Handbook for
Programme Outcome and Course Outcome

Programme Educational Objective
Curriculum Design & Development

Programme Outcomes
Professional, Technical & Skills etc.

OBE

Course outcomes
Expanded Opportunities & High Expectations

Vision and Mission
Clarity of Focus

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1.1.1. Programme Outcome and Course Outcome for All Programmes

The following table represents Course Outcome and Programme Outcome for all programme:

S. No.	Name of the Programme	Supporting Documents PP
1	B.Sc. Physics	04-12
2	M.Sc. Physics	13-21
3	M.Sc. Medical Physics	22-29
4	B.Sc. Chemistry	30-34
5	M.Sc. Chemistry	35-44
6	B.Sc. Mathematics With CA	45-54
7	B.Sc. Mathematics	55-62
8	M.Sc. Mathematics	63-71
9	B.Sc. Catering Science and Hotel Management	72-83
10	B.Sc. Costume Design and Fashion	84-89
11	B.Sc. Biochemistry	90-103
12	M.Sc. Biochemistry	104-115
13	B.Sc. Clinical Lab Technology	116-121
14	B.Sc. Biotechnology	122-132
15	M.Sc. Biotechnology	133-138
16	B.Sc. Microbiology	139-148
17	M.Sc. Microbiology	149-156
18	B.Sc. Food Science and Nutrition	157-168
19	M.Sc. Food Science and Nutrition	169-175
20	B.Sc. Computer Science	176-182
21	M.Sc. Computer Science	183-189
22	BCA	190-197
23	B.Sc. Information Technology	198-206
24	B.Sc. Computer Technology	207-214
25	B.Sc. Computer Science with Data Analytics	2015-219
26	M.Sc. Computer Science with Data Analytics	220-224
27	B.Sc. Computer Science with Cognitive System	225-227

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S. No.	Name of the Programme	Supporting Documents PP
28	B.Com.	228-241
29	M.Com.	242-252
30	B.Com. with Computer Application	253-262
31	M.Com with Computer Application	263-272
32	B.Com. Corporate Secretaryship with CA	273-281
33	M.Com. Corporate Secretaryship	282-290
34	B.Com. Information Technology	291-299
35	B.Com. Professional Accounting	300-309
36	B.Com. Finance	310-321
37	B.Com. Banking and Insurance	322-334
38	B.Com. Business Process Services	335-346
39	B.Com. Business Analytics	347-355
40	B.Com. Accounting and Taxation	356-364
41	B.Com. International Business	365-376
42	M.Com. International Business	377-386
43	B.Com. Cost Accounting	387-390
44	BBA CA	391-397
45	M.Sc. Hospital Administration	398-404
46	B.A. English Literature	205-413
47	M.A. English Literature	414-420

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B.Sc. Physics

Programme Outcome	
1	Producing graduates who are well acquainted with the fundamentals of Physics and requisite skills, in order to use their knowledge in Physics in a wide range of practical applications.
2	Developing creative thinking and the power of imagination to enable graduates work in research in academia and industry for broader applications.
3	Relating the training of Physics graduates to the employment opportunities within the country.
4	To promote societal values through Physics related activities.

Programme Educational Objective	
1	Demonstrate an understanding of basic scientific principles,theories, and laws in Physics as well as an awareness of the changing nature of science.
2	Analyze, interpret, and evaluate scientific hypotheses and theories using rigorous methods use appropriate mathematical techniques and concepts to obtain quantitative solutions to problems in physics.
3	Demonstrate basic experimental skills by the practice of setting up and conducting experiments with minimizing measurement errors.
4	Demonstrate a qualitative understanding of the core physics ideas and the relationship of this physics to the humanities through both written and oral communication.
5	Demonstrate an ability to recognize the need for life-long learning for sustaining professional career

Course Outcome			
192PY1A1CA	**CORE-I PROPERTIES OF MATTER AND SOUND**	**Semester**	**Level**
CO1	Explain the importance and applications of elastic modulus.		K2
CO2	Utilize the basic properties of matter and do the experiments in laboratory to evaluate the properties.		K3
CO3	Explain the basics of viscosity and compare it using different methods.	I	K2

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CO4	Show experiments in explaining basics of sound waves using sonometer.		K2
CO5	Summarize the production, detection, properties and uses of ultrasonic waves.		K2
192PY1A1CB	**CORE II MECHANICS**	**Semester**	**Level**
CO1	Summarize the fundamental laws of mechanics and apply them to solve problems.	I	K2
CO2	Utilize the principles of Moment of Inertia and do experiments in laboratories.		K3
CO3	Illustrate gravitational field, potential and Kepler's Law.		K2
CO4	Solve the problems in central force motions and interpret it through derivational values		K3
CO5	Demonstrate the importance of hydrodynamical functions and its applications.		K2
192MT1A1IA	**IDC MATHEMATICS I**	**Semester**	**Level**
CO1	Describe differential equations	I	K2
CO2	Demonstrate the existence of a partial differential equations		K2
CO3	Explain the concepts of linear partial equations of order one		K2
CO4	Analyse the laplace transform of some function transforms		K3
CO5	Apply inverse laplace transforms to solve differential equations		K3
193MB1A1AA	**AECC-I ENVIRONMENTAL STUDIES**	**Semester**	**Level**
CO1	understand the importance of natural resources in order to conserve for the future.	I	K2
CO2	inculcate the knowledge on structure, function and energy flow in the Eco system.		K3
CO3	impart knowledge on Biodiversity and its conservation.		K3

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CO4	create awareness on effects, causes and control of air, water, soil and noise pollution etc.		K2,K3
CO5	build awareness about sustainable development and Environmental protection		K2,K3
192PY1A2CA	**Heat and Thermodynamics**	**Semester**	**Level**
CO1	Outline of kinetic theory of gases, its concepts and their applications.	II	K2
CO2	Compare the thermodynamic and statistical principles.		K2
CO3	Utilize the third law of thermodynamics and concepts of entropy.		K3
CO4	Demonstrate the phenomena of Thermometry and its measurement.		K2
CO5	Experiment with the specific heats of liquid and heat capacities.		K3
192PY1A2CB	**Atomic and Nuclear Physics**	**Semester**	**Level**
CO1	Explain the concept of positive rays and atom models	II	K2
CO2	Identify the fine spectral notation of the atoms		K3
CO3	Illustrate the x-ray and photoelectric effect with atoms		K2
CO4	Outline the concepts of nuclear forces and radioactivity		K2
CO5	Construct the kinematics of nuclear reaction and elementary particles		K3
192MT1A2IA	**Mathematics - II**	**Semester**	**Level**
CO1	Identify the problem solving techniques measures of central tendency	II	K3
CO2	Interpret the concepts of Correlation and Regression		K2
CO3	Illustrate the Axioms of Probability and Conditional Probability		K2
CO4	Apply the knowledge of Probability distribution		K3
CO5	Solve the concept of Curve Fitting		K3

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192PY1A3CA	ELECTRICITY AND ELECTROMAGNETISM	Semester	Level
CO1	Identify the magnetic flux through Biot-savart law and galvanometer.	III	K3
CO2	Relate the thermal and chemical effect of electric current		K3
CO3	Explain the laws and concept of electromagnetic induction.		K2
CO4	Make use of the LCR in AC circuits.		K3
CO5	Examine the wave equations in electric and magnetic field		K4
192CE1A3IA	CHEMISTRY – I	Semester	Level
CO1	Outline the electrochemical cells and its series	III	K2
CO2	Explain the preparation an properties of simple polymers		K2
CO3	Infer the properties and types of alloys and batteries		K2
CO4	Relate the rate of the reaction and characteristics of catalytic reactions		K2
CO5	Examine the Solubility and ionic equilibria and concept of acid and bases		K2
192PY1A3SA	ELECTRIC CIRCUITS AND NETWORKING SKILLS	Semester	Level
CO1	Utilize the concepts of basic of electricity principles.	III	K3
CO2	Relate the series and parallel electrical circuits.		K3
CO3	Identify the power circuits and control circuits		K2
CO4	Label the primary and secondary cells.		K2
CO5	Interpret the network transformations.		K3
192PY1A4CA	OPTICS AND SPECTROSCOPY	Semester	Level
CO1	Classify the different types of aberrations and Demonstrate the dispersive power of prism through experiments in laboratories	IV	K2

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CO2	Interpret the interference pattern form and refractometer		K2
CO3	Experiment with the Fresnel and Fraunhofer diffraction and identify the dispersive power of grating through laboratory experiments		K3
CO4	Identify the plane, circularly and elliptically polarized light and compare different types of microscopes		K3
CO5	Make use of the principle of spectroscopy for their applications		K3
192CE1A4IA	**CHEMISTRY II**	**Semester**	**Level**
CO1	Outline the knowledge of coordination compounds and its biological importance.		K2
CO2	Extend the classification and synthesis of nanomaterials.		K2
CO3	Infer the importance of nuclear chemistry and radioactive materials.	IV	K2
CO4	Apply the action of colloids in daily life.		K3
CO5	Show the composition of different type of rubbers and characteristics of inorganic polymers.		K2
192PY1A4SA	**BASIC INSTRUMENTATION SKILLS**	**Semester**	**Level**
CO1	Infer the functions of measurement instrument like multimeters and voltmeters.		K3
CO2	Apply the fundamental of CRO voltmeter to its applications		K3
CO3	Explain the classification & characterization of signal generators.	IV	K2
CO4	Illustrate the technical problems associated with various forms of bridges and their measurements.		K2
CO5	Make use digital voltmeter & multimeter.		K3
17UPY53A	**CORE- V: Mathematical Physics and Classical Mechanics**	**Semester**	**Level**
CO1	Solve determinants and matrices		K1,K2,K3
CO2	Apply integral calculus and differential calculus to solve physical problems.		K3
CO3	Evaluate beta and gamma functions and the relationship between them		K3

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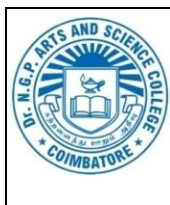
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CO4	Extend lagrangian formulation to oscillator and pendulum	V	K2
CO5	Apply Hamiltonian Formulation to oscillator and pendulum		K3
17UPY53B	**CORE- VI: Electricity and Magnetism**	**Semester**	**Level**
CO1	Analyze fundamental properties of the electric charge and simplify technical problems associated with the electrostatic force using calculus.	V	K1
CO2	Understand the fundamental problem in creating efficient thermoelectric materials.		K2
CO3	Evaluate technical problems associated with LR circuits and coils.		K3
CO4	Solve technical problems associated with the uniform and non-uniform magnetic fields on moving charges.		K2,K3
CO5	Classify magnetic materials, their properties and applications in industry.		K2
17UPY53C	**CORE–VII: Applied Electronics**	**Semester**	**Level**
CO1	Understand the basic concept of semiconductors, types of solids, rectifiers and diodes	V	K1
CO2	Analyze different actions of transistors through experiments in laboratories		K2
CO3	Construct different oscillators and amplifiers through laboratory experiment		K3
CO4	Compare and study modulators, demodulators with different types.		K2,K3
CO5	Differentiate FET,JFET,MOSFET and UJT		K2
17UPY5SA	**Skill based Subject III: Digital Electronics and Operational Amplifier**	**Semester**	**Level**
CO1	Understand problems related to number systems and Boolean algebra.	V	K1,K2
CO2	Apply logic gates and Demorgan's law through experiments in laboratories.		K3
CO3	Demonstrate flip flops using logic gates and Synchronous counters. Identify Shift Registers using JK / D Flip Flop		K3
CO4	Understand and demonstrate memories, its types and their applications.		K2,K3

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CO5	Make Use of OP-AMP through experiments in laboratories and for various applications.		K2
17UPY5SB	**Skill based subject - IV: Microprocessors**	**Semester**	**Level**
CO1	Understand the microprocessor architecture		K2
CO2	Explain memory and I/O devices		K1
CO3	Develop assemble language programming	V	K3
CO4	Learn about the additional instructions in programming techniques		K3
CO5	Recall on code conversions and stack instructions		K2
17UPY63A	**CORE–VIII: Nuclear Physics**	**Semester**	**Level**
CO1	Outline properties of nucleus and the various nuclear models		K1
CO2	Learn about the particle accelerators and detectors		K2
CO3	Determine alpha, beta , gamma rays and their properties	V	K2
CO4	Differentiate nuclear fission and nuclear fusion		K3
CO5	Explain cosmic rays and elementary particles		K1
17UPY63B	**CORE- IX: Quantum Mechanics and Relativity**	**Semester**	**Level**
CO1	Understand the basic concept of properties of waves, de Broglie wavelength and photoelectric effect.		K1
CO2	Explain uncertainty principle, its physical significance and applications		K1
CO3	Apply the concepts of Schrodinger equation to one dimensional problem	V	K2
CO4	Apply the concepts to three dimensional problem		K2
CO5	Understand theory of relativity and Lorentz transformation		K3
17UPY63C	**CORE-X: Solid State Physics**	**Semester**	**Level**
CO1	Learn about different features of crystals	V	K3
CO2	Classify solids based on band theory		K1

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		Semester	Level
CO3	Explain free electron theory and determine Hall effect through experiments in laboratory		K3
CO4	Understand dielectric and know about the concepts of superconductivity		K2
CO5	Classify magnetic materials based on domain theory		K2
17UPY5EA	**Material Science**	**Semester**	**Level**
CO1	Understand engineering materials with their bonding nature.		**K2**
CO2	Recall mechanical behaviours of engineering materials		K1
CO3	Explain properties of magnetic materials and dielectric materials with their domain structure	V	K2
CO4	Understand smart materials and their applications in modern trend.		K2
CO5	Apply the concepts of different testing methods such as NDT, SEM for various properties.		K2,K3
17UPY5EB	**Energy Physics**	**Semester**	**Level**
CO1	Make use of electrical energy in home appliances		K1
CO2	Discuss non- conventional energy sources		K1
CO3	Explain bio gas and the generation of bio gas.	V	K2
CO4	Understand thermal energy their laws and types of pyroheliometers		K2
CO5	Outline on solar energy and their applications.		K3
17UPY5EC	**Agricultural Physics**	**Semester**	**Level**
CO1	Classify and explain significance of soil		K2
CO2	Explain importance of ground wate		K2
CO3	Learn basic principle of alternating current	V	K1
CO4	Analyze hygrometry and water pumps		K2
CO5	Make use of solar energy in everyday life		K3

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17UPY6EA	Fundamentals of Nano Science	Semester	Level
CO1	Outline the basics of Nanotechnology	VI	K2
CO2	Learn about synthesis of nanomaterials		K1
CO3	Classify types of nanostructures		K2
CO4	Summarize on functional nanomaterials		K2
CO5	Apply nanomaterials in various fields		K3
17UPY6EB	Optical Fibres and Fibre Optic Communication Systems	Semester	Level
CO1	Classify fibres based on mode of propagation	VI	K1
CO2	Summarize various techniques for fibre fabrication		K2
CO3	Explain fibre optic losses and dispersion		K2
CO4	Select light sources for fibre communication		K3
CO5	Apply optical fibres in various fields		K3
17UPY6EC	Bio-Physics	Semester	Level
CO1	Outline the structure of biomolecules	VI	K2
CO2	Learn about diffusion, osmosis and filtration		K1
CO3	Recall significance of adsorption, hydrotrophy and colloids.		K1
CO4	Apply optical techniques in biological studies		K3
CO5	Explain the concepts of radioactivity and bio electricity		K2

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BoS Chairman/HoD
Department of Physics
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Coimbatore – 641 048

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M.Sc. Physics

Programme Outcome

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2	Developing creative thinking and the power of imagination to enable graduates work in research in academia and industry for broader applications.
3	Relating the training of Physics graduates to the employment opportunities within the country.
4	To promote societal values through Physics related activities.

Programme Educational Objective

1	Apply theoretical knowledge of principles and concepts of Physics to practical problems.
2	Develop skills in planning and carrying out advanced physics experiments.
3	Solve scientific problems by applying a combination of theory, numerical simulation, and experiments.
4	Relate critically to scientific models.
5	Examining specific phenomena theoretically and experimentally, to contribute to the generation of new scientific insights or to the innovation of new applications of physics research.

Course Outcome

192PY2A1CA	**Mathematical Physics**	**Semester**	**Levels**
CO1	Outline the concept of gradient, divergence, curl and matrices.		K2
CO2	Identify the definite integrals using Complex variables.		K3
CO3	Make use of the Special function and its properties through the expansion of a function in terms of orthogonal polynomials.	I	K3
CO4	Examine the differential equations for first and second order equations.		K4

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CO5	Value the concept of tensors and group theory.		K5
192PY2A1CB	**Thermodynamics and Statistical Mechanics**	**Semester**	**Levels**
CO1	Relate the thermodynamics, microstates through thermodynamics postulates, quantities and relations	I	K1
CO2	Identify the micro and macroscopic properties of the mater.		K2
CO3	Inspect the classical and quantum distribution laws and their relations.		K3
CO4	Apply the transport properties, different phases of maters, equilibrium and non-equilibrium process.		K4
CO5	Explain and evaluate the heat capacities, ising model through phase transitions.		K5
192PY2A1CC	**Classical Mechanics**	**Semester**	**Levels**
CO1	Apply Lagrangain equation of motion to oscillator and pendulum.	I	K1
CO2	Construct the Hamilton equation and canonical transformation.		K2
CO3	Summarize the Hamilton-Jacobi Theory and Small oscillation		K3
CO4	Classify the Euler angle and equation through Kinematics of Rigid Body		K4
CO5	Evaluate the oscillations with simple examples through Central Force Problem and Theory of Relativity.		K5
192PY2A1CD	**ELECTRONICS**	**Semester**	**Levels**
CO1	Outline about various semiconductor diodes.	I	K2
CO2	Identify and Construct various transistors biasing and Opto Electronic devices		K2
CO3	Interpret the operational amplifier with their applications		K3
CO4	Examine the principle and working of various semiconductor memories.		K3
CO5	Solve analog to digital convertors (ADC) and digital to analog convertors (DAC)		K4
192PY2A1DA	**Environmental Physics**	**Semester**	**Levels**

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CO1	Relate the natural resources and its biological control of chemical factors in the ecosystem	I	KI
CO2	Build the dynamics of physical soil components and their phases of bioremediation.		K2
CO3	Identify the physio-chemical and biological hazards on environment.		K3
CO4	Analyze the environmental hazards through various instrumental techniques.		K3
CO5	Motive to learn the various environmental law and policy of India.		K4
192PY2A1DB	**Crystal Growth and Thin Film Physics**	**Semester**	**Levels**
CO1	Develop the concepts of crystal growth technique through Nucleation and Kinetics of growth.	I	K1
CO2	Relate the various experimental techniques for crystal growth.		K2
CO3	Identify various preparation methods like gel, melt and vapor growth techniques of crystal		K3
CO4	Construct the thin films deposition in various techniques		K4
CO5	Analyze the various characterization techniques for both crystal and thin film samples.		K4
192PY2A1DC	**Laser Physics and Non-linear Optics**	**Semester**	**Levels**
CO1	Explain the principle and construction of various lasers.	II	K2
CO2	Identify the operation technique of lasers.		K3
CO3	Construct the laser beam characteristics.		K3
CO4	Inspect the focusing of Laser beam.		K4
CO5	Examine the Non linear optical media and make use in various applications.		K5
202PY2A2CA	**Condensed Matter Physics**	**Semester**	**Levels**
CO1	Outline the crystal structure and bonding of atoms		K2
CO2	Illustrate the lattice vibration of atoms and thermal properties		K3

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CO3	Solve free electron theory by Fermi Dirac distribution and bloch theorem		K4
CO4	Identify the classification and theory of magnetic materials and dielectric		K2
CO5	Examine the theory on superconductivity, its applications and imperfection in crystals	II	K3
202PY2A2CB	**Quantum Mechanics–I**	**Semester**	**Levels**
CO1	Explain basic concept and the application of Schrödinger wave equation		K2
CO2	Solve one dimensional problem and apply it to simple harmonic oscillator		K3
CO3	Utilize quantum mechanics to three dimensional wave equations	II	K4
CO4	Compare Heisenberg and Schrödinger wave equations		K2
CO5	Identify angular momentum and the system of identical particles		K3
202PY2A2CC	**Spectroscopy**	**Semester**	**Levels**
CO1	Identify the modes of vibration and rotation in molecules using IR spectroscopy.		K2
CO2	Apply the theory of Raman spectroscopy for structure determination.		K3
CO3	Examine the spectra of Nuclear magnetic Resonance and Electron Spin Resonance.		K2
CO4	Explain the principle of Nuclear Quadrupole Resonance and Mossbauer spectroscopy.	II	K3
CO5	Select the type of spectroscopy for interaction of electromagnetic waves with matter.		K4
192MT2A2IB	**Numerical Methods**	**Semester**	**Levels**
CO1	Apply the Numerical solution of Linear equations for bisection method		K1
CO2	Solve the set of Linear Algebraic equations.		K2
CO3	Interpret the concept of Numerical differentiation and integration		K3
CO4	Identify the Interpolation Formulae for equal intervals	II	K3

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Criterion I
Metric 1.1.2
PO-PSO-CO

CO5	Solve the Ordinary Differential Equations		K4
192PY2A2DA	**Energy Physics**	**Semester**	**Levels**
CO1	Outline about energy sources and their availability		K2
CO2	Illustrate non- conventional energy sources		K3
CO3	Explain biomass energy and the generation of bio gas		K4
CO4	Utilize the principle solar cells to find its applications	**II**	K2
CO5	Summarize additional energy sources and its developments		K3
192PY2A2DB	**Materials Physic sand Processing Techniques**	**Semester**	**Levels**
CO1	Explain the growth process of crystals.		K2
CO2	Summarize plasma processing and its types.		K2
CO3	Classify Vacuum techniques and pressure gauges.	**III**	K3
CO4	Make use of crystal growth methods in preparation.		K3
CO5	Explain the working principle of characterization tools.		K4
192PY2A2DC	**Photovoltaic Science**	**Semester**	**Levels**
CO1	Explain history of solar cell and its properties.		K2
CO2	Discuss fundamental properties of semiconductors.		K3
CO3	Classify the deposition techniques.		K2
CO4	Outline the Thin film fabrication method.	**III**	K4
CO5	Discuss about preparation and mechanism of dye sensitized solar cell.		K4
192PY2A3CA	**Electromagnetic Theory**	**Semester**	**Levels**
CO1	Summarize the fundamentals of electrostatics		K2

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CO2	Outline the concepts of magnetostatics		K2
CO3	Develop the skills to solve problems of motion of charged particles in various fields		K3
CO4	Analyze the concept of electromagnetic theory in electromagnetic waves		K3
CO5	Examine the electrodynamics of radiating and relativistic systems	III	K4
192PY2A3CB	**Quantum Mechanics –II**	**Semester**	**Levels**
CO1	Outline on the approximation methods and its applications.		K2
CO2	Explain the scattering theory and Partial wave analysis		K2
CO3	Identify the use of time independent perturbation theory.	III	K2
CO4	Utilize the Klein-Gordon equation in Dirac equation.		K1
CO5	Analyze Euler Lagrange's equation and Hamiltonian formulation.		K3
192PY2A3CC	**Microprocessors and Microcontroller**	**Semester**	**Levels**
CO1	Outline the architecture of microprocessor 8085.		K2
CO2	Make use of instruction sets to write assemble language program.		K2
CO3	Experiment with the architecture and programming of 8086 microprocessor.	III	K3
CO4	Demonstrate the interfacing in 8085 microprocessor.		K3
CO5	Contrast microprocessor and microcontroller and perform basic arithmetic programs.		K4
192PY2A3DA	**Introductory Astronomy, Astrophysics Cosmology**	**Semester**	**Levels**
CO1	Outline the theories related to origin of the Universe.		K2
CO2	Summarize various parameters related to astronomy.		K3
CO3	Identify the types of stars based on their properties.		K3
CO4	Explain the principles related to cosmology.		K2

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CO5	Solve various problems related to cosmology.	IV	K4
192PY2A3DB	**Band Gap Engineering in Semiconductors**	**Semester**	**Levels**
CO1	Outline about band structure of semiconductors	IV	K2
CO2	Identify the physical characteristics of semiconductors		K2
CO3	Apply the concept of band gap engineering		K3
CO4	Examine the principle and working of semiconductors in electronics, spintronics and valleytronics		K3
CO5	Explain the density functional theory of semiconductors		K4
192PY2A3DC	**Solar Cells an d Solar Energy Utilization**	**Semester**	**Levels**
CO1	Outline the heat transfer process at the earth's surface and its measurement.	IV	K2
CO2	Summarize the feauture of solar collectors and its thermal evaluation.		K3
CO3	Contrast the operation of solar heaters and storage tanks.		K3
CO4	Make use of the concepts in solar energy conversion.		K4
CO5	Choose the materials for production and storage of solar energy.		K5
202PY2A4CA	**Molecular Physics**	**Semester**	**Levels**
CO1	Outline the molecular structure and bonding	IV	K2
CO2	Interpret the molecular symmetry		K3
CO3	Experiment with the molecular interaction and mechanics		K2
CO4	Identify the molecular reaction dynamics		K2
CO5	Examine quantum theory to electron transfer, electronic structure and spectra		K4
192PY2A4CB	**Nuclear and Elementary Particle Physics**	**Semester**	**Levels**

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CO1	Interpret the various properties of nuclei.		K2
CO2	Apply the laws of radioactivity decay for various applications.		K3
CO3	Explain the properties of nuclear forces and nuclear reaction dynamics.	IV	K2
CO4	Identify alpha, beta and gamma decay based on its theory.		K3
CO5	Analyze the concepts of elementary particles.		K4
202PY2A4CC	**Research Methodology**	**Semester**	**Levels**
CO1	Explain the concepts of research methodologies		K2
CO2	Apply the knowledge for data Interpretation		K3
CO3	Make use of the knowledge strategies for report writing	IV	K3
CO4	Take part in materials preparation techniques		K4
CO5	Identify the advanced analytical techniques and applications		K3
192PY2A4DA	**Radiological Safety Aspects**	**Semester**	**Levels**
CO1	Interpret the structure of atomic nucleus.		K2
CO2	Make use of the principles of radioactivity into handling radio-isotopes.		K3
CO3	Identify various radiations interacting with matter.	IV	K3
CO4	Classify various types of detector principles for nuclear radiation.		K2
CO5	Take part in implementing the safety aspects principles in radioisotope labs.		K4
192PY2A4DB	**Instrumental Methods of Analysis**	**Semester**	**Levels**
CO1	Summarize the types of instrumental methods, measurements, signals and data evaluation		K2
CO2	Explain the instrumentation and analysis of TGA, DTA and DSC	IV	K2
CO3	Develop the skills to analyze XRD and XRF spectroscopic techniques		K3

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CO4	Analyze the concept of optical method and electron microscopes.		K4
CO5	Examine the electrochemical techniques.		K4
192PY2A4DC	**Plasma Physics**	**Semester**	**Levels**
CO1	Summarize the basic concepts of plasma.		K2
CO2	Infer knowledge about different characteristics of plasma.		K2
CO3	Utilize the confinements in plasma.	IV	K3
CO4	Classify the different waves of plasma.		K2
CO5	Identify the different applications of plasma waves.		K3

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M.Sc. Medical Physics

	Programme Outcome
1	To impart knowledge of various branches of Microbiology and to understand the role of microorganisms in human welfare and sustainable development
2	To acquire skills in the techniques used to observe and study the nature of microorganisms and the techniques, skills, and modern tools necessary for biological practice.
3	To appreciate the complexities of microbiological processes for industrial and other purposes, especially the genetic manipulation of microorganisms for the production of antibiotics, hormones, etc.
4	To inculcate broad education necessary to understand the impact of microbiological solutions in a global and societal context; an ability to function in multi-disciplinary teams; To develop the ability to identify, formulate, and solve biological problems and to design and conduct experiments, as well as to analyze and interpret data.
5	To create awareness of contemporary issue and to appreciate the applications of Microbiology to become an entrepreneur.

	Programme Educational Objective
1	The aim of this programme is designed to enable a student to optimize their learning and their knowledge by implementing in medicine and biology in order to improve health care
2	To develop new methods and techniques for the radiology and imaging and radiotherapy related topics.
3	To plan radiotherphy treatment methods, delivery verification and execution.
4	To develop radiation dosimetry and ensure radiological safety of health care workers, patients and public.
5	A the end of the programme the student will have an in depth knowledge in the field of medical physics and related sciences.

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Course Outcome			
192MP2A1CA	CORE:NUCLEAR PHYSICS	Semester I	Level
CO1	Explain about Nucleus, its energy states and radioactivity principles.		K3
CO2	Write the Applications of decay types and Nuclear reactions.		K3
CO3	Outline the concepts of accelerators and their medical applications.		K4
CO4	Evaluate various nuclear models and nuclear reactions.		K4
CO5	Analyze different types of spectroscopy with varied detectors.		K4
192MP2A1CB	CORE:RADIATION PHYSICS	Semester I	Level
CO1	Explain about Non Ionizing Radiation and the concept of classification of LASER and its uses in medicine.		K4
CO2	Outline the X-ray tube construction and safe operation of the X-ray tube and its function		K4
CO3	Evaluate the theories of atomic physics nuclear reactions uncertainty and exclusion principles to radiation physics.		K4
CO4	Infer the Physics aspects of Interaction of indirectly ionizing radiation with matter		K4
CO5	Distinguish the Interaction of directly ionizing radiation with matter and its effects inside a living object.		K5
192MP2A1CC	CORE:BIOMEDICAL ELECTRONICS AND INSTRUMENTATION	Semester I	Level
CO1	Manipulate the component types and connections used to build functioning electronic circuits.		K3
CO2	Explain about solving problems related to number systems and Boolean algebra		K4
CO3	Construct the basic architecture of different Microprocessors		K4
CO4	Estimate the concept of various bioelectric potentials generated in human body and related equipments		K4

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Criterion I Metric 1.1.2 PO-PSO-CO

CO5	Evaluate human physiology and anatomy with signal processing paradigms.		K5
192MP2A1CD	CORE:RADIOLOGICAL ANATOMY, PHYSIOLOGY AND PATHOLOGY	Semester I	Level
CO1	Demonstrate the normal organization of the organ systematic levels		K3
CO2	Experiment the anatomy of human body, nomenclature, and radiographic anatomy		K4
CO3	Categorize the indications for and complications of various treatments procedure.		K4
CO4	Assess the site specific signs, symptoms, diagnosis and management for all types of cancer.		K5
CO5	Summarize the outcomes of various treatment methods, including the interpretation of clinical trials		K5
192MP2A1DA	ELECTIVE I: SOLID STATE PHYSICS	Semester I	Level
CO1	Illustrate the various crystal structures and forces associated with it.		K3
CO2	Explain the application of lattice structures heat processes associated with it.		K4
CO3	Outline the theories of various metals and semiconductors and their mobility phenomena.		K4
CO4	Classify different types of magnetic materials.		K4
CO5	Categorize different types of superconductivity and their applications.		K4
192MP2A2CA	CORE:RADIATION DETECTORS AND INSTRUMENTATION	Semester II	Level
CO1	Analyze the various types of radiation detectors to measure radioactive materials or produced.		K4
CO2	Function of scintillation detectors and methods of its detection.		K4
CO3	Analyze the concept the Dosimetric		K4

	instruments.		
CO4	Simplify about the protection instruments for X-ray, Photon, Electron, neutron and contamination instruments.		K4
CO5	Explain about the nuclear medicine instruments.		K5
192MT2A2IC	EDC: MATHEMATICAL PHYSICS	Semester II	Level
CO1	Build the concepts of probability theory, statistical distributions and frequency distributions		K3
CO2	Analyze the application of Poisson's Statistics, Goodness- of-fit tests, Sampling distributions		K4
CO3	Inference the Simultaneous linear equations concept to solve problems		K4
CO4	Simplify the concept of test of randomness and random number generation.		K4
CO5	Take part in Programming Skills in C++, MATLAB/ MATHEMATICA, and STATISTICA		K4
192MP2A2CB	CORE:PHYSICS OF RADIATION THERAPY	Semester II	Level
CO1	Analyze the various types of radiation detectors to measure radioactive materials or produced.		K4
CO2	Function of scintillation detectors and methods of its detection.		K4
CO3	Analyze the concept the Dosimetric instruments.		K4
CO4	Simplify about the protection instruments for X-ray, Photon, Electron, neutron and contamination instruments.		K4
CO5	Explain about the nuclear medicine instruments.		K5
192MP2A2CC	CORE:PHYSICS OF RADIOLOGY IMAGING	Semester II	Level
CO1	Inference the concept of the two electrical quantities, KV and mA,		K4

	that are associated with x-ray		
CO2	Explain mammography requires the highest visibility and high contrast sensitivity of all radiographic procedures		K5
CO3	Explain the multiple views are required to produce an image.		K5
CO4	Explain the concept of image detail and why it is an important characteristic in medical imaging in MRI.		K5
CO5	Explain how the operator changes the ultrasound frequency in a typical imaging system		K5
192MP2A2DA	ELECTIVE-II : RADIATION DOSIMETRY AND STANDARDIZATION	Semester II	Level
CO1	Find the relationship between kerma, absorbed dose and exposure under CPE		K4
CO2	Discuss the basics of the TRS-398 measurement protocol for high-energy photons and electrons.		K6
CO3	Discuss about neutron standard dosimetry and to optimize the intercomparison and standardization		K6
CO4	Interpret methods of measurement of radioactivity		K5
CO5	Describe mechanism of radiolysis of aqueous solutions of biologically relevant compounds and radiation chemistry.		K6
192MP2A3CA	CORE : ADVANCED RADIOTHERAPY PHYSICS	Semester III	Level
CO1	Understand the conformal radiotherapy techniques such as 3DCRT, IMRT and IMAT.		K5
CO2	To understand the use of imaging KVCT and MVCT during radiation therapy to improve the precision and accuracy of treatment delivery.		K5
CO3	Observe the difference of dose delivery of SRS/SRT		K5

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CO4	Describe particulate beam therapy, Carbon ion therapy – Proton therapy – Hadron therapy		K5
CO5	Understand the concepts of treatment planning systems and review dosimetry methods for Photons and electrons		K4
192MP2A3CB	CORE : PHYSICS OF NUCLEAR MEDICINE	Semester III	Level
CO1	Explain the applications of radioisotopes to diagnostic/ therapeutic in Nuclear Medicine		K5
CO2	Understand the properties of radiopharmaceuticals used in Nuclear Medicine.		K5
CO3	Discuss about Data acquisition and processing with various equipments, quality control of instruments and labeled agents		K5
CO4	Understand the treatment for thyroid disorders and palliative treatment using radioisotope.		K5
CO5	Describe Internal Dosimetry and calculation of the radiation dose from internally administered radionuclide		K5
192MP2A3CC	CORE :RADIATION BIOLOGY	Semester III	Level
CO1	Explain the structures and biological functions of cells, tissues, and organisms.		K5
CO2	Describe different interactions of radiation on living cells and its biological damage.		K5
CO3	Explain the biological basis 5Rs of fractionated radiotherapy		K5
CO4	Describe the relationship between LET, RBE and OER.		K5
CO5	Explain the effects of radiation and factors influencing radiation effect.		K6
192MP2A3CD	CORE :BRACHYTHERAPY PHYSICS	Semester III	Level
CO1	Explain the physical properties and construction of brachytherapy sealed sources used in brachytherapy treatment.		K5

CO2	Describe the dosimetry procedures and various quality assurance tests in brachytherapy.		K5
CO3	Explain the basics of brachytherapy and its classification.		K5
CO4	Compare the treatment planning for various techniques. To understand the ICRU recommendations.		K4
CO5	Explain about the advanced brachytherapy techniques.		K5
192MP2A3DA	ELECTIVE-III : MATERIALS FOR RADIATION DOSIMETERS	Semester III	Level
CO1	Develop the fundamental knowledge on the working principle of dosimeters		K5
CO2	Distinguish the different types of dosimeters and their applications		K4
CO3	Formulate the different synthesis techniques and their influence on the properties of dosimeters		K6
CO4	Determine the structure-property relationships of dosimeter materials		K5
CO5	Perceive the properties required for various materials used in medical applications.		K5
192MP2A4CA	CORE : RADIATION HAZARDS EVALUATION AND CONTROL	Semester IV	Level
CO1	Explain the hazards of radiation and its protection system.		K5
CO2	Explain the monitoring and protection principle of internal and external radiation exposure		K5
CO3	Interpret the types of installations and Safety requirements on radiation sources and equipment		K5
CO4	Discuss about the radioactive waste disposal and transport of radioactive material		K5
CO5	Outline the radiation safety legislation, radiation emergencies and medical management.		K5

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192MP2A4DA	ELECTIVE-IV : QUALITY CONTROL, ACCEPTANCE TESTING AND CALIBRATION OF RADIATION SYSTEMS	Semester IV	Level
CO1	Importance of the quality assurance program		K4
CO2	Discuss the Dosimetric protocols and quality assurance tests for radiation therapy.		K5
CO3	Explain the quality assurance test for various types of diagnostic equipments.		K5
CO4	Interpret the Acceptance and commissioning test for TPS.		K5
CO5	Explain the Commissioning and Decommissioning procedures for radioactive source and equipment.		K5

BoS-Chairman

BoS Chairman/HoD
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B.Sc. Cheimistry

2019-2020

Programme Outcome	
1	Apply knowledge in scientific concepts, fundamental principles and varied theories to extend their relevance in day-to-day life.
2	Build the foundation in the current trends of chemistry with experimental skills.
3	Make use research based knowledge in multidisciplinary approaches.
4	Extend the role and need of the chemist in societal, environmental contexts and demonstrate the knowledge for sustainable development.
5	Plan and organize as a member or leader in the diverse team and ability to engage in independent life – long learning in the broadest context of technological change.

Programme Educational Objective	
1	To provide an ability to identify, formulate and to solve complex problems in Chemistry by applying concepts and principles of Chemistry.
2	To endow with the scientific, chemical knowledge and proper laboratory and safety techniques essential for success.
3	The educational objectives of our programmes is to ensure that the graduates are fundamentally practical , collaborative and professional.

Course Outcome			
192CE1A1CA	**CORE : GENERAL CHEMISTRY - I**	**Semester**	**Level**
CO1	Compare the different atomic model structures.	Semester I	K2
CO2	Relate the types of bonding nature in various molecules based on their hybridization.	Semester I	K2
CO3	Classify the Kinetic theory of gases	Semester I	K2
CO4	Summarize the concept of thermodynamics to different	Semester I	K2

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	systems and the basics of thermo chemistry		
CO5	Illustrate the preparation, properties of alkanes, free radicals and conformations of alkanes.	Semester I	K2
192PY1A1IA	**IDC: PROPERTIES OF MATTER, THERMAL PHYSICS AND OPTICS**	**Semester**	**Level**
CO1	Explain the importance and applications of elasticity modulus.	Semester I	K2
CO2	Utilize the basic properties of matter and do the experiments in laboratory to evaluate the properties.	Semester I	K3
CO3	Demonstrate the differences in heat transfer mechanisms.	Semester I	K2
CO4	Classify the Reversible and irreversible process in thermodynamics.	Semester I	K2
CO5	Experiment with the application of Interference and Diffraction.	Semester I	K3
192CE1A2CA	**192CE1A2CA CORE : GENERAL CHEMISTRY – II**	**Semester**	**Level**
CO1	Explain the fundamental concepts in organic chemistry.	Semester II	K2
CO2	Explain the fundamental concepts in organic chemistry.	Semester II	K2
CO3	Explain the fundamental concepts in organic chemistry.	Semester II	K2
CO4	Outline the basics of crystals and their characteristics	Semester II	K2
CO5	Interpret the facts and limitations of second law of thermodynamics	Semester II	K2
192CE1A2CB	**CORE : APPLIED CHEMISTRY**	**Semester**	**Level**
CO1	Relate the nature of soil and corrective measures.	Semester II	K2
CO2	Explain the method of preparation of insecticides, fungicides and their applications.	Semester II	K2
CO3	Explain the method of preparation of insecticides, fungicides and their	Semester II	K2

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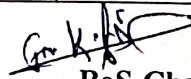|	applications.		
CO4	Outline the classification and analysis of fuels and their combustion.	Semester II	K2
CO5	Summarize the processes and characteristics of cement	Semester II	K2
192PY1A2IA	**IDC: ELECTRICITY, ELECTRONICS, ATOMIC AND NUCLEAR PHYSICS**	**Semester**	**Level**
	Understand the basic circuit connections and charge flow in the	Semester II	K2
	Infer knowledge about induction of current in magnetic field.	Semester II	K2
	Illustrate structure model of atoms and nucleus.	Semester II	K4
	Explain the fundamentals and applications of transistors	Semester II	K2
	Construct different logic and flip-flop circuits.	Semester II	K3
192CE1A3CA	**GENERAL CHEMISTRY – III**	**Semester**	**Level**
CO1	Choose the different types of metals extraction process and its importance in chemical metallurgy.	Semester III	K3
CO2	Identify the periodic behavior and their properties of groups 13 & 14 elements.	Semester III	K3
CO3	Outline the properties of aromatic compounds and their reactions	Semester III	K2
CO4	Compare the preparation and properties alkyl and aryl halides.	Semester III	K4
CO5	Apply the chemical equilibrium and laws of thermodynamics in different states	Semester III	K2
192CE1A3CB	**GENERAL CHEMISTRY – IV**	**Semester**	**Level**
CO1	Classify the structure, preparation, properties and uses of group 15 & 16 elements.	Semester III	K4
CO2	Analyze the structure, preparation and properties of inetrhalogen and noble gases (Xenon).	Semester III	K4
CO3	Compare the preparation, properties and manufacture of	Semester III	K4

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	mono, di, tri alcohol, ethers and epoxide.		
CO4	Examine the mechanism of aldehyde and ketone with naming reaction.	Semester III	K4
CO5	Apply the action of colloids in daily life	Semester III	K3
192MT1A3IA	**MATHEMATICS - I**	**Semester**	**Level**
CO1	describe and understand the concept of differential equations.	Semester III	K2
CO2	explain the existence of a partial differential equations	Semester III	K2
CO3	apply the concept of first order linear partial differential equation	Semester III	K2
CO4	solve Laplace transform of some functions	Semester III	K3
CO5	analyze inverse Laplace transforms to solve differential equations.	Semester III	K3
192CE1A3SA	**WATER AND FOOD QUALITY ANALYSIS**	**Semester**	**Level**
CO1	Examine the water quality by chemical and physical methods	Semester III	K4
CO2	Construct the waste water treatment from sewage and industry effluent	Semester III	K3
CO3	Identify the food adulteration and the toxic chemicals present in foods.	Semester III	K3
CO4	Explain the food preservatives and identify the various poisonous metal present in it.	Semester III	K4
CO5	Analyze the adulterant products present in different food materials.	Semester III	K4
192CE1A4CA	**INORGANIC CHEMISTRY - I**	**Semester**	**Level**
CO1	Classify the structure, preparation, properties and uses of d-Block elements.	Semester IV	K3
CO2	Utilize different approaches of Arrhenius, Bronsted, Lowry concepts and their application & limitations.	Semester IV	K3

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CO3	Summarize the classification, neutralization and their behaviour of Non-aqueous solvents	Semester IV	K3
CO4	Illustrate the occurrence, extraction, properties and uses of transition element	Semester IV	K3
CO5	Analyze the radioactivity and its types	Semester IV	K3
192MT1A4IA	**MATHEMATICS -II**	**Semester**	**Level**
CO1	Explain the methods for solving various form of linear differential equations.	Semester IV	K2
CO2	The solvability of Cauchy's and Legendre's equations	Semester IV	K2
CO3	Explain the application of variation of parameters to solve Linear differential equations of second order.	Semester IV	K2
CO4	Interpret the differential equation in the solution of real world problems.	Semester IV	K3
CO5	Solve the non-linear partial differential equations using Charpit's method	Semester IV	K3
192CE1A4SA	**ANALYTICAL METHODS IN CHEMISTRY**	**Semester**	**Level**
CO1	Demonstrate the laboratory practices	Semester IV	K2
CO2	Identify the various terms used to express concentration and role of indicators in titration	Semester.IV	K3
CO3	Relate concentration, precipitation and solubility products.	Semester IV	K2
CO4	Examine the errors, significant figures and precision of the experimental result.	Semester IV	K4
CO5	Outline the principles of crystal growth	Semester IV	K2

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Chairman/HoD
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Dr. N. G. P. Arts and Science College
Coimbatore – 641 048

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	(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)	**3rd Cycle**
	Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)	**Criterion I**
	Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India	**Metric 1.1.2**
	Web: www.drngpasc.ac.in |Email: info@drngpasc.ac.in | Phone: +91-422-2369100	**PO-PSO-CO**

M.Sc. Cheimistry

2019-2020

Programme Outcome	
1	Make use of knowledge in the major fields of Chemistry which would make them to analyze the significant role played in the field of energy, materials, health sector and environment.
2	Select the appropriate modern scientific instruments, to plan and execute in laboratory.
3	Interpret the Knowledge and skills to develop independent writing reports and to execute the ideas.
4	Take part in research- based knowledge in interdisciplinary approach including design of experiments, analysis and interpretation of data for Provide better solution in emerging issues.
5	Utilize the knowledge for social, economic, and environmental challenges globally and formulate for life –long learning in the broadest context of technological change.

Programme Educational Objective	
1	To demonstrate formal and informal learning opportunities to maintain and enhance technical excellence and professional growth.
2	To equip students with effective scientific communication skills and professional leadership in their workspace and the society.
3	To engage in successful professional practices in their chosen chemistry discipline and to encourage the pursuit of life long learning.

Course Outcome			
192CE2A1CA	**ORGANIC REACTION MECHANISMS**	**Semester**	**Level**
CO1	Apply the electronic effects in organic chemistry and know about aromaticity in order to understand the stability of organic compounds.	Semester I	K3
CO2	Utilize the various methods to determine thereaction mechanisms.	Semester I	K3
CO3	Summarize reaction mechanisms of the aliphaticand aromatic nucleophilic substitution reactions.	Semester I	K2

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CO4	Illustrate the reaction mechanisms of the aliphatic, aromatic electrophilic substitution reactions and various reactive intermediates.	Semester I	K2
CO5	Compare the addition and elimination reactions.	Semester I	K4
192CE2A1CB	**COORDINATION CHEMISTRY**	**Semester**	**Level**
CO1	Explain the various theories of coordination compounds, distortion and constructing MO diagrams of complexes.	Semester I	K2
CO2	Make use of importance of electronic spectroscopy by using energy level diagrams and magnetic properties of coordination compounds.	Semester I	K3
CO3	Choose the various types of inorganic reaction mechanism in different geometries.	Semester I	K3
CO4	Compare the various symmetries/geometries of coordination complexes.	Semester I	K4
CO5	Utilize the importance and applications of chains, rings, cages and clusters.	Semester I	K3
192CE2A1CC	**THERMODYNAMICS, ELECTROCHEMISTRY AND KINETICS**	**Semester**	**Level**
CO1	Analyze the concepts of equilibrium thermodynamics and non-equilibrium thermodynamics.	Semester I	K4
CO2	Apply the basic principle involved i	Semester I	K3
CO3	Analyze the concepts and functions involved in the electrochemical reactions.	Semester I	K4
CO4	Interpret the knowledge about chemical kinetics in molecular reactions	Semester I	K5
CO5	Apply concept involved in catalysis and adsorption for various applications	Semester I	K3
192CE2A1DA	**ANALYTICAL CHEMISTRY**	**Semester**	**Level**
CO1	Identify the nature of errors and their analysis.	Semester I	K3
CO2	Apply the various methods of chromatographic techniques in purification process.	Semester I	K3
CO3	Examine the basis involved in Spectrophotometry, XRD and Fluorescence Spectroscopy.	Semester I	K4
CO4	Explain the basic analysis of	Semester I	K4

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	Radiochemical andThermal methods of analysis.		
CO5	Analyze the various electroanalytical techniques.	Semester I	K4
192CE2A1DB	**PHARMACEUTICAL CHEMISTRY**	**Semester**	**Level**
CO1	Infer the information about basis of common diseases and their treatment methods.	Semester I	K3
CO2	Classify the types of antibiotics and their mode ofactions.	Semester I	K2
CO3	Explain the critical understanding of the goalsand actions analgesic and antipyretics.	Semester I	K2
CO4	Identify the characteristics of various anaestheticsand local anaesthetics.	Semester I	K3
CO5	Analyze the different methods to identify thecomponents present in blood and urine samples.	Semester I	K4
192CE2A1DC	**SUPRAMOLECULAR CHEMISTRY**	**Semester**	**Level**
CO1	Interpret the information about various conceptsinvolved in supramolecular chemistry.	Semester I	K2
CO2	Compare the different model for the metalloorganic frameworks.	Semester I	K2
CO3	Explain the various co-receptor molecules andmultiple recognitions in metalloreceptors.	Semester I	K2
CO4	Examine the Supramolecular reactivity and theircatalytic activity.	Semester I	K4
CO5	Analyze the role of supramolecular chemistry inthe development of nanoscience and technology.	Semester I	K4
192CE2A2CA	**CORE :STEREOCHEMISTRY, PHOTOCHEMISTRY AND REARRANGEMENTS**	**Semester**	**Level**
CO1	Outline the stereochemistry of organic molecules in 3-Darrangements.	Semester II	K2
CO2	Interpret the various methods of conformational analysisof organic molecules	Semester II	K2

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CO3	Categorize the various light induced photo reactions andtheir rearrangements	Semester II	K4
CO4	Examine the basic principles involved in the peri cyclicreactions	Semester II	K4
CO5	Analyze the reaction mechanism of various molecularrearrangement reactions.	Semester II	K4
192CE2A2CB	CORE : BIO-INORGANIC CHEMISTRTY	**Semester**	**Level**
CO1	Interpret toxic and non-toxic metal ions to the biologicalsystems.	Semester II	K2
CO2	Compare the activity of Haem and non-haem proteins.	Semester II	K2
CO3	Evaluate the specific and non-specific enzymes in abiological function.	Semester II	K3
CO4	Examine the role of nitrogen as a nutrient to the plant andtypes of photosynthesis	Semester II	K4
CO5	Survey the role of inorganic complexes in medicinalapplications	Semester II	K4
192CE2A2CC	CORE : QUANTUM CHEMISTRY ANDGROUP THEORY	**Semester**	**Level**
CO1	Make use of basic concepts and categorize the operatorsand Eigen functions	Semester II	K3
CO2	Explain the concepts involved in the basics and theoriesof quantum chemical approach	Semester II	K2
CO3	Analyze the approximation methods to	Semester II	K4
CO4	Summarize the basic concepts of group theory	Semester II	K2
CO5	Identify the point groups of molecules and construct thecharacter table for point groups	Semester II	K3
193BC2A2EA	**EDC : DRUG BIOCHEMISTRY**	**Semester**	**Level**
CO1	Outline the concept and principles of drug interactionwith the body.	Semester II	K2
CO2	Interpret the effect of drug interaction in the body.	Semester II	K2
CO3	Explain the basic concepts of d	Semester II	K2
CO4	Examine the mechanism of action and effect of variousdrugs.	Semester II	K4
CO5	Select the usage of different drugs for the treatment ofvarious ailments.	Semester II	K3

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192CE2A2DA	ELECTIVE-II: POLYMER CHEMISTRY		
CO1	Summarize the Mechanism of polymerization process.Illustrate the difference between polymers and plastics.	Semester II	K2
CO2	Categorize the different polymerization techniques.	Semester II	K4
CO3	Analyze the various characteristics of polymers usingphysical and chemical methods.	Semester II	K4
CO4	Examine the structure, properties and	Semester II	K4
CO5	Summarize the functionalities of commercial polymersand polymer additives.	Semester II	K2
192CE2A2DB	ELECTIVE : NANO SCIENCE ANDTECHNOLOGY	Semester	Level
CO1	Understand the basics in the field of nanotechnology and relationship between the size and properties for various materials	Semester II	K2
CO2	Identify the major properties of nano objects such asnanotubes and nanoparticles	Semester II	K3
CO3	Examine the synthesis of nanomaterials using chemicaland physical routes	Semester II	K4
CO4	Explain the various characterization techniques for nano materials	Semester II	K2
CO5	Evaluate the applications of nanostructured materials indifferent fields	Semester II	K4
192CE2A2DC	ELECTIVE-BIOORGANIC CHEMISTRY	Semester	Level
CO1	Explain the properties and functions of amino acids andproteins.	Semester II	K2
CO2	Summarize chemical nature and biological functions ofenzymes and cofactors.	Semester II	K2
CO3	Analyze the structure and properties of lipids and nucleicacids.	Semester II	K4
CO4	Apply concept of energy in living organisms and relate free energy to the chemical	Semester II	K3

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	equilibria and Laws of Thermodynamics.		
CO5	Examine the disconnection approach and asymmetricsynthesis in Organic chemistry.	Semester II	K4
192CE2A3CA	CHEMISTRY OF NATURAL PRODUCTS	Semester	Level
CO1	Classify the isolation and synthesis of terpenoids	Semester III	K4
CO2	Interpret the various methods involved in the structuredetermination of steroids	Semester III	K5
CO3	Analyze the various pathways to synthesize the alkaloids.	Semester III	K4
CO4	Examine the basic principles and applications involved inthe proteins and nucleic acids.	Semester III	K4
CO5	Distinguish the reaction and th	Semester III	K4
192CE2A3CB	ORGANOMETALLIC CHEMISTRY	Semester	Level
CO1	Indentify the structure and bonding of organometalliccomplexes.	Semester III	K3
CO2	Distinguish the various methods of preparation andreactivity of M-C complexes.	Semester III	K4
CO3	Analyze the methods of synthesis and reaction of alkenes	Semester III	K4
CO4	Examine the synthesis and applications of metallocenecompounds.	Semester III	K4
CO5	Categorize the various reactivity of metal allyl, alkyneand arene complexes.	Semester III	K4
192CE2A3CC	PRINCIPLES OF SPECTROSCOPY	Semester	Level
CO1	Outline the fundamental concepts of	Semester III	K2
CO2	Apply intense knowledge about the basic principles instrumentation of IR spectroscopy and electronic spectroscopy.	Semester III	K3
CO3	Develop the basic principles of NMR spectroscopy.	Semester III	K3
CO4	Analyze in-depth knowlegde about the 2D techniquesinvolved in NMR spectroscopy.	Semester III	K4
CO5	Utlize the basic principles involved in ESR spectroscopy and to know the fundamental concepts and application of analytical	Semester III	K3

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	techniques in determining few complexes.		
192CE2A3CD	**RESEARCH METHODOLOGY**	**Semester**	**Level**
CO1	Take part in research activities through the knowledge ofscientific communication.	Semester III	K4
CO2	Apply the computation concepts in research.	Semester III	K3
CO3	Make use of the basic principle of Mass spectroscopy and to apply the concept in finding out the known and unknown organic compounds.	Semester III	K3
CO4	Apply the concepts of IR spectroscopy and Raman to inelucidating the structure of compounds.	Semester III	K4
CO5	Analyze and evaluate the conjoint knowledge of the spectroscopic techniques in solving the structure of unknown compounds.	Semester III	K4
192CE2A3DA	**INDUSTRIAL CHEMISTRY**	**Semester**	**Level**
CO1	Understand the basics in the field of water treatmenttechnology.	Semester III	K2
CO2	Identify the various petroleum products, hydrocarbonsand their preparation methods.	Semester III	K3
CO3	Examine the properties and synthesis routes of oils, fatsand Soaps.	Semester III	K4
CO4	Explain the different inorganic m	Semester III	K2
CO5	Evaluate the catalytic processes and applications invarious organic reactions.	Semester III	K4
192CE2A3DB	**INORGANIC RINGS,CAGE ANDCLUSTERS**	**Semester**	**Level**
CO1	Identify the structure of main group clusters.	Semester III	K3
CO2	Outline the structure, synthesis and reactivity of metalcarbonyl clusters.	Semester III	K2
CO3	Analyze the different forms of metal clusters based onisolable analogy.	Semester III	K4
CO4	Categorize the structure, synthesis and reactivity of homoand hetero cycles.	Semester III	K4
CO5	Examine the different polymeric structures of elementsand catalysis.	Semester III	K5
192CE2A3DC	**ORGANIC REACTIONS ANDREAGENTS**	**Semester**	**Level**

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CO1	Outline the mechanism and applications of variousoxidation reagents.	Semester III	K2
CO2	Interpret the mechanism and applications of reducingreagents involved in organic synthesis.	Semester III	K2
CO3	Analyze the various metal mediated and multicomponentname reactions and their applications.	Semester III	K4
CO4	Examine the basic principles and applications involved inname reaction on substitution.	Semester III	K4
CO5	Analyze the reaction and reagents functional grouptransformations.	Semester III	K4
192CE2A4CA	**SYNTHETIC ORGANIC CHEMISTRY**	**Semester**	**Level**
CO1	Outline the methods involved	Semester IV	K2
CO2	Interpret methods of two group C-C and C-Xdisconnections	Semester IV	K2
CO3	Analyze the various protective and deprotecting groupsin organic synthesis	Semester IV	K4
CO4	Examine the various named reactions and their syntheticapplications	Semester IV	K4
CO5	Analyze the various asymmetric synthetic methods andtheir selectivity	Semester IV	K4
192CE2A4CB	**SOLID STATE, NUCLEAR AND MAINGROUP CHEMISTRY**	**Semester**	**Level**
CO1	Relate the basics of solid state chemistry.	Semester IV	K2
CO2	Examine crystal structure and defects in crystals.	Semester IV	K4
CO3	Inference the basic concepts of nuclear chemistry andtypes of nuclear reaction.	Semester IV	K4
CO4	Identify the applications of nuclear chemistry in variousfields.	Semester IV	K3
CO5	Analyze the general characteristics of f-block elementsand the electronic and magnetic properties	Semester IV	K4
192CE2A4CC	**STATISTICAL THERMODYNAMICS,**	**Semester**	**Level**

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Criterion I Metric 1.1.2 PO-PSO-CO

	MACROMOLECULES AND COMPUTATIONAL CHEMISTRY		
CO1	Examine statistical thermodynamics to the properties ofidentical indistinguishable particles like electrons	Semester IV	K4
CO2	Analyze the reaction paths and concepts in solid andliquid phase kinetics	Semester IV	K5
CO3	Appraise the different methods	Semester IV	K4
CO4	Demonstrate the Mossbauer and	Semester IV	K2
CO5	Inspect the compounds using the basic knowledge of thecheminformatics	Semester IV	K4
192CE2A4DA	**MEDICINAL CHEMISTRY**	**Semester**	**Level**
CO1	Interpret the synthesis and pharmacological applicationof sulpha drugs in various infectious diseases.	Semester IV	K5
CO2	Identify and appraise the synthesis and mode of action ofmycobacterial and thyroid drugs.	Semester IV	K3
CO3	Analyse the anesthetics and anaesthetics and analgesics.	Semester IV	K4
CO4	Appraise the application and synthesis of an analgesicsand anaesthetics.	Semester IV	K5
CO5	Analyse the mode of action and synthetic route of anti-malarial drugs.	Semester IV	K4
192CE2A4DB	**CATALYSIS**	**Semester**	**Level**
CO1	Apply the knowledge of catalysis in green, enzyme, nanoand phase transfer catalytic reactions.	Semester IV	K3
CO2	Utilize the different reactions to conduct C-C, C-X and C-H type of reactions.	Semester IV	K3
CO3	Determine various surface parameters using differentspectral techniques.	Semester IV	K5
CO4	Illustrate the reaction mechanisms	Semester IV	K2
CO5	Outline the different photocatalysis reactions and it'sapplications.	Semester IV	K2

192CE2A4DC	**GREEN CHEMISTRY**	Semester	Level
CO1	Interpreting the advantages of green synthetic methods inindustrial process	Semester IV	K2
CO2	Discuss and appraise microwave and ultrasound assistedsynthesis	Semester IV	K2
CO3	Analyse the synthetic applications and advantages ofionic liquids	Semester IV	K4
CO4	Appraise the advantages and the applications of phasetransfer catalyst in organic synthesis	Semester IV	K5
CO5	Discuss types and applications of Crown ethers	Semester IV	K2

BoS-Chairman

BoS Chairman/HoD
Department of Chemistry
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048

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B.Sc. Mathematics CA

Programme Outcome	
1	To relate a core of Mathematical and Computational knowledge that provides a solid foundation for future learning
2	To develop a respectable intellectual level seeking to expose the various concepts in Mathematics and Computer Applications
3	To develop the students reasoning, logical, problem solving, employability skills for carrier opportunities
4	To extend the interest among students in higher studies and inter disciplinary research
5	To build an advance level of career prospectus in a huge array of fields in mathematics and its applications.

Programme Educational Objective	
1	To understand the basic rules of logic, including the role of axioms or assumptions
2	To Appreciate the role of mathematical proof in formal deductive reasoning
3	To Proficiently construct logical arguments and rigorous proofs and To Formulate and solve abstract mathematical problems
4	To Recognize real-world problems that are amenable to mathematical analysis, and formulate mathematical models of such problems and To Apply mathematical methodologies to open-ended real-world problems
5	To understand the basic rules of logic, including the role of axioms or assumptions

Course Outcome			
192MT1B1CA	**CORE I: Advanced Calculus**	**I**	Level
CO1	Classify the methods of integrations		K2
CO2	Explain convergence or divergence using comparison test		K2
CO3	Solve the value of power series		K3
CO4	Identify the parameterize curves		K3
CO5	Illustrate the applications of vector integrals		K2
192MT1B1CB	**CORE II: Data Structures And File Processing**	**I**	**Level**
CO1	Explain about data type and stack.		K2
CO2	Explain about data type and stack.		K2
CO3	Illustrate files and its types		K2
CO4	Construct the structure of files using trees		K3

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CO5	Apply the concept of trees in query processing		K3
192PY1A1IA	**IDC I: Properties Of Matter, Thermal Physics And Optics**	**I**	**Level**
CO1	Explain the importance and applications of elasticity modulus.		K2
CO2	Utilize the basic properties of matter and do the experiments in laboratory to evaluate the properties		K3
CO3	Demonstrate the differences in heat transfer mechanisms		K2
CO4	Classify the Reversible and irreversible process in thermodynamics.		K2
CO5	Experiment with the application of Interference and Diffraction.		K3
192MT1A2CA	**CORE III: Differential Equations And Laplace Transforms**	**II**	**Level**
CO1	Examine the concept of first order differential equations		K1
CO2	Identify the solution of various form of linear differential equations		K1
CO3	Discuss the Method of Variation of Parameters to solve linear differential equations		K2
CO4	Describe the formation of partial differential equations and finding the general integral		K2
CO5	Employ the concept of Laplace transforms and Inverse Laplace transforms to solve differential equation		K3
192MT1B2CB	**CORE IV: Design And Analysis Of Algorithms**	**II**	**Level**
CO1	Describe the role of algorithms in computing.		K1
CO2	Explain with the Heapsort algorithms through examples.		K2
CO3	Illustrate the working of Quicksort techniques		K2
CO4	Apply the Dynamic programming and Greedy algorithms for optimization problems		K3
CO5	Construct the elementary graph algorithms.		K3
192PY1A2IA	**IDC II: Electricity, Electronics, Atomic And Nuclear Physics**	**II**	**Level**
CO1	Analyse fundamental properties of the electric charge and simplify technical problems associated with the electrostatic force using calculus.		K2
CO2	Explain the fundamental problem in creating efficient thermoelectric materials		K2
CO3	Describe the structure of atom		K3
CO4	Explain the fundamentals and applications of transistors.		K2
CO5	Experiment with the applications of various semiconductor devices		K3
196BM1A2AA	**AECC I : Human Rights**	**II**	**Level**

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		Criterion I **Metric 1.1.2** **PO-PSO-CO**

CO1	Understand the concept of human values, personality traits and character formation.		K2
CO2	Acquire the knowledge through value education towards national and global development.		K1
CO3	Introduce the basic concepts of conflict, emotions and adolescent emotions.		K1
CO4	Illustrate the techniques in therapeutic measures like yoga and meditation.		K2
CO5	Learn the concepts of human rights, rights for women and children and domestic violence.		K3
192MT1A3 CA	**CORE V: Numerical Methods**	**III**	**Level**
CO1	Discuss numerical solution of Algebraic and Transcendental Equation.		K1
CO2	Discuss errors in polynomial interpolation & detection of errors by difference table.		K1
CO3	Apply the concept of numerical differentiation and integration.		K3
CO4	Compute the solution of system of equations by Gauss elimination and Seidel method.		K3
CO5	Estimate the solution of ordinary differential equations.		K3
192MT1A3 CB	**CORE VI: Statistics – I**	**III**	**Level**
CO1	Define the basic concepts of probability theory.		K1
CO2	Describe random variables and its corresponding functional forms.		K2
CO3	Compute mathematical expectation and variance for analyzing the relation between variables.		K3
CO4	Employ the concept of correlation and regression Analysis		K2
CO5	Illustrate generating functions corresponding to random variables with theorems.		K3
192MT1B3 CC	**CORE VII: Programming In Linux**	**III**	**Level**
CO1	Learn about history of Linux and its distributions		K1
CO2	Learn the concept of the Linux shell and file structure		K1
CO3	Learn the concept of the Linux shell and file structure		K2
CO4	Apply the concept of the shell scripts and programming in problem solving		K2
CO5	Solve the problems related to directories and files management.		K2
195CI1A3I A	**IDC I : Business Accounting – I**	**III**	**Level**

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CO1	Know the concepts, conventions and rules of accounting to pass journal entries and prepare ledger accounts and cash books.		K1
CO2	Obtain knowledge to prepare the final accounts of a company		K2
CO3	Capture the procedures relating to bill of exchange.		K2
CO4	Understand the principles related to various field of accounting for consolidations.		K3
CO5	Discuss the methods of cost accounting and know about cost sheets.		K3
192MT1A3 SA	**SEC I: Operations Research-I**	**III**	**Level**
CO1	Define the problem in the form of linear programming problem.		K1
CO2	Discuss the way of getting optimum solution in arithmetic progression.		K2
CO3	Explain the duality in linear programming problem.		K2
CO4	Compute the optimum solution for any form of transportation problem.		K3
CO5	Analyzing the replacement of machines and labours.		K3
192MT1A4 CA	**CORE VIII: Discrete Mathematics**	**IV**	**Level**
CO1	Define the relations and functions		K1
CO2	Discuss the applications of functions		K2
CO3	Explain the concept of Lattices & Boolean algebra		K2
CO4	Illustrate the theory of groups and semigroups		K3
CO5	Construct the regular grammar and finite state machine		K3
192MT1A4 CB	**CORE IX: STATISTICS – II**	**IV**	
CO1	Define the theoretical distributions based on situation.		K1
CO2	Explain the discrete and continuous probability distribution.		K1
CO3	Examine the validity of hypothesis using sampling tests.		K2
CO4	Explain the relation between various distributions.		K3
CO5	Compute the estimators and study its properties.		K3
192MT1B4 CC	**CORE X: Android Programming**	**IV**	**Level**
CO1	Introducing Object Oriented Programming and basics of JAVA.		K1
CO2	Demonstrate Inheritance, Interface and Exceptions in JAVA		K2
CO3	Summarize the Intents, Adapters and Internet in Android.		K2

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CO4	Summarize the Intents, Adapters and Internet in Android.		K2
CO5	Demonstrate User Interface models using List view and adapters in Android.		K3
195CI1A4IA	**IDC II: Business Accounting-II**	**IV**	**Level**
CO1	Classify and apply appropriate methods of depreciation		K1
CO2	Demonstrate the accounting for incomplete system		K2
CO3	Apply the concepts of accounting in a real time business entity.		K2
CO4	Understand hire purchase system.		K2
CO5	Acquire knowledge about budget accounts		K1
192MT1A4SA	**SEC II: Operations Research-II**	**IV**	**K2**
CO1	Identify a number of different situations which can be characterized as sequencing problems.		K1
CO2	Understand various components of a queuing system		K2
CO3	Explain the way of making decisions under certainty.		K2
CO4	Compute value of the game with mixed strategies.		K3
CO5	Analyzing the PERT and CPM network technique.		K3
17UMA53A	**Real Analysis I**	**V**	**Level**
CO1	Remember the fundamental knowledge in number systems and real number systems		K1
CO2	Understand the notations and terminology in relations and functions to manipulate the problems.		K2
CO3	Demonstrate the different types of points in real number system and manipulate the fundamental theorems.		K3
CO4	Apply the concepts of spaces and manipulate the Theorems in metric spaces.		K3
CO5	Abstract thinking of sequences, demonstrate the various sequences and learn basic techniques in continuous functions.		K3
17UMA53B	**Complex Analysis I**	**V**	**Level**
CO1	Learn the concepts of equations of straight lines and circles, elementary transformation, infinity and extended complex plane, stereographic projection and C-R equation in polar coordinates		K1
CO2	Learn the concepts of Bilinear transformation, Special bilinear transformations, Circle and inverse points		K1
CO3	Distinguish between convergence and uniform convergence, logarithmic functions, function a^z and Harmonic functions		K2

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CO4	Demonstrate Analyticity of the sum of power series, Uniqueness of representation of a function by a power series		K3
CO5	Explain integration of complex functions, definite integrals, interior &exterior of closed curve and Simply connected region with Cauchy"s fundamental theorem		K3
17UMA53C	**Modern Algebra**	**V**	**Level**
CO1	Remember the knowledge of fundamental concepts in sets, functions, mappings, relations and integers.		K1
CO2	Understand the definitions and theorems of group and utilize them to prove related results.		K1
CO3	Demonstrate an ability to understand and Manipulate the theorems in Homomorphisms		K2
CO4	Manipulating the examples of Rings and special Classes of Rings.		K3
CO5	Apply the concept of Rings, prove the theorems in quotient rings and integral domain		K3
18UMA53D / 7UMA43D	**Programming in C & C++**	**V**	**Level**
CO1	Learn the concepts of Keywords and identifiers, Variables datatypes, declaration ofvariables and operators		K1
CO2	Learn the concepts of Simple IF and Switch statement, The?:Operator, The GOTO statement ,The WHILE statement-the DO statement and FOR statement		K1
CO3	Distinguish between C and C++ and learn the basic concepts of C++programming		K2
CO4	Demonstrate classes and objects, constructors and destructors		K3
CO5	Explain Operator overloading and inheritance also make use of the concept in the programming.		K3
17UMA5EA	**Astronomy-I**	**V**	**Level**
CO1	Learn the current accepted theories of solar systems, spherical trigonometry and the Kepler's law of motion.		K1
CO2	Discuss the scientific reasoning of Equator, Zenith, nadir and variation in length of the day.		K2
CO3	Demonstrate the Latitude and Longitude, Twilight.		K2
CO4	Discuss and manipulate the tangent formula and Cassinis formula.		K3
CO5	Interpret the motion of interior and superior		

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	planets, Relation between true eccentric and mean anamolies.		K3
17UMA5EB	**Numerical Methods-I**	**V**	**Level**
CO1	Recall numerical solutions of nonlinear equations in single variable		K1
CO2	Understand elementary linear algebra techniques and how to apply them to numerical methods		K2
CO3	Identify the interpolation for equal and unequal intervals and solve them		K2
CO4	Construct the numerical methods in modern scientific computing		K3
CO5	Illustrate the fundamental mathematical theories and algorithms underlying modern numerical methods		K3
17UMA5EC	**Discrete Mathematics**	**V**	**Level**
CO1	Define the basic concepts of functions, Relations, Language, Grammar, and Boolean Algebra.		K1
CO2	List the fundamental algorithms used by the computer programmers.		K1
CO3	Understand finite state to represent the special grammars and languages.		K2
CO4	Apply the relation to map X–values andY–values By ordered pairs.		K2
CO5	Apply the logical solution and writing program using The concept of Boolean algebra.		K3
17UMA63A	**Core- XVI: Real Analysis II**	**VI**	**Level**
CO1	Recollect the knowledge in limits and continuitywith examples.		K1
CO2	Abstract thinking of continuity and functions, discuss Examples and theorems.		K2
CO3	Consideration the concept of derivatives, demonstrate The theorems and properties.		K3
CO4	Apply the concept of functions, manipulate the Properties in functions and bounded variations.		K3
CO5	Construct the theorems and properties of integrals and integration by parts.		K3
17UMA63B	**Complex Analysis II**		
CO1	Learn the concepts of Cauchy's integral formula and formulas for derivatives-zeros of a function		K1
CO2	Learn the concepts of zeros of an analytic function		K1
CO3	Distinguish between Singularity, Isolated singularity, Removable singularity, Essential singularity, Behavior of a function at an isolated singularity		K2
CO4	Demonstrate Residues and calculation of residues		K3

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CO5	Explain Taylor's series , zeros of an analytic function, Laurent's series and Meromorphic functions, Function meromorphic in the extended plane		K3
17UMA63C	**Java Programming**	**VI**	**Level**
CO1	Identify and reproduce the features of Object Oriented programming paradigm		K1
CO2	Learn the constants, variables and datatypes, decision making and Branches, Operators and Looping.		K1
CO3	Describe the Java Packages, multithreading, and Interface concepts.		K2
CO4	Manage errors and exception, design Applet and Execute Applet, draw graphs and shapes.		K3
CO5	Use I/O functionality to code basic file operations and experiment with exceptions handling.		K3
17UMA6EA	**Astronomy-II**	**VI**	**Level**
CO1	Recall the equation of time and seasons.		K1
CO2	Describe the direct and retrograde emotion.		K2
CO3	Classify the different kinds of years and nutation.		K2
CO4	Relate the Eclipses, Ecliptic limits and number of Eclipses in a year.		K3
CO5	Describe the stellar system and identify the transit		K3
17UMA6EB	**Numerical Methods-II**	**VI**	**Level**
CO1	Recall numerical differentiation and integration		K1
CO2	Identify numerical methods to obtain approximate solutions to mathematical problem		K2
CO3	Acquire knowledge about numerical solutions of Ordinary Differential Equations		K3
CO4	Construct the numerical methods in modern scientific computing		K3
CO5	Solve ODE using Milne's and Adam Predictor and Corrector formula.		K3
17UMA6EC	**Digital Electronics and Computer Fundamentals**	**VI**	**Level**
CO1	Learn the fundamental concepts and techniques used in digital electronics.		K1
CO2	Demonstrate various number system, codes, Boolean laws and rules to simplify simple expressions.		K2
CO3	Experiment combinational and sequential circuits.		K2
CO4	Acquired the memory concepts, I/O devices and peripherals.		K3
CO5	Identify and illustrate basic organization of computer		K3
17UMA6ED	**Automata Theory & Formal Languages**	**VI**	**Level**

CO1	Recall the Sets, Relations, Functions, Graph theory, Strings, Languages, Expression and Grammars.		K1
CO2	Understand the concept of finite automata, Regular expression, Context Free Grammar and Push down Automata.		K2
CO3	Construct properties of regular set and minimization of finite automata using MyhillNerode theorem.		K3
CO4	Analyze Context Free Grammars, ambiguous grammars, simplification of CFG"S and Normal forms.		K3
CO5	Identify a fundamental understanding of core concept relating to the Deterministic and Non-deterministic push down automata.		K3
17UMA6EE	**Fuzzy Logic and Neural Networks**	**VI**	**Level**
CO1	Learn the basic concepts of feed forward neural networks and fuzzy logic.		K 1
CO2	Demonstrate the various feedback networks.		K 2
CO3	Understand the concept of fuzziness involved in various systems and fuzzy set theory.		K 2
CO4	Construct the fuzzy logic control and adaptive fuzzy logic and to design the fuzzy control using genetic algorithm.		K 3
CO5	Build the application of fuzzy logic control to real time systems.		K 3
17UMA6EF	**Graph Theory**	**VI**	**Level**

CO1	Understand fundamentals of graphs, degree, circuits and trees.		K1
CO2	Illustrate the basic principles of trees, spanning tree and its properties.		K2
CO3	Discuss about circuits, connectivity and planar graphs, manipulate the examples and theorems.		K2
CO4	Abstract thinking of directed and undirected graphs are to be represented by matrices.		K3
CO5	Compute chromatic characteristic and applications of coloring.		K3

BoS-Chairman

BoS Chairman/HoD
Department of Mathematics
Dr N. G. P. Arts and Science College
Coimbatore – 641 048

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B.Sc. Mathematics

	Programme Outcome
1	The learner will able to relate the concept underlying standard applications of Mathematics, Physics and Statistics
2	The learner will have an understanding on basic pure and applied Mathematics and able to formulate the Mathematical arguments in logical manner
3	They can be able to illustrate Mathematical concepts effectively by oral, written, computing and graphical means
4	The learner will make use of the theories of Mathematics and their applications in real world problems
5	The learners can able to identify the complex physical problems and apply the mathematical techniques to solve them

	Programme Educational Objective
1	Mathematics is the key to success in the field of science and engineering.
2	Today, the students need a thorough knowledge of fundamental basic principles, methods, results and a clear perception of the power of mathematical ideas and tools to use them effectively in modelling, interpreting and solving the real world problems.
3	Mathematics plays an important role in the context of globalization of Indian economy, modern technology and we find the applications of Computers in all walks of life from Agriculture to Atomic research.
4	This course is aimed at preparing the students to cope with the latest developments and compete with students from other universities and put them on the right track.
5	Mathematics is the key to success in the field of science and engineering.

Course Outcome			
192MT1A1CA	**CORE I: Advanced Calculus**	**I**	**Level**
CO1	Classify the methods of integrations		K2
CO2	Explain convergence or divergence using comparison test		K2
CO3	Solve the value of power series		K3
CO4	Identify the parameterize curves		K3
CO5	Illustrate the applications of vector integrals		K2
192MT1A1CB	**CORE II: Analytical Solid Geometry**	**I**	**Level**

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CO1	Summarize the metric properties in space.		K2
CO2	Explain different forms of plane		K2
CO3	Illustrate different forms of Straight lines		K2
CO4	Identify different forms of sphere		K3
CO5	Apply the basic geometrical concepts to form Conicoid		K3
192PY1A1IA	**IDC I: Properties Of Matter, Thermal Physics And Optics**	**I**	**Level**
CO1	Explain the importance and applications of elasticity modulus.		K2
CO2	Utilize the basic properties of matter and do the experiments in laboratory to evaluate the properties		K3
CO3	Demonstrate the differences in heat transfer mechanisms		K2
CO4	Classify the Reversible and irreversible process in thermodynamics.		K2
CO5	Experiment with the application of Interference and Diffraction.		K3
192MT1A2CA	**Differential Equations And Laplace Transforms**	**I**	**Level**
CO1	Examine the concept of first order differential equations		K1
CO2	Identify the solution of various form of linear differential equations		K1
CO3	Discuss the Method of Variation of Parameters to solve linear differential equations		K2
CO4	Describe the formation of partial differential equations and finding the general integral		K2
CO5	Employ the concept of Laplace transforms and Inverse Laplace transforms to solve differential equation		K3
192MT1A2CB	**CORE IV: Trigonometry, Fourier Series And Fourier Transforms**	**I**	**Level**
CO1	Describe exponential and logarithmic Series		K1
CO2	Discuss the series expansion of trigonometric and hyperbolic functions.		K2
CO3			
CO4	Explain the periodicity of Fourier series.		K2
CO5	Illustrate the concept of Fourier series		K3
CO1	Determine the Fourier transform of given function		K3
192PY1A2IA	**IDC II: Electricity, Electronics, Atomic And Nuclear Physics**	**II**	**Level**

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Criterion I Metric 1.1.2 PO-PSO-CO

CO1	Analyses fundamental properties of the electric charge and simplify technical problems associated with the electrostatic force using calculus.		K2
CO2	Explain the fundamental problem in creating efficient thermoelectric materials		K2
CO3	Describe the structure of atom		K3
CO4	Explain the fundamentals and applications of transistors.		K2
CO5	Experiment with the applications of various semiconductor devices		K3
196BM1A2AA	**AECC I : Human Rights**	**II**	**Level**
CO1	Understand the concept of human values, personality traits and character formation.		K2
CO2	Acquire the knowledge through value education towards national and global development.		K1
CO3	Introduce the basic concepts of conflict, emotions and adolescent emotions.		K1
CO4	Illustrate the techniques in therapeutic measures like yoga and meditation.		K2
CO5	Learn the concepts of human rights, rights for women and children and domestic violence.		K3
192MT1A3CA	**CORE V: Numerical Methods**	**III**	**Level**
CO1	Discuss numerical solution of Algebraic and Transcendental Equation.		K1
CO2	Discuss errors in polynomial interpolation & detection of errors by difference table.		K1
CO3	Apply the concept of numerical differentiation and integration.		K3
CO4	Compute the solution of system of equations by Gauss elimination and Seidel method.		K3
CO5	Estimate the solution of ordinary differential equations.		K3
192MT1A3CB	**CORE VI: Statistics – I**	**III**	**Level**
CO1	Define the basic concepts of probability theory.		K1
CO2	Describe random variables and its corresponding functional forms.		K2
CO3	Compute mathematical expectation and variance for analysing the relation between variables.		K3
CO4	Employ the concept of correlation and regression Analysis		K2
CO5	Illustrate generating functions corresponding to random variables with theorems.		K3

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195CI1A3IA	**IDC I: Business Accounting – I**	**III**	**Level**
CO1	Know the concepts, conventions and rules of accounting to pass journal entries and prepare ledger accounts and cash books.		K1
CO2	Obtain knowledge to prepare the final accounts of a company		K2
CO3	Capture the procedures relating to bill of exchange.		K2
CO4	Understand the principles related to various field of accounting for consolidations.		K3
CO5	Discuss the methods of cost accounting and know about cost sheets.		K3
192MT1A3SA	**SEC I: Operations Research-I**	**III**	**Level**
CO1	Define the problem in the form of linear programming problem.		K1
CO2	Discuss the way of getting optimum solution in arithmetic progression.		K2
CO3	Explain the duality in linear programming problem.		K2
CO4	Compute the optimum solution for any form of transportation problem.		K3
CO5	Analysing the replacement of machines and labours.		K3
192MT1A4CA	**CORE VII:Discrete Mathematics**	**IV**	**Level**
CO1	Define the relations and functions		K1
CO2	Discuss the applications of functions		K2
CO3	Explain the concept of Lattices & Boolean algebra		K2
CO4	Illustrate the theory of groups and semigroups		K3
CO5	Construct the regular grammar and finite state machine		K3
192MT1A4CB	**CORE VIII:Statistics – Ii**	**IV**	**Level**
CO1	Define the theoretical distributions based on situation.		K1
CO2	Explain the discrete and continuous probability distribution.		K1
CO3	Examine the validity of hypothesis using sampling tests.		K2
CO4	Explain the relation between various distributions.		K3
CO5	Compute the estimators and study its properties.		K3
195CI1A4IA	**IDC II:Business Accounting-Ii**	**IV**	**Level**
CO1	Classify and apply appropriate methods of depreciation		K1
CO2	Demonstrate the accounting for incomplete system		K2
CO3	Apply the concepts of accounting in a real time business entity.		K2

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CO4	Understand hire purchase system.		K2
CO5	Acquire knowledge about budget accounts		K1
192MT1A4SA	**SEC II:Operations Research-Ii**	**IV**	**Level**
CO1	Identify a number of different situations which can be characterized as sequencing problems.		K1
CO2	Understand various components of a queuing system		K2
CO3	Explain the way of making decisions under certainty.		K2
CO4	Compute value of the game with mixed strategies.		K3
CO5	Analysing the PERT and CPM network technique.		K3
17UMT53A	**Real Analysis-I**	**V**	**Level**
CO1	Define the real numbers, least upper bounds, and the triangle inequality		K1
CO2	Know the concept and properties of set theory		K2
CO3	Understand the concept of accumulation and adherent points		K3
CO4	Prove statements related to the convergence of covering and metric space		K2
CO5	Prove statements related to the limit and continuity		K3
17UMT53B	**Complex Analysis-I**	**V**	**Level**
CO1	To Learn about the Complex plane and Sets of complex points		K1
CO2	To understand the Analytic functions		K2
CO3	To understand the Power Series and Elementary Functions		K2
CO4	Apply the Elementary and conformal mappings		K3
CO5	Apply the Complex Integration		K3
17UMT53C	**Abstract Algebra**	**V**	**Level**
CO1	Learn about Set theory		K1
CO2	Understand the Subgroups		K2
CO3	Learn about Homomorphisms		K2
CO4	Learn about Rings		K2
CO5	Learn about Ideals and Quotient Rings		K3
CO3	Know the models for Fuzzy Quantifiers and Fuzzy inference		K3
CO4	Understand the Method of steepest Descent		K4
CO5	Analyze the Fundamentals Of Neural Network		K5
17UMT5EB	**Astronomy-I**	**V**	**Level**
CO1	To Learn about the Solar system		K1

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CO2	To understand the Variation in length of the day		K1
CO3	To gain knowledge about the Geocentric parallex.		K2
CO4	Apply the Cassinis formula.		K2
CO5	To Compare the relation between true eccentric and mean anamolies		K2
17UMT5EC	**History of Mathematics I**	**V**	**Level**
CO1	To Learn about the Arithmetic and Logistic		K1
CO2	To understand the Numerals and Trigonometry		K1
CO3	To gain knowledge about the Euclid of Alexandria		K2
CO4	Apply the concept of Abacus		K2
CO5	To Learn about the Latin West		K1
17UMT63A	**Real Analysis-II**	**VI**	**Level**
CO1	Know the concept of Topological mappings and Bolzano's theorem		K1
CO2	Understand the concept of Connectedness, Uniform continuity and Discontinuity		K2
CO3	Prove the Rolle's theorem, Mean- Value theorem for and Intermediate-value theorem		K3
CO4	Know the concept of bounded variation and total variation		K2
CO5	Determine the Riemann integrability and the Riemann-Stieltjes integrability of a bounded function and prove a selection of theorems concerning integration		K3
17UMT63B	**Complex Analysis-II**	**VI**	**Level**
CO1	To Learn about the Complex integration		K1
CO2	To understand the Taylor"s series and Laurent"s series		K2
CO3	To understand the Singularities		K2
CO4	Apply the Residues		K3
CO5	Apply the Meromorphic Functions		K3
17UMT63C	**Linear Algebra**	**VI**	**Level**
CO1	To Learn about the Complex integration		K1
CO2	To understand the Taylor"s series and Laurent"s series		K2
CO3	To understand the Singularities		K2
CO4	Apply the Residues		K3

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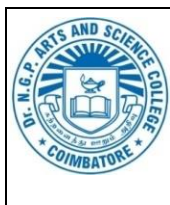|			
CO5	Apply the Meromorphic Functions		K3
17UMT6SA	**Operations Research –II**	**VI**	**Level**
CO1	To Learn about the Sequencing problem		K1
CO2	To understand about the game theory		K1
CO3	Apply the Dominance Property		K2
CO4	Apply the Queuing theory problem		K2
CO5	Solve the problems related PERT / CPM		K3
17UMT6EA	**Automata Theory & Formal Languages**	**VI**	**Level**
CO1	Learn about the various structure languages		K1
CO2	Learn about the operations		K1
CO3	Learn about the Context free languages.		K2
CO4	Learn about the finite state automata		K2
CO5	Learn about the push down automata		K3
17UMT6EB	**Astronomy-II**	**VI**	**Level**
CO1	Learn about the equation and conversion of time		K1
CO2	Learn about the Abberation		K1
CO3	Learn about the Precession and nutation		K2
CO4	Learn about the Eclipses		K2
CO5	Learn about the Planetory Phenomenon		K3
17UMT6EC	**History of Mathematics II**	**VI**	**Level**
CO1	To Learn about the Astronomy		K1
CO2	To understand the Theory of Numbers		K1
CO3	To gain knowledge about the British Techniques and Continental Methods		K2
CO4	Apply the Mathematical Physics in Germany		K2
CO5	Apply the Mathematics in Italy		K2
17UMT6ED	**Number Theory**	**VI**	**Level**
CO1	Know the concept of divisibility , G.C.D etc.		K1
CO2	Know the basic properties of congruences, Binary and decimal representation of integers.		K1
CO3	Solve problems of greatest integer function.		K2
CO4	Solve n- primitive roots for Primes , Composite numbers having primitive roots.		K3
CO5	Know the concept of Legendre symbol and its properties		K3
17UMT6EE	**Special Functions and Integral Transforms**	**VI**	**Level**
CO1	Learn about Bessel's function & Gamma and Beta functions		K1
CO2	Understand the Hermite equation and its solution		K2
CO3	Learn about Legendre function		K2

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Criterion I
Metric 1.1.2
PO-PSO-CO

CO4	Learn about Differentiation and integration of Laplace transform		K2
CO5	Learn about Relations between Fourier transform and Laplace transform		K3
17UMT6EF	**Graph Theory**	**VI**	**Level**
CO1	Learn about graphical representation and travelling sales man problem		K1
CO2	Understand the concept of circuits		K2
CO3	Find the concept of isomorphism and planarity		K2
CO4	Apply matrix representation of graphs		K3
CO5	Application of coloring		K3

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Criterion I
Metric 1.1.2
PO-PSO-CO

M.Sc. Mathematics

Programme Outcome	
1	Students will have knowledge, understanding and Mathematical thinking of the basic and advanced concepts, techniques from different topics
2	They have a fundamental and advanced understanding of at least one Mathematical topic of their choice and able to solve problem related to the topic
3	They can be able to communicate clearly in writing and orallying the detailed technical arguments of complex Mathematical concepts
4	The students develop problem solving skill and apply them independently to problems in pure and applied Mathematics
5	They can develop the knowledge of formulating, analyzing and problem solving in core areas of the Mathematics including Analysis, Algebra and Statistics

Programme Educational Objective	
1	To meet the demand for well trained Post Graduates in Mathematics with academic Excellence.
2	To demonstrate an understanding of the theoretical concepts and axiomatic underpinnings of Mathematics and an ability to construct proofs at the appropriate level.
3	To demonstrate competency in Mathematical modeling of complex phenomena, problem solving and decision making.
4	To demonstrate a level of proficiency in quantitative and computing skills sufficient to meet the growing demands of society upon modern education.
5	To meet the demand for well trained Post Graduates in Mathematics with academic Excellence.

Course Outcome			
192MT2A1CA	**Core I: Advanced Analysis**	**I**	**Level**

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Criterion I
Metric 1.1.2
PO-PSO-CO

CO1	Understand the concept of Riemann Stieltjes integral of a bounded function		K2
CO2	Relate the concept of convergence and continuity		K2
CO3	Apply the concept of inverse and implicit theorems		K3
CO4	Analyze the concept of functions of Several Variables.		K4
CO5	Explain the method of integration of function of several variables using the Rank theorem		K5
192MT2A1CB	**Algebra**	**I**	**Level**
CO1	Understand the Orbits and P-groups		K2
CO2	Apply Sylow theory in the factorization of polynomials		K3
CO3	Analyze the structure of finite fields		K4
CO4	Relate the concepts Automorphisms and Isomorphism		K5
CO5	Explain the applications of Galois theory		K5
192MT2A1CC	**Measure Theory**	**I**	**Level**
CO1	Understand the concept of Lebesgue integral and solve it		K2
CO2	Utilize the concepts Lebesgue integral and Lebesgue spaces		K3
CO3	Apply integration theory in one or several variables to formulate		K3
CO4	Examine the convergence of measures		K4
CO5	Explain the relation between integrals and derivatives		K5
192MT2A1CD	**Ordinary Differential Equations**	**I**	**Level**
CO1	Solve Legendre and Bessel equations		K1
CO2	Understand the concept of fundamental matrix of system		K3
CO3	Apply Lipschitz condition in mathematical problems		K2
CO4	Inspect the existence and uniqueness solutions		K1
CO5	Prove some oscillatory theorems		K3
192MT2A1CE	**Core V: Fuzzy Sets And Fuzzy Logic**	**I**	**Level**
CO1	Understand about the crisp and fuzzy sets		K1
CO2	Know the fuzzy operations		K3
CO3	Develop fuzzy arithmetic properties		K2
CO4	Model the uncertainty and probability theory		K1
CO5	Analyze the fuzzy sets		K3

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192MT2A1DA	**Elective I: Advanced Numerical Analysis**	**I**	**Level**
CO1	Find the numerical solution of nonlinear equations		K1
CO2	Classify the set of equations		K2
CO3	Know the concept of numerical differentiation and integration		K2
CO4	Apply the Taylor's method to Ordinary and Partial Differential Equations		K3
CO5	Analyze the nature of solution of one- and two-dimensional problems		K4
192MT2A1DB	**ELECTIVE II: Differential Geometry**	I	Level
CO1	Learn about the curves and curvature		K2
CO2	Develop the solution of natural equation, Evolutes and Involutes.		K3
CO3	Understand the concept of Elementary Theory of surfaces		K2
CO4	Apply in higher dimensional objects		K3
CO5	Apply in the hyper surface		K3
192MT2A1DC	**ELECTIVE III: Advanced Operations Research**	**I**	**Level**
CO1	Understand characteristics of dynamic programming problem		K3
CO2	Deterministic dynamic programming-probabilistic dynamic programming		K2
CO3	Learn A prototype Example for Dynamic Programming		K2
CO4	Apply to Binary Integer Programming		K3
CO5	Analyze decision making with experiment		K4
192MT2A2CA	**CORE VI: Complex Analysis**	**II**	**Level**
CO1	Explain the Taylor's series and Laurent's series		K2
CO2	Apply the concept of Analytic function and linear transformations.		K3
CO3	Illustrate complex Integration through Cauchy's integral formula		K3
CO4	Analyze the calculus of residues and evaluating complex integrals		K4
CO5	Assess the boundary behaviour at an angle through reflection principle.		K5
192MT2A2CB	**CORE VII: Partial Differential Equations**	**II**	**Level**

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CO1	Classify the type of partial differential equations and identify the method to solve them.		K2
CO2	Determine the characteristic curve for a second order partial differential equation		K3
CO3	Analyze the characteristics of Laplace's equation.		K4
CO4	Analyze the solvability of wave equations		K4
CO5	Evaluating diffusion equations by using integral transforms method		K5
192MT2A2CC	**CORE VIII: Topology**	**II**	**Level**
CO1	Explain the concepts behind topological spaces.		K2
CO2	Constructing various spaces through the axioms of spaces		K3
CO3	Applying fixed point theorems to study the properties of spaces.		K3
CO4	Examine the properties of metric spaces.		K4
CO5	Analysing the Topological properties.		K4
192MT2A2CE	**CORE IX : Mathematical Softwares**	**II**	**Level**
CO1	Express the mathematical documentation through LATEX.		K2
CO2	Learn how to employ LATEX for various diagrammatic representations.		K3
CO3	Discuss the basic operations through MATLAB		K2
CO4	Illustrate the application of MATLAB to solve various forms of Mathematical problems		K4
CO5	Plots and export figures and test the efficiency of a method by computing error		K5
194DA2A2IA	**EDC: Foundations Of Data Analytics**	**II**	**Level**
CO1	Understand the key issues in data management and its applications in business and scientific computing		K3
CO2	Acquire fundamental enabling techniques and scalable algorithms.		K3
CO3	Interpret business models and scientific computing paradigms.		K4
CO4	Apply software tools for data analytics.		K4

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CO5	Achieve perspectives of data analytics in real applications like recommender systems, social media applications.		K5
192MT2A2DA	**ELECTIVE IV: Mathematical Finanace**	**II**	**Level**
CO1	Learn about financial model and its representation through Binomial trees.		K2
CO2	Develop the stock and option trees using Spreadsheets.		K3
CO3	Analyze continuous models		K4
CO4	Learn about Black-Scholes model for various options		K2
CO5	Evaluate parameters corresponding to financial model.		K5
192MT2A2DB	**ELECTIVE V: Mathematical Biology**	**II**	**Level**
CO1	Know the continuous population models for single species.		K2
CO2	Understand the discrete population models for a single species		K2
CO3	Understand the concept of Mathematical models.		K2
CO4	Apply mathematical model for human beings.		K3
CO5	Analyze the marital relationship between man and women.		K4
192MT2A2DC	**ELECTIVE VI: Advanced Statistics**	**II**	**Level**
CO1	Identity the confidence intervals.		K2
CO2	Identity the confidence intervals.		K2
CO3	Compute one maximum likelihood estimator.		K3
CO4	Analyze the sufficiency in estimation.		K4
CO5	Choose the optimal tests for hypothesis.		K5
192MT2A3CA	**CORE X: Functional Analysis**	**III**	**Level**
CO1	Understand the concept of normed linear spaces and its implications		K2
CO2	Relate the concept of Banach space and Hilbert space		K3
CO3	Apply the operators on normed linear spaces		K3
CO4	Analyze the concept of orthonormal sets		K4
CO5	Explain the closed graph theorem and its consequences		K5
192MT2A3CB	**CORE XI: Industrial Mathematics**	**III**	**Level**
CO1	Illustrate the concept of Mathematics behind X-ray and Back projection		K2

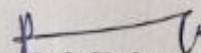|		NAAC 3rd Cycle
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CO2	Understand the theories of filters and convolution to reconstruct the images		K3
CO3	Apply Fourier transform in discrete image reconstruction		K3
CO4	Analyze the applicability of various methods of optimization in Industries		K4
CO5	Analyze the Monte-Carlo theory.		K5
192MT2A3CC	**CORE XII: Mathematical Methods**	**III**	**Level**
CO1	Understand the definition of the integral equations and its types.		K2
CO2	Apply the method of successive approximation to find the solution of integral equations and classical Fredholm theory.		K3
CO3	Understand he method of solving variational problems.		K3
CO4	Understand the new kind of approximate calculus necessary to solve hard problems approximately.		K4
CO5	Analyze the asymptotic expansion and perturbation theory		K5
192MT2A3CD	**CORE XIII: Stochastic Differential Equations**	**III**	**Level**
CO1	Learn about the construction of Ito integra		K3
CO2	Analyze and solve a stochastic differential equation through Ito's formula		K4
CO3	Analyze the random situations through Markov property		K4
CO4	Examine the applications of diffusion theory in various real time problems raised under uncertain situations		K5
CO5	Employ fuzzy logic to construct quantified propositions		K5
192MT2A3CE	**CORE XIV: Fluid Dynamics**	**III**	**Level**
CO1	Explain about kinematics of fluids.		K2
CO2	Analyzing relation between stress and strain, flow of viscous compressible fluids.		K4
CO3	Analyzing flow of inviscid compressible fluids		K4
CO4	Comparing similarity of flows.		K5
CO5	Application of Momentum Integral Theorems.		K5
192MT2A3DA	**DSE I: Mathematical Modeling**	**III**	**Level**

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PO-PSO-CO

CO1	Describe the optimal power and exponential models		K2
CO2	Discuss the dimensional analysis and similarity		K2
CO3	Apply the concept of probability density function to define stochastic state		K3
CO4	Analyze the properties of various forms of changes using modelling		K4
CO5	Develop the models for situations involving evolution theory		K5
192MT2A3DB	**DSE II: Control Theory**	**III**	**Level**
CO1	Learn about effect of fixed points in differential systems		K2
CO2	Apply stability to non-linear systems		K2
CO3	Apply stability to non-linear systems		K3
CO4	Analyze stabilization via Linear Feedback Control		K4
CO5	Evaluate nonlinear systems		K5
192MT2A3DC	**DSE III: Wavelet Analysis**	**III**	**Level**
CO1	Recall the Fourier transform and discrete Fourier analysis		K2
CO2	Know the basic concept of Haar wavelet analysis		K2
CO3	Learn multi resolution analysis		K3
CO4	Understand Daubechies wavelets		K4
CO5	Computational complexity and wavelet algorithm		K5
192MT2A4CA	**CORE XV: Finite Element Theory And Applications**	**IV**	**Level**
CO1	Understand the fundamental theory of the finite element method		K2
CO2	Formulate the design and heat transfer problems with application of FEM		K2
CO3	Analyze linear 1D problems and 2D structural problems		K3
CO4	Solve 1D, 2D and dynamic problems using finite element method		K4
CO5	Develop the computer code for solving weak problems and approximate by finite elements		K5
192MT2A4CB	**CORE XVI: Mechanics**	**IV**	**Level**
CO1	Learn about the mechanical system and its basic characteristics		K2

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Criterion I
Metric 1.1.2
PO-PSO-CO

CO2	Solving the mechanical problems using Lagrange's equations		K2
CO3	Understand the concept of Hamilton's equations and its applications		K3
CO4	Learn about Jacobi's theory on systems and its applications		K5
CO5	Applying canonical transformations for generating functions		K5
192MT2A4DA	**DSE IV: Actuarial Mathematics**	**IV**	**Level**
CO1	Explain the basic terminologies in life insurance		K2
CO2	Compute the premium to be payable for different forms of policies		K3
CO3	Construct the approximations in life tables based on force of mortality		K4
CO4	Explain the concept of multiple decrement theory in insurance and annuities		K4
CO5	Estimate the premiums and annuities with the support of spreadsheets		K5
192MT2A4DB	**DSE V: Nonlinear Ordinary Differential Equations**	**IV**	**Level**
CO1	Understand the general plane and solution of		K1

	a linear autonomous plane systems		
CO2	Find the periodic solutions using averaging methods		K2
CO3	Solve non-autonomous system with perturbation method		K3
CO4	Use Liapunov stability to solve the plane autonomous linear systems		K4
CO5	Demonstrate knowledge of the theory and application of Poincare and find the periodic solutions		K4
192MT2A4DC	**DSE VI: Computational Fluid Dynamics**	**IV**	**Level**
CO1	Learn the basic concepts of computational fluid dynamics		K1
CO2	Solve the governing equations of fluid flow		K2
CO3	Know the effect of laminar and turbulence flow in the system		K3
CO4	Understand the concept of finite volume method		K4
CO5	Solve the convection - diffusion problems by various scheme		K5

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Department of Mathematics
Dr. N. G. P. Arts and Science College
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B.Sc. Catering Science and Hotel Management

	Programme Outcome
1	Will be able to understand about the basics which are very much necessary for working in all the departments of a Hospitality Industry. Will be able to Gain Knowledge about the aspects of Cookery and to be skilful Personnel to work in the different sections of the Hotel Kitchen
2	Could be able to be a very Good Entrepreneur who can be Successful in His Career by the usage of His knowledge with a Strong Understanding about the Basics.
3	Will be able to serve in the Food Service Outlets like Restaurants, Banquets, Bars, Etc.
4	Will be able to Work in the Housekeeping Department by the Knowledge Acquired during His period of Study.
5	Will be able to handle Guest and the Problems in the Front Office Department by the Knowledge that is Acquired during His course.

	Programme Educational Objective
1	To inculcate the Basic concepts and Applications of Catering Science and Hotel Management in the Student and to get Expertise and Flourish in the Field of Hospitality.
2	To Provide Opportunities to get Hands on Experience in the Hotel and Hospitality Industry.
3	To Enhance the skills of the students with some key aspects like Patience, Smart work, Punctuality, Hard work, Communication, Body Language, Willingness to work, etc., that are very much expected by the Hospitality Industry.
4	To Provide opportunities for students to Secure knowledge in Hospitality Industry and Service Sectors.
5	To Develop the Entrepreneurship Skills in the Minds of the Students.

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Course Outcome			
192CH1A1CA	**Core: Food Production-I**		**Level**
CO1	Understand about the important cuisines of the world, Attributes of a Kitchen staff		K1
CO2	Identify and Know the different types of ingredients used in cooking and its characteristics		K1
CO3	Learn the Preparation techniques of different ingredients and to apply the different Methods in suitable areas		K2
CO4	Know the importance of Raising Agents, Its applications in Bakery Section and also the Classifications of Stocks, Soups, Sauces	Semester I	K2
CO5	Identify the Different types of fishes, Learn the characteristics of Eggs and Preparation of Different meats.		K3
192CH1A1CB	**Core: Food and Beverage Service-I**		**Level**
CO1	Explain the different types of Catering establishments, Role of the service staff		K1,K2
CO2	Understand the different staff, their roles and responsibilities, Classify about the different types of Restaurants.		K1,K2
CO3	Understand the different types of Operating Equipments, Co-ordination of Food and Beverage staff With Other Staff	**Semester I**	K3
CO4	Explaining the different types of Menu and its Classification, Food with its usual Accompaniments and Service Method		K2,K3
CO5	Understand about the different styles of Food and Beverage Service and to illustrates the pros and cons of Different styles		K1,K2,K3
196M1A1IA	**IDC: Entrepreneurial Development**		**Level**
CO1	Introduce the Basic concepts of Entrepreneurship and the various role played by an Entrepreneur in the emerging world	**Semester-I**	K1
CO2	Foster the students in the areas of Entrepreneurial Growth and Equipment with different Entrepreneurial Development		K2

	Programme		
CO3	Project management is a Powerful discipline in the core areas of Project life cycle and to know about the roles and responsibilities and Project Manager		K1
CO4	Understand the benefits of delivering the Project Identification and selecting the successful Project with the various guidelines issued by the authorities		K2
CO5	Classify the Various sources of Business finance and Identify the different Institutions that supporting Entrepreneurs.		K3
191TL1A2TA	**TAMIL-II**		**Level**
CO1	Life Skills	**Semester-II**	K1,K2,K3
CO2	Attitude and Value Education		K2,K4
CO3	Co-curricular Activities		K2,K3,K4
CO4	Ecology		K4
CO5	Tamil Knowledge		K5,K6
191TA1A2HA	**HINDI-II**		**Level**
CO1	Learn the Fundamentals of Novels and Stories	**Semester-II**	K1
CO2	Understand the Principles of Translation Work		K2
CO3	Apply the Knowledge writing critical Views on Fiction		K3
CO4	Build Creative ability		K3
CO5	Expose the Power of Creative Reading		K2

191TL1A2FA	FRENCH-II		Level
CO1	Learn the Basic verbs, Numbers and Accents		K1
CO2	To learn the Adjectives and the Classroom environment in France		K2
CO3	Learn the Plural, Articles and the Hobbies	Semester-II	K3
CO4	To learn the Cultural Activity in France		K3
CO5	To learn the Sentiments, life style of the French People and the usage of the conditional tense		K2
191TL1A2MA	MALAYALAM-II		Level
CO1	Learn the fundamentals of Novels and stories		K1
CO2	Understand the Principles of Translation work	Semester-II	K2
CO3	Apply the knowledge writing critical views on Fiction		K3
CO4	Build creative ability		K3
CO5	Expose the Power of Creative reading		K2
191EL1A2EA	ENGLISH-II		Level
CO1	Interpret skills in communication and to shape their attitude		K2
CO2	Develop oral and written language skills in a Business context		K3
CO3	Analyze to gain key strategies and expressions for communicating with Professional	Semester-II	K4
CO4	Inspect the Knowledge to the Corporate needs		K4
CO5	Formulate Inter and Intrapersonal skills		K6
192CH1A2CA	Core-III: Food Production-II		Level
CO1	Understand about the important	Semester-II	

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	commodities used in the Kitchen		K1
CO2	Identify and know the different types of ingredients used in cooking and its characteristics	**Semester-II**	K2
CO3	Learn the importance of Indian Cooking, spices used and concept of Masalas		K2
CO4	Understand and apply the different Methods of Cooking for different dishes		K2,K3
CO5	Learn the Organizational structure of the Hotel and different designations in kitchen and stewarding department		K2
192CH1A2CB	**Core-IV: Accommodation Operations-I**		**Level**
CO1	Understand about the important classifications of Hotels and categories of Rooms and Room Tariff		K1
CO2	Identify and know the different Organization hierarchy of the Front office and Housekeeping Departments and Reservation Process	**Semester-II**	K2
CO3	Learn the Process of Registration in the Front office and Key Handling Procedures and Know the guest Safety and security Based Activities		K2,K3
CO4	Know the different cleaning Equipment, Classification of Polishes, and Cleaning of Different Surfaces		K2
CO5	Learn the cleaning and Maintenance of Guest rooms and Housekeeping Inventories		K3
194CS1A2IA	**IDC-II: Computer Applications in Hotel Industry**		**Level**
CO1	Understand the Basics usage of MS.Word		K1
CO2	Apply different formatting Techniques of MS word documents		K2
CO3	Use the different formulas for different calculations using MS Excel	**Semester-II**	K2.K3
CO4	Create and Design Presentations using MS-Power point		K2

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**Criterion I
Metric 1.1.2
PO-PSO-CO**

CO5	Create and Format tables, forms by using MS- Access		K2
196BM1A2AA	**AECC: Human Rights**		**Level**
CO1	Understand the concepts of Human values, personality traits and character formation		K2
C02	Acquire the knowledge through value Education towards National and Global Development		K1
CO3	Introduce the Basic concepts of conflicts, emotions and Adolescent Emotions	**Semester-II**	K1
CO4	Illustrate the techniques in therapeutic measures like Yoga and Meditation		K2
CO5	Learn the concepts of Human rights, rights for women and children and domestic voilence		K3
192CH1A3CA	**Food Production-III**		**Level**
CO1	Learn the highlights of dishes from different states, regions and staple diets, various methods of Cooking with Dishes.		K2
CO2	Understand the Methods of Cooking applied western regions of India Like Goa, Maharastra, Gujarat Cuisine, etc and its features	**Semester-III**	K1,K2
CO3	Learn the regional Cuisines of Punjab, Kashmir, Rajasthan Cuisines, etc		K3
CO4	Understand the Methods of Cooking applied western Regions of India like Tamil nadu, Kerala, Karnataka, AndraCuisines,etc and its features		K2,K3
CO5	Learn the Importance of Tandoori Cooking, Indian Breads, Indian Sweets and Indian Breakfast recipes from Various States		K2
192CH1A3CB	**Food and Beverage service-II**	**Semester-III**	**Level**
CO1	Explain the types of Breakfast, the Sequential service, and billing Methods		K3
CO2	Understand about the different types of non Alcoholic Beverages		K2

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CO3	To Understand the different types of Service procedure for Lunch Dinner		K3
CO4	Understand the Service Procedure of Different Courses, Record Keeping		K2,K3
CO5	Understand the Service procedure of Room Service, Lounge Service, Afternoon tea Service and Reception Tea Service		K2,K3
192CH1A3CC	**Accommodation Operations-II**		**Level**
CO1	Understand the functions and Importance of different sections of the Front office		K2
CO2	Know about the recent trends in the Hospitality Industry		K2
CO3	Understand the concept and Importance of Safety awareness and First Aid	**Semester-III**	K3
CO4	Learn about the Laundry Section of the Hotel and its Function		K2
CO5	Understand the Special Provisions for the Differently abled, Safety, Security & Comfort		K3
192CH1A3SA	**Bakery and Confectionery-I**		**Level**
CO1	Understand the role of raw Materials used in Bakery and Identify the Equipments& types of Oven used in Bakery		K1
CO2	Understand about the Yeast dough, Types of dough, Bread Faults and their causes		K1
CO3	Explaining the meaning of Biscuits and Preparation Cookies Production, Sandwich Cookies, Ice Box cookies, Bar cookies, Macaroons	**Semester-III**	K1,K2
CO4	Understand the different types of Paste: Short crust, Sweet crust, Rough Puff, Puff Paste, choux paste, Suet Paste, Preparation		K1,K2
CO5	Understand the Piles, Rolling pie dough and lining pans, Preparation of fillings for Pies		K1,K2
192CH1A4CA	**Food production-IV**		**Level**
CO1	Know about the Characteristics, ingredients used, Equipments used in Chinese cuisine,	**Semester-IV**	

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	Srilankan Cuisine and Thai cuisine		K2,K3
CO2	Learn about the Characteristics, ingredients used, Equipments used in Malaysian cuisine, Indonesian cuisine and Japanese Cuisine	Semester-IV	K2,K3
CO3	Explain the characteristics, ingredients used, Equipments used in Italian cuisine, Spanish Cuisine and Russian Cuisine		K2,K3
CO4	Know about the Characteristics, ingredients used, Equipments used in Greek Cuisine, Mexican Cuisine and American Cuisine		K2,K3
CO5	Characteristics ingredients used, Equipments used in Portugese cuisine, Scandinavian Cuisine and German Cuisine		K2,K3
192CH1A4CB	**Food and Beverage Service-III**		**Level**
CO1	To understand about the different types of Alcoholic Beverage and its characters, beer manufacturing procedure and Explain about the different spirit calculation Methods	Semester-IV	K1,K2,K3
CO2	To understand about the Different types of Wine and Its characteristics		K1,K2,K3
CO3	To Understand about the different wines from France and Germany, Its Characteristics and its Regions		K1,K2
CO4	To Understand about the Different wines from Italy, about the Food and Wine Pairing.		K1,K2
CO5	To Understand about Production of Vermouth, Cider Perry and the types of Liqueurs		K1,K2,K3
195PA1A4IC	**HOTEL ACCOUNTING**		**Level**
CO1	Know the concepts, conventions rules of Accounting to pass journal entries and prepare ledger accounts	Semester - IV	K1
CO2	Obtain knowledge to prepare final accounts of a Company		K2
CO3	Understand about Banking and its Negotiable instruments		K2

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CO4	Obtain Knowledge to know the cost accounting, Methods of Pricing of Stock Issues		K3
CO5	To know about Hotel Front Office Accounting		K4
193MB1A4IA	**Food Safety and Microbiology**		**Level**
CO1	To Understand the Basic introduction to Food Safety, Food hazards and to Explain the Basic Principles and Implementation of HACCP, ISO 22000 and Food Safety Act	**Semester-IV**	K3
CO2	To understand the concept of Microbiology and to describe the classification of Micro-organisms and to familiarize the Basic Characteristics, beneficial and harmful effect of Bacteria, Yeast and Mold		K2,K3
CO3	To Recognise the concept of hygiene with an emphasis on Food contamination and Food Preservation		K3
CO4	To compare and understand food borne diseases, infection and intoxication		K3
CO5	To Provide knowledge on the concept of food hygiene regulation		K3
192CH1A4SA	**Bakery and Confectionery-II**		**Level**
CO1	To Understand the Basic preparation Methods of Sponges –Types of Sponges-Petit fours-Preparation of Syrups &Glaces	**Semester-IV**	K1
CO2	Classification of Cake Making Methods-Cake Formula Balance-Common Faults in cakes, Cake decoration-colour-design-templates-texture-Equipments-wedding cake preparation		K1
CO3	To acquire the Knowledge about the Icing, Filling and Glazes-Different types of Icing. Glazes and Their uses		K1,K2
CO4	To Know the Preparation of Chocolate and Sugar Confectionery, Liqueur chocolate, Toffees and Boiled Sweets, Fudges, Pulled sugar, Blown Sugar, Pastilles		K1,K2

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CO5	Classify and explain about Hot Sweets, Cold Sweets and Savour Goods	**Semester-IV**	**K1,K2**
17UCH53A	**Core-XIII: Cold Kitchen and Store Management**		**Level**
CO1	Define Larder Kitchen, Its Layout, Functions, Duties And Responsibilities, Equipments and Understand about Charcuterie		K2
CO2	Understand about Cold Preparations-Aspics and Gelee, Chaud-Froid, Panada, Terrines and Pates, Galantine- Mousse, Mousseline and Processed Whole Meats-Ham and Bacon		K1,K2
C03	Learn about the Products that are made in the Cold Kitchen- Brines, Marinades and Salad Preparations and Also about Garnishes	**Semester-V**	K2,K3
CO4	Understand about Store Management, its Functions and Types records in stores in Hotel		K2,K3
CO5	Know about Storing control- Facilities and Equipments storage of Food, Cleanliness, Safety of Storage Areas, HACCP and the Duties of a Storekeeper		K2
17UCH53B	**Core-XIV: Catering Operations Management**		**Level**
CO1	Handle Equipments, Prepare and serve dishes from Gueridon		K1,K2,K3
CO2	Know the types of Functions and Service Methods for Each and Plan for Different types of Buffets		K1,K2,K3
CO3	To Understand the Procedure followed in Outdoor Catering and Specialized forms of Service	**Semester-V**	K1,K2,K3
CO4	To understand the Concept of Menu Engineering And Merchandising		K1,K2,K3
CO5	To Understand the Preparation of Budget, Training needs of Staff of Food and Beverage Service department and to Acquire customer relation and Social Skills		K1,K2,K3

17UCH6EB	Elective-I: Food and Beverage Management		Level
CO1	To Understand the Functions, Responsibilities, constraints & Objectives of F & B Department and the Mean and drink experience	Semester-V	K1
CO2	To understand about the purchasing and receiving of Food and Beverages with standard Purchase Specifications		K1
CO3	To Understand about the Storing, issuing and Controlling of Food and Beverages		K1,K2
CO4	To Know about the Elements of Cost of Variance Analysis		K1,K2
CO5	To know about Functions Catering, Banquets, Banquets protocols, Informal Banquet and Buffet		K1,K2
17UCH5ED	Elective-II: Room Division Management		Level
CO1	Understand about the Room Division Management and Different guest Services	Semester-V	K1
CO2	Learn about the Communication Process in Room Divisions and Interdepartmental Communication		K1,K2
CO3	Explain the Basics of Room Division Accounting and Night Auditing		K2,K3
CO4	Evaluate the Performance of the Hotel and Understand the room Tariff Fixation		K2
CO5	Understand the Concepts of Yield management and Forecasting		K2
17UCH5EG	Elective-III: Tourism and Hospitality Business		Level
CO1	Explain about Tourism Business Defining Categories of Business Travel, Business Tourism Market and To know about Incentive Travel	Semester-V	K1
CO2	Outline the Planning for Tourism, its need and its types, Market analysis		K1

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Criterion I
Metric 1.1.2
PO-PSO-CO

CO3	To Acquire the Knowledge about Future trends in Tourism and to know about the types of Hotel Rooms, Globalization Professionalism.	Semester-V	K1,K2
CO4	To Understand the Future trends in Travel and to know the different between services and physical products and customer relationship management		K1,K2
CO5	To Explain the Hotel Technologies and Global Distribution Systems, Outline Web Marketing, its Elements		K1,K2
17UCH5SA	**Skill Based Course-III: Bar Management**		**Level**
CO1	Learn the Bar layout and different types of Bar and its Set-up	Semester-V	K1,K2
CO2	Understand the process of Business Planning in Bar		K1,K2
CO3	Know the Procedure for Maintaining different types of Ledgers Maintained in Bar		K1,K2,K3
CO4	Understand the Procedure of Purchasing, storing, Issuing, and Inventory Control.		K1,K2,K3
CO5	Understand the Method of Preparation of Cocktails and Mocktails		K1,K2,K3

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B.Sc. Costume Design and Fashion

Programme Outcome	
1	To understand design concepts to develop them exceptionally good.
2	Analyse and apply knowledge of various process in textiles design and fashion.
3	To develop and apply critical thinking skills within the context of professional in apparel industry.
4	To apply knowledge on advance information technology and develop to communicate effectively.
5	To organize entrepreneur skill management and team building.

Programme Educational Objective	
1	To educate the students about textiles and garment industries.
2	To train the students with technical knowledge in textiles/fashion designing and manufacturing processes.
3	To enhance creativity in fashion designing and to develop entrepreneur skills.
4	To impart managerial and merchandising abilities.

Course Outcome		
202CF1A1CA	**Fashion Designing**	**Semester I**
CO No	**CO Statement**	**Knowledge Level**
CO1	Apply the design and its types and analyze the knowledge of elements of design, principles of design.	K4
CO2	Learn about the principles of color in garment design and standardized color harmonies.	K3
CO3	Designing dresses for unusual figures.	K5
CO4	Understand the fashion evolution and fashion cycle	K3
CO5	Categorize the different types of Fashion theories	K4
202CF1A2CB	**Sewing Technology**	**Semester II**
CO No	**CO Statement**	**Knowledge Level**

CO1	Understanding and Constructing about stitch and seam classification, Know the essential qualities of stitching	K2
CO2	Examine about lower and upper threading of sewing machines, stitching mechanisms of sewing machine, loops and loop spreader, Types of feeding and mechanisms.	K3
CO3	Outline about the Spreading technology of garment industry, marker plan, requirements of marker planning. Utilize the marker efficiency in fabric cutting, Importance of grain line.	K3
CO4	Explain the definition and function of fabric cutting.	K4
CO5	Categorize the Various types of pressing in textiles industry and types of sewing threads.	K5
202CF1A2CA	**Textile Science**	**Semester II**
CO No	**CO Statement**	**Knowledge Level**
CO1	Classify the fibres, yarns and its characteristics	K2
CO2	Explain the manufacturing process, properties and uses of natural fibres	K3
CO3	Explain the manufacturing process, properties and uses of man-made fibres	K3
CO4	Summarize the various process of spinning	K4
CO5	Outline the manufacturing of non-woven, types and application	K5
192CF1A3CB	**Sewing Technology**	**Semester III**
CO No	**CO Statement**	**Knowledge Level**
CO1	Understanding and Constructing about stitch and seam classification, Know the essential qualities of stitching	K2
CO2	Examine about lower and upper threading of sewing machines, stitching mechanisms of sewing machine, loops and loop	K3

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	spreader, Types of feeding and mechanisms.	
CO3	Outline about the Spreading technology of garment industry, marker plan, requirements of marker planning. Utilize the marker efficiency in fabric cutting, Importance of grain line.	K3
CO4	Explain the definition and function of fabric cutting.	K4
CO5	Categorize the Various types of pressing in textiles industry and types of sewing threads.	K5

192CF1A3CC	**Surface Embillishment**	**Semester III**
CO No	**CO Statement**	**Knowledge Level**
CO1	Study about tools used and categories of Embroidery	K2
CO2	Demonstrate the flat and loop stitches	K3
CO3	Understand Knotted stitches and embellishment works	K3
CO4	Discuss about Indian Traditional Embroidery	K4
CO5	Fabric and colours used in Traditional Embroidery	K5
192CF1A4CA	**Fabric Construction**	**Semester IV**
CO No	**CO Statement**	**Knowledge Level**
CO1	Discuss the Elements of woven design, methods of fabric representation.	K2
CO2	Classify the Twill weave and Crepe weaves.	K3
CO3	Explain Ordinary and brighten honey comb, huck a back, mock leno, Extra warp and extra weft figuring and Backed fabrics.	K2
CO4	Explain knitting and compare weaving and knitting, warp and weft knitted fabrics. Classify warp and weft knitting	K2,K3
CO5	Explain Weft knitting and Warp knitting, Categorize types of threading, production	K2,K4

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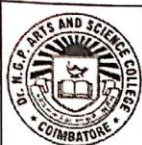Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)
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Criterion I
Metric 1.1.2
PO-PSO-CO

	of nets, curtains, heavy fabrics, elasticized fabrics.	
192CF1A4CB	**Traditional Textiles And Costumes Of India**	**Semester IV**
CO No	**CO Statement**	**Knowledge Level**
CO1	Relate the Indian textiles and type of costumes, symbols and ancient Indian textiles.	K2
CO2	Name the woven textiles of India and discuss the dyed and printed textiles of India	K2
CO3	Describe the traditional costume of southern and eastern India	K2
CO4	Restate the traditional costume of northern India	K3
CO5	Discuss Jewelries used in the period of Indus valley civilization and temple Jewelries of southern India.	K3
192CF1A4CB	**Textile Finishes**	Semester V
CO No	CO Statement	Knowledge Level
CO1	Understand t h e production sequence of textile fabrics. Finishes- classification, importance and its application methods.	K2
CO2	Analyze the methods and applications of Mechanical finishes, Aesthetic finishes, Drape and Texture	K4
CO3	Analyze the methods and applications of functional finishes	K4
CO4	Analyze the methods and applications of Special purpose finishes	K4
CO5	Analyze the Recent trends in finishing and Environmental pollution during chemical processing of textiles.	K4
18UCF53B	**Textile Processing and Dyeing**	**Semester V**
CO No	**CO Statement**	**Knowledge Level**
CO1	Understand about pretreatments of fabric.	K2, K3

CO2	Understand the types and methods of bleaching, mercerization , wool carbonizing and silk weighting	K2, K3
CO3	Classify the colourants to evaluate the properties of dyes and to rectify the defects in dyeing	K2
CO4	Categorize the different types of dyeingmachines and methods	K3
CO5	Apply the enzymes in textile processing and to understand the pollution and effluent treatment	K5
17UCF5EB	**Fashion Merchandising**	**Semester V**
CO No	**CO Statement**	**Knowledge Level**
CO1	Discuss the role of fashion merchandiser and Write the fashion merchandising terminology.	K2
CO2	List out the types of merchandiser, types of display and explain branded merchandising.	K2
CO3	Identifying the fashion forecasting of orders procurement and compose buying house and buying agencies.	K3
CO4	Inspect the production follow up of garment industry and production follow up problem and parameters.	K3
CO5	Justify the production scheduling costing and programming and problem in CMT sub-contract of vendors rating.	K4
17UCF6EC	**Principles of Textile Testing**	**Semester VI**
CO No	**CO Statement**	**Knowledge Level**
CO1	Introduction of various home textile fibers and fabrics	K3
CO2	Detailing about various coverings like wall coverings and floor coverings for aesthetic purpose and protection	K3
CO3	Brief knowledge about Door and window treatments, curtains and draperies	K3

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Criterion I
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CO4	Knowledge of Soft furnishing for living and bedroom its various types and products and its care advantages and disadvantages.	K4
CO5	Knowledge of Soft furnishing for kitchen, dining and bathroom- factors affecting its selection, use and care. Construction of Terry towels.	K4
18UCF63A	**Textile printing**	**Semester VI**
CO No	**CO Statement**	**Knowledge Level**
CO1	Learn printing, differences between printing and dyeing, preparation of fabric for printing, methods of printing, preparation of printing paste, and selection of thickening agents.	K2
CO2	Predict Direct printing -block printing, Stencil printing	K2,K3
CO3	Outline the stencil printing through various methods	K2,K3
CO4	Identify the resist printing through batik and tie and dye methods	K4
CO5	Categorize the different minor printing methods	K4

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B.Sc. BIOCHEMISTRY

	Programme Outcome
1	Offer students a thorough understanding on basic principles of biochemistry at the molecular and cellular levels.
2	Empower students to comprehend the occurrence of varied bio-molecular types with unique chemical characteristics that make them indispensible for life.
3	Provide students a detailed understanding on basic energy requirement of living cells, and how cells meet this prerequisite adequately through varied metabolic processes.
4	Capacitate students to grasp intricate influence of DNA and RNA structures in preserving and transferring information of cell function for generations.
5	Enable students to understand how multiple biological reactions with differing kinetics are performed in a small cell volume at a given time.
6	Entitle students to appreciate the prominence of Biochemistry in basic and applied research in varied branches of industry, medicine, agriculture, pharmacy, food technology, biotechnology,etc.

	Programme Educational Objective
1	Graduates are cognizant of basic principles and concepts in diverse branches of biological and allied sciences that govern mechanisms of bio-molecular unity in varied life existences. Alumni are expressive of assimilated wisdom to peers and public at ease with language of their choice through discussion and debate.
2	Graduates are comprehensive of intricacies in biological organization, and they have acquired and developed primary and secondary experimental competencies and technical skills to address, investigate, design, develop and demonstrate solutions to life's important issues.
3	Graduates are advantaged to the pivotal and functional importance of major and allied subjects, and combine it with modern tools to investigate both basic and applied research questions in areas of industry, medicine, agriculture, pharmacy, food technology, biotechnology, etc. Alumni are valuable performers as an individual or in a team.
4	Graduates are competent to enroll in higher education programs, and successful in placements of vast career options in core and allied areas of the study (scholars, managers, counselors, writers, technical experts, field experts, teachers, entrepreneur and a responsible citizen). Alumni have acquired and developed skills to manage projects and finances. While discharging duties at varied capacities, graduates are inculcated to keep sustainable environment as a goal, and follow ethics of professional stature.

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5	Graduates are infused with metamorphic qualities of education, and inspired to develop scientific temperament and lead a scientific way of life in facing socio-economical challenges that will benefit the society. Alumni are adept at connecting their learning's to worldwide events. Thereby, they continue the learning's lifelong.

Course Outcome			
193BC1A1CA	Biomolecules	Semester I	Level
CO1	Explain the chemical properties of water and how they influence biomolecular and cellular function.		K1, k2
CO2	Describe the structure and conformational freedom of biomolecules, viz., proteins, DNA/RNA, carbohydrates and key metabolites/co-factors		K1,k2
CO3	Understand the structural principles that govern reactivity/physical properties of molecules		K2
CO4	Understand and demonstrate how the structure of biomolecules determines their chemical properties and reactivity		K1,k2,k3
CO5	Develop chemical reasoning, thinking, and are able to apply chemical rules and logics to biological problems.		k3
193BC1A1CB	Cell biology	Semester I	Level
CO1	List various cellular types based on origin and evolution.Compare and contrast structural and functional differences of microbial, plant and animal cells.		K1, K2 & K3
CO2	Define the structural and functional importance of various internal and external cellular organelles in proand eukaryotic cells.Classify		K1, K2 & K3

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	various internal and external cellular organelles in pro- and eukaryotic cells based on their structure and functions.		
CO3	Recall various cytoskeletal proteins. Demonstrate microfilament polymerization, assembly and intracellular organization of intermediate filament proteins.Construct a model of cilia and flagella movement.		K1, K2 & K3
CO4	Label cell membrane, cell wall and extracellular matrix in a cell. Outline various cell-matrix and cell-cell interactions. Build a diffusion model for transport mechanism.		K1, K2 & K3
CO5	Matching structure and functions of nucleus and chromosomes of eukaryotic cell. Summarizing stages in cell division cycle and cell death process.Identifying features of transformed cells.		K1, K2 & K3
192CE1A1IB	Chemistry of Biologists	Semester I	Level
CO1	Gain the knowledge about the basic theories in coordination chemistry and to name the inorganic compounds		K2
CO2	Recall basics of chemistry which helps students to understand bonding in molecules, crystals structures and evaluate their bonding characteristics.		K2
CO3	Understand and apply concepts of bonding in organic molecules, and relate their displacement reactions with mechanism.		K2
CO4	Design a demonstration that enables the students to prepare laboratory solutions		K2
CO5	To study the spontaneity of the reaction, the nature of catalyst and		K2

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	reaction pathway.		
193BC1A2CA	Analytical Biochemistry	Semester II	Level
CO1	Explain the basics and applications of the chromatographic techniques		K2
CO2	Choose appropriate centrifugation techniques for analysis of different biological sample types		K3
CO3	Choose and apply the various electrophoretic techniques in biological research applications		K3
CO4	Understand the basics spectroscopic techniques		K2
CO5	Explain the methods and uses of radioiostopic techniques in biological research and applications		K2&K3
193BC1A2CB	Enzymology	Semester II	Level
CO1	Classify enzymes, explain active site and specificity of enzymes, illustrate theories of enzyme catalysis		K1,K2
CO2	Describe the comparison of co-enzymes, regulatory enzymes, ribozymes and abzymes.		K1,K2
CO3	Illustrate factors that affect enzyme activity and construct MM plot,LB plot, Eadie-Hofstee and Hanes plot		K2,K3
CO4	Compare different types of enzyme inhibition and build models of bi-substrate reactions		K3
CO5	Explain industrial and diagnostic applications of enzymes		K4
192PY1A2IC	Physics	Semester II	Level
CO1	Explain concepts of Elasticity, and their applications in real time examples.		K2
CO2	Demonstrate the Newton's law of Gravitation and applications of acoustics		K3
CO3	Identify different number system and verification of logic gates with truth tables		K2
CO4	Examine the coefficient of viscosity		K3

	of the liquids		
CO5	Apply the concept of diffraction and interference and application of various smart materials		K3
193BC1A3CA	Intermediary Metabolism	Semester III	Level
CO1	Illustrate the general design of metabolic pathways based on bioenergetics principle.		K2&K3
CO2	Explain the events that make up the process of aerobic cellular respiration and Electron Transport Chain.		K2&K3
CO3	Understand the chemical logic of lipid metabolic pathways.		K2
CO4	Explain nitrogenous Compound metabolism and the biochemical basis of some diseases arising in amino acid metabolism.		K3
CO5	Compare nucleic acid metabolic pathways and evaluate their interrelations of Carbohydrate, fat and protein.		K4
194IT1A3IA	Artificial Intelligence in Biology	Semester III	Level
CO1	Demonstrate fundamental understanding of Artificial Intelligence and Artificial Neural Networks		K1,K2
CO2	Apply basic principles of AI with Self-Organizing Maps		K1,K2,K3
CO3	Predict the stability of small atomic clusters using Evolutionary Algorithms.		K4
CO4	Analyze the components of cellular automata and Expert Systems.		K2,K3
CO5	Understand basic knowledge of fuzzy sets and fuzzy logic and classification		K3,K4
193BC1A3SA	Basics of Bioinformatics	Semester III	Level
CO1	Develop elementary knowledge of Bioinformatics		K3
CO2	Identify Nucleotide and protein		K2,K3

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	sequencing and their analysis		
CO3	Construct global and local alignment search tool using BLAST and FASTA programs.		K3
CO4	Analyze protein structure prediction using laboratorybased approaches		K4
CO5	Develop various approaches for target identification and validation in drug discovery.		K3
193BC1A4CA	Human physiology	Semester IV	Level
CO1	Explain the significance of body fluids and gas exchanges in lungs		K2&K3
CO2	Explain physiological aspects of muscular and nervous system		K2&K3
CO3	Summarize the physiological processes of the cardiovascular system		K3
CO4	Explain the physiological aspects of digestive system		K3
CO5	Outline the importance of excretory, endocrine and reproductive systems		K2&K3
192MT1A4IC	Mathematics	Semester IV	Level
CO1	Discuss the basics of data collection		K2
CO2	Explain the concept of probability distribution		K2
CO3	Apply the concept of chi square test and t-test		K3
CO4	Demonstrate the concept of Presentation of Biometric data		K3
CO5	Explain the concept of matrices		K2
17UBC53A	Genetics and Molecular Biology	Semester V	Level
CO1	Recall the basics of genetics, laws of inheritance.		K1 & K3
CO2	Outline the basics of gene cloning and restriction endonucleases. Explain that DNA is the genetic material. Define replication and enzymes involved. Compare the enzymes in transcription. Distinguish the general and specific characteristics of replication of		K1, K3 & K4

	prokaryotes and eukaryotes.		
CO3	Explain the transcription and central dogma of prokaryotic cell, selection and identification of recombinants. Examine and understand the different factors like Rho dependent and Rho independent transcription, Outline the basic concept of the gene.		K2, K4 & K5
CO4	Explain the concept of protein synthesis and posttranslational modifications. Comparison of Prokaryotic and eukaryotic ribosome. Justify the definition and silent features of Genetic code.		K3, K4 & K5
CO5	Explain the application of repair mechanism of DNA repair. Evaluate the prokaryotic gene regulation. Explain the types of gene mutation.		K4 & K5
18UBC53B	Human Physiology	Semester V	Level
CO1	Explain about the composition of blood and lymph. Compare and contrast the transport of Oxygen and Carbon-di-oxide through blood.		K2 & K3
CO2	Explain about the mechanism of muscle contraction in skeletal and smooth muscle. Identify the structures of neuron, synapse and neuromuscular junction.		K2 & K3
CO3	Summarize the physiological processes of the cardiovascular system.		K3
CO4	Identify the different enzymes involved in the digestion of carbohydrates, proteins and fats.		K3
CO5	Outline the composition of urine. Identify the various diseases associated with the hyper and hypo secretion of hormones.		K2 & K3
17UBC53C	Nutritional Biochemistry	Semester V	Level
CO1	Explain the composition of food and		K2& K3

	how foods are grouped Construct a dietary chart.		
CO2	Outline the physiological and nutritive values of carbohydrates, lipids and proteins. Apply the nutritive values of macromolecules in a dietary chart.		K2& K3
CO3	Define BMR and SDA and how to measure the energy content in food. Relate the factors, which influence the BMR and SDA.		K1& K2
CO4	Identify the various primary nutritional diseases and conditional nutritional disorders.		K3
CO5	Plan a diet for the prevention and treatment of a number of diseases.		K3
17UBC5EA	Genetic Engineering	Semester V	Level
CO1	Explain the basics of genetics, restriction enzymes and expression vectors.		K1 &K3
CO2	Recall the basics of gene cloning and restriction endonucleases. Identify the basic features of expression vectors and recombinant DNA technology. Examine the general and specific characteristics of vectors used in gene cloning.		K1, K3 & K4
CO3	Summarize the transformation, selection and identification of recombinants. Compare the different recombinant identification techniques, nucleic acid and protein blotting methods.		K2, K4 & K5
CO4	Evaluate the concept of protein engineering and DNA sequencing methods.		K3, K4 & K5
CO5	Explain the application of gene technology. Compare the production of recombinant products like insulin and growth hormones Explain the safety aspects and hazards of genetic		K4 & K5

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	engineering.		
17UBC5EB	**Principles of Genetics**	**Semester V**	**Level**
CO1	Explain fundamental laws of genetics		K2
CO2	Recall and Illustrate the roles of mitosis and meiosis in reproduction and explain how meiosis leads to genetic variability Explain patterns of Mendelian, Epistatic, and quantitative (polygenic) inheritance		K1&k2
CO3	Explain the structural organization of chromosomes		K5
CO4	Explain linkage analysis and recombination mapping and infer the chromosomal basis of inheritance, linkage and crossing over, and mapping of linked genes.		K2&k4
CO5	Outline and interpret phenotype to changes in chromosome structure and number		K2&k5
17UBC5EC	**Genetics of Clinical Disorders**	**Semester V**	**Level**
CO1	Illustrate the role of mutations in genetic and analysis Understand variation in Chromosome number and structure		K2 & K3
CO2	Demonstrate the Patterns of Single Gene Inheritance		K2 & K3
CO3	Analyze the Genetic Variation in Health and Diseases		K3 & K4
CO4	Understand the epigenetics in human diseases Analyze the Polymorphisms and Disease		K2 & K3
CO5	Explain the Chromosomal disorders, Analyze the Inborn errors of metabolism		K3 & K4
17UBC5SA	**Clinical Biochemistry**	**Semester V**	**Level**
CO1	Understand blood sugar regulation. Illustrate about the disease Diabetes mellitus and carbohydrate related disorders and lipid disorders Analyse to diagnose Diabetes		K2 & K4

	Mellitus		
CO2	Explain the disorders of amino acid metabolism Illustrate the disorders of purine, pyrimidine and porphyrin metabolism		K2 & K3
CO3	Compare normal and abnormal constituents of urine and blood Demonstrate the handling of samples and their units		K3 & K4
CO4	Demonstrate the gastric function test, Renal function tests and Thyroid function test and analyze the results		K3 & K4
CO5	Examine the Gastric function and illustrate the function tests Analyze the enzymes in disease		K3 & K4
17UBC63A	General Microbiology	Semester VI	Level
CO1	Explain about the difference between prokaryotes and eukaryotes. Identify and Illustrate different types of microscopes.		K2 & K3
CO2	Plan and choose a suitable nutritional media required for microbial growth. Compare and contrast different types of nutritional uptake. Apply and experiment with the different microbiological techniques learnt		K2 & K3
CO3	Outline and apply the physical and chemical sterilization methods.		K2 & K3
CO4	Identify the mode of action of antibiotics.		K3
CO5	Compare and contrast the various microbial diseases.		K3
17UBC63B	Introductory Immunology	Semester VI	Level
CO1	Explain the Innate and Acquired immunity and antibody. Examine the differentiation of antigen and antibody and the application of antigen antibody interaction		K2, K4 & K5
CO2	Identify the complement activation		K3

	mechanisms.		
CO3	Examine the immune response to infections.		K4
CO4	Distinguish the types of hypersensitivity reactions. Explain the pathogenicity of autoimmune diseases.		K3, K4 & K5
CO5	Explain the application of transplantation immunology. Examine the applications of immunological techniques		K4 & K5
17UBC63C	Plant physiology and Biochemistry	Semester VI	Level
CO1	Compare and contrast structural and functional differences in plant cell organelles. Show plant water relations. Outline the physiological processes that occur in plants		K1 & K2
CO2	List the components of photosynthetic apparatus. Summarize and construct a model for transport processes, light and dark reactions in photosynthesis, respiration in plants, including photorespiration.		K1, K2 & K3
CO3	Experiment with nitrogen cycle and nitrogen fixation. Demonstrate specific roles of macro and microelements in plant growth and their deficiency symptoms.		K1, K2 & K3
CO4	Label the plant growth regulators. Illustrate plant hormone biochemistry and mode of action. Experiment with seed germination, dormancy, fruit ripening and senescence. Explain Phytochrome, photoperiodism and vernilization.		K3
CO5	Classify secondary metabolites. Identify a method for extraction of secondary metabolites. Relate secondary metabolites with plant defense mechanism.		K1, K2 & K3

17UBC6EA	Concepts in Drug Discovery	Semester VI	Level
CO1	Outline the general pathway for drug discovery and development. Understand important concepts and challenges in each step of drug discovery. Summarize the methods used to identify and validate drug targets		K1 & K2
CO2	Explain key technologies in every aspect of drug discovery. Demonstrate and critically appraise the effectiveness of the drug discovery and development process.		K1 & K2
CO3	List and describe the steps required for a new drug to be approved for human use. Define the major types of clinical research studies, the clinical phases in the drug and device development processes, and their rationale. Apply rules and regulations for developing a new drug		K1 & K2&k3
CO4	Relate clinical in vivo imaging techniques with diagnosis. Illustrate the use of mass spectroscopy in drug discovery		K1 & K2
CO5	Understand and apply epigenetic concepts of drug discovery in drug development. Solve drug discovery related problems in his/her research. Experiment with stem cell therapy.		K2 & K3
17UBC6EB	Concepts in Clinical Trials	Semester VI	Level
CO1	Outline various clinical trial types.		K1 & K2
CO2	Apply Indian clinical trial rules and regulations		K1 & K2
CO3	Relate role of Indian pharmaceutical companies		K1 & K2&k3
CO4	Understand ICMR ethical guide lines on clinical research in India.		K1 & K2

CO5	Understand and apply regulations concerning animals in scientific research.		K2 & K3
17UBC6EC	Plant Therapeutics and Medicinal Chemistry	Semester VI	Level
CO1	Define and classify drugs. Explain absorption and distribution of drugs. Summarize passage of drugs cross membrane Illustrate drug-receptor interactions.		K1 & K2
CO2	Define and compare various ways of drug metabolism. Explain elimination of drugs.		K1 & K2
CO3	Outline chemotherapy. Illustrate mode of action of sulfonamides. Build models for mechanism of action of antibiotics. Interpret the mode of action of drugs acting on CNS and cardiovascular system.		K2 & K3
CO4	Develop method for the production of pharmaceutically important secondary metabolite. Experiment with nanoparticle synthesis from phytochemicals. Recall medicinal plants with antioxidant activity.		K2 & K3
CO5	Demonstrate plant-derived drugs for various diseases. Identify medicinal plants for development of new drug leads.		K2 & K3
18UBC6SA	Research Methodology	Semester VI	Level
CO1	Explain the basic concepts of research and its applications .		K2
CO2	Identify the research problem and develop an experimental design .		K3
CO3	List various sampling techniques and outline methods for collecting data .		K1&k2
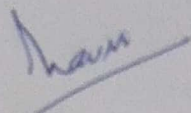
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| CO4 | Apply statistical analysis for interpreting data . | | K3 |
| CO5 | Explain to formulate a research paper. | | K2 |

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M.Sc. BIOCHEMISTRY

Programme Outcome	
1	Instill inquisitiveness in students to explore realms of modern biology (Moleculargenetics, Marine biochemistry, Pharmaceutical biochemistry, andImmunology, Enzymology and Clinical biochemistry) through interdisciplinary cutting edge research.
2	Empower students to acquire, develop and demonstrate skills in bioinstrumentation, bio-statistical and bio-informatic software and tools,and in the fields of Industrial Biochemistry, and Nanotechnology and Cancer biology to meet the relevant demands of traditional and emerging industries

Programme Educational Objective	
1	Postgraduates are cognizant of progressive principles and concepts in diverse branches of modern biology that govern the integrity of dynamic bio-molecular assembly in varied life forms. Alumni are expressive of mastered wisdom to peers and public to expedite basic understanding of issues of social importance through practice and investigation.
2	Postgraduates are comprehensive of complex of biological systems, and they have broadened and perfected competency and skills in principal and contingent are as of modern biology. Thereby, alumni as an individual or as a team member can address, investigate, design, develop and demonstrate solutions to important issues facing humanity and preserve natural ecosystems.
3	Postgraduates are advantaged to identify and exploit functionally crucial areas in diverse branches of modern biology, and combine it with modern tools to investigate,design,develop, demonstrate and familiarize solutions to both basic and applied research questions in areas of industry, medicine, agriculture, pharmacy, food technology, biotechnology,etc. Alumni are valuable performers as an individual or in a team.
4	Postgraduates are competent to enroll in research programs and modeled to receptive of successful career options in diverse branches of modern biology as scholars, managers, counselors,writers, technical experts, field experts,teachers, entrepreneur and a responsible citizen. Alumni have acquired and developed skills to manage projects and finances as individual or as a team member. While discharging duties at varied

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	capacities, postgraduates are inculcated to keep sustainable environment as a goal, and follow Ethics of professionals tature
5	Postgraduates are infused with metamorphic qualities of education, and inspired to develop scientific temperament and lead a scientific way of life in facing socio-economical challenges that will benefit the society. Alumni are adept at evaluating their learning's to worldwide events. Thereby, they continue their learning lifelong.

Course Outcome			
193BC2A1CA	Chemistry of Biomolecules	Semester I	Level
CO1	Examine the structure and functions of complex polysaccharides.Assess the importance of carbohydrate containing proteins, homo and heteropolysaccharides.		K4 & K5
CO2	Determine the structure of protein. Explain elaborately the different structural levels of proteins.		K4 & K5
CO3	Value the importance of complex lipids. Infer the functions of saturated and unsaturated fatty acids		K4 & K5
CO4	Give an opinion on the different forms of DNA& RNA. Explain various hypotheses.		K4 & K5
CO5	Justify the structure and functions of important Biological molecules. Explain the role of lipid peroxidation and antioxidant.		K4 & K5
193BC2A1CB	Biochemical techniques and Instrumentation	Semester I	Level
CO1	Distinguish the principles, instrumentation and applications of conventional and recent techniques in the field of spectroscopy. Explain the		K4 & K5

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	principle and importance of advanced analytical techniques like ESR, NMR and MS.		
CO2	Distinguish the preparative and analytical ultracentrifugation techniques. Compare and contrast the principles, instrumentation, and applications of conventional and advanced microscopic methods		K4 & K5
CO3	Evaluate the advantages and disadvantages of ancient and recent techniques in chromatography.		K4 & K5
CO4	Assess and explain the importance of different types of electrophoresis and blotting techniques.		K4
CO5	Examine the different biophysical techniques like X ray diffraction, ORD and CD. Understand the basics of radioactivity and examine the benefits of using radioisotopic techniques.		K3, K4 & K5
193BC2A1CC	Enzymes and Enzyme Technology	Semester I	Level
CO1	Examine the structural and functional properties of enzymes, experiment methods of enzymes isolation and purification, Measure the enzyme activity		K3, K4 & K
CO2	Understand and prove the kinetics of enzyme-mediated reactions, distinguish different types of enzyme inhibition and its kinetics, solve simple problems related to enzyme		kinetics K4 & K5
CO3	Evaluate the enzyme specificity, determine the mechanism of enzymes action and understand the regulation of enzyme activity		K4 & K5
CO4	Describe elaborately how enzymes can be used in industry, Value the importance of enzymes in clinical diagnostics and therapeutics		K4 & K5
CO5	Develop immobilized enzymes using different methods and appraise its applications, Propose a minor project		K4, K5 & K6

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Criterion I
Metric 1.1.2
PO-PSO-CO

	on enzyme isolation, purification and application		
193BC2A1CD	Cellular Biochemistry	Semester I	Level
CO1	Distinguish the composition and orientation of macromolecules constituting bio-membranes. Explain methods and models to investigate biomembranes structure and function.		K4&K5
CO2	Distinguish various types of transport system in cells. Compare and contrast different transport process in cells.		K4&K5
CO3	Evaluate pathways of energy generation and utilization, cytoskeleton organization in a cell.		K4&K5
CO4	CO4 Assess and explain molecules of cellular integration and pathways of cellular communication.		K4
CO5	Examine cell division events and process of cell death. Understand events leading to cellular transformation		K5
193MB2A1DA	Microbial Nanotechnology	Semester I	Level
CO1	To apply the basics of Nanosciences, able to differentiate particles at macro, micro and nano level		K2, K3
CO2	To know the synthesize of nanoparticles at the laboratory scale		K3
CO3	Understand the characterization techniques involved in nanotechnology		K3
CO4	To explore the interdisciplinary applications of nanotechnology		K2,K3
CO5	To learn the positive and negative aspects of nanotechnology and its present status in India		K2
193BC2A1DA	Cancer Biology, Diagnosis and Therapy	Semester I	Level
CO1	Compare and contrast benign and malignant tumors. Explain morphological characteristics of cancer cells.		K4 & K5
CO2	Justify molecular basis of the cancer. Distinguish interdisciplinary areas in cancer biology. Elaborate the		K4, K5 & K6

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	carcinogenetic process.		
CO3	Discuss about molecular mechanism of oncogenesis and tumor biology. Compare and explain the role of cell cycle in cancer. Value the importance of nutrition given to cancer patients.		K4, K5 & K6
CO4	Judge the role of tumor suppressor genes and apoptosis. Elaborate on epigenetics.		K5 & K6
CO5	Elaborate on the choice of diagnosis and therapy available for cancer patients.		K5 & K6
193BT2A1DA	Protein Engineering	Semester I	Level
CO1	Understand the bond and modification of protein		K3, K4
CO2	Acquire knowledge on protein Architecture		K3, K4
CO3	Impart knowledge on the various electromagnetic radiation		K3, K4, K5
CO4	Focus on DNA binding factors		K4, K5
CO5	In depth understanding of designing of protein and its applications		K4, K5
193BC2A2CA	Immunology	Semester II	Level
CO1	Illustrate the cells involved in immune response.		K2 &K4
CO2	Demonstrate factors and forces of Ag-Ab interaction.		K3, K4 &K5
CO3	Compare different pathways of complement activation		K3, K4 &K5
CO4	Predict allergic responses. Transplantation, cancer		K4 &K5
CO5	Analyze types of immune-techniques and vaccines		K4 &K5
193BC2A2CB	Metabolism	Semester II	Level
CO1	Explain the bioenergetics principles and Illustrate the Electron transfer and Oxidative phosphorylation		K3
CO2	Demonstrate the carbohydrate metabolism. Introduces the regulation and analysis of metabolic pathways.		K5
CO3	Illustrate the lipid metabolism and relate it with clinical lab findings.		K4

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CO4	Explain and justify amino acids and porphyrin metabolic pathways and their regulations		K5
CO5	Illustrate the nucleic acid metabolism and its regulation Predict the pattern of disease with altered metabolism		K6
193BC2A2CC	Microbial Biochemistry	Semester II	Level
CO1	Examine the importance of microbial nutrition. Determine bacterial growth and its growth kinetics		K3,K4 & K5
CO2	Evaluate and explain elaborately the central metabolic pathways existing in microbes.		K5 & K6
CO3	Compare different types of fermentation technology.		K5 & K6
CO4	Value the application of microbes in agriculture, mining, and energy production and food industry.		K5
CO5	Discuss in detail the production of antibiotics, amino acids and single cell protein from microbial source.		K5
193BC2A2CD	Genetics and Molecular Biology	Semester II	Level
CO1	Demonstrate knowledge of the basics principles of Mendelian and Non-Mendelian genetics and display a broad understanding of core genetics concepts		K3 & K4
CO2	Explain the mechanisms of DNA replication, RNA synthesis and processing, and protein synthesis.		K3, K4 & K5
CO3	Describe the processes of gene regulation and predict how a gene will be expressed under specific circumstances.		K3, K4 & K5
CO4	Describe the molecular events of DNA damage & repair.		K4 & K5
CO5	Analyse and critically present primary scientific literature in the genetics and molecular biology field.		K5 & K6
193MB2A2DA	Medical Laboratory Techniques	Semester II	Level
CO1	Understand the laboratory principle and organization of clinical laboratory		K2

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CO2	Apply the knowledge on antiseptics and disinfectants		K3
CO3	Understand the collection and processing of blood.		K3
CO4	Explain the methods involved in collection and processing of urine, stool and sputum.		K4
CO5	Impart the responsible of maintaining laboratory equipments and Biomedical waste management.		K3
193BC2A2DA	Biochemistry of Toxicology	Semester II	Level
CO1	Value the importance of toxicology. Explain about factors which influence toxicity.		K5
CO2	Distinguish and evaluate the biochemical effects of toxic agents on cellular macromolecules and tissues.		K4 & K5
CO3	Compare and perceive different genetic methods used for testing toxicity.		K4 & K5
CO4	Examine the effects and metabolism of various microbial toxins, teratogens and carcinogens.		K4
CO5	Justify the mode of action of toxic pesticides, heavy metals, chemicals and air pollutants.		K5
193BT2A2DA	Forensic Biotechnology	Semester II	Level
CO1	Impart the concepts of Forensic Serology and examine Forensic samples		K3, K4
CO2	Know the basics of serogenetic markers and its significance in Forensic Science		K3, K4
CO3	Interpret and examine forensic evidence of DNA typing		K3, K4
CO4	Discuss the different methods if DNA profiling		K4, K5
CO5	Distinguish and inspect the data generated from DNA fingerprints and to store the data		K4, K5
193BC2A3CA	Biostatistics and Research Methodology	Semester III	Level
CO1	Organize statistical survey, classify the methods for collecting and analyzing qualitative and quantitative data		K3, K4 & K5

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CO2	Interpret data using measures of central tendency, variation, and correlation regression analysis.		K5 & K6
CO3	Discuss the utility of sampling theory, probability and theoretical distributions in conducting research.		K5
CO4	Assess various tests of significance for the purpose of making inferences based on available data.		K5
CO5	Discuss the objectives of conducting research, Formulation of research problem.		K5 & K6
193BC2A3CB	Plant Biochemistry and Biotechnology	Semester III	Level
CO1	Illustrate biochemical events associated with plant cell and explain photosynthesis.		K3 & K4
CO2	Examine the mechanism of Nitrogen fixation & Identify the biochemical events of plant growth & development.		K3 & K4
CO3	Gain knowledge about the importance of plant growth regulators & secondary metabolites in industries.		K5
CO4	Choose proper genetic engineering tools for the improvement of crops.		K5
CO5	Develop skills and knowledge to conduct basic research work in plant biochemistry and biotechnology.		K6
193BC2A3CC	Genetic Engineering	Semester III	Level
CO1	Distinguish the transmission and Mendelian genetics. Compare the recessive and dominance in Mendelian inheritance.		K4 & K5
CO2	Explain the role of restriction endonucleases in Restriction mapping. Support of nucleic acid probes in application.		K4 & K5
CO3	List of different types Vectors and its applications.		K4 & K5
CO4	Explain the cloning techniques. Distinguish Cultured insect cell expression systems; mammalian cell expression systems.		K4 & K5

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CO5	Analyze the expression of cloned genes by gene transfer techniques in animal cells.Applications of transgenic animals		K4 & K5
193BC2A3CD	Clinical Biochemistry	Semester III	Level
CO1	Summarize about the Specimen collection and processing, Evaluate the use of biochemical data and Automation in Clinical Laboratory		K4&K5
CO2	Explain about the factors that influence disorders associated with coagulation and hemoglobin.		K4
CO3	Analyze the relation between biomolecules and diseases.		K4
CO4	Assess the function of organ by clinical diagnosis and outline on Clinical Enzymology.		K5
CO5	Predict the importance of molecular diagnosis of disease and forensic biochemistry		K5
193MB2A3DA	Molecular Diagnostics in Microbiology	Semester III	Level
CO1	Recall the concept of molecular diagnostics of microorganism.		K2, K3
CO2	Demonstrate the traditional methods of identification of bacteria, fungi, virus, protozoans, and parasites		K3
CO3	Identify microbes based on nucleic acid sequencing and PCR based identification methods		K2, K3
CO4	Illustrate the microbial identification based on proteins and different blotting techniques.		K4
CO5	Develop the hybridization techniques to identify and confirm the type of microbe		K5
193BC2A3DA	System Biology	Semester III	Level
CO1	Distinguish designed and evolved systems		K2 & K3
CO2	Elucidate structures of any networks in the biological systems		K2 & K3
CO3	Elucidate mechanisms of dynamics of any networks in the biological systems		K3 & K4
CO4	Relate systems dynamics with organism		K4 & K5

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	evolution		
CO5	Design and create synthetic biological networks for various applications		K5 & K6
193BT2A3DA	Molecular therapeutics	Semester III	Level
CO1	Sketch the process of drug targeting and gene therapy		K3
CO2	Estimate the current techniques of gene delivery and other therapeutic products		K3,K4
CO3	Summarize recombinant gene therapy		K3,K4,K5
CO4	Integrate pathogenic diseases and metabolic disorders		K4, K5
CO5	Design concept of immunotherapy and its applications		K3,K4,K5
193BC2A4CA	Bio-ethics and Bio-safety	Semester IV	Level
CO1	Explain biosafety and bioethics concepts, demonstrate good laboratory practices and apply the standard operating procedures for research		K2 & K3
CO2	Apply Biosafety practices in appropriate Biosafety labs		K3
CO3	Understand and analyze the basic principles and legal framework of IPR and its application to biotechnology		K2 &K4
CO4	Understand the basic issues of IPR Biosafety & Bioethics		K2 &K3
CO5	Create awareness on the Biosafety, Bioethics and patenting of biotechnological processes and products		K6
193BC2A4CB	Endocrinology and Developmental biology	Semester IV	Level
CO1	Explain the role of endocrine system in maintaining homeostasis and signal transduction		K2
CO2	Illustrate and evaluate the biochemical and physiological effects of pituitary, hypothalamic, Thyroid hormones		K3,K5
CO3	Evaluate the molecular, biochemical and physiological effects Adrenal, Gonadal and Neurohormones		K5
CO4	Demonstrate the basic concepts of		K5

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	developmental biology that occur within all living organisms, and fundamental processes of fertilization		
CO5	Demonstrate the basic concepts in the organogenesis, cell death and regeneration		K6
193MB2A4DA	Microbial Technology	Semester IV	Level
CO1	Inculcate the knowledge about microbial products.		K3
CO2	Exemplify the ideas about the production and uses of Biofuel and Biofertilizer.		K4
CO3	Demonstrate the commercial production of Biopolymers using Microorganisms.		K3
CO4	Understand the way cells and enzymes were immobilised for industrial uses.		K4
CO5	Explore the production of vaccines and toxoids.		K4
193BC2A4DA	Neurobiology	Semester IV	Level
CO1	Understand the morphogenesis of the central nervous system and histology of the nervous system.		K4 & K5
CO2	Examine the functioning of the components of the nervous system		K4 & K5
CO3	Elucidate the role of different neurotransmitters in nerve impulse conduction		K4 & K5
CO4	Understand the process of vision, olfaction and taste sensation in detailed pathways		K4 & K5
CO5	Analyse the neurologic process behind the different neurological diseases		K4 & K5
193BT2A4DA	Stem Cell Technology	Semester IV	Level
CO1	Know the process of stem cell and storage		K2,K3
CO2	Understand the stem cell importance in plants		K3, K4
CO3	Imparts knowledge on the stem cells in animals		K3,K4,K5

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| CO4 | In depth understanding of haemopoietic stem cell | | K4,K5 |
| CO5 | Focus on stem cell therapies and its application | | K4,K5 |

BoS-Chairman

BoS Chairman/HoD
Department of Biochemistry
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048

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Criterion I
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B.Sc. Clinical Lab Technology

Programme Outcome	
1	The students are familiarized with theoretical and practical aspects of life science education
2	Students are encouraged to recognize and appreciate life processes taking place in human body.
3	Students are exposed to modern tools and techniques adopted in the medical field and are motivated to apply the contextual knowledge for analysis and interpretation of data.
4	Students are kindled to realize the need for lifelong learning and need for sustainable development.
5	Students are encouraged to understand and follow ethical principles and practices and function effectively as an individual or team thereby achieve employability/ entrepreneurship skills.

Programme Educational Objective	
1	Attain careers as practicing laboratory technicians in fields such as clinical laboratories, hospitals, clinical research centers, biotechnology laboratories, equipment manufacturing industries.
2	Attain advanced studies in disciplines such as Microbiology, Medical Laboratory Technology, Biochemistry, Biotechnology, Hospital Administration, Hospital Records Management, etc.
3	Assume professional leadership roles.

Course Outcome		
193CL1A1CA	**Human Anatomy And Physiology**	**SEMESTER –I**
CO No	CO Statement	Knowledge Level
CO1	Understand the definition of anatomical terms, general anatomy and physiology of central nervous system.	K1,K2
CO2	Know the circulatory system and understand the principles of cardiac system and measurement of cardiac output	K1,K2,K3
CO3	Describe the anatomy and physiology of respiratory and digestive system	K1,K2, K3

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CO4	Understands the structure and functions of excretory and reproductive system	K1,K2, K3
CO5	Know the anatomy and physiology of lymphatic and sensory systems and appreciate the anatomical techniques	K1,K2, K3
193CL1A1CB	**General Biochemistry**	**SEMESTER –I**
CO No	CO Statement	Knowledge Level
CO1	Describe the distinguishing characteristics of prokaryotic and eukaryotic cells and to understand the structure and functions of cell organelles	K1,K2
CO2	Understand the types, properties and significance of major biomolecules	K1,K2,K3
CO3	Understand the structure and functions of nucleic acids and to recall the types, sources and functions of vitamins and minerals	K1,K2
CO4	Understand the classification, structure, mechanism of action and diagnostic importance of enzymes.	K1,K2
CO5	Understand the types and functions of various endocrine hormones and their disorders	K1,K2, K3
193CL1A2CA	**Analytical Techniques**	**SEMESTER –II**
CO No	CO Statement	Knowledge Level
CO1	Describe the principle & working of pH meter, buffer preparations and to recall the basic units of expressing solute and solvent concentration	K1, K2
CO2	Understand the principle, methodology and applications of various techniques applied for separation of biomolecules	K1,K2,K3
CO3	Appreciate the applications of electrophoretic and immunological techniques in disease diagnosis	K1,K2,K3
CO4	Describe the procedures for determination of concentration of various substances by spectroscopic methods	K1,K2,K3
CO5	Describe the principle & working of pH meter, buffer preparations and to recall the basic units of expressing solute and solvent concentration	K1, K2
193CL1A2CB	**Intermediary Metabolism And Metabolic Disorders**	**SEMESTER –II**

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CO No	CO Statement	Knowledge Level
CO1	Know the metabolism of carbohydrates and understand the individual pathway and its alternative pathway	K1,K2
CO2	Describes the lipid, protein metabolism and nucleotide metabolism.	K1,K2, K3
CO3	Know the Biological oxidation and Mitochondrial shuttle system.	K1,K2, K3
CO4	Understand disorders of carbohydrate and lipid metabolism	K1,K2, K3
CO5	Describes the diseases associated lipid storage and disorders of nucleotide metabolism.	K1,K2, K3
193CL1A3CA	**Clinical Pathology**	**SEMESTER –III**
CO No	CO Statement	Knowledge Level
CO1	Understand the overall organization, functioning and dynamics of a clinical laboratory, quality control in the laboratory	K1,K2, K3
CO2	Demonstrate a working understanding of the urine chemistry and its significance	K1,K2, K3
CO3	Demonstrate a working understanding of the stool chemistry and its significance	K1,K2, K3
CO4	Understand the various body fluids and will demonstrate the ability to interpret laboratory data	K1,K2, K3
CO5	Interpret and evaluate clinical laboratory examination of Seminal fluid	K1,K2, K3
193CL1A3CB	**Histopathology**	**SEMESTER –III**
CO No	CO Statement	Knowledge Level
CO1	Understand basic concepts, techniques and methods in histopathology	K1,K2, K3
CO2	Description of instruments and its applications employed in histo techniques	K1,K2, K3
CO3	Learn about principle, working, instrumentation, types and applications of microscopes	K1,K2, K3
CO4	Understand principle, concepts, techniques of section making, staining and mounting process	K1,K2, K3
CO5	Know about record maintenance, microphotography, museum techniques and ICDS classifications	K1,K2, K3

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193CL1A3CC	Human Genetics And Fetal Medicine	SEMESTER –III
CO No	CO Statement	Knowledge Level
CO 1	Understand basic concepts, techniques and methods in Genetic Analysis	K1,K2, K3
CO 2	Description of Laws of inheritance and chromosome theory	K1,K2, K3
CO 3	Principle of recombination and gene mapping, and sex inheritance	K1,K2, K3
CO 4	Understand principle, concepts, techniques of Embryology and Fetal development.	K1,K2, K3
CO 5	Know about multiple pregnancies and Perinatal infectious diseases	K1,K2, K3
193CL1A4CA	Molecular Biology	SEMESTER –IV
CO No	CO Statement	Knowledge Level
CO1	Understand the basic concepts of genetic material and central dogma of life	K1,K2
CO2	Know the mechanism of DNA synthesis and regulation	K1,K2, K3
CO3	Know the mechanism of RNA synthesis and regulation	K1,K2, K3
CO4	Understand protein synthesis and regulatory mechanism	K1,K2, K3
CO5	Understand the concept of mutation and repair mechanism	K1,K2, K3
193CL1A4CB	Clinical Biochemistry - Functional Tests	SEMESTER –IV
CO No	CO Statement	Knowledge Level
CO1	Examine in detail on conditions and biochemical tests involving the Gastric secretions	K1, K2
CO2	Evaluate in detail on functions, conditions and biochemical test involving Pancreatic secretions.	K1, K2, K3
CO3	Analyse in detail on functions, conditions and biochemical test involving Intestinal secretions	K1, K2, K3
CO4	Estimate in detail on functions, conditions and biochemical detection in Liver secretions.	K1, K2, K3

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CO5	Analyse and estimate the functions, conditions and biochemical tests in kidney secretions.	K1, K2, K3
18UCL53A	**Microbiology**	**SEMESTER –V**
CO No	CO Statement	Knowledge Level
CO1	Compare and classify the organism	K1, K2, K3
CO2	Understand the characteristics of various organisms	K1, K2, K3
CO3	Recall the characters of important pathogenic fung	K1, K2, K3
CO4	Understand the general characters of pathogenic viruses	K1, K2, K3
CO5	Know the general characters of various microbes	K1, K2, K3
18UCL53B	**Hematology**	**SEMESTER –V**
CO No	CO Statement	Knowledge Level
CO1	Understand the basic tests in hematology laboratory	K1, K2, K3
CO2	Know the patho-physiology of anemia	K1, K2, K3
CO3	Know the mechanism of coagulation and diagnosis of hemorrhagic disorders	K1, K2, K3
CO4	Understand fibrinolysis and tests used for its diagnosis	K1, K2
CO5	Understand lab automation in hematology	K1, K2, K3
18UCL53C	**Blood Banking**	**SEMESTER –V**
CO No	CO Statement	Knowledge Level
CO1	Understand the basic concepts of blood grouping system	K1, K2
CO2	Apply screening methods of cross matching	K1, K2, K3
CO3	Know the criteria for donor selection and screening tests	K1, K2, K3
CO4	Understand blood transfusion reactions	K1, K2, K3
CO5	Understand the organization of blood bank	K1, K2, K3
18UCL63A	**Immunology**	**SEMESTER –VI**
CO No	CO Statement	Knowledge Level
CO1	Know the basics of immunity and organs involved in immunology	K1, K2

CO2	Understand the antigen and antibody reactions	K1, K2, K3
CO3	Appreciate the techniques involved in detection and quantification of immune components	K1, K2, K3
CO4	Gain knowledge on manifestation of various immune diseases	K1, K2, K3
CO5	Understand immuno therapy and vaccination	K1, K2, K3
18UCL63B	**Cytology**	**SEMESTER – VI**
CO No	CO Statement	Knowledge Level
CO1	Know histology and cytology of various tissues	K1, K2
CO2	Understand the normal and malignant cytology of FNAC and non gynae cytology	K1, K2, K3
CO3	Understand the cytology of cervix	K1, K2, K3
CO4	Understands concepts of flow cytometry	K1, K2, K3
CO5	Understand the production of monoclonal antibodies and immunohistochemical analysis	K1, K2, K3

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B.Sc. Biotechnology

Programme Outcome	
1	Students will be able to identify, analyze and understand problems related to biotechnology and finding valid conclusions with basic knowledge in biotechnology.
2	Graduates will be able to justify societal, health, safety and legal issues and understand his responsibilities in biotechnological practices
3	Provide education that leads to comprehensive understanding of the principles and practices of biotechnology that will help to undertake any responsibility as an individual and as a team in a multidisciplinary environment.
4	Graduates will be able to demonstrate knowledge of project management when dealing with Biotechnology problems.
5	Students will possess hands-on technical skills necessary for supporting biotechnology research activity and empower students with the ability to think and solve problems in the field of biotechnology.

Programme Educational Objective 1	
	To demonstrate a substantial understanding of concepts in key areas of Biotechnology and its applications.
2	To supplement the academic input of students by way of seminars, conferences, guest lectures and industrial visits.
3	To describe the common methods and applications of biotechnology with regards to microorganisms, plants, animals and Pharma industries.
4	To develop competency in research and in current technologies.

Course Outcome			
193BT1A1CA	**Cell biology**	**Semester I**	**Level**
CO1	Learn the fundamental concepts in the structureand functioning of a cell and membrane transport processes.		K1

CO2	Interpret precisely the diversified roles of cytoskeletal filaments and infer the cascade ofevents in signal transduction and their significance.		K1, K2
CO3	Discuss and distinguish the replication ofprokaryotic and eukaryotic DNA.		K1, K2
CO4	Explain the synthesis of RNA and post-transcriptional modification and protein		K1, K2
CO5	Understand the gene regulation, DNA damage and repair mechanisms.		K1, K2
193BT1A1CB	**Biodiversity**	**Semester I**	**Level**
CO1	Understand the nature, concept anddefinition of biodiversity, conservation strategies.		K1, K2
CO2	Familiarize with Global patterns of Biodiversity		K1,K2
CO3	Focus on Biodiversity & major biomes of world		K1,K2
CO4	Highlight Biodiversity for Sustainable Development		K1,K2
CO5	Awareness on Ethics of Conservation		K2,K3
192CE1A1IB	**Chemistry for Biologists'**		**Level**
CO1	Gain the knowledge about the basic theories in coordination chemistry and to name the inorganic compounds.		K2
CO2	Recall basics of chemistry which helps students to understand bonding in molecules, crystals structures and evaluate their bonding characteristics.		K2
CO3	Understand and apply concepts of bonding in organic molecules, and relate their displacement reactions with mechanism.		K2

CO4	Design a demonstration that enables the students to prepare laboratory solutions.		K2
CO5	To study the spontaneity of the reaction, the nature of catalyst and reaction pathway.		K2
193BT1A2CA	**Molecular Biology**	**Semester II**	**Level**
CO1	Learn the basis of DNA and RNA		K1,k2
CO2	Imparts knowledge on the mode of DNA replication		K1,k2
CO3	Provide in-depth knowledge of transcriptional events		K2,k3
CO4	Focus on translational events and its role in gene expression		K2,k3
CO5	Know the concept of DNA mutation and repair mechanisms		K2,k3
193BT1A2CB	**Microbiology**	**Semester II**	**Level**
CO1	Understand the fundamental concepts of microbiology		K1
CO2	Know the basics of media preparation and different sterilization techniques		K1,K2
CO3	Distinguish different phases in microbial growth and learn about nutritional classification		K2,K3
CO4	Discuss the structure, reproduction and the causative diseases of bacteria		K2,K3
CO5	Discuss the structure, reproduction and the causative diseases of virus		K2,K3
194CT1A2IC	**Computer for Biologists'**	**Semester II**	**Level**
CO1	Learn the fundamentals of Computer		K1, K2
CO2	Learn the concept of MS-Word.		K1, K2
CO3	Apply the creativity of slide presentation		K2, K3
CO4	Apply the formulas and functions in Excel		K2,

			K3
CO5	Knowledge on biological data		K3
193BT1A3CA	**Genetics**	**Semester III**	**Level**
CO1	Understand the history and concept of Mendelian laws		K1, K2
CO2	Recognize the structure of chromosome, gene and its interaction		K1, K2
CO3	Differentiate the natural horizontal gene transfer methods		K1, K2
CO4	Interpret chromosomal variations and genetic disorders		K1, K2, K3
CO5	Classify the pedigree analysis and administer genetic counseling		K1, K2, K3
193BT1A3CB	**Biochemistry**	**Semester III**	**Level**
CO1	Understand the concepts of biochemical pathwaysand carbohydrates		K1, K2
CO2	Know the classification, structure, propertiesand metabolism of aminoacids and protein		K1, K2
CO3	Discuss the classification, structure, properties,biosynthesis and oxidation of lipids		K1, K2
CO4	Learn the classification, structure, functions of nucleic acids and metabolism of nucleotides		K1, K2
CO5	Understand the classification of enzymes, Mechanism of action and enzyme kinetics		K2, K3
193BT1A3IC	**Mathematics**	**Semester III**	**Level**
CO1	Learn about Set Theory		K1
CO2	Learn about Matrices		K1
CO3	Apply Statistical Techniques for data collection		K2
CO4	Solve the problems related to Measures of centraltendency		K2
CO5	Solve the problems related to Probability		K3

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193BT1A3SA	Personality Development	Semester III	Level
CO1	Sketch the values of self introspection		K1 and K2
CO2	Interpret the relationship between healthy eating and mind		K1 and K2
CO3	Compose the pros and cons of personal effectiveness		K1 , 2, K3
CO4	Hypothesize the importance of mind		K1, 2, K3
CO5	Appraise oneself as a biologist		K1, 2, K3
193BT1A4CA	Immunology	Semester IV	Level
CO1	Understand the fundamental concepts inimmunology		K1
CO2	Know the basics of Immune Response and Transplantation Technology		K1, K2
CO3	Discuss and distinguish different antigen antibody interactions, Allergic reactions andTumour immunology		K2, K3
CO4	Learn about different antibody production techniques		K2, K3
CO5	Awareness on types of vaccines and its significance		K2, K3
193BT1A4CB	Bioinformatics	Semester IV	Level
CO1	Impart knowledge on basics of bioinformatics and importance of multidisciplinary concept.		K1
CO2	Acquire knowledge on different databases and their characteristics		K1, K2
CO3	Gain insight on sequence alignment and genefinding and some related tools.		K1, K2, K3
CO4	Understand protein structures and related databases and visualization tools.		K2
CO5	Highlight the applications of bioinformatics to drug discovery.		K3
192PY1A4IA	Biophysics	Semester IV	Level

CO1	Learn basic of Molecular Biophysics		K1
CO2	Understand the Membrane Biophysics, Physical Properties of membrane and Membrane potentials		K1, K2
CO3	Know the biophysical techniques applied in understating biomolecules		K1, K2
CO4	Learn about Neurobiophysics; Nervous System, Visionary System and Hearing System		K2, K3
CO5	Know the Role of Radiation Physics in applied medical diagnosis & treatment		K3
193BT1A4SA	**Biotechniques**	**Semester IV**	**Level**
CO1	Understand the Principle and the types of Centrifugation		K2, K3
CO2	Classifying the chromatographic techniques and analyzing its applications		K2,K3
CO3	Imparts knowledge on the Electrophoresis and Blotting Techniques		K3, K4,K5
CO4	Focus on Spectroscopic Techniques and it's applications		K4, K5
CO5	In depth understanding of Radio-isotopic Techniques and its applications		K4, K5
193BT1A4GA	**Apiculture**	**Semester IV**	**Level**
CO1	Understanding the concepts of apiculturemushrooms		K1, K2
CO2	Know the classification and types of apiculture		K1, K2
CO3	Discuss the pros and cons of rearing bees		K1, K2
CO4	Transform into a business		K1, K2
CO5	Understand the uses and applications		K2, K3
18UBT53B	**Microbial Biotechnology**	**Semester - v**	**Level**
CO1	Understand the basic principles of Microbial		K1

	Biotechnology		
CO2	Explain the features of various types of		K1, K2
CO3	Explain the production and development of microbial products		K1,K2
CO4	Understand the application of microbes in agricultural techniques		K2, K3
CO5	Demonstrate microbial product testing and finishing		K3
18UBT53C	**Plant Biotechnology**	**Semester - V**	**Level**
CO1	Impart knowledge on basics of plant tissue culture and its requirements		K1
CO2	Acquire knowledge about the gene transfer techniques and applications		K1, K2
CO3	Understand the genetic engineering and genemodification in agriculture		K3
CO4	Gain insight about valuable secondary metabolites, its production and purification		K2, K3
CO5	Highlight the applications of plant biotechnology in the modern era		K3
18UBT5EA	**Bioprospecting**	**Semester - V**	**Level**
CO1	Focus on Major areas of Bio-prospecting		K1
CO2	Comprehend knowledge on Natural products from plants		K1, K2
CO3	Elucidate Screening for bioactive Compounds		K3
CO4	Highlight Drug discovery and productdevelopment		K2
CO5	To understand Regulatory legislation andconvention in Bioprospecting		K2, K3
18UBT5EB	**Basics of Clinical Trials**	**Semester – V**	**Level**
CO1	Understand the Pre and Post Clinical Studies		K1,K2

CO2	To understand about the regulations and guidelines in clinical research		K1,K2
CO3	Understand the concepts about clinical research on Humans		K2,K3
CO4	Know the protocols and Standardization methods		K2,K3
CO5	Comprehend information's regarding clinical trials		K2,K3
18UBT5SA	**EntrepreneurialBiotechnology**	**Semester - V**	**Level**
CO1	Understand the concept of Entrepreneurship		K1,K2
CO2	Know about the business opportunities in planttissue culture companies		K1, K2
CO3	Understand the various farming technique andits certification procedures		K1, K2
CO4	Learn about business scope in commercialimportant products like Biofertilizer, Biopesticide, Vermicompost etc		K1, K2
CO5	Application of Biopharmaceutical products,IPR and product safety		K1, K2,K3
18UBT5SB	**PharmaceuticalBiotechnology**	**Semester – V**	**Level**
CO1	Learn basic of Biopharmaceutical		K1
CO2	Understand the sources of Biopharmaceutical and therapeutic enzymes		K1, K2
CO3	Know the drug development process		K1, K2
CO4	Learn about Dosage forms, ManufacturingPrinciples and packing techniques		K1, K2, K3
CO5	Know the regulatory aspects with respect to clinical trails		K3
18UBT63A	**CORE-IX: ANIMAL BIOTECHNOLOGY**	**SEMESTER - VI**	**Level**
CO1	To develop an understanding on basic pattern of animal cell culture and	K1	K1

	controlling		
CO2	Acquire knowledge on handling animal cellculture and their applications	K1, K2	K1, K2
CO3	Understand the gene transfer technology, transgenic animal and stem cell technology	K3	K3
CO4	Emphasize techniques on fertilization in animals and its development	K2, K3	K2, K3
CO5	Highlight the applications of animal biotechnology in various fields	K2, K3	K2, K3
18UBT63B	**Environmental Biotechnology**	**Semester -VI**	**Level**
CO1	To understand the basics of Ecosystem structure and organization		K1
CO2	To Acquire knowledge on handling Pollution and waste management		K1, K2
CO3	Understand the concept and application ofBiodegradation		K1, K2
CO4	Emphasize techniques on Bioremediation		K2, K3
CO5	Highlight the applications, Policies andRegulations relating to Environmental biotechnology.		K3
18UBT63C	**Nanobiotechnology**	**Semester - VI**	**Level**
CO1	Learn basic of Bio nanotechnology		K1
CO2	Understand the basic of Bionanomachinery and protein folding structure		K1, K2
CO3	Know the functional concept of biomaterials		K1, K2
CO4	Learn about microarray technology,Nanobiosensors, Biochips,Biorobotics and its application		K1, K2, K3

CO5	Know the drug delivery system and cancer biology based on bionanotechnology		K3
18UBT63D	**Bioethics, Biosafety and IPR**	**Semester -VI**	**Level**
CO1	Impart basic knowledge about lab safety andcommittees involved.		K1,K2
CO2	Understand the role of bioethics in the field of biotechnology and its products		K3
CO3	Gain insight on types of IPR and its licensing.		K3, K4
CO4	Imbibe skills on patenting and strategiesinvolved.		K4, K5
CO5	Highlight the global scenario on IPR		K4, K5
18UBT6EA	**Marine Biotechnology**	**Semester - VI**	**Level**
CO1	Understand the nature, concept strategies.		K1, K2
CO2	Familiarize with Global patterns Biodiversity		K1,K2
CO3	Focus on Biodiversity & major biomes of world		K1,K2
CO4	Highlight Biodiversity for Sustainable Development		K1,K2
CO5	Awareness on Ethics of Conservation		K2,K3
18UBT6EB	**Agricultural Biotechnology**	**Semester - VI**	**Level**
CO1	Understand the concept about agriculture		K1
CO2	Know the role of transgenic plants and theirimportance		K1, K2
CO3	To gain knowledge on the concepts ofbiofertilizer		K1, K2
CO4	Impart the concepts of soil science		K2, K3
CO5	Understand the strategies involved in agricultural economics		K3
18UBT6EC	**Food And Dairy Technology**	**Semester - VI**	**Level**

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CO1	Understand the concept of Food technology andits methods		K1
CO2	Know the role of various microorganisms infood production		K1, K2
CO3	Understand the various food preservation methods and its importance		K1, K2
CO4	Know the dairy food products and its differenttypes and varieties		K2, K3
CO5	Understand the Quality and Safety monitoringof food products		K3

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M.Sc. Biotechnology

Programme Outcome	
1	**Impart quality biotechnology education to students and to develop young minds as outstanding scholars/teachers/entrepreneurs and responsible citizens.**
2	**Apply their understanding of the commercialization processes to biotechnology products or services in future.**
3	**Graduates of the course will have strong background in the interface of biotechnology and be able to use the tools in industry and/or institutes wherever necessary.**
4	**Ability to design and carry out experiments (safely) and to interpret experimental data and apply the scientific method by developing valid hypotheses, designing experiments, gathering relevant data using current technology, and interpreting quantitative and qualitative data.**
5	**Develop an awareness of ethical issues in biochemical research and careers options along with understanding of the area of biotechnology chosen.**

Programme Educational Objective 1	
	This programme will enable students to acquire knowledge on the fundamentals of Biochemistry, Cell biology, Microbiology and Molecular biology. It helps them to understand emerging and advanced concept in modern biology and guide them to take up their carrier in this field.
2	**This programme will facilitate the students to acquire knowledge in fields such as Genetic Engineering, Protein Engineering and Molecular Therapeutics.**
3	**The programme will aid the students to learn the recent developments in the field of Genomics, Proteomics, Stem cell biology and Tissue Engineering approach.**

Course Outcome			
193BT2A1CA	**CORE-I : MOLECULAR BIOLOGY AND GENETICS**	Semester I	Level
CO1	Imparts knowledge on the mode of DNA replication and repair mechanisms		K3, K4, K5
CO2	Provide in-depth understanding of transcriptional events and its role in		K4, K5

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	gene regulation		
CO3	Focus on translational events and its role in gene expression & protein targeting Documentation, Inspection and certification Procedure		K4, K5
CO4	To gain knowledge about Human genetics and various genetic disorders		K4,K5
CO5	To analyze the inheritance pattern and population genetics		K4,K5
193BT2A1CB	**CORE-II : BIOCHEMISTRY**	Semester I	Level
CO1	Understand the physical properties, Classification, metabolism and disorders of Carbohydrates		K3, K4
CO2	Know the concepts of structure and function, metabolism and disorders associated with Lipid and Fatty acid		K3, K4
CO3	Structural understanding, Biosynthesis of Amino acids and to know about disorders related to amino acids.		K3, K4, K5
CO4	Learning about Mechanism, kinetics and inhibition of Enzymes and Coenzymes.		K3, K4
CO5	Concept and regulatory mechanism of different metabolic activities and their disorders of Nucleic acid.		K3, K4, K5
193BT2A1CC	**CORE-III : MICROBIOLOGY**	**SEMESTER - I**	**LEVEL**
CO 1	To gain knowledge about microbial biodiversity and systematics		K3, K4
CO 2	To elucidate microbial growth and physiology		K4
CO 3	To analyze microbial interactions and infections		K4, K5
CO 4	To examine the microorganisms role in diverse environment		K4, K5
CO 5	To apply the knowledge of microbes in food processing technology		K4, K5
193BT2A1CD	**CORE-IV : BIOANALYTICAL TECHNIQUES**	**SEMESTER - I**	**LEVEL**
CO 1	Understand the chromatographic techniques and analyzing its applications		K3, K4
CO 2	Acquire knowledge on Principle of electrophoresis and Classifying the types of Centrifugation		K3, K4
CO 3	Impart knowledge on the various spectral analysis techniques		K3, K4, K5

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CO 4	Focus on Microscopic Techniques and its applications		K4, K5
CO 5	In depth understanding of electrochemical Techniques and its applications Documentation, Inspection and certification Procedure		K4, K5
193BT2A1DA	**ELECTIVE-I : PROTEIN ENGINEERING**	**SEMESTER - I**	**LEVEL**
CO 1	Understand the bond and modification of protein K3, K4		K3, K4
CO 2	Acquire knowledge on protein Architecture K3, K4		K3, K4
CO 3	Impart knowledge on the various electromagnetic radiation K3, K4, K5		K3, K4, K5
CO 4	Focus on DNA binding factors K4, K5		K4, K5
CO 5	In depth understanding of designing of protein and its applications Documentation, Inspection and certification Procedure		K4, K5
193BT2A2CA	**CORE-V : IMMUNOTECHNOLOGY**	**SEMESTER - II**	**LEVEL**
CO 1	Understand about basic of immune response		K3
CO 2	Know the antigen – antibody related test.		K3
CO 3	Learn about new generation of antibody production techniques.		K3,K4,K5
CO 4	Awareness on vaccine immunological types and its role in immune system		K3,K4,K5
CO 5	Know about allergic reaction, tumour immunology and its affect on immune system.		K3,K4,K5
193BT2A2CB	**CORE-VI : GENETIC ENGINEERING**		**LEVEL**
CO1	Understand the steps in recombinant DNA preparation and labeling		K3, K4
CO2	Explain the features of various types cloning vectors for bacteria, yeast , animals and plants.		K3, K4
CO3	Understand the methods of gene transfer and hybridization		K3, K4
CO4	Describe various molecular techniques and its applications		K4, K5
CO5	Knowing different types of sequencing and gene therapy		K4, K5

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193BT2A2CC	CORE-VII : BIOPROCESS TECHNOLOGY	SEMESTER - II	LEVEL
CO1	Understand the concepts microbial culture collection and preservation		K3,K4
CO2	Acquire information about types of Media and Fermentation		K4, K5
CO3	Concept and mechanism of different types of fermenters		K4, K5
CO4	Learning about the purification of fermentation products		K4, K5
CO5	Recent development in microbial product production		K4, K5
193BT2A2CD	CORE-VIII : BIODIVERSITY & BIOPROSPECTING	SEMESTER - II	LEVEL
CO1	To understand the types of biodiversity, the threats to the biodiversity and Biodiversity hotspots		K3,K4
CO2	To know the management strategies for biodiversity and biodiversity mapping		K3,K4
CO3	To understand the sustainable utilization of resources and benefit sharing		K3,K4,K5
CO4	To understand the screening process of various bioactive substances		K3
CO5	To know the various regulatory bodies of bioprospecting		K4,K5
193BT2A2DA	ELECTIVE-II : FORENSIC BIOTECHNOLOGY	SEMESTER - II	LEVEL
CO1	Impart the concepts of Forensic Serology and examine Forensic samples		K3, K4
CO2	Know the basics of serogenetic markers and its significance in Forensic Science		K3, K4
CO3	Interpret and examine forensic evidence of DNA typing		K3, K4
CO4	Discuss the different methods if DNA profiling		K4, K5
CO5	Distinguish and inspect the data generated from DNA fingerprints and to store the data		K4, K5
193BT2A3CA	CORE-IX : PLANT AND ANIMAL BIOTECHNOLOGY	SEMESTER - III	LEVEL
CO1	Explain plant culture media types and the role of different media constituents		K3
CO2	Infer knowledge on Agrobacterium		K3

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	biology and transgenic technology		
CO3	Compile various types of resistance and green house technology concepts		K4,K5
CO4	Summarize animal cell culture media types and its functions		K3, K4
CO5	Design tissue and organ culture and the applications of the culture products and cryopreservation		K3,K4,K5
193BT2A3CB	CORE-X : ENVIRONMENTAL BIOTECHNOLOGY	SEMESTER - III	LEVEL
CO1	Review on the organization of ecosystem and its functions		K3
CO2	Appraise the global environment problems and the hazards of pollution		K3,K4
CO3	Support the understanding of waste water treatment and Vermicomposting		K3,K4,K5
CO4	Compile Xenobiotics and bioremediation methods		K4, K5
CO5	Grade the awareness on environmental monitoring and environmental laws		K4, K5
193BT2A3CC	CORE-XI : GENOMICS AND PROTEOMICS	SEMESTER - III	LEVEL
CO1	Summarize about Bioinformatics and Databases		K3,K4
CO2	Design Data interpretation using Alignment Algorithms		K3,K4
CO3	Evaluate Genome Analysis and Principles of Docking		K3,K4,K5
CO4	Formulate Proteome analysis, tools & databases available		K4,K5
CO5	Compos concept of proteomics & with their applications		K3,K4,K5
193BT2A3CD	CORE-XII : RESEARCH METHODOLOGY & IPR	SEMESTER - III	LEVEL
CO1	Comprehend and interpret the concepts of research		K3
CO2	Inculcate the importance of scientific validation		K3,K4
CO3	Strategies of reporting the research findings		K3,K4,K5
CO4	Summarize deliverables of Intellectual Property Rights		K4,K5
CO5	Justify filing and licensing of Patents		K3,K4,K5
193BT2A3DA	ELECTIVE-III : MOLECULAR THERAPEUTICS	SEMESTER - III	LEVEL
CO1	Sketch the process of drug targeting and gene therapy		K3

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CO2	Estimate the current techniques of gene delivery and other therapeutic products		K3,K4
CO3	Summarize recombinant gene therapy		K3,K4,K5
CO4	Integrate pathogenic diseases and metabolic disorders		K4,K5
CO5	Design concept of immunotherapy and its applications		K3,K4,K5
193BT2A4DA	ELECTIVE- IV : STEM CELL TECHNOLOGY	SEMESTER - IV	LEVEL
CO1	Know the process of stem cell and storage		K2,K3
CO2	Understand the stem cell importance in plants		K3, K4
CO3	Imparts knowledge on the stem cells in animals		K3,K4,K5
CO4	In depth understanding of haemopoietic stem cell		K4,K5
CO5	Focus on stem cell therapies and its application		K4,K5

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Department of Biotechnology
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048

B.Sc. Microbiology

Programme Educational Objective

- The Curriculum is designed to attain the following learning goals which students shall accomplish by the time of their graduation:
- To inculcate practical knowledge in correlation with the theoretical knowledge.
- To equip the students to meet the requirements of the current technology in Microbiology.
- To motivate and train the students in various clinical and industrial sectors.
- To encourage students to involve in research to explore microorganisms for the betterment of mankind

Programme Outcomes

- PO1 To prepare microbiologists who are competent, creative, and highly valued professionals in academia, industry and private/public sector that are capable of excelling in careers of their choice.
- PO2 To impart basic knowledge on the theoretical basis of the tools and techniques and to imbibe and demonstrate the practical skills in microbiology.
- PO3 To disseminate knowledge in microbiological discipline and to promote and develop competency in microbiology that have enduring value beyond the classroom.
- PO4 To instill a pattern of life-long learning and to translate the potentials of microorganisms to the welfare of biosphere.
- PO5 To explore the scope of various branches of microbiology to become an entrepreneur.

B. Sc. Microbiology – Course Outcome

193MB1A1CA	CORE I : GENERAL MICROBIOLOGY	SEMESTER –I
Course Outcome		

CO No	CO Statement	Knowledge Level
CO 1	Describe the emergence of systematic microbiology. Provide details about the Pioneers and their invaluable contributions in micro biology.Familiarize the history of microbiology	K1
CO 2	Gives technical ideas about the handling of microscopes. Develop robust technology in micro scopical observation. Route map for bacteriological study.	K1,K2
CO 3	Understand the aseptic techniques which are applicable in day today life. Familiarize various types of disinfecting agents and their mode of action and application on inanimate objects.	K2,K3
CO 4	Describes the cultivation of various types of microbes and their handling	K3
CO 5	Interpret the knowledge of fungi and algae for human welfare sting	K2, K3
193MB1A2CA	**CORE II: CELL BIOLOGY AND MICROBIAL DIVERSIT**	**SEMESTER –II**
CO No	**CO Statement**	**Knowledge Level**
CO 1	Describe the morphological details of prokaryote and their physiology. Explain the structure of internal organelles and their functions in organisms.	K2
CO 2	Identify the reproduction methods or cell division strategies. Summarise the nutrient uptake mechanism and their transportation among cell to cell.	K3
CO 3	Provides knowledge in the primitive life form. Outline the characteristics of the life in the extreme environment. Summarize the environmental adaptation strategies via microbial life in extreme environment	K3
CO 4	Explain the taxonomy and nomenclature	K4
CO 5	Describe the classification of Fungi and Algae	K3
18UMB33A	**CORE III: MICROBIAL PHYSIOLOGY**	**SEMESTER –III**
CO No	**CO Statement**	**Knowledge Level**
CO1	Formulate a comprehensive definition of microbial physiology. Understand the nutritional requirements and modes of nutrient uptake by microorganisms. Categorize the microorganism based on mode of nutrition.	K1
CO2	Formulate a comprehensive definition of microbial physiology. Understand the nutritional requirements and modes of nutrient uptake by microorganisms. Categorize the microorganism based on mode of nutrition.	K3,K4
CO3	Confer the significance of different pathways of Carbohydrate metabolism. Infer the concepts of energy generation in aerobic cellular processes with calculation of ATP. Infer and extrapolate how small molecules are integrated into macromolecule (Biosynthetic process).	K3,K3
CO4	Respond on the concepts of anaerobic respiration. Describe and distinguish the various types of fermentation	K3,K2

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Criterion I
Metric 1.1.1
PO-PSO-CO

	processes. Reiterate the importance of methanogens and methanogenic K3, K2 76 Dr. N. G. P. Arts and Science College (Autonomous) B. Sc., Microbiology (Students admitted for the Academic Year 2018-19) processes. Demonstrate the atmospheric nitrogen fixation process. Compare oxygenic and anoxygenic process.	
CO5	Acquire knowledge on the concepts of biosynthesis of aminoacids. Differentiate gram-positive and gram-negative cell wall synthesis State the biological process of bioluminescence in microbes.	K3,K1
17UMB43A	**CORE IV- BIOINSTRUMENTATION**	**SEMESTER –IV**
CO No	**CO Statement**	**Knowledge Level**
CO1	Describe the properties of Buffers. Calculate different concentration units of solutions. Understand the working principle of pH electrodes. Determine the pH of samples using pH meter.	K2
CO2	Demonstrate the use of instruments to maintain sterility and aseptic transfer of microbial cultures. Use of instruments to preserve microorganisms. Use of instruments to mix and blend substances.	K3
CO3	Understand the core principles of Centrifugation. Describe the features and components of major types of centrifuges. Illustrate how centrifugation methods are utilized for bioanalysis.	K2
CO4	Estimate the concentration of an unknown colored solution using colorimetry. Explain the basic principles of spectrophotometer. Demonstrate how to measure concentration by a UV Visible spectrophotometer.	K3,K4
CO5	Become familiar with fundamental concepts of chromatography and their role in achieving separations across different types of chromatography. Develop the core skills and identify the key factors influencing in Electrophoresis.	K2,K3
17UMB53A	**CORE - V: MICROBIAL GENETICS**	**Semester-V**
CO No	**CO Statement**	**Knowledge Level**
CO1	To understand the concept of genetic material and its replication. To obtain information on the types of DNA & RNA. To explain the principle behind replication	K2, K3
CO2	To describe the principle behind transcription. To review on protein synthesis and the Enzymology behind it. To illustrate the properties of genetic code and its universality	K2
CO3	To categorize the mutational types and significance of mutation in recombinantion. To synergize the molecular basis of repair mechanism	K2
CO4	To be familiar with microbial recombination.	K4, K2

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	To recognise the types of recombination in producing variants.	
CO5	To distinguish constitutive and inducible enzymes and their expression. To understand positive and negative regulation.	K2, K3
17UMB53B	**CORE - VI: IMMUNOLOGY**	**Semester-V**
CO No	**CO Statement**	**Knowledge Level**
CO1	Understand the basis of complex, cellular processes involved in inflammation and immunity. Recognise the importance of cell and organs of the immune system.	K1, K2
CO2	Define the cellular pathways of humoral/cell-mediated adaptive responses.	K2, K3
CO3	Compare the four types of hypersensitivity for the Immunologic mechanism involved.	K2, K3, K4
CO4	Detailed knowledge and understanding of immunology and the way it is applied in diagnostic and therapeutic techniques and research.	K2, K3
CO5	Understand the consequences of general types of immunodeficiency diseases. Explain the mechanisms and factors associated with organ transplantation.	K2, K3
17UMB53C	**CORE VII- FOOD MICROBIOLOGY**	**SEMESTER-V**
CO No	**CO Statement**	**Knowledge Level**
CO1	To understand the relation between the food and microbes and types of microorganisms in related to food. To provide the knowledge on factors affecting the growth of microorganisms in food.	K2, K3
CO2	To understand the role of microbes involved in production of various fermented food product and their production procedure.	K3
CO3	To acquaint the knowledge on spoilage of various types of food by microbes	K3
CO4	To describe the characteristics food infections and poisoning and explain the bacterial food poisoning	K3
CO5	To impart the knowledge on non bacterial food borne illness by fungi, parasites, viruses and other hazards To become equipped with the investigational procedure for food poisoning outbreaks.	K3
17UMB53D	**CORE VIII- MEDICAL MICROBIOLOGY – I**	**Semester V**
CO No	**CO Statement**	**Knowledge Level**
CO1	To define the concept of infection, types and infectious disease process To illustrate epidemic, endemic and pandemic diseases To	K1, K2

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	Explain the investigation and control of epidemics	
CO2	To classify the morphology, cultural characteristics, pathogenesis of gram positive cocci. To interpret knowledge on the morphology, cultural characteristics, pathogenesis of gram negative cocci.	K2, K4
CO3	To identify the gram positive rods. To classify the gram positive and negative cocci.	K2, K3
CO4	To infer the morphology, cultural characteristics, pathogenesis of gram negative rods.	K2
CO5	To demonstrate the importance of Mycobacterium species. To acquire knowledge on Spirochete, Leptospira and their pathogenesis.	K2, K3
17UMB63A	**CORE IX: VIROLOGY**	**SEMESTER- VI**
CO No	**CO Statement**	**Knowledge Level**
CO1	Recall the early development of Virology – Virus – Morphology. Describe the general characteristics and structure of viruses. Illustrate classification, cultivation, purification and assay of viruses.	K2, K3
CO2	Compare the reproduction of DNA phages.	K2
CO3	Distinguish the Lysogeny - Temperate bacteriophages, lambda phage, Induction of lysogens. Compose the generation of defective phages and their uses. Demonstrate the reproduction of RNA phages.	K2, K3
CO4	Discuss the Viruses of Eukaryotes. Categorize the reproduction of animal and plant viruses. Outline the Viruses of Algae, fungi and viruses. Distinguish the Viruses and cancer.	K2, K3
CO5	Understand the process of Human viral infections. Compile the Pathogenicity and diagnosis of Hepatitis (A, B, C), Mumps, AIDS, Rabies, Influenza, Measles, Rubella, Polio virus. Infer the knowledge of Emerging viral diseases	K3
17UMB63B	**CORE X- INDUSTRIAL MICROBIOLOGY**	**SEMESTER- VI**
CO No	CO Statement	Knowledge Level
CO1	Intimate the economically and commercially important microbes Demonstrate industrially important microbes and their isolation techniques Familiarize the method to increase the yield	K1, K3
CO2	Recall the types of fermentation Describe the components of fermentor Give ideas about the operative mechanism of fermentor.	K1
CO3	Illustrate the large scale production of fermented foods Teach the types of antibiotics and their production Provide the protocol for enzyme production	K3

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CO4	Demonstrate the nutritive and the commercial value of SCP Recall different types of mushroom cultivation techniques Describe the commercial importance of mushroom	K1, K3
CO5	Outline the harvesting techniques of industrially important microbial products Classify the microbial metabolites based on their production	K1, K2
17UMB63C	**CORE XI MEDICAL MICROBIOLOGY – II**	**Semester VI**
CO No	**CO Statement**	**Knowledge Level**
CO1	To acquaint with the collection procedure of clinical samples.	K2
CO2	To classify the fungal infections To explain the infectious disease mycology To interpret the morphology and, pathogenesis of superficial mycoses. To analyze the subcutaneous mycoses.	K2, K4
CO3	To inspect the opportunistic mycoses To infer the antifungal agents and its testing methods	K2, K4
CO4	To classify the medically important parasites and its significance.	K2
CO5	To analyze the life cycle and infection of medically important parasites To understand the action of antibiotic and its prevention of resistance.	K2, K4

B.Sc. Microbiology Course Outcome –Allied Courses

193CL1A1IA	**IDC -BIOCHEMISTRY- I**	**SEMESTER –I**
Course Outcome		
CO No	**CO Statement**	**Knowledge Level**
CO 1	Outline carbohydrate structure, classification and function	K1,K2
CO 2	Know the structure and properties of lipids	K1,K2
CO 3	Understand the structural and functional aspects of aminoacids and proteins	K1,K2,K3
CO 4	To be acquainted with the hardware, software and operating system and its operations	K1,K2, K3
CO 5	Understand the types and significance of vitamins, minerals and hormones	K1,K2, K3
192CE1A2IB	**IDC – Chemistry**	**SEMESTER –II**
CO No	**CO Statement**	**Knowledge**

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		Level
CO 1	Gain the knowledge about the basic theories in coordination chemistry and to name the inorganic compounds.	K2
CO 2	Recall basics of chemistry which helps students to understand bonding in molecules, crystals structures and evaluate their bonding characteristics.	K2
CO 3	Understand and apply concepts of bonding in organic molecules, and relate their displacement reactions with mechanism.	K2
CO 4	Design a demonstration that enables the students to prepare laboratory solutions.	K2
CO 5	To study the spontaneity of the reaction, the nature of catalyst and reaction pathway.	K2
17UBC3AA	**IDC – Biochemistry I**	**SEMESTER –III**
CO No	**CO Statement**	**Knowledge Level**
CO 1	Outline carbohydrate definition, classification and function. Explain Monosaccharides, Disaccharides and Polysaccharides	K1 & K2
CO 2	Define and classify lipids. List and compare saturated and unsaturated fatty acids. Summarize the physiochemical properties of lipids.	K1 & K2
CO 3	Compare the different structural levels & Organization of proteins with suitable examples. Classify the standard amino acids and list the non protein aminoacids Experiment with aminoacids.	K1, K2 & K3
CO 4	Define Nucleic acids. Identify the structures of purines, pyrimidines, nucleoside and nucleotides. Classification and identification different forms of DNA and RNA.	K1, K2 & K3
CO 5	Define and classify vitamins. Explain the functions of minerals in biological system. Illutrate the role of hormones in metabolic regulation.	K1 & K2
18UMB3SA	**Skill based Course I - Introduction to Entrepreneurship**	**SEMESTER –III**
CO No	**CO Statement**	**Knowledge Level**
CO1	To remember and understand the Concept, roles of Entrepreneurship	K1 & K2
CO2	To understand and design different SSU	K2 & K3
CO3	To procure knowledge on planning & raising funds	K2
CO4	To acquaint the Schemes available and roles	K2

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	of Banks	
CO5	To think and act as socially responsible Entrepreneur.	K3 & K4
17UBC4AB	**IDC – Biochemistry II**	**SEMESTER –IV**
CO No	**CO Statement**	**Knowledge Level**
CO1	llustrate what happens during glycolysis, glycogenesis, and glycogenolysis. Explain the events that make up the process of TCA cycle, pentose phosphate pathway and HMP shunt.	K1, K2 & K3
CO2	Understand the chemical logic of lipid metabolic pathways.	K1 & K2
CO3	Explain how nucleic acids are synthesized and degraded. Demonstrate a model for DNA replication.	K1, K2 & K3
CO4	Define and classify enzymes. Explain active site and specificity of enzymes. Illustrate kinetics of enzyme catalysis.	K1, K2 & K3
CO5	Compare and contrast different types of enzyme inhibition.	K1 & K2
17UMB4SA	**Skill based Course II - Entrepreneurial Microbiology**	**SEMESTER –IV**
CO No	**CO Statement**	**Knowledge Level**
CO1	Describe the microbial products that are having rich nutritive and commercial value Discuss different types of yeast and their applications Familiarize the fermented food products.	K1,K2
CO2	Teach variety of enzymes and their beneficial aspects Demonstrate large scale production of enzymes Route map for industrial application of enzymes	K1,K3
CO3	Explain the mushroom cultivation techniques Acknowledge the variety of mushroom and their characterization Review the protocol for mushroom cultivation	K2,K3
CO4	Teach the historical aspects of bio fertilizer llustrate different types of bio fertilizer Describe the organic farming and their importance	K3,K1
CO5	Describe about the media formulation Interpret the involvement of microbes in the production of industrially important products Augments the knowledge in alcohol production	K2, K3

B.Sc. Microbiology Course Outcome –Elective Courses

17UMB5EA	**ELECTIVE I- RECOMBINANT DNA TECHNOLOGY**	**SEMESTER –V**

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Dr. N.G.P. –KalapattiRoad, Coimbatore-641048, Tamil Nadu, India
Web: www.drngpasc.ac.in |Email:info@drngpasc.ac.in | Phone: +91-422-2369100

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Criterion I Metric 1.1.1 PO-PSO-CO

Course Outcome

CO No	CO Statement	Knowledge Level
CO1	Classify Restriction enzymes. Compile the types and Mode of action,Polymerases,Ligases and Methylases.	K2, K3
CO2	Outline the procedure of Isolation and Purification of DNA and RNA. Compare the Genomic library and cDNA library.	K2, K3
CO3	Appraise the knowledge about Vectors. Summarize the importance of Hybrid Vectors.	K2, K3
CO4	Demonstrate the Gene transfer techniques. Outline the procedures of Screening and selection of recombinants.	K2, K3
CO5	Describe the Blotting Techniques. · Explain the procedures of RFLP, RAPD and Protein Engineering.	K2, K3
17UMB5SA	**SKILL BASED COURSE III - FOOD QUALITY CONTROL AND FOOD PRESERVATION**	**SEMESTER -V**
CO No	CO Statement	Knowledge Level
CO 1	Understand the principles of food safety and sanitation, cleanliness, personal hygiene, packaging , handling , transportation and recall procedures	K
CO 2	Interpret the knowledge on GMP, SSOP and HACCP and their Principles. To give the ideas on food adulteration	K2,K3
CO 3	Describe about the food laws and laboratory. sampling, various food safety policies in food industry	K3
CO 4	Understand the principles of food preservation. Summarize the importance of Canning and high temperature preservation methods.	K2
CO 5	Describes the preservation of food by low temperature, drying and chemical preservatives.	K3
17UMB6EA	**ELECTIVE II ENVIRONMENTAL AND AGRICULTURAL MICROBIOLOGY**	**SEMESTER - VI**
CO No	CO Statement	Knowledge Level
CO1	List the distribution of microorganisms in Nature. Describe the importance of microbial communities in soil. Explain the factors influencing the microbial Density in soil. Compare the microbial associations in soil with suitable examples.	K1, K2,K3
CO2	Recall the microbial decomposition process taking place in soil. Compile the factors influencing degradation, Bioconversion of organic wastes.	K1
CO3	Illustrate the microorganisms in the decomposition of organic matter. Discuss the carbon cycle, nitrogen cycle and phosphorous cycle. Importance of biofertilizers in agriculture	K2,K3

CO4	Demonstrate the procedure of water treatment. Appraise the importance of MPN technique in water quality analysis.	K1,K3
CO5	Identify the factors influencing air quality. Demonstrate the methods of air quality analysis.	K1,K3
17UMB6ED	**ELECTIVE III BIOTECHNOLOGY**	**SEMESTER- VI**
CO No	**CO Statement**	**Knowledge Level**
CO1	To introduce the concept Biopharmaceutics To understand the principle of recombinant methods in commercial production of interferons, antibiotics, vaccines and monoclonal antibodies	K2,K3
CO2	To explain and understand the role of Ti plasmid in genetic recombination. To describe the method of genetic modification to obtain insect resistance and microbial resistance crops	K2
CO3	To comprehend the methods of producing transgenic animals. To demonstrate and create awareness on significance of embryonic stem cell methods.	K2
CO4	To summarize biotechnological remedies for environmental issues like xenobiotic degradation, rapid degradation of organic waste for effective recycling of carbon and nitrogen.	K4, K3
CO5	To know the applications of genetic engineering in forensic science. To upgrade the concept of gene therapy to heritable and non curable disorders	K2, K3

BoS Chairman

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	Dr. N.G.P. –KalapattiRoad, Coimbatore-641048, Tamil Nadu, India	**Metric 1.1.1**
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M.Sc. Microbiology

Programme Educational Objectives

- Present intense knowledge in areas of organization and functioning of micro-organisms. Familiarize with the operations of bio instruments and related techniques.
- Enable students to understand the applications of microbiology in healthcare, agriculture, food technology & environmental protection.
- Provide opportunities to develop skills and participate in Research projects

Programme Outcomes

- PO1 To impart knowledge of various branches of Microbiology and to understand the role of microorganisms in human welfare and sustainable development.
- PO2 To acquire skills in the techniques used to observe and study the nature of microorganisms and the techniques, skills, and modern tools necessary for biological practice.
- PO3 To appreciate the complexities of microbiological processes for industrial and other purposes, especially the genetic manipulation of microorganisms for the production of antibiotics, hormones, etc.
- PO4 To inculcate broad education necessary to understand the impact of microbiological solutions in a global and societal context; an ability to function in multi-disciplinary teams; To develop the ability to identify, formulate, and solve biological problems and to design and conduct experiments, as well as to analyze and interpret data.
- PO5 To create awareness of contemporary issue and to appreciate the applications of Microbiology to become an entrepreneur

M. Sc. Microbiology – Course Outcome

193MB2A1CA	**CORE I : PRINCIPLES OF**	**MICROBIOLOGY**
SEMESTER –I Course Outcome		

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CO No	CO Statement	Knowledge Level
CO 1	Explain the theories to understand the importance of microorganisms. Summarise the contributions and discoveries of various scientists to microbiology.	K2
CO 2	Apply the principles of sterilization and disinfection. Make use of the types of Media. Apply knowledge on Culture Maintenance and Preservation. Summarise the objectives and importance of Culture Collection Centres.	K2,K3
CO 3	Compare and contrast the principles of Microscopy.	K4
CO 4	To compare and understand the characteristics of internal and external structures of prokaryotic cells.	K2, K4
CO 5	To compare and understand the characteristics of internal and external structures of Eukaryotic cells.	K2,K4
193MB2A1CB	**CORE II : BACTERIAL DIVERSITY AND METABOLISM**	**SEMESTER –I**
CO No	**CO Statement**	**Knowledge Level**
CO 1	Describe the components of microbial systematic. Explain and evaluate methods and approaches used to study microbes. Apply the knowledge on taxonomic strategies and approaches used to name microorganisms and the criteria used to define genera, species and sub specific divisions within species. Develop an understanding diversity of Archaebacteria and to compare the characteristics of archaebacteria with eubacteria.	K3,K4
CO 2	Understand the characteristics of eubacteria, their diversity and classification. To discuss the nutritional classification of microorganism based on carbon, energy and electron source.	K3,K4
CO 3	To explain the effects of physical parameters on the growth of microorganisms. To understand the physiology of growth and modes of nutrient uptake by microorganisms	K3,K4
CO 4	To comprehend nomenclature, classification, kinetics and types of enzymes with an emphasis on nature of enzyme Inhibitions. To confer the significance of different pathways of Carbohydrate metabolism. To infer the concepts of fermentation, energy generation and Bioluminescence.	K3,K4
CO 5	To acquire the knowledge on the concepts of biosynthesis of aminoacids, nucleotides, fatty acids and cell wall of Gram positive and Gram negative bacteria. To interpret and define the mechanism of photosynthesis, CO2 fixation and study about	K3,K4

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	nutritional categorisation of microorganism based on organic carbon source.	
193MB2A1CC	**CORE III : BIOINSTRUMENTATION**	**SEMESTER –I**
CO No	**CO Statement**	**Knowledge Level**
CO1	To understand the principles, instrumentation, types of centrifuge with an emphasis on applications of Analytical centrifuge. To impart knowledge on various techniques of purification of bio molecules by chromatography and their application.	K3
CO2	To become equipped with the operational principle and working methods of spectral instruments.	K3
CO3	To procure knowledge on the principles and techniques of various types of electrophoresis with emphasis on recovery and identification of electrophoresed molecules.	K2
CO4	To acquaint the concept of radioactivity and its types of decay. To describe the methods of detection and measurement of radioactivity based on different principles.	K3
CO5	Application of knowledge for the characterization of Biomolecules.	K4
193MB2A1CD	**CORE IV : MYCOLOGY AND PHYCOLOGY**	**SEMESTER –I**
CO No	**CO Statement**	**Knowledge Level**
CO1	Describe the structural components of fungi Develop an understanding diversity of fungi through classification	K3,K4
CO2	Understand the characteristics of fungi and its importance in environment	K3,K4
CO3	Describe the structural components of algae Develop an understanding diversity of algae through classification	K3,K4
CO4	To Understand the characteristics of algae and its importance in environment	K3,K4
CO5	To acquire the knowledge on the current applications of algae and fungi for human benefit. To learn the ways of sustaining better environment through algae and fungi	K3,K4
193MB2A1CE	**CORE V : COMPREHENSIVE BIOLOGY**	**SEMESTER –I**
CO No	**CO Statement**	**Knowledge Level**
CO1	Understand the importance and application of CSIRNET syllabus and preparation.	K1
CO2	Prepare for competitive exams like CSIR/GATE	K2
CO3	Critical thinking ability by practicing MCQs for the CSIR contents	K2

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Criterion I
Metric 1.1.1
PO-PSO-CO

CO4	Understand the inheritance and structural alterations of chromosomes	K2, K3
CO5	Understand the molecular evaluation and brain behavior	K2, K3
193MB2A2CA	**CORE: MICROBIAL GENETICS AND MOLECULAR BIOLOGY**	**SEMESTER – II**
CO No	**CO Statement**	**Knowledge Level**
CO1	Understand and appraise the biological process by a historical approach to study classical systems of gene regulation in bacteria.	K2
CO2	Understand the topology of DNA and RNA. To compare and contrast the mechanisms of replication, transcription and translation.	K3
CO3	Explain the processes behind mutation and other modifications.	K3
CO4	Develops knowledge and summarize the DNA transfer mechanisms and the role of transposons.	K4
CO5	Identify and distinguish genetic regulatory mechanisms at different levels.	K4
193MB2A2CB	**CORE: FOOD MICROBIOLOGY AND FOOD QUALITY CONTROL**	**SEMESTER - II**
CO No	**CO Statement**	**Knowledge Level**
CO 1	To understand the relation between the food and microbes and spoilage of various types of food by microbes.	K2
CO 2	To describe the food infections, poisoning, various food borne microorganisms and the production of various fermented food products.	K3
CO 3	To acquaint the knowledge on indicator organisms and examination of food for the identification of spoilage causing microorganisms.	K3
CO 4	To become equipped with in house quality assurance in food industry and, GMP, SSOP and HACCP Principles.	K4
CO 5	To describe about the food laws and regulations. To understand the GHP and waste disposal in food industry.	K4
193MB2A2CC	**CORE: ENVIRONMENTAL AND AGRICULTURAL MICROBIOLOGY**	**SEMESTER -II**
CO No	**CO Statement**	**Knowledge Level**
CO1	To explore the community of microflora present in air and indicators of air pollution. To understand the types of Bacterial, Viral and Fungal airborne diseases and the effect of air pollution on plants and animals.	K2
CO2	To understand the sources of soil pollution and concept of Biogeochemical cycling.	K2
CO3	To compare the characteristic features of microbial populations of symbiotic and non symbiotic nitrogen fixers, phosphate solubilizers and phytopathogens.	K2, K3
CO4	To comprehend the distribution of microorganisms in various sorts of aquatic environments.	K3

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CO5	To analyse the concepts of solid waste management. To comprehend the different value added products from the solid wastes.	K3
193MB2A2CD	**CORE: VIROLOGY**	**SEMESTER –II**
CO No	**CO Statement**	**Knowledge Level**
CO1	Understands the basic classification of viruses, cultivation and characterization.	K3
CO2	Develops the skills of Routine and Molecular Diagnosis with special reference to Virology.	K3
CO3	Basic knowledge on structure, genome replication, protein synthesis and assembly of DNA and RNA containing bacteriophages and Classification.	K2
CO4	Able to differentiate DNA and RNA containing animal viruses.	K3
CO5	Application of virology in viral vaccines, preparation, recombinant viruses and gene therapy.	K2
193MB2A2CE	**CORE: Pharmaceutical Microbiology and Quality Assurance**	**SEMESTER –II**
CO No	**CO Statement**	**Knowledge Level**
CO1	Identify and analyse unexpected results during routine analyses and solutions based on scientific and regulatory considerations by preventive and corrective actions programs.	K3
CO2	Acquire a working knowledge of Indian GMP to the manufacture of pharmaceuticals, blood products, and natural health products	K3
CO3	Interpret the requirements for testing of raw materials, in- process samples, and finished product in accordance with pharmacopoeia compendia standards.	K3
CO4	Operate, validate, and calibrate a variety of laboratory equipment used in pharmaceutical industrial labs.	K3
CO5	Understand the concept of quality systems and compliance in the regulated industry and the role of quality assurance and documentation.	K2
193MB2A3CA	**CORE: Immunology and Immuno Technology**	**SEMESTER –III**
CO No	**CO Statement**	**Knowledge Level**
CO1	Describe the role of the immune system. Differentiate various cells involved in immune responses.	K2,K4
CO2	Describe the basic mechanisms, division and	

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	functional interplay of innate and adaptive immunity.	K2, K4
CO3	Prioritize the application of immunology in diagnostic and therapeutic techniques and research.	K4
CO4	Discriminate the features of B and T cell in Immune responses.	K4
CO5	Connect Tissue transplantation and graft rejection. Categorize vaccines and its types.	K4
193MB2A3CB	**CORE: Medical Microbiology I – Bacteriology and Virology**	**SEMESTER –III**
CO No	**CO Statement**	**Knowledge Level**
CO1	Describe the infection, the role of epidemiology of infectious diseases and control of epidemics	K2
CO2	Discriminate the pathogenicity involved in gram positive and gram negative cocci	K4
CO3	Contrast the pathogenicity involved in gram positive and gram negative bacilli	K4
CO4	Prioritize the emerging viral infections and control measures	K4
CO5	Compare and classify the treatment procedures and therapeutic measures for viral diseases	K4
193MB2A3CC	**CORE: Medical Microbiology II – Mycology and Parasitology**	**SEMESTER –III**
CO No	**CO Statement**	**Knowledge Level**
CO1	Recognize the concept of infectious disease process. Demonstrate the processing of clinical samples.	K1, K4
CO2	Classify the morphology, cultural characteristics and pathogenesis of fungal infections.	K4
CO3	Illustrate the morphology, cultural characteristics and pathogenesis of subcutaneous mycosis.	K3
CO4	Recommend the collection and processing of clinical samples to identify the intestinal parasitic infection.	K5
CO5	Construct the techniques for the processing of clinical samples to identify the intestinal parasitic infection.	K3
193MB2A3CD	**CORE: Genetic Engineering**	**SEMESTER –III**
CO No	**CO Statement**	**Knowledge Level**
CO1	Illustrate the cloning and the methods of handling and quantification of DNA and RNA.	K2, K3

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CO2	Review the Vectors and its properties for gene cloning. Describe the plant vectors and animal vectors.	K2
CO3	Recognize the direct and indirect method of screening of recombinants and blotting techniques.	K3
CO4	Compare and contrast the characters of cloned DNA.	K4
CO5	Express Site directed mutagenesis, design and construction of novel proteins and enzymes.	K2, K4
193MB2A3CE	**CORE: Research Methodology, Biostatistics and Bioinformatics**	**SEMESTER –III**
CO No	**CO Statement**	**Knowledge Level**
CO1	Categorize and design a research study. Recognize the process and analysis of research data.	K1, K4
CO2	Interpret the reports for statistical and qualitative data. Demonstrate competence in open defense presentation.	K2, K3
CO3	Practice the collection, classification and tabulation of data. Formulate and interpret graphs appropriately.	K3, K5
CO4	Comprehend and compute the basic descriptive statistical measures.	K2, K4
CO5	Understand the bioinformatics, databases and its applications.	K2, K3

M.Sc Microbiology Course Outcome- Elective Courses		
193MB2A1DA	**ELECTIVE I : MICROBIAL NANOTECHNOLOGY**	**SEMESTER –I**
Course Outcome		
CO No	**CO Statement**	**Knowledge Level**
CO1	To apply the basics of Nanosciences, able to differentiate particles at macro, micro and nano level	K2, K3
CO2	To know the synthesize of nanoparticles at the laboratory scale	K3
CO3	Understand the characterization techniques involved in nanotechnology	K3
CO4	To explore the interdisciplinary applications of nanotechnology	K2, K3
CO5	To learn the positive and negative aspects of nanotechnology and its present status in India	K2
193MB2A2DA	**Elective II: Medical Laboratory Techniques**	**SEMESTER –II**
CO No	**CO Statement**	**Knowledge Level**
CO1	Understand the laboratory principle and organization of	K2

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	clinical laboratory	
CO2	Apply the knowledge on antiseptics and disinfectants.	K3
CO3	Understand the collection and processing of blood.	K3
CO4	Explain the methods involved in collection and processing of urine, stool and sputum.	K4
CO5	Impart the responsible of maintaining laboratory equipments and Biomedical waste management.	K3
193MB2A3DA	**Elective III: Molecular Diagnostics in Microbiology**	**SEMESTER –III**
CO No	**CO Statement**	**Knowledge Level**
CO1	Recall the concept of molecular diagnostics of microorganism.	K2, K3
CO2	Demonstrate the traditional methods of identification of bacteria, fungi, virus, protozoans, and parasites	K3
CO3	Identify microbes based on nucleic acid sequencing and PCR based identification methods	K2, K3
CO4	Illustrate the microbial identification based on proteins and different blotting techniques.	K4
CO5	Develop the hybridization techniques to identify and confirm the type of microbe	K5
193MB2A4DA	**Elective III: Microbial Technology**	**SEMESTER –IV**
CO No	**CO Statement**	**Knowledge Level**
CO1	Inculcate the knowledge about microbial products.	K3
CO2	Exemplify the ideas about the production and uses of Biofuel and Biofertilizer.	K4
CO3	Demonstrate the commercial production of Biopolymers using Microorganisms.	K3
CO4	Understand the way cells and enzymes were immobilised for industrial uses.	K4
CO5	Explore the production of vaccines and toxoids.	K4

BoS Chairman

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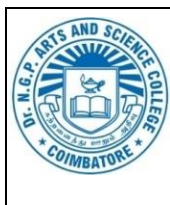Metric 1.1.2
PO-PSO-CO

B.Sc. Food Science and Nutrition

Programme Outcome	
1	Acquire knowledge and develop aptitude in Food Science and Nutrition intended for potential career opportunities.
2	Build self-empowerment in food Science and Nutrition and develop effective communication skills sufficient for entry in pre professional practice.
3	Apply skills by planning, implementing and evaluating diets to the community in the current scenario.
4	Interpret and utilize nutrition techniques in developing novel products to improve the health status of society and promote entrepreneurism.
5	Develop professional attributes and portfolio in Food Science and Nutrition that are adopted to serve in diverse professional and community organizations.

Programme Educational Objective	
1	To enable the students to implement the basic food science in operation.
2	To provide basic knowledge and practice to enhance the quality of life though the improvement of human health and nutritional status.
3	To develop skill and techniques in food preparation with conservation of nutrients and palatability using cooking methods generally employed.
4	To help the students to contribute proper utilization of foods and prevent food ravages.
5	To understand the prevalence of malnutrition in Indian scenario and gain knowledge on effective methods to combat malnutrition.

Course Outcome			
193FN1A1CA	**CORE : BASIC FOOD SCIENCE**	**SEMESTER I**	**Level**
CO1	List the basic food groups Define various cooking methods	I	K1
CO2	Interpret the nutritive value of food groups Outline the sources, structure, composition, methods and effects of cooking cereals, pulses, fruits and vegetables	I	K2
CO3	Demonstrate the methods of beverage preparation Explain the types and functions of fats and oils Outline medicinal uses of Spices and Condiments	I	K2

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CO4	Illustrate milk processing and demonstrate preparation of milk products Identify uses, methods and experiment with effects of cooking egg	I	K2
CO5	Choose the cooking methods appropriate for meat, poultry and fish Solve the effects of cooking on meat, poultry and fish by applying the principles of cooking	I	K3
193FN1A1CB	**CORE : CHEMISTRY OF FOODS**	**SEMESTER I**	**Level**
CO1	Illustrate the physico-chemical properties of foodsMoisture in Foods, Hydrogen Bonding, Bound Water, Water Activity. Demonstrate Moisture Content in Foods, True Solutions, Dispersions, Sols, Gels, Foams, Colloids and Emulsions	I	K1, K2
CO2	List out the Components of Starch and treatment effects on starch. Explain the Stages of Sugar Cookery, Crystal Formation. Classify the types of Candies, Action of Acid, Alkali and Enzymes.	I	K1, K2
CO3	Explain Structure of wheat proteins, pulse proteins, egg proteins, vegetable proteins. Interpret the effect of treatments on various proteins.	I	K2
CO4	Identify the Physical and Chemical Properties of fats and oils. Explain the techniques of processing fats and oils Summarize the factors affecting Fat Absorption in Foods	I	K2, K3
CO5	Identify the properties, importance of enzymes, enzymes involved in food reactions Choose the plant pigments and its abundant sources	I	K3
192CE1A1IA	**IDC : CHEMISTRY I**	**SEMESTER I**	**Level**
CO1	Outline the basics of chemistry which helps students to understand bonding in molecules, crystals structures and evaluate their bonding characteristics.	I	K2
CO2	Demonstrate to prepare laboratory solutions.	I	K2

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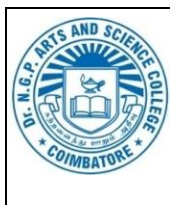|			
CO3	Understand the concepts of bonding in organic molecules, and relate their displacement reactions with mechanism.	I	K2
CO4	Infer the concepts of adsorption and chromatography	I	K2
CO5	Extend their knowledge in absorption spectra, classification and few applications of dyes	I	K2
193FN1A2CA	**CORE: PRINCIPLES OF NUTRITION**	**SEMESTER II**	**Level**
CO1	Understand the introduction and history of nutrition, basic values to determine energy. Analyze the calorific value of food.	II	K2
CO2	Editorialize the role of carbohydrate, dietary fiber and the significance of fats in human nutrition.	II	K5
CO3	Analyze the metabolism of protein and digestibility coefficient. Construct the vital role of amino acids and mutual supplementation of dietary proteins in human nutrition.	II	K3,K4
CO4	Speculate the role of vitamins and its implication in human nutrition.	II	K6
CO5	Infer the general functions of minerals. Execute the role and its implication of micro-macro minerals in human nutrition. Elucidate the distribution and maintenance of water and acid base and electrolyte balance in the body	II	K2,K4
193FN1A3CA	**Core: Nutrition In Health**	**SEMESTER III**	**Level**
CO1	Illustrate the RDA for Indians. Evaluate the nutritional needs of adults.	III	K4
CO2	Explain the physiological, nutritional changes, hormonal control and relaxation during pregnancy.	III	K5
CO3	Assess the growth and development of infants. Explain the importance breast milk. And preparation of Weaning foods and compare commercially and other organization.	III	K4
CO4	Assess the nutritional requirement of preschool and school going children. Importance of packed lunch.	III	K4
CO5	Infer the nutritional problem and nutritional requirement in adolescent and old age people.	III	K6

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193FN1A3CB	Core: Human Physiology	SEMESTER III	Level
CO1	Apply the concept and knowledge of general terminology Relates structure, functions of cell and digestive system	III	K2, K3
CO2	Demonstrate understanding of the circulatory system Describe the heartbeat, and relate it to the cardiac cycle Analyze factors leading to hypertension	III	K2
CO3	Explain the reflexes associated with the senses. Discuss the process of gas exchange and transport in lungs	III	K2
CO4	Identify the major organs and functions of important reproductive systems. Illustrate the structure and function of the major endocrine organ	III	K3
CO5	Explain the processes of filtration, reabsorption, and secretion in the nephron. Examine how the nervous system controls the body mechanism	III	K3
193BC1A3IA	Core: Biochemistry	SEMESTER III	Level
CO1	Outline the chemical characteristics, types and importance of carbohydrates.	III	K1, K2
CO2	List and compare saturated and unsaturated fatty acids. Summarize the physiochemical properties of lipids.	III	K1, K2
CO3	Compare the different saturated level & organization of proteins. List the non-protein amino acids.	III	K1, K2, K3
CO4	Identify the structures of purines, pyrimidines, nucleoside and nucleotides. Classification of DNA and RNA	III	K1,K2, K3
CO5	Explain the functions of minerals in biological system. Illustrate the role of hormones in metabolic regulation.	III	K1, K2
193FN1A4CA	Core: Dietetics	SEMESTER IV	Level
CO1	Explain the principles of diet therapy, Nutrition Care. Process and different types of feeding the patients	IV	K1, K2
CO2	Identify the signs, symptom, causes and dietary recommendations for, gastro-intestinal diseases and nutrient deficiencies	IV	K2,K3
CO3	Identify the signs, symptom, causes and nutritional recommendations for the diseases of the liver, and CVD	IV	K2,K3

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CO4	Identify the signs, symptom, causes and nutritional recommendations for Diabetes mellitus and renal diseases	IV	K2,K3
CO5	Identify the signs, symptom, causes and nutritional recommendations for Cancer, Food Allergy and Fever	IV	K2,K3
193BC1A4IA	**Core: Biochemistry-II**	**SEMESTER IV**	**Level**
CO1	Tell the basic concepts of pH and Buffers and their role of buffers system in our body fluids.	IV	K1, K2
CO2	Outline the various electrophoretic techniques. Compare colorimetry and spectrophotometry.	IV	K1,K2
CO3	Understand the concepts involved in thermodynamics. Recall respiratory chain and oxidative phosphorylation.	IV	K1,K2,K3
CO4	Understand the chemical logic of metabolic pathways.	IV	K1,K2,K3
CO5	Outline how amino acids are synthesized and degraded. Interrelations of CHO, lipid and protein metabolism	IV	K1,K2
193FN1A4SA	**Core: Perspective Psychology**	**SEMESTER IV**	**Level**
CO1	Interpret the methods and disciplines of psychology. Illustrate the modern perspective in psychology	IV	K3
CO2	Classify the types of attitudes and various communication styles including the types and barriers	IV	K2
CO3	Appraise the self-management, self-esteem and stress management techniques	IV	K2
CO4	Understand the nature, character, types, aspects and the importance of personality.	IV	K3
CO5	nalyze the relationship between body and mind. Evaluate the barriers to modify poor health behaviours.	IV	K3
17UFN53A	**Core– Food Preservation**	**Semester - V**	**Level**
CO1	List the general principles and methods of food preservation Recall about the preservation by addition of sugar and salt	V	K1
CO2	Explain about the preservation by Use of High Temperature. Illustrate about	V	K2

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	thermal death curve, calculation of process time, methods of heat transfer Compare the steps, merits and demerits and of canning and bottling. Explain about principle of dehydration, types, merits and demerits of driers		
CO3	Explain about the preservation by use of low temperature – Illustrate about the types- refrigeration, freezing and its merits and demerits. Outline the requirement of refrigerated storage, characteristic of refrigerant, refrigeration during transport, defects in cold storage	V	K2,K3
CO4	Explain about the preservation with chemicals Classify and summarize the role of the chemicals in preservation - Inorganic and Organic preservatives, Antibiotics, Mold inhibitors, Antioxidants and its role in preservation	V	K2,K3
CO5	Explain about the Food irradiation and Ohmic heating Techniques Illustrate about the Semi moist foods	V	K2,K3
17UFN53B	**CORE - Food Microbiology**	**SEMESTER - V**	**Level**
CO1	Understand the general importance of microorganisms in food. Intricate the Factors affecting the growth of microorganisms in food– pH, temperature, moisture, oxidation – Reduction potential, , Nutrient content and Inhibitory substances and biological structure.	V	K_1,K_2
CO2	Illustrate the role of Microorganism in Food Safety Outline the GMP and Explain HACCP	V	K_2
CO3	Summarize and Identify the Fermented food – Bread, dairy products, Fermented beverage, fermented fish and meat products	V	K_2,K_3
CO4	Explain the Spoilage of food - cereals, vegetables, fruits, egg and milk – canned foods.	V	K_2, K_3

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CO5	Evaluate the Food borne diseases – Food poisoning and Food borne infections . Investigation of food poisoning outbreaks of Bacterial and Mycotoxins	V	K_3
17UFN53C	**CORE – Food Processing**	**SEMESTER -V**	**Level**
CO1	List the processing techniques of cereals and their by products Recall the millet processing	V	K_1
CO2	Explain the pulse processing techniques Outline the processing steps for edible oil production	V	K_2
CO3	Explain the processing of dairy products and Identify the Indigenous milk products Illustrate the processing of meat and poultry Demonstrate the methods of manufacturing of egg and fish products	V	K_2
CO4	Explain the dehydration methods in vegetables Demonstrate the method of mushroom processing and its utilization.	V	K_2,K_3
CO5	Identify and make use of the latest non - thermal technologies in food processing	V	K_3
17UFN5SA	**Skill Based Course - Basic Computer Science In Nutrition**	**SEMESTER - V**	**Level**
CO1	Learn the concepts of windows	V	K1
CO2	Ability to Understanding MS Word documents and its tools	V	K2
CO3	Demonstration of different operations and views on MS Excel and MS PowerPoint	V	K2
CO4	Illustrates the working principles of tables and queries in MS Access.	V	K2
CO5	Ability to identify the computer applications in the field of nutrition	V	K3
17UFN5EA	**ELECTIVE I - Food Safety And Quality Control**	**SEMESTER -V**	**Level**
CO1	Define food safety and principles of quality control in food industry	V	K1

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Metric 1.1.2
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	List the practices to prevent food spoilage		
CO2	List the food laws and standards to be followed in industry Demonstrate the tests for food adulterants	V	K1, K2
CO3	Illustrate the food laws and standards followed by government	V	K2
CO4	Explain the methods for determining the quality of foods. Select the sensory scores to assess the food products	V	K2,K3
CO5	Experiment with microbial analysis to enhance the shelf life of the food product. Apply HACCP principles to maintain the standard of industrial sector	V	K3
17UFN5EB	**ELECTIVE I- Baking Technology**	**SEMESTER - V**	**Level**
CO1	Define baking and its principles Classify baked foods and the types of equipment and operation techniques in baking industry with cleaning and sanitizing methods	V	K_1, K_2
CO2	Relate the ingredients and their role in baking List the standard coloring & flavoring agents Explain on leavening agents	V	K_1, K_2
CO3	Make use of the previous knowledge and categorize the preparation of all kinds of baked foods	V	K_3
CO4	List the decoration of baked foods and the types of icing and the role of other ingredients in icing	V	K_3
CO5	Explain the sanitation &hygiene of baking unit/plant layout & its design Compare the types of packaging materials used for bakery products, methods of packaging	V	K_3
18UFN63A	**Core: Community Nutrition**	**SEMESTER -VI**	**Level**
CO1	Define Community, family, village and block. Know the meaning of optimum nutrition and malnutrition. Outline the	VI	K_1, K_2

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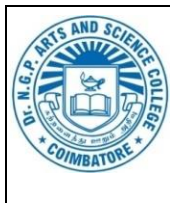**NAAC 3rd Cycle**

Criterion I Metric 1.1.2 PO-PSO-CO

	factors contributing to malnutrition in the community.		
CO2	List the direct and indirect nutritional status assessment methods. Illustrate the nutritional problems of women and men.	VI	K_2
CO3	Identify and explain the nutritional problems of infants and children.	VI	K_2, K_3
CO4	Outline the nutrition intervention programmes Identify the national and international organization and other health care involved in nutrition intervention.	VI	K_2, K_3
CO5	Identify the role of Home-Scientists in rural development. Illustrate adult education and nutrition education methods.	VI	K_2, K_3
18UFN63B	**Core -Food Service Management**	**SEMESTER -VI**	**Level**
CO1	List the types of catering institutions and services Name the food service institutions according to the methods of processing Outline the types of menu and service of food	VI	K_3
CO2	Tell the types and principles of organization State the principles and tools of management	VI	K_2
CO3	Outline the activities of personnel management Discuss the importance of human relations and ethics of employees and employers	VI	K_2
CO4	Illustrate the cost control techniques and financial management strategies Explain the sanitation and safety measures in health care food service institutions	VI	K_2
CO5	Use the principles of art and color in food service institutions	VI	K_3

Dr. N.G.P. ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

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NAAC
3rd Cycle

Criterion I
Metric 1.1.2
PO-PSO-CO

	Explain the application of art in table service and home furnishing techniques.		
17UFN6EA	**Elective II -Food Product Development And Marketing**	**SEMESTER - VI**	**Level**
CO 1	Know the trends in food consumption pattern State the change for new product development	VI	K_1
CO 2	Outline the status of food processing industry in India Tell the principles and purpose of new product development	VI	K_2
CO 3	Relate various foods for new recipe development Discuss on foods for space and defense services	VI	K_2
CO 4	Illustrate evaluation analysis, and testing of processed foods Describe the packaging materials for processed foods	VI	K_2
CO 5	Use the financial management techniques in food product development Construct marketing strategies for developed food products.	VI	K_3
17UFN6EB	**ELECTIVE II- Nutrition Care Process**	**SEMESTER - VI**	**Level**
CO1	Define Nutrition Care Process Explain the Introduction, Definition, Purpose and the steps in NCP(Assessment, Diagnosis, Intervention, Monitoring and Evaluation)	VI	K1, K_2
CO2	Explain the Nutrition care process for Underweight, overweight and Obesity, Diabetes Mellitus (T1DM, T2DM and Gestational Diabetes) a case study approach.	VI	K_2
CO3	Explain Nutrition care process for Cardiovascular Diseases Identify the (Hypertension and hyperlipidemia), Cancer a case study approach.	VI	K2, K_3
CO4	Contrast Nutrition care processes for Gastrointestinal Diseases, HIV/AIDS	VI	K2, K_3

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	and Critically ill patients- a case study approach.		
CO5	Identify Case report writing, case presentation and medical record.	VI	K_3
18UFN6EC	**ELECTIVE III- Clinical Nutrition And Counselling**	**SEMESTER -VI**	**Level**
CO1	Use the advanced techniques to assess the health and nutritional status of the community and give implication through nutritional counseling	VI	K_1, K_2, K_3
CO2	Apply the principles of menu planning in therapeutic condition Identify the psychological and nutritional factors and educate for betterment of health	VI	K_2, K_3
CO3	Use food guide and determine the Diet calculation to meet the requirement of the individual. Apply educational tools for nutrition intervention	VI	K_2, K_3
CO4	Interpret and Identify the biochemical and clinical parameters of the patients to free from deficiency and diseases	VI	K_2, K_3
CO5	Identify the condition of ICU patients and to apply nutritional administrative techniques to overcome the diseases	VI	K_2, K_3
17UFN6ED	**ELECTIVE III – Food Packaging**	**SEMESTER- VI**	**Level**
CO1	Illustrate the functions of packaging materials for different foods, List out the characteristics of packaging material.	VI	K_1, K_2
CO2	Outline the purpose and requirements of packaging materials Classify the modern packaging materials and forms	VI	K_1, K_2
CO3	Explain rigid containers, flexible containers Interpret the general methods for establishing radiation stabilization Demonstrate the importance of biodegradable packaging material	VI	K_2

CO4	Identify the techniques in packages of dehydrated products Outline the package forms and components of plastics	VI	K_2, K_3
CO5	Apply the packaging techniques for finished goods and fulfill the standards of Labeling Make use of the types of labels and apply with labeling regulation in food packaging	VI	K_3

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Department of Food Science & Nutrition
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	Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India	**Metric 1.1.2**
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M.Sc. Food and Nutrition

Programme Outcome	
1	To develop the knowledge of the students in the area of human nutrition, food science, food product development, food safety and quality management.
2	Apply recently advanced novel foods in medical nutrition therapy and recommend the physical activity to manage the common disease and metabolic disorder to achieve the fitness and well being
3	Familiarize with the problems and plan, implement, monitor and evaluate interventional programs related to food and nutrition and security to the community.
4	To build entrepreneurial values, attitudes, quality and desire in developing innovative food products by fulfilling quality parameters, used to meet the consumer needs nutritionally and commercially viable.
5	To develop skills and techniques for the students to become professionals in service industries.

Programme Educational Objective	
1	To provide advanced knowledge on food science and nutrition to enhance the quality of life through the improvement of human health and nutritional status
2	To enable the students to implement the basic food science in operation.
3	To develop skills and techniques in food preparation with conservation of nutrients and palatability using cooking methods generally employed
4	To help the students to contribute proper utilization of foods and prevent wastes
5	To understand the prevalence of malnutrition in our Country and gain knowledge on effective methods to combat malnutrition.

Course Outcome			
193FN2A1CA	**CORE: ADVANCED FOOD SCIENCE**	**SEMESTER I**	**Level**
CO1	Analyze the structure of foods and Compare the nutrient composition of foods.	I	K4
CO2	Classify foods based on food processing and Explain the methods of processing different foods.	I	K4,K5
CO3	Interpret the factors which affects the nutritive value of foods, Classify the methods of cooking different foods.	I	K4,K5

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CO4	Examine the postmortem changes in meat, Criticize the food quality, Analyze the medicinal value of foods	I	K4,K5
CO5	Choose foods based on quality, Decide storage conditions and subjective and objective evaluation of foods.	I	K5,K6
193FN2A1CB	**CORE : NUTRITION THROUGH LIFE CYCLE**	**SEMESTER I**	**Level**
CO1	Plan diet for the different stages of the life span. Make use of nutritional requirements needed for health promotion and disease prevention for each stage of the life cycle	I	K4
CO2	Analyze specific dietary practices during lactation and design foods to increase milk production, supplementary and weaning foods for infants.	I	K4,K5
CO3	Recommend the nutrition for toddlers-physiological and cognitive development, feeding skill and behaviour, common nutrition problems.	I	K4,K5
CO4	Evaluate physical growth, eating disorders, physiological psychological and socio economic factors effect nutritional status.	I	K4,K5
CO5	Choose the fitness assessments and plan nutritional needs during exercise and sports.	I	K5
193FN2A1CC	**CORE:PHYSIOLOGICAL ASPECTS OF NUTRITION**	**SEMESTER I**	**Level**
CO1	Classify the different types of enzymes. Utilize the enzymes in medical diagnosis. Explain the functions of enzymes	I	K2,K3
CO2	Identify the factors influencing enzyme action. Discover the biological effect of hormones. Examine the synthesis and secretion of hormones	I	K2,K3
CO3	Distinguish the immunity changes in deficiency. Categorize cells of immune system and immune responses.	I	K4
CO4	Inspect the composition of body fluids Analyze the mechanism of water and electrolytes, acid-base balance. Examine the gastric, renal, liver and endocrine function test	I	K4
CO5	Determine absorption, biotransformation, and drug metabolism. Elaborate drug and nutrient interaction.	I	K5
193FN2A1CD	**CORE: FOOD CHEMISTRY**	**SEMESTER I**	**Level**
CO1	Elaborate the structure and properties of water	I	K2 ,K3

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	and ice, types of water , solutions and colligative properties, Water activity and Food spoilage, Sorption phenomena, Elucidate the structure, formation, strength, types and permanence and Emulsions		
CO2	Explicate the chemistry of Reactions of mono and oligosaccharides, Use of Polysaccharides in foods and gelatinization, retrogradation.	I	K3,K4
CO3	Illustrate the structure, physicochemical properties, and functional properties of amino acids.	I	K3,K4
CO4	Explicate the classification, sources, composition, and properties, role of lipids in food flavor. Discuss the lipids exposed to frying conditions	I	K3,K4
CO5	Illuminate the chemistry of Individual aroma compoundsvegetable, fruit and spice and condiment. Infer the Composition, flavorings extracts – natural and synthetic.	I	K4, K5
193FN2A1DA	**ELECTIVE : FUNCTIONAL FOODS AND NUTRACEUTICALS**	**SEMESTER I**	**Level**
CO1	Analyze the basics and importance of nutrceuticals. Examine the basics and importance of functional foods	I	
CO2	Determine the properties and structure of various nutrceuticals Explain the functions of various nutrceuticals.	I	
CO3	Inspect nutrceuticals of plant origin and nutrceuticals of animal origin Importance of nutrceuticals of plant and animal origin in the field of medicine and therapy.	I	
CO4	Distinguish between functional foods and nutrceuticals. Compare the importance of nutritive and non-nutritive components. Explain the role of fibers and sync-biotic with respect to health	I	
CO5	Design the role of nutrceuticals as food remedies. Test the role of nutrceuticals in alleviating disorders. Originate the role of nanotechnology in the field of functional food industry.	I	
193FN2A2CA	**CORE:FOOD PROCESSING**	**SEMESTER II**	**Level**
CO1	Analyze the food processing sectors and methods of processing. Illustrate the different types of food commodities used for processing.	II	K3
CO2	Choose the processing method of cereals and millets. Explain the Nutrients lost during processing	II	K4, K5

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CO3	Compare the different processing techniques of Legumes and oil seeds. Infer the Fortification of fats and oils.	II	K4, K5
CO4	Classify the processing methods of milk, meat, fish and egg. Integrate the processing techniques involved in manufacturing of its by products	II	K4, K5
CO5	Distinguish the thermal processing and non thermal processing. Summarize the Recent trends in packaging technology	II	K5
193FN2A2CB	**CORE:NUTRITIONAL BIOCHEMISTRY**	**SEMESTER II**	**Level**
CO1	Infer on carbohydrate metabolism.	II	K4
CO2	Illustrate the cholesterol metabolism and the inborn errors of fat metabolism.	II	K4,K5
CO3	Explain the biosynthesis and importance of protein metabolism in biochemical analysis.	II	K4,K5
CO4	Interpret the significance of nucleic acids in the field of biochemistry.	II	K4,K5
CO5	Editorialize the principle and techniques involved in the field of biochemistry.	II	K5,K6
193FN2A2CC	**CORE:THERAPEUTIC NUTRITION– I**	**SEMESTER II**	**Level**
CO1	Integrate the Principles of diet therapy and Nutrition Care Process (NCP).	II	K4,K5
CO2	Critique the Physiological changes in the Gastro Intestinal system and dietary modification for Gastro Intestinal Diseases and Inflammatory Diseases	II	K4,K5
CO3	Generalize the Physiological changes Kidney and dietary Modification for Kidney.	II	K4,K5
CO4	Hypothesis the Physiological Changes and Nutritional modifications for Diabetes Mellitus	II	K4,K5
CO5	Infer the Physiological Changes in Circulatory System and Nutritional Considerations in Diseases of the Heart and Circulatory System	II	K5, K6
193FN2A2CD	**CORE:MACRO NUTRIENTS**	**SEMESTER II**	**Level**
CO1	Examine the utilization of energy, basal metabolism and energy requirements.	II	K4,K5
CO2	Enumerate the metabolism of Carbohydrates and dietary fiber.	II	K4,K5
CO3	Infer the protein requirements and its metabolism through factorial method and quality of protein through animal studies.	II	K4,K5
CO4	Examine the mechanism of transport of lipid and the role of fats in the human system.	II	K4,K5
CO5	Explain the Hormone and Nutrient Interactions.	II	K4,K5

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	Discuss the role of alcohol in digestive mechanism.		
193FN2A2CE	**EDC - COMPUTER APPLICATIONS IN NUTRITION**	**SEMESTER II**	**Level**
CO1	Understand the concepts of computer, memory and operating system.	II	K1
CO2	Apply the knowledge for creating document and presentation.	II	K3
CO3	Build and analysis the table and database for nutrition using MS Excel and MS Access.	II	K3,K4
CO4	Apply the knowledge for creating nutrition webpage. Expose the concepts of computer networks.	II	K4,K5
CO5	Develop the online application in nutrition education using multimedia tools.	II	K4,K5
193FN2A2DA	**DSE-ELECTIVE: FOOD BIOTECHNOLOGY**	**SEMESTER II**	**Level**
CO1	Sketch out the importance of biotechnology and genetic engineering. Hypothesize the concepts of Nutrigenomics.	II	K3,K6
CO2	Integrate the traditional applications of biotechnology in Fermented foods.	II	K6
CO3	Generalize the regulations concerning Genetically Modified Foods in India and at the International level	II	K6
CO4	Editorialize the importance of Xenobiotics in the field of biotechnology	II	K5
CO5	Appraise the significance of nanotechnology and nano-biotechnology.	II	K5
193FN2A3CA	**CORE:MICRONUTRIENTS**	**SEMESTER III**	**Level**
CO1	Explain the absorption, utilization, deficiency, toxicity, sources and requirements of minerals.	III	K2
CO2	Identify the functions, intake, utilization, bio availability, storage, and output of trace elements	III	K3
CO3	Examine the chemistry, biosynthesis, transport, utilization, storage and assay methods of Fat soluble vitamins	III	K4
CO4	Examine the chemistry, physiological action, storage, transport, and biosynthesis of water soluble vitamins	III	K4
CO5	Explain the chemistry, functions and metabolism of pseudo vitamins. Explain the deficiency, excess and dietary consideration of the pseudo vitamins.	III	K5
193FN2A3CB	**CORE:THERAPEUTIC NUTRITION – II**	**SEMESTER III**	**Level**

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CO1	Examine the aetiological factors and dietary modifications of fever and nutritional imbalances	III	K4
CO2	Assess the nutritional needs of patients with inborn errors of metabolism. Evaluate the compliance to the dietary intervention.	III	K5
CO3	Assess the nutritional needs of patients with respiratory and Musculo-skeletal disorders	III	K5
CO4	Evaluate the compliance to the dietary intervention in diseases of Liver, Gall Bladder and Pancreas	III	K6
CO5	Assess the nutritional needs of patients with AIDS and Cancer. Evaluate the compliance to the diet intervention	III	K5
193FN2A3CC	**CORE:RESEARCH METHODOLOGY AND STATISTICS**	**SEMESTER III**	**Level**
CO1	Distinguish the types of research Choose a hypothesis and plan a research. Analyze the sampling techniques	III	K3,K4
CO2	Choose and simplify the data collection methods. Organize and analyze the data	III	K4, K5
CO3	Priorities and design the data representation suitable for the research Compare and contrast the results obtained from the data	III	K4, K5
CO4	Statistically analyze the research data and explain the results. Measure the reliability of the research data	III	K4, K5
CO5	Justify the results using the test of significance. Provide a theoretical conclusion from the obtained data.	III	K5,K6
193FN2A3CD	**CORE : FOOD ADDITIVES AND CONTAMINANTS**	**SEMESTER III**	**Level**
CO1	Elaborate the role of Food additives	III	K3,K4
CO2	Explicate the regulatory aspects of food additives	III	K3,K4
CO3	Illustrate the principle and applications of food additives in food processing sectors	III	K3,K4
CO4	Summarize the importance of flavors in foods and its significance as food additives.	III	K5,K6
CO5	Illuminate the harmless of adulteration and contaminants and explicate the Consumer Protection Act	III	K5,K6
193FN2A3DA	**DSE: INSTRUMENTATION IN FOOD INDUSTRY**	**SEMESTER III**	**Level**
CO1	Elaborate the working principle of basic instruments used for food analysis.	III	K3,K4
CO2	Explicate the instrumentation of Rheological analysis	III	K3,K4

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CO3	Illustrate the working principle and applications of spectroscopic analysis of food components.	III	K3,K4
CO4	Evaluate the instrumentation and applications of chromatographic techniques in food	III	K5,K6
CO5	Illuminate the instrumentation and applications of isotopic and immune techniques in food.	III	K5,K6
193FN2A4CA	**CORE : COMMUNITY NUTRITION**	**SEMESTER IV**	**Level**
CO1	Develop the knowledge about malnutrition and Measures to overcome malnutrition in community	IV	K4
CO2	Evaluate the communicable disease and relation to nutritional status importance of sanitation and hygiene in health	IV	K4
CO3	Analyze the nutritional status of community	IV	K4 ,K5
CO4	Infer the Nutrition education of community	IV	K4 ,K5
CO5	Distinguish the various Nutrition programmers national and international organizations improving the health care of the community	IV	K4 ,K5
193FN2A4CB	**CORE : FOOD SAFETY AND QUALITY MANAGEMENT**	**SEMESTER IV**	**Level**
CO1	Develop the knowledge about the quality control and quality assurance program in food industry	IV	K2,K3
CO2	Explain various Government regulations and its applications in quality control	IV	K3,K4
CO3	Justify the importance of the role of Central and State Government in imparting quality control	IV	K3,K4
CO4	Infer the food standards and explain the importance of patents for food products	IV	K4,K5
CO5	Evaluate the importance of food safety	IV	K5

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B.Sc. Computer Science

Programme Outcome	
1	An ability to apply knowledge of computing and mathematics appropriate to the program's student outcomes and to the discipline.
2	An ability to analyse a problem and identify and define the computing requirements appropriate to its solution.
3	An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modelling and design of computer-based systems in a way that demonstrates comprehension of the trade-offs involved in design choices.
4	An understanding of professional, ethical, legal, security and social issues and responsibilities.
5	An ability to communicate effectively with a range of audiences.

Programme Educational Objective	
1	To provide adequate basic understanding about Computer Science and its applications.
2	To exploit emerging technologies in Computer Science and its related discipline.
3	To expose adequate training to the computing environment in Software Development, Graphics, Data Mining etc.
4	To inculcate training & practical approach, internship is given to be trained among the students in the field of Computer Science.
5	To equip the students with sufficient exposure and skills to enable them in attaining a deserving position in Software Industry.

Course Outcome			
194CT1A1CA	**Problem Solving using C Programming**	**Semester I**	**Level**
CO1	Learn the problem-solving techniques and C programming basics		K1
CO2	Remember the concepts of C fundamentals, Types of operators and Input /Output functions		K1,K2
CO3	Understand the principles of decision-making statement, array and strings		K1,K2,K3
CO4	Apply the knowledge of function, structure and union		K3

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CO5	Expose the concept of pointer and file management		K3
192MT1A1IB	**Discrete Mathematical Structures**	**Semester I**	**Level**
CO1	Discuss the types of sets and operations		K1
CO2	Describe the concepts of relations and digraphs		K1
CO3	Understand the concept of functions and Boolean algebra		K2
CO4	Apply the concept of graph theory in network problems		K3
CO5	Interpret the given language into the machine language		K3
194CA1A2CA	**Data Structures**	**Semester II**	**Leve1**
CO1	To define the fundamental concepts of data structures		K1
CO2	To demonstrate and develop algorithm for linked list methods		K1, K2
CO3	To interpret and understand searching and sorting techniques		K1.K2. K3
CO4	To make use the concepts of Binary, Binary Search and AVL trees		K3
CO5	To construct algorithms for Graph and its Application		K3
194CS1A2CB	**C++ Programming**	**Semester II**	**Leve1**
CO1	To spell the key concepts of OOPs, Input/output and control structures		K1
CO2	To demonstrate C++ programs with functions, classes and objects		K2
CO3	To apply Operator Overloading & Inheritance technique for various problem solving approach		K3
CO4	To utilize C++ Strings, Pointers & Virtual functions		K3
CO5	To identify various File operations and Exception Handling mechanism		K3
192PY1A2IB	**Digital Electronics**	**Semester II**	**Leve1**
CO1	To show and enumerate about the number system		K1
CO2	To plan and simplify the expressions of combinational Logic Circuits		K3

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CO3	To infer and outline the concept of sequential circuits		K2
CO4	To spell and understand the different types of logic families and memory		K1
CO5	To tell and understand the concept of microprocessors and microcontrollers		K1
194IT1A3CA	**Java Programming**	**Semester III**	
CO1	Define the basic fundamentals of Java Programming.		K1
CO2	Learn about Object-oriented programming concepts.		K2
CO3	Apply the knowledge in Java packages, Threads and Strings.		K3
CO4	Demonstrate the concept of JDBC and RMI		K3
CO5	Building programs to develop rich internet applications using JavaFX		K3
194CT1A3CA	**Operating System**	**Semester III**	**Leve1**
CO1	Understand the evolution of OS functions and process		K1
CO2	Learn Process scheduling		K1, K2
CO3	Understand Deadlock techniques		K2, K3
CO4	Acquire knowledge on Memory management		K3
CO5	Ascertain facts on Storage management.		K3
192MT1A3IC	**Numerical Methods And Statistics**	**Semester III**	**Leve1**
CO1	Explain about linear algebraic equations		K2
CO2	Discuss the concept of numerical differentiation and numerical integration		K2
CO3	Use measures of central tendency and variation for statistical analysis		K3
CO4	Demonstrate relation between variables using correlation and regression analysis		K3
CO5	Analyse the concept of test of significance		K4
194CS1A3SA	**Web Designing**	**Semester III**	**Leve1**
CO1	Understand the basic structure of a web page and code editors.		K2
CO2	Identify the basic HTML tags		K1
CO3	Apply CSS in a web page.		K3

CO4	Demonstrate form validation using JavaScript		K3
CO5	Develop responsive web page using multimedia controls		K3
194CS1A4CA	**Agile Methodology**	**Semester IV**	**Leve1**
CO1	Ability to understand the various Project Management tasks.		K2
CO2	Understand the basic techniques of Agile Methodology		K2
CO3	Apply Lean and Agile in Project Management Life Cycle		K3
CO4	Learn about Agile Management		K3
CO5	Ability to apply the Agile Leadership Ethics in Project Management.		K3
194IT1A4CA	**Relational Database Management System**	**Semester IV**	**Leve1**
CO1	Understand the database concepts, modelling, dependencies and normalization.		K1
CO2	Recognize the basics and facts of Oracle9i with DDL commands.		K2
CO3	Develop the knowledge of data management using DML and TCL Commands.		K3
CO4	Acquire knowledge of PL/SQL to develop, organize and manage a database with huge data.		K3
CO5	Illustrate the knowledge of database designer using named PL/SQL Blocks		K3
195CI1A4IB	**Fundamentals Of Accounting**	**Semester IV**	**Leve1**
CO1	Know the concepts, conventions and rules of accounting to pass journal entries and prepare ledger accounts and cash books		K1
CO2	Obtain knowledge to prepare the final accounts of a Company		K2
CO3	Classify and apply appropriate methods of depreciation		K2

CO4	Understand about single entry system of bookkeeping		K2
CO5	Acquire knowledge about branch accounts		K2
194CS1A4SA	**Python Programming**	**Semester IV**	**Leve1**
CO1	Enable the students to understand the basic principles of the Python Language		K1
CO2	Applying the design principles in the data-driven applications		K2
CO3	Enabling to design the web-based applications using Python		K2
CO4	Understanding the machine learning ability of Python based components		K3
CO5	Solving the real time problems using Python		K4
194CT1A5CA	**Data Communication And Networks**	**Semester IV**	**Leve1**
CO1	Know about Data Communications and Transmission Methods		K1, K2
CO2	Describe modes of Data Transmission, Multiplexing Techniques and Transmission Media		K1, K2
CO3	Interpret Network Topologies, OSI layers and Routing Algorithms		K3
CO4	Understand the ISDN Architecture, Internetworking concepts and Basics of TCP/IP		K3
CO5	Apply TCP and UDP formats.		K3
194CS1A5CA	**C# Programming**	**Semester V**	**Leve1**
CO1	Learn the C#.Net framework		K1
CO2	Illustrate generic control structures and arrays regulatory functions		K2
CO3	Learn the additional features in C#.Net		K3
CO4	Develop the knowledge of database connectivity and build programs		K2

CO5	Expose the concepts of server-side web controls		K2
194CS1A5CB	**Computer Graphics**	**Semester V**	
CO1	Understand the overview of Pycairo and Basic drawing operations		K1
CO2	Apply various Transforms and Gradients and image fills for generating shapes.		K3
CO3	Learn the Clipping, Masking and Compositing on graphics objects		K2
CO4	Learn about Adding Widgets and Layout Management		K2
CO5	Implementing the customization using different controls		K3
194IT1A5CB	**Cyber Crime and Digital Forensic**	**Semester V**	**Leve1**
CO1	Understand the basic forensics and techniques for conducting the forensic.		K1
CO2	Examine digital evidences such as the data acquisition, Threats and Applications		K1, K2
CO3	Apply forensic analysis tools to recover important evidence for identifying computer crime		K2, K3
CO4	Learn Theft and fraud identification		K3
CO5	Acquire Knowledge on Web based criminal activity and crime investigators.		K3
194CS1A5DA	**NoSQL Database**	**Semester V**	**Leve1**
CO1	Learn the fundamentals of NoSQL databases		K1
CO2	Understand the Types of NoSQL Databases		K2
CO3	Learn the basics of Apache Cassandra NoSQL database		K3
CO4	Understand MongoDB Database creation and Manipulation.		K3
CO5	Knowledge on Graph-Based Database		K3

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194CS1A5DB	Software Testing	Semester V	Level
CO1	Understand the software life cycle model		K1
CO2	Understanding the fundamentals of software testing		K2
CO3	Learn the principles of verification and validation		K3
CO4	Learn different tools used for software testing		K3
CO5	Apply the testing metrics with current scenario		K3
194CS1A5DC	Mobile Computing	Semester V	Level
CO1	Learn the fundamentals mobile communication with current scenario		K1
CO2	Understand the telecommunication system		K2
CO3	Learn the network layer and concepts of routing packets.		K1,K3
CO4	Understand mobile transport layer process.		K2. K3
CO5	Knowledge on Wireless Application Protocol architecture and WML		K2, K3

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M.Sc. Computer Science

Programme Outcome	
1	The ability to identify and analyse the requirements of Computer Science problems.
2	The understanding of professional and ethical responsibility in the field of computer science and to communicate effectively
3	The ability to implement algorithms and paradigms with modern software tools.
4	The ability to function effectively on multi-disciplinary projects and problems.
5	The ability to recognize and respond towards research areas of computer science and the need for lifelong learning.

Programme Educational Objective	
1	To embrace future developments and professional relevance in Computer Science.
2	To attain agility in advanced programming languages and software building for wide area of applications
3	To explore with applications of Internet Technologies in the related profession with social and ethical responsibilities.
4	To handle the current techniques, skills and tools necessary for computing practice.
5	To engage in research-oriented activities and life-long learning for continuing professional development.

Course Outcome			
194CS2A1CA	**Relational Database Management System**	**Semester I**	**Level**
CO1	To learn about structure of relational databases.		K2
CO2	To know about the structured query language		K3
CO3	To know about ER model		K2
CO4	To learn about querying and transactions		K3
CO5	To learn about Oracle No SQL database		K2
194CS2A1CB	**Advanced Java Programming**	**Semester I**	**Level**
CO1	Understand the Basic OOPS and History of the Java Programming		K2
CO2	Demonstrate Even Handling programming techniques		K3

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CO3	Demonstrate and Develop database connectivity skills		K3
CO4	Implement the Servlet and JSP concepts in applications and develop small project		K4
CO5	Analyze effective technique follow to develop EJB application		K4
194CS2A1CC	**Cloud Computing**	**Semester I**	**Level**
CO1	Understanding the cloud computing.		K2
CO2	To learn about Data Storage in the Cloud		K3
CO3	To know about General Security Advantages of Cloud- Based Solutions		K3
CO4	To know about Managing the Cloud		K3
CO5	To learn about Designing Cloud Based Solutions		K3
194CS2A1CD	**Internet of Things**	**Semester I**	**Level**
CO1	To know about Internet of Things		K2
CO2	To learn about Domain Specific IoTs		K2
CO3	To Know about IoT Platforms Design Methodology		K3
CO4	To learn about IoT Physical Devices and Endpoints		K3
CO5	To learn about case study for IoT design		K2
194CS2A1DA	**Advanced Computer Architecture**	**Semester I**	**Level**
CO1	To learn about parallel processing		K2
CO2	To learn about Solving Problems in Parallel		K2
CO3	To know about Principles Linear Pipelining, design, and Characteristic.		K3
CO4	To demonstrate SIMD Array Processors		K4
CO5	To design Parallel Algorithms		K5
194CS2A1DB	**Object Oriented Analysis and Design**	**Semester I**	**Level**
CO1	To learn about Object Oriented System Development and Basics		K2
CO2	To learn about Object Oriented System Development Methodology, Booch Methodology, Jacobson Methodologies, Patterns and Unified approach		K2

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CO3	To know about Unified Modeling Language, UML Class Diagram and UML Dynamic Modeling.		K3
CO4	To demonstrate OO Design axioms, Designing Methods and Protocols.		K4
CO5	To design Quality Assurance testing		K5
194CS2A1DC	**Mobile Computing**	**Semester I**	**Level**
CO1	Understanding the Vertical and applications of Wireless Networking		K2
CO2	To know about Space division multiplexing		K2
CO3	To learn about Comparison of S/T/F/CDMA		K3
CO4	To demonstrate the UMTS and IMT		K4
CO5	To design a case study on World Wide Web		K5
194CS2A2CA	**Design and Analysis of Algorithms**	**Semester II**	**Level**
CO1	To interpret the complexity of algorithms and paradigms to solve problems		K2
CO2	To show and understand Divide and Conquer technique for effective problem solving in computing		K2
CO3	To apply Greedy technique to solve problems in different approach		K3
CO4	To analyze the complexities of various problems indifferent domains		K4
CO5	To make use of Backtracking, Branch and Bound techniques to solve optimization problem		K3
194CS2A2CB	**Internet Programming**	**Semester II**	**Level**
CO1	To show about HTML5 and CSS		K2
CO2	To interpret XML and Java Script		K2
CO3	To utilize the Web Servers		K3
CO4	To summarize about Angular JS Concepts		K2
CO5	To make use of AJAX and Web Services		K3
194IT2A2EA	**Digital Marketing**	**Semester II**	**Level**
CO1	To show the digital marketing strategies		K1
CO2	To demonstrate and understand the nuances of Advertising		K2
CO3	To apply the marketing strategies in social media		K3

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CO4	To interpret the Web Analytics and Mobile Analytics		K2
CO5	To analyze the marketing strategies with case studies		K4
194CS2A2CC	**Network Security**	**Semester II**	**Level**
CO1	To show and understand the basic concepts of security		K1
CO2	To explain the different Symmetric Key Cryptographic Algorithms		K2
CO3	To interpret the various key distribution, algorithms and management schemes		K2
CO4	To apply the basic concepts of Internet Security Protocols		K3
CO5	To tell and understand Authentication, Firewall and Virtual Private Network		K1
194CS2A2DA	**Wireless Networks**	**Semester II**	**Level**
CO1	To explain the overview of Wireless Systems		K2
CO2	To demonstrate the basic skills of Cellular Communications		K2
CO3	To analyze security, efficiency, scalability and their unique characteristics in Wireless Networks		K4
CO4	To outline Wireless Application Protocol and Bluetooth		K2
CO5	To infer and understand Wireless Sensor Network and WLAN		K2
194CS2A2DB	**Principles Of Programming Languages**	**Semester II**	**Level**
CO1	To tell and discuss the programming language concepts		K1
CO2	To show and learn the storage variables		K1
CO3	To outline the data abstraction concepts		K2
CO4	To spell OOP and Concurrent Programming		K1
CO5	To infer Functional and Logic Programming		K2
194CS2A2DC	**Augmented Reality and Virtual Reality**	**Semester II**	**Level**
CO1	To show the basics of Augmented Reality		K1
CO2	To outline and understand the value of Augmented Reality		K2

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CO3	To summarize and understand the applications of Augmented Reality		K2
CO4	To spell the basics of Virtual Reality		K1
CO5	To define 3D Graphics concept and the applications of Virtual Reality		K1
194CS2A3CA	**Open-Source Technology**	**Semester III**	**Level**
CO1	Understand the key concepts in developing Open-Source Software.		K2
CO2	Relate MongoDB with Python.		K2
CO3	Apply Scientific computing using Numerical Python.		K3
CO4	Implement Data Manipulation and Analysis using Pandas.		K4
CO5	Evaluate Data Visualization using Matplotlib.		K5
194CS2A3CB	**Big Data Analytics**	**Semester III**	**Level**
CO1	Understand Big Data and Big Data Analytics		K2
CO2	Remember Hadoop and basics of R.		K1
CO3	Implement R scripts for performing data handling functions.		K3
CO4	Categorize Decision Trees and Time Series Analysis in R.		K4
CO5	Demonstrate Clustering and Text Mining functions in R.		K3
194CS2A3CC	**Software Project Management**	**Semester III**	**Level**
CO1	Remember the process of Software Project Management.		K1
CO2	Identify the theoretical and methodological issues involved in modern Software Project Management		K1
CO3	Prepare the activity planning and evaluate the risks involved in it.		K3
CO4	Analyze project monitoring activities		K4
CO5	Develop quality products by working as a team.		K3
194CS2A3CD	**Research Methodology**	**Semester III**	**Level**
CO1	Understand the basic concepts of research problem and research design.		K2

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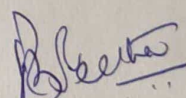
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Criterion I Metric 1.1.2 PO-PSO-CO

CO2	Understand the measurement and scaling techniques.		K2
CO3	Experiment different data collection methods for doing research process.		K4
CO4	Demonstrate Sampling and Hypothesis Testing.		K3
CO5	Develop Research Paper and Thesis Writing skills.		K3
194CS2A3DA	**Machine Learning**	**Semester III**	**Level**
CO1	Understand ideas and concepts of Machine Learning.		K2
CO2	Demonstrate the importance of Decision trees using Weka.		K3
CO3	Analyze Perceptron Learning Algorithms.		K4
CO4	Apply different approaches of Support Vector Machine and Clustering Techniques.		K3
CO5	Classify various stages in Natural Language Processing.		K4
194CS2A3DB	**Soft Computing**	**Semester III**	**Level**
CO1	Remember the fundamentals of Soft Computing.		K1
CO2	Review in Fuzzy Logic and Interference rules.		K2
CO3	Derive possibility Theory in Neural Networks.		K2
CO4	Develop Multi-Layered Feed Forward Neural Networks		K3
CO5	Analyze the performance of Evolutionary Computing.		K4
194CS2A3DC	**Distributed Operating System**	**Semester III**	**Level**
CO1	Understand the basics of Message Passing System.		K2
CO2	Relate Interprocess Communication and Exception Handling Mechanism.		K2
CO3	Review the architecture and implementation of Shared Memory and Synchronization.		K3
CO4	Summarize the concepts of Resource management and Process management.		K3
CO5	Emphasis on Naming schemes and security approaches.		K4

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194CS2A4CA	Android Programming	Semester IV	Level
CO1	Ability to perform installation and configuration of Android application development tools		K2
CO2	Understand the fundamental building blocks of Android application		K2
CO3	Design and develop User Interfaces for the Android platform		K3
CO4	Explore views, pictures and menus in android application		K3
CO5	Apply techniques to store, retrieve data using SQLite database and demonstrate to build location-based services		K3
194CS2A4CB	Web Intelligence	Semester IV	Level
CO1	Providing knowledge on the basic concepts of web mining.		K2
CO2	Ability to understand the Web Search and Web Crawling methods		K2
CO3	Use different concepts on Web Structure Mining and Social Network Analysis		K3
CO4	Learn about the Opinion Mining and Sentiment Analysis		K3
CO5	Apply the concept of Web Usage Mining		K3

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B.C.A

Programme Outcome	
1	Understand the concepts of key areas in Computer Applications.
2	Develop student's profession and ethical attitudes, effective communication, team work and logical proficiency.
3	Apply knowledge of mathematical, algorithmic and computing skills.
4	Make use of modern tools and techniques to develop software
5	Develop practical skills to fulfill the needs of industry and society.

Programme Educational Objective	
1	• To provide students with a strong foundation in the mathematical, logical skills and Programming ability to solve and analyze computing problems to prepare them for graduate studies, consultancy and higher learning.
2	To inculcate in students professional and ethical attitude, effective communication skill, teamwork, and an ability to relate computer applications to global perspective issues and social context.
3	To excel with problem solving and programming skills in various IT Fields.
4	Students will demonstrate their ability to adapt to a rapidly changing environment by having learned and applied new skills and new technologies.
5	To train future industry professionals
6	To continue a lifelong professional development in computing that contributes in self and societal growth.

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Course Outcome			
194CT1A1CA	**Problem Solving using C Programming**	**Semester I**	**Level**
CO1	Learn the Problem solving Techniques and C Programming Basics		K1
CO2	Remember the concepts of C fundamentals, operators and Input and Output functions		K1,K2
CO3	Understand the Principles of Decision Making Statement, array and Strings		K1,K2.K3
CO4	Apply the knowledge of function ,structure and union		K3
CO5	Expose the concept of pointer and file management		K3
192MT1A1IG	**Numerical Methods And Statistics**	**Semester I**	**Level**
CO1	Recall numerical Differentiation and Integration		K1
CO2	Know the concept of numerical Differentiation and Integration		K2
CO3	Use measures of central tendency and Variation for solving the varies data		K2
CO4	Explore the relation between the variables using Correlation and Regression Analysis		K3
CO5	Gain knowledge about the interpolation and its methods		K3
194CA1A3CA	**Data Structures**	**Semester 2**	**Level**
CO1	Understand the fundamental concepts of data structures		K1
CO2	Develop algorithm for linked list methods		K1,K2
CO3	Understand searching and sorting techniques		K1,K2,K3
CO4	Demonstrate the concepts of Binary, Binary Search and AVL trees		K3
CO5	Build algorithms for graph and its Application		K3
192MT1A2IG	**Discrete Mathematical Structures**	**Semester 2**	**Level**
CO1	Learn the concept of Set theory		K1
CO2	Understanding and apply Mathematical Logics		K3
CO3	Know the difference between Relation and Function		K2
CO4	Know the concept of Algebraic Structures		K2

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	and Graph Theory		
CO5	Learn Language and Finite State Machine		K1
194IT1A3CA	**Java Programming**	**Semester 3**	**Level**
CO1	Define the basic fundamentals of Java Programming		K1
CO2	Learn about Object-oriented programming concepts		K2
CO3	Apply the knowledge in java packages, Threads and Strings		K3
CO4	Demonstrate the concept of JDBC and RMI.		K3
CO5	Building programs to develop rich internet applications using JavaFX		K3
194CA1A3CA	**Relational Database Management System**	**Semester III**	**Level**
CO1	Understand the basic concepts of database concepts, Database design and data modeling and normalization.		K1
CO2	Obtain knowledge on database environment.		K1
CO3	Know the DML commands.		K2
CO4	Learn the concepts of PL/SQL.		K2
CO5	Analyze the various composite data types.		K3
192MT1A3IG	**Computer Based Optimization Techniques**	**Semester III**	**Level**
CO1	Explain optimum solution of linear programming Problem.		K1
CO2	Apply the concept of transportation models in transport goods from one origin to various destination		K3
CO3	Solve the concept of Assignment Models in various Job allocation in various field		K2
CO4	analyze the concept of Game Theory and Queuing Theory		K2
CO5	Demonstrate The Network Diagrams In Project Scheduling		K1
194CA1A3SA	**Data Analytics**	**Semester III**	**Level**
CO1	Learn the concept of big data analytics		K2
CO2	Understand knowledge of Hadoop, HDFS, NoSQL		K3
CO3	Apply the knowledge of MongoDB and		K3

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	Map Reduce Query Language		
CO4	Build programs using Cassandra, Pig and HIVE		K4
CO5	Apply the concept Database Connectivity		K5
194CA1A4CA	**Digital Logic And Design**	**Semester IV**	**Level**
CO1	Illustrate the digital representations & Arithmetic Operations		K1
CO2	Understand the functional concepts of Logic gates		K2
CO3	Analyze the concept of Boolean Algebra & its simplifications		K2&K3
CO4	Acquire knowledge of Arithmetic and Logic Circuits		K1&K2
CO5	Understand the knowledge of various Organization in Computer System		K1&K2
194CA1A4CB	**Software Engineering**	**Semester IV**	**Level**
CO1	Learn the systematic approach to design, Development of software systems.		K1
CO2	Demonstrate the development process of a software Engineering and Requirement engineering techniques.		K2
CO3	Translate Design engineering Techniques.		K2
CO4	Make use of component design, user interface design and Testing techniques.		K3
CO5	Identify quality of the software management techniques and perform case study.		K3
195PA1A4IB	**Business Accounting**	**Semester IV**	**Level**
CO1	Know the book keeping concepts and conventions of accounting and rules of accounting and its types		K1,K2
CO2	Capture the procedures relating to pass journal entries posting of ledger, trial balance and subsidiary books		K2,K3
CO3	Obtain knowledge to prepare final accounts of a sole trader		K2
CO4	Know the consignment accounting and the theoretical aspect of joint venture.		K3
CO5	Classify and apply appropriate methods of depreciation		K2,K3
17UCA53A	**Data Communications and Networks**	**Semester V**	**Level**

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CO1	Know about data communications and transmission methods		K2
CO2	Describe modes of data transmission, transmission media and network topologies		K3
CO3	Memorize OSI layers, routing algorithms and ISDN architecture		K2
CO4	Know about internetworking devices and problems in internetworking		K2
CO5	Remember TCP and UDP communication and classify various application level protocols		K1
17UCA53B	**Python Programming**	**Semester V**	**Level**
CO1	Define Data science concepts using Python.		**K1**
CO2	Understand the Python Environment and Implement its operations.		**K2**
CO3	Apply the Panda concepts to read and write from different file format.		**K3**
CO4	Build skills to manipulate data using string functions, aggregate functions.		**K3**
CO5	Develop a application using visualization and machine learning techniques.		**K3**
18UCA53C	**Web Technology**	**Semester V**	**Level**
CO1	Learn the fundamentals of XML Programming.		
CO2	Learn XML Style Sheet.		
CO3	Understand the principles of control structures and arrays in JavaScript.		
CO4	Build dynamic web page using JavaScript.		
CO5	Build Server Side Script with JSP.		
18UCA5EA	**Cryptography and Network Security**	**Semester V**	**Level**
CO1	Know about Network Security		K1
CO2	Describe Encryption Techniques		K2
CO3	Memorize Public key Cryptography Algorithms		**K3**
CO4	Know about Authentication and Digital Signature		**K3**
CO5	Remember Applications of security in internet		**K3**
17UCA5EB	**Artificial Intelligence and Expert System**	**Semester V**	**Level**
CO1	Learn Conceptual framework for Artificial		**K1**

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	intelligence Technique		
CO2	Understand key concept of Searching process		**K2**
CO3	Classify different approach for issues in knowledge representation		**K2**
CO4	Make use of Predicate Logic		K3
CO5	Build traditional information systems to be inadequate for addressing expert system.		**K2**
17UCA5EC	**Computer Graphics**	**Semester V**	**Level**
CO1	Learn methods for basic building blocks of graphics.		K1
CO2	Understand the key concept of two dimensional geometric transformations.		K2
CO3	Apply the knowledge of clipping algorithm.		K3
CO4	Build the procedures for Three-dimensional objects.		K3
CO5	Identify various color models.		K3
17UCA63A	**PHP & MySQL**	SemesterVI	Level
CO1	Define the Preliminaries of PHP.		K1
CO2	Remember string and array in PHP.		K1
CO3	Understand tools and functions.		K2
CO4	Build Web Applications using functions & classes, and that manipulate files and directories.		K3
CO5	Develop database connectivity using MySQL and solve various database tasks using the PHP language.		K3
17UCA63B	**Software Engineering**	**Semester VI**	**Level**
CO1	Learn the systematic approach to design, development of software systems.		K1
CO2	Demonstrate the development process of a software Engineering and Requirement engineering techniques.		K2
CO3	Translate Design engineering Techniques		K2
CO4	Make use of component design, user interface design and Testing techniques.		K3
CO5	Identify quality of the software management techniques and perform case study.		K3
17UCA6EA	**Cloud Computing**	**Semester VI**	**Level**
CO1	Learn the basics of cloud computing.		K1

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CO2	Understand the types of cloud services.		K2
CO3	Outline the cloud computing for family and community.		K2
CO4	Illustrate the collaboration of cloud in various applications.		K2
CO5	Make use of Web based Tools and Services.		K3
17UCA6EB	**Business Intelligence**	**Semester VI**	**Level**
CO1	Explain the fundamentals of business intelligence		K1
CO2	Explain the data analysis and knowledge delivery stages.		K2
CO3	Apply various modeling techniques.		K2
CO4	Apply business intelligence methods to various situations		K2
CO5	Demonstrate the BI feature and Text analytics.		K3
17UCA6EC	**Mobile Communications**	**Semester VI**	**Level**
CO1	Learn the basic concepts of Mobile Computing.		K1
CO2	Understand the mobile computing architecture.		K2
CO3	Compare the different types of emerging technologies in mobile computing.		K2
CO4	Illustrate the modern network technology GPRS and its Applications.		K2
CO5	Identify CDMA,3G, Wi-Fi applications.		K3
17UCA6ED	**Internet Of Things**	**Semester VI**	**Level**
CO1	To learn the basics of IoT		K1
CO2	Relate IoT with M2M		K2
CO3	Build IoT platform design methodologies.		K3
CO4	Illustrate IoT Physical Servers and Cloud offerings.		K2
CO5	Make use of Data Analytics of IoT.		K3
17UCA6EE	**Client Server Computing**	**Semester VI**	**Level**
CO1	Learn the fundamentals ideas of Client Server Computing.		K1
CO2	Demonstrate the Components of Client / Server Applications Connectivity.		K2
CO3	Apply the connectivity in the Components of Client / Server Applications.		K3

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	of Client / Server Applications.		
CO4	Develop the Client / Server Software & Hardware.		K3
CO5	Explanation about the Components of Client / Server Applications Service and Support.		K2
17UCA6EF	**Data Mining**	**Semester VI**	**Level**
CO1	Be familiar and Learn the fundamentals ideas of Data Mining.		K1
CO2	Classify the Techniques in Data Mining.		K2
CO3	Understand the classification		K2
CO4	Construct the clustering algorithms		K3
CO5	Build Association rules in algorithms.		K3

(Dr.R.Kousalya)

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BoS Chairman/HoD
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B.Sc. Information Technology

Programme Outcome	
1	Understand the fundamental concepts of Information Technology.
2	Gain knowledge on programming language to constructs application and packages.
3	Improve programming knowledge to solve real-world problems using Information Technology.
4	Develop necessary skills to design digital system
5	Enhance problem solving, analytical, communication, team work and potential to develop software and network management.

Programme Educational Objective	
1	Demonstrating a substantial understanding of concepts in key areas of Information Technology and its applications.
2	Analysis and synthesis involved in Computer System, Information System and Computer applications.
3	To develop a software and in its design and implementation for professional competence
4	To equip and train the students to meet the requirement of the IT Industries and Public Sectors.
5	To stimulate an interest in computing as an academic discipline with a view to encouraging progression to research and higher studies.

Course Outcome			
194CT1A1CA	Problem Solving using C		Level
CO1	Define the basic fundamentals of C Programming.		K1
CO2	Explain the principles of Control Structures and Arrays.	Semester I	K2
CO3	Apply the knowledge of strings and functions.		K3

CO4	Build programs using structure, union and pointers.		K3
CO5	Demonstrate the concept of file management and Error handling.		K2
192MT1A1ID	Discrete Mathematical Structures		Level
CO1	Describe the theory behind sets		K1
CO2	Explain the concept of relations and digraphs		K1
CO3	Describe the applications off functions and Boolean algebra		K2
CO4	Apply the concept of graph theory in network problems		K3
CO5	Employ the knowledge of group theory and coding theory		K3
194CA1A2CA	Data Structures		Level
CO1	Apply and analyze various problems using stack & queue techniques		K1
CO2	Develop algorithms for linked list methods		K1,K2
CO3	Understand searching and sorting techniques		K1,K2,K3
CO4	Problem solving approaches in trees		K3
CO5	Understand graph and its applications	Semester II	K3
192MT1A2IC	Numerical Methods And Statistics		Level
CO1	Learn about Linear Algebraic Equations		K1
CO2	Know the concept of numerical Differentiation and Numerical Integration		K2
CO3	Use measures of central tendency and Variation for Statistical Analysis		K2
CO4	Explore the relation between the variable using Correlation and Regression Analysis		K3

CO5	Gain knowledge to solve problems in Testing Hypothesis		K3
194IT1A3CA	Java Programming		Level
CO1	Define the basic fundamentals of Java Programming.		K1
CO2	Learn about Object-oriented programming concepts.		K2
CO3	Apply the knowledge in java packages, Threads and Strings		K3
CO4	Apply the knowledge in java packages, Threads and Strings		K3
CO5	Building programs to develop rich internet applications using JavaFX	Semester III	K3
194CT1A3CB	Operating System		Level
CO1	Understand the evolution of OS functions and process		K1
CO2	Learn Process scheduling		K1,K2
CO3	Understand deadlock techniques		K2,K3
CO4	Acquire knowledge on memory management		K3
CO5	Learn mass storage structure.		K3
193PY1A3IC	Digital Electronics		Level
CO1	Show and enumerate about the number system.		K1
CO2	Plan and simplify the expressions of combinational Logic Circuits		K3
CO3	Infer and outline the concept of sequential circuits		K2
CO4	Spell and understand the different types of logic families and memory		K1
CO5	Tell and understand the concept of microprocessors and microcontrollers.		K1

194IT1A3SA	Internet Programming		Level
CO1	Understand the basics of Websites		K1
CO2	Demonstrate about the HTML5 working concepts		K2
CO3	Interpreting the functioning of Control structures, Functions, Cookies using Java Scripts		K3
CO4	Analyze the concept of Node JS		K3
CO5	Inspect the Angular basics and its services in web applications		K3
194CS1A4CA	Agile Methodology		Level
CO1	Ability to understand the various Project Management tasks.		K2
CO2	Understand the basic techniques of Agile Methodology		K2
CO3	Apply Lean and Agile in Project Management Life Cycle.		K3
CO4	Learn about Agile Management		K3
CO5	Ability to apply the Agile Leadership Ethics in Project Management.	Semester IV	K3
194IT1A4CB	Relational Database Management System		Level
CO1	Understand the database concepts, modeling, dependencies and normalization.		K1
CO2	Recognize the basics and facts of Oracle9i with DDL commands.		K2
CO3	Develop the knowledge of data management using DML and TCL Commands.		K3
CO4	Acquire knowledge of PL/SQL to develop, organize and manage a database with huge data.		K3
CO5	Illustrate the knowledge of Database designer using named PL/SQL Blocks		K3
19AT1A41A	Digital Marketing		Level
CO1	Understand the digital marketing strategy and the advertising tools.		K1

CO2	Know about the Search engine advertising and the account monitoring		K2
CO3	Recognize the Social media marketing techniques with social medias monitoring tools.		K3
CO4	Acquire the knowledge on the Search Engine Optimization and the Web analytics.		K3
CO5	Know the case shell of various digital marketing applications and advertisements.		K2
194CS1A4SA	Python Programming		Level
CO1	Enable the students to understand the basic principles of the Python Language.		K1
CO2	Applying the design principles in the data-driven applications		K2
CO3	Enabling to design the web-based applications using Python.		K2
CO4	Understanding the machine learning ability of Python based components.		K3
CO5	Solving the real time problems using Python		K4
17UIT53A	Data Communication And Networks		Level
CO1	Define and analyze the communication and networking concepts.		K1
CO2	Explain the principles of transmission media		K2
CO3	Apply the knowledge of Routing Algorithms		K3
CO4	Build the concept of Internetworking		K3
CO5	Demonstrate the applications of Protocols		K2
17UIT53B	Dot Net Programming		Level
CO1	Understanding the building standalone Applications.		K1

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Criterion I
Metric 1.1.2
PO-PSO-CO

CO2	Apply the design principles in distributed data-driven Applications		K2
CO3	Able to create design in web-based distributed applications using C#, ASP.NET		K3
CO4	Understand XML parser in .NET and create web Service-based components.		K3
CO5	Solve the problems in real time using C# Applications		K4
17UIT5SA	Open Source Tools		Level
CO1	To outline the basic concepts of the Linux Operating System		K1
CO2	To classify the different editors and recognize security in Linux		K2
CO3	To interpret network programming concepts	Semester V	K3
CO4	To point out the importance of Perl Programming		K3
CO5	To set up file management and working with MYSQL		K2
17UIT5EA	Elective I: Cloud Computing		Level
CO1	Define the basics of Cloud Computing		K1
CO2	Explain the concepts of Cloud Services		K2
CO3	Understand the Concept of Cloud Security		K2
CO4	Distinguish the concept of Cloud Storage		K3
CO5	Apply the knowledge of Cloud Computing		K3
17UIT5EB	Elective I: AI And Robotics		Level
CO1	To know the basic & foundations of AI		K1
CO2	Explain different search techniques		K2

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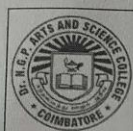
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CO3	Understand the knowledge representation issues in AI		K2
CO4	Acquire knowledge on Robotic system		K1
CO5	Gain knowledge on the architecture & application of Robotic system		K2
17UIT5EC	ELECTIVE I: MULTIMEDIA		Level
CO1	Define and analyze the branch overlapping and structure		K1
CO2	Explain the concepts of Computer Image Processing		K2
CO3	Apply the knowledge of compression techniques.		K3
CO4	Build the network architectures.		K3
CO5	Demonstrate the applications of multimedia		K2
17UIT63A	CORE- X: PHP AND MYSQL		Level
CO1	To state the basic concepts of PHP programming.		K1
CO2	To infer and build knowledge about the string, array and functions.		K2
CO3	To apply the web programming knowledge		K3
CO4	To examine the application related to browser Accessing and File Handling.		K3
CO5	To synthesize how to work with MYSQL		K2
17UIT6EA	Elective- II: Cryptography And Network Security		Level
CO1	Define and analyze the security concepts in networks		K1
CO2	Explain the principles and types of cryptography		K2
CO3	Apply the knowledge of functions and algorithms in cryptography.		K3

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CO4	Demonstrate the concept of layer level security		K2
CO5	Build the applications of cryptography		K3
17UIT6EB	Elective- II: Mobile Computing		Level
CO1	Describe the concepts of mobile computing		K1
CO2	Express mobile computing through telephone		K2
CO3	Illustration of Global System for mobile Communications		K3
CO4	Apply the knowledge of General Packet Radio Service and WAP		K3
CO5	Demonstrate the CDMA, 3G and WLAN techniques	Semester VI	K3
17UIT6EC	Elective- II: Wireless Communications And Networks		Level
CO1	Define and analyze the concepts of wireless communication.		K1
CO2	Explain the principles of mobile wireless communication system		K2
CO3	Build the concept of designing cellular system		K3
CO4	Apply the knowledge of multiple access techniques		K3
CO5	Demonstrate wireless data services		K2
17UIT6ED	Elective- III: Big Data Analytics		Level
CO1	Define and analyze the characteristics of Big data		K1
CO2	Apply the knowledge of Hadoop tools and techniques		K3
CO3	Explain the concepts of big data in cloud.		K2
CO4	Build the data science work flow and tools.		K3

CO5	Demonstrate the applications of big data analytics		K2
17UIT6EE	Elective- III: Data Mining		Level
CO1	Define and analyze data mining algorithms		K1
CO2	Explain the principles of classification techniques		K2
CO3	Apply the knowledge of clustering Algorithms		K3
CO4	Build the concept of web data mining and search engines		K3
CO5	Demonstrate the concepts of data warehousing		K2
17UIT6EF	Elective- III: Enterprise Information System		Level
CO1	Describe the concepts of Re-engineering		K1
CO2	Express the skills of Supply chain management		K2
CO3	Build the concept of ERP, Material Requirement Planning , Manufacturing Resource Planning and Money Resource Planning		K3
CO4	Illustration of ERP implementation		K3
CO5	Demonstrate the Customer Relationship Management		K3

BoS-Chairman

BoS Chairman/HOD
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B.Sc. Computer Technology

Programme Educational Objective

- Demonstrating a significant understanding the Key Concepts of various Computer technologies.
- To stimulate the interest among the learners on various technologies through Lab sessions.
- Inculcating professional competence in technologies, software design, database and Quality Assurance.
- To facilitate the learners to develop skills to meet the requirements of the corporate.
- To develop competency in research and in current technologies.

Programme Outcomes

- P01:Understand proficient, ethical, and social issues and community responsibilities
- P02:Capability to intend, execute and assess a computer based system on par with the industry standards through the ability to identify the problem and capability to provide a solution
- P03:Correlate the knowledge of mathematics and computing in the field of project development and apply the obtained knowledge in real – time platform using latest tools and technologies
- P04:Improve the ability to communicate effectively and to work as individual or team in the industry / enterprise / community
- P05:Ability to excel in the field of IT and ITES by enduring learning to accomplish their goals

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B. Sc. Computer Technology – Course Outcome		
194CT1A1CA	**CORE I:PROBLEM SOLVING USING C PROGRAMMING**	**SEMESTER - I**
	Course Outcome	
CO No.	**CO. Statement**	**Knowledge Level**
CO 1	Learn the problem solving techniques and C Programming basics	K1
CO 2	Remember the concepts of c fundamentals , types of operator and Input /Output functions	K1,K2
CO 3	Understand the principles of decision making statement , array and strings	K1,K2,K3
CO 4	Apply the knowledge of function ,structure and union	K3
CO 5	Expose the concept of pointer and file management	K3
194CA1A2CA	**CORE II: DATA STRUCTURES**	**SEMESTER - II**
CO 1	Apply and analyze various problems using stack & queue techniques	K1
CO 2	Develop algorithms for linked list methods.	K1,K2
CO 3	Understand searching and sorting techniques	K1,K2,K3
CO 4	Problem solving approaches in trees	K3
CO 5	Understand graph and its applications	K3
194IT1A3CA	**CORE III: JAVA PROGRAMMING**	**SEMESTER - III**
CO No.	**CO. Statement**	**Knowledge Level**
CO 1	Understand the basic fundamentals of Java Programming.	K1
CO 2	Learn about Object-oriented programming concepts.	K2
CO 3	Apply the knowledge in java packages, Threads and Strings.	K3
CO 4	Demonstrate the concept of JDBC and RMI.	K3
CO 5	Building programs to develop rich internet applications using JavaFX.	K3
194CT1A4CA	**CORE IV: C#.NET PROGRAMMING**	**SEMESTER - IV**
CO No.	**CO. Statement**	**Knowledge Level**
CO 1	Obtain knowledge on .NET platform	K2

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CO 2	Understand the fundamental of object-oriented programming in Java	K3
CO 3	Analysis and Apply inheritance, multithread, collections and delegates	K4
CO 4	Apply web controls in web based applications	K4
CO 5	Apply the CRUD operation using ADO.NET	K4
192MT1A1IC	**IDC: DISCRETE MATHEMATICAL STRUCTURES**	**SEMESTER - I**
CO No.	**CO. Statement**	**Knowledge Level**
CO 1	Describe the theory behind sets	K1
CO 2	Explain the concept of relations and digraphs	K1
CO 3	Describe the applications off functions and Boolean algebra	K2
CO 4	Apply the concept of graph theory in network problems	K3
CO 5	Employ the knowledge of group theory and coding theory	K3
192MT1A2IC	**IDC : NUMERICAL METHODS AND STATISTICS**	**SEMESTER - III**
CO 1	Learn about Linear Algebraic Equations	K1
CO 2	Discuss the concept of numerical Differentiation and Numerical Integration.	K2
CO 3	Use measures of central tendency and Variation for Statistical Analysis	K3
CO 4	Demonstrate the relation between the variables using Correlation and Regression Analysis	K3
CO 5	Analyzing the concept of Test of Significance	K4
17UCT33A	**CORE III: DATA STRUCTURES**	**SEMESTER - III**
CO1	Apply and analyze various problems using stack &queue techniques.	K2
CO2	Develop algorithms for linked list methods.	K3
CO3	Understand searching and sorting techniques.	K1
CO4	Problem solving approaches in trees.	K3
CO5	Understand graph and its applications.	K2
17UCT33B	**CORE IV: JAVA PROGRAMMING**	**SEMESTER - III**
CO1	Understand the format and use of objects.	K1

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CO2	Learn basic input/output methods and their use.	K1
CO3	Apply inheritance, interface, exception, packages andits use.	K3
CO4	Analyze JAVA applets concepts and JAVAapplications concepts.	K4
CO5	Understand the use of various system libraries and todevelop the JAVA applets and application programs.	K1
17UCT3AA	**Allied 3 :DIGITAL LOGIC AND DESIGN**	**SEMESTER - III**
CO1	Learn about digital logic circuits and digital components	K2
CO2	Understand data representation	K1
CO3	Learn the central processing unit and its functions	K2
CO4	Knowledge on I/O organization and devices	K1
CO5	Knowledge about memory organization	K1
17UCT3SA	**SKILL BASED COURSE 1:WEB TECHNOLOGY**	**SEMESTER - III**
CO1	Learn the basics of Hyper Text Markup Language	K2
CO2	Knowledge about the concept of CSS	K1
CO3	Learn and execute Java Script	K2
CO4	Remember conditional statements, looping statements and arrays concepts	K1
CO5	Know about the concept of XML	K2
17UCT43A	**CORE V: OPERATING SYSTEM**	**SEMESTER - IV**
CO1	Understand the evolution of OS functions and process.	K1
CO2	Learn CPU scheduling.	K2
CO3	Understand deadlock techniques	K2
CO4	Acquire knowledge on memory management	K2
CO5	Learn on mass storage structure	K2
17UCT43B	**CORE VI: RELATIONAL DATABASE MANAGEMENT SYSTEM**	**SEMESTER - IV**
CO1	Understand the basic concepts of database concepts, database design and data modeling and normalization.	K1

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CO2	Obtain knowledge on database environment.	K2
CO3	Know the DML commands.	K2
CO4	Learn the concepts of PL/SQL	K3
CO5	Analyze the various composite data types.	K4
17UCT43C	**CORE VII: COMPUTER INSTALLATION AND SERVICING**	**SEMESTER - IV**
CO1	Understand the basic concepts of PC	K1
CO2	Acquire knowledge on various controllers	K2
CO3	Identify the input device and adapters.	K2
CO4	Knowledge on output device	K3
CO5	Learn trouble shooting various devices.	K4
17UCT4AA	**ALLIED 4 : SOFTWARE TESTING**	**SEMESTER - IV**
CO1	Knowledge on software development life cycle models and white – box testing concept.	K2
CO2	Understand black – box testing and integration testing.	K2
CO3	Learn system acceptance testing.	K2
CO4	Ability to obtain knowledge on performance testing and regression testing.	K2
CO5	To understand deep knowledge test planning and test metrics.	K2
17UCT53A	**CORE VIII : DATA COMMUNICATION AND NETWORKS**	**SEMESTER - V**
CO1	Know about data communications and transmission methods	K2
CO2	Describe modes of data transmission, transmission media and network topologies	K3
CO3	Memorize OSI layers, routing algorithms and ISDN architecture	K2
CO4	Know about internetworking devices and problems in internetworking	K2
CO5	Remember TCP and UDP communication and classify various application level protocols	K1
17UCT53B	**CORE IX: C#.NET PROGRAMMING**	**SEMESTER - V**
CO1	Obtain knowledge on .NET platform	K2

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CO2	Remember arrays, strings, structure and classes and objects	K1
CO3	Remember inheritance, polymorphism, operator overloading and understand delegates	K1
CO4	Learn Exceptions, multithread and web based applications	K2
CO5	Know the web form components	K2
17UCT5SB	**SKILL BASED COURSE 2: ANDROID TECHNOLOGY**	**SEMESTER - V**
CO1	Knowledge on android environment	K2
CO2	Learn components and layouts	K1
CO3	Learn design interface tools	K1
CO4	Acquire Knowledge on activity	K2
CO5	Know about JSON	K2
17UCT5EA	**ELECTIVE I : MIDDLEWARE TECHNOLOGIES**	**SEMESTER - V**
CO1	Learn architecture of client/server	K2
CO2	Know about presentation services	K1
CO3	Study the component model	K1
CO4	Learn asp.net	K2
CO5	Know about ado connectivity	K2
17UCT5EB	**ELECTIVE I: CLOUD COMPUTING**	**SEMESTER - V**
CO1	Understand the basics, benefits, limitations of Cloud computing	K2
CO2	Understand the concepts of Cloud infrastructure	K1
CO3	Knowledge on cloud platforms	K1
CO4	Understand about cloud computing services	K2
CO5	Knowledge on developing cloud applications	K2
17UCT63A	**CORE X :OPEN SOURCE TOOLS**	**SEMESTER - VI**
CO1	Understand basics of PHP	K2
CO2	Learn functions and objects in PHP.	K1
CO3	Understand working with MySQL database using PHP.	K2
CO4	Learn fundamental concepts of Python language	K1
CO5	Remember the core functions and techniques used in Python	K2

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17UCT63B	CORE XI : NETWORK SECURITY	SEMESTER – VI
CO1	Understand the various risks involved with network computers	K2
CO2	Acquire the knowledge various security tools and techniques	K1
CO3	Understand internet security protocols	K1
CO4	Learn basic concept of cyber security	K1
CO5	Knowledge on cybercrime methods and tools	K2
17UCT6EA	ELECTIVE II : MOBILE COMPUTING	SEMESTER - VI
CO1	Understand the basics of mobile computing	K2
CO2	Knowledge on cellular phones, satellite communication, WLANs, Bluetooth and protocols	K1
CO3	Study on wireless communication systems and to remember various standards	K1
CO4	Knowledge on cellular networks	K2
CO5	Acquire wider knowledge on CDMA and GSM	K2
17UCT6EB	ELECTIVE II: BIG DATA AND ANALYTICS	SEMESTER - VI
CO1	Understand digital data	K2
CO2	Know about data science and analytics	K1
CO3	Acquire knowledge NoSQL	K1
CO4	Understand the concepts of Hadoop	K2
CO5	Study the Hadoop file System	K2
17UCT6EC	ELECTIVE III: INTERNET OF THINGS	SEMESTER - VI
CO1	Vision and Introduction to IoT.	K2
CO2	Understand IoT Market perspective.	K1
CO3	Know about Data and Knowledge Management and use of Devices in IoT Technology.	K1
CO4	Understand State of the Art – IoT Architecture.	K2
CO5	Learn Real World IoT Design Constraints, Industrial Automation and Commercial Building Automation in IoT.	K2

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17UCT6ED	ELECTIVE III: GRAPHICS AND MULTIMEDIA	SEMESTER - VI
CO1	Understand various output primitives	K2
CO2	Acquire the knowledge of 2D	K1
CO3	Analyze the text and image concepts	K1
CO4	Identify the fundamental characteristics of Audio & Video	K2
CO5	Develop skills in animation & compression methods	K2

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B.Sc. Computer Science with Data Analytics

Programme Outcome	
1	Ability to apply knowledge of Computer Science and Mathematics to identify problems and model solutions
2	Ability to analyze large data sets in the context of real world problems and interpret results
3	Ability to Design, Implement and Evaluate solutions for computing problems
4	Ability to apply current techniques, skills and tools necessary for Data Analytics
5	Ability to exhibit soft skills and understand professional and social responsibilities

Programme Educational Objective	
1	Demonstrate expertise to solve diverse range of problems in Computer Science.
2	Exhibit skills for employment in industries especially in the field of Data Analytics.
3	Practice professional ethics and remain socially responsible.
4	Involve in life-long learning by adapting contemporary technologies, tools and Methodologies.
5	Progress towards higher studies and entrepreneurship

Course Outcome			
194DA1A1CA	Problem Solving using C Programming		Level
CO1	Able to design a computational solution for a given problem		K2
CO2	Apply knowledge of arrays and strings		K4
CO3	Analyze the given problem statement, divide it into modules and represent them using functions in C	Semester I	K4
CO4	Identify the role of Structure, Union ,Pointers and Files and use the suitable data type to store and manipulate data in C		K3
CO5	Develop a C Program for a given problem statement by using the necessary program structure ,data types and constructs		K6

192MT1A1IF	Probability Theory		Level
CO1	Define and apply basic concepts and methods of probability theory		K2
CO2	Understand and use the properties of random variables		K2
CO3	Analyse and apply the properties of expectation	Semester I	K4
CO4	Understand and apply Curve Fitting and Principle of Least Squares		K3
CO5	Define and apply basic concepts and methods of probability theory		K4

194DA1A2CA	Data Science with Python		Level
CO1	Describe the technologies related to Data Science		K2
CO2	Develop solutions to simple computational problems using Python		K5
CO3	Construct Python lists, tuples and dictionaries for representing compound data	Semester II	K6
CO4	Develop solutions using Python NumPy		K5
CO5	Develop solutions using Pandas and demonstrate data visualization.		K5

194DA1A2CB	Data Structures and Algorithms		Level
CO1	Compare different programming methodologies and explain the analysis of algorithms		K2
CO2	Apply linear data structures like arrays, stacks and queues to solve problems.		K3
CO3	Construct linked list and its variants to solve problems	Semester II	K5
CO4	Create programs using Trees and Graphs		K5
CO5	Select the appropriate techniques for searching and sorting		K6

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192PY1A2ID	Digital Logic and Circuits		Level
CO1	Infer basics about various number systems		K2
CO2	Apply the concepts of logic gates		K3
CO3	Simplify circuit diagrams using Boolean algebra	Semester II	K4
CO4	Build skill for constructing logic circuits		K3
CO5	Illustrate the working of different flip-flop circuits.		K2

194DA1A3CA	Computer Networks		Level
CO1	Describe the functions of each layer in OSI and TCP/IP model		K1
CO2	Explain the functions of Physical and Data Link layers and Presentation layer paradigms and Protocols.	Semester III	K2
CO3	Understand the Network design issues		K2
CO4	Describe the Transport layer services		K1
CO5	Understand the Functions of Application Layer and explain the protocols.		K2

194DA1A3CB	Database Management Systems		Level
CO1	Understand the fundamentals of databases		K2
CO2	Understand the various database models and apply relational operations		K3
CO3	Design databases using Normalization techniques	Semester III	K6
CO4	Understand about storage Techniques		K2
CO5	Understand Transaction Management		K2

192MT1A3IF	Applied Statistics		Level
CO1	Explain sampling theory and sampling errors		K1
CO2	Apply concept in test of significance		K2
CO3	Interpret association of attributes and their usage	Semester III	K3
CO4	Examine the analysis of time series method		K3
CO5	Analyze concept of index numbers		K3

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194DA1A3SA	R Programming		Level
CO1	Understand the Basics of R Programming	Semester III	K2
CO2	Understand the control statements, loops and functions in R Programming		K2
CO3	Construct R data objects like Data Frames, Factors and Vectors		K3
CO4	Construct Data and use R to prepare data for analysis		K3
CO5	Develop and Visualize data with R's graphics		K6

194DA1A4CA	Java Programming		Level
CO1	Gain Knowledge about basic concepts of Java	Semester IV	K1
CO2	Understand fundamentals of object oriented programming in Java		K2
CO3	Construct Arrays , Packages and Interfaces		K5
CO4	Apply the concepts of exception handling, multithreading and Files		K3
CO5	Develop interactive programs using applets and graphics		K5

194DA1A4CB	Operating Systems		Level
CO1	Describe the Concepts of Operating Systems and System calls	Semester IV	K1
CO2	Understand Process scheduling and Synchronization concepts		K2
CO3	Understand CPU Scheduling and Handling of Dead locks		K2
CO4	Analyze memory management and allocation policies		K4
CO5	Identify the usage of storage management		K3

192MT1A4IF	Discrete Mathematics		Level
CO1	Discuss the Mathematical logical operators		K2
CO2	Explain the concept of relation and function	Semester IV	K3
CO3	Apply the application of Lattices through Boolean functions		K3
CO4	Apply the concept of Graphs in the construction of Trees		K3
CO5	Construct the finite state machines for various languages		K2

194DA1A4SA	Next Generation Databases		Level
CO1	Describe the features of No-SQL Databases		K1
CO2	Develop programs using Document and Graph databases	Semester IV	K3
CO3	Experiment the features of column and key value databases		K4
CO4	Construct simple queries using MongoDB		K3
CO5	Apply advanced MongoDB features		K3

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M.Sc. COMPUTER SCIENCE WITH DATA ANALYTICS

Programme Outcome	
1	Ability to apply knowledge of Computer Science, Mathematics and Statistics to solve problem
2	Ability to model, analyse, design, visualize and realize physical systems or processes of increasing size and complexity
3	An ability to select appropriate methods and tools for data analysis in specific organizational contexts
4	An ability to analyze very large data sets in the context of real world problems and interpret results
5	Ability to exhibit soft skills and understand professional and social responsibilities

Programme Educational Objective	
1	Exhibit technical proficiency in Data Analytics to solve real world problems.
2	Engage in successful careers in industry, research and public service.
3	Employ cutting edge tools and technologies for decision making and remain self-motivated and lifelong learners.
4	Practice profession with ethics, integrity, leadership and social responsibility
5	Apply knowledge in areas of Data Analytics for research and entrepreneurship

Course Outcome			
204DA2A1CA	**Foundations of Data Science and Python Programming**		**Level**
CO1	Understand the principles of data science		K2
CO2	Understand the techniques for Data Handling		K2
CO3	Apply the concepts of Python for Data Aggregation and Wrangling	Semester I	K3
CO4	Apply the numerical concepts using Numpy		K3
CO5	Create the visualization concepts in Python		K6

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204DA2A1CE	Probability and Statistics		Level
CO1	Explain theory of application behind the descriptive statistics	Semester I	K2
CO2	Demonstrate the properties of random variable and expectation		K3
CO3	Analyse various distributions and their usage		K4
CO4	Apply concepts in testing of hypothesis		K4
CO5	Interpret real world problems into statistical models		K6

204DA2A1CB	Data Structures and Algorithm Design		Level
CO1	Analyze the time and space complexity of algorithms	Semester I	K4
CO2	Apply Divide and Conquer techniques for solving problems		K3
CO3	Apply the Dynamic Programming Techniques for solving the Shortest Path Problems		K3
CO4	Understand the Concepts of trees and their techniques		K2
CO5	Apply graphs traversals to solve the Shortest Path Problems		K3

204DA2A1CC	Advanced Operating Systems		Level
CO1	Understand the structure and functions of operating Systems.	Semester I	K2
CO2	Analyze deadlock situations, recovery mechanisms and memory management.		K4
CO3	Understand about distributed operating systems and its Issues.		K2
CO4	Understand the Concepts of Process synchronization and Scheduling in Distributed System		K2
CO5	Evaluate the Real time operating systems and its functionality		K5

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204DA2A1CD	Advanced Java Programming		Level
CO1	Understand about Java beans and swing		K2
CO2	Develop and apply event in applets		K3
CO3	Understand the life cycle of Java Servlet	Semester I	K2
CO4	Learn the architecture and design of Enterprise Java Bean		K1
CO5	Establishing Database Connectivity using JDBC		K3

204DA2A2CA	Artificial Intelligence		Level
CO1	Understand the foundations of artificial intelligence		K2
CO2	Model problems by applying a suitable search methods		K4
CO3	Construct techniques for Constraint Satisfaction problem and Adversarial search	Semester II	K3
CO4	Explain knowledge representation and reasoning		K3
CO5	Discuss the major approaches in planning		K5

204DA2A2CB	Data Mining and Business Intelligence		Level
CO1	Discuss the scope and necessity of Data Mining		K2
CO2	Apply clustering techniques		K3
CO3	Develop association rules for mining data	Semester II	K5
CO4	Identify the foundations and capabilities of BI.		K3
CO5	Model Business intelligence applications		K4

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204DA2A2CC	Database Administration and Management		Level
CO1	Discuss the elements of Relational Database Management Systems	Semester II	K2
CO2	Design database queries using Structured Query Language.		K5
CO3	Understand the concept of a database transaction and recovery		K2
CO4	Explain features of Parallel and distributed database systems.		K4
CO5	Examine the role of the database administrator.		K3

204DA2A2CD	Information and Network Security		Level
CO1	Discuss the concepts of information security, threats, security services, and countermeasures.	Semester II	K2
CO2	Illustrate the information security blue prints and major components		K3
CO3	Analyze various cryptographic algorithms		K4
CO4	Compare network security services and mechanisms		K4
CO5	Illustrate Internet security protocols for protecting data		K3

204DA2A2DA	Advanced Statistics		Level
CO1	Examine the experimental designs	Semester II	K2
CO2	Develop concept of acceptance sampling plans		K5
CO3	Analyse various statistical decision theory		K4
CO4	Model solutions using partial and multiple correlation		K4
CO5	Analyse the concept of non-parametric tests		K4

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204DA2A2DB	**Image and Video Analytics**		**Level**
CO1	Understand the concepts of image processing		K2
CO2	Experiment with image filtering		K3
CO3	Apply color processing and compression techniques	Semester II	K3
CO4	Understand the concepts of object detection and tracking		K2
CO5	Apply image and video analytics in real life problems		K3

204DA2A2DC	**Web Intelligence**		**Level**
CO1	Understand the concepts of web mining		K2
CO2	Analyze social networks and web crawling		K4
CO3	Experiment with opinion mining and sentiment analysis	Semester II	K5
CO4	Understand Google Analytics		K2
CO5	Design Applications using web intelligence		K5

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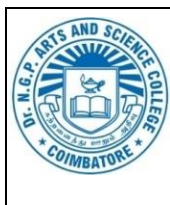|	Dr. N.G.P. ARTS AND SCIENCE COLLEGE	NAAC 3rd Cycle
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B.Sc. Computer Science with Cognitive Systems

Programme Outcome	
1	The graduates are relied upon to apply mathematical foundations, algorithmic standards and software engineering hypothesis in displaying, plan and direct of trials just as information interpretation and analysis.
2	Dissect an unpredictable computing issue and to apply principles of computing and other significant disciplines to recognize solutions.
3	Graduates will create solid thinking aptitudes to empower them to take effective choices in key administration and promoting positions and get presented to bleeding edge improvements in computing technology innovations.
4	Creating and executing solution based frameworks or potentially forms that address issues and additionally improve existing frameworks inside in a computing based industry.
5	Implementation of cognitive-skill based solutions for the betterment of society keeping the environmental context in mind, be aware of professional ethics and be able to communicate effectively.

Programme Educational Objective	
1	To offer a sufficient core understanding about Computer Science and Cognitive based applications to the students.
2	Graduates will be engaged in a wide range of careers and/or graduate studies in computer science or related fields with a passion for lifelong learning.
3	Students able to complete successfully be able to computer program on their own. Sufficient programming skills will require the use of best practices.
4	To understand of professional, ethical, legal, security, and social issues and responsibilities of the computing profession.
5	Understand how technological advances impact society and the social, legal, ethical and cultural ramifications of computer technology and their usage.

Course Outcome			
204CG1A1CA	Problem Solving Techniques	Semester I	Level
CO1	Read, comprehend and follow the execution of projects written in C language.		K1

CO2	Write the C Source Code for a given calculation.		K2
CO3	Implement Programs with pointers and arrays, perform pointer arithmetic, and utilize the pre-processor.		K3
CO4	Develop the programs that perform operations utilizing derived data types.		K3
CO5	Identify tasks in which the numerical procedures learned are relevant and apply them to compose programs		K3
202MT1A1IB	Discrete Mathematical Structure	Semester I	Level
CO1	Explain the concept of set theory		K1
CO2	Apply the concept of Logical operators		K3
CO3	Demonstrate the concept and know the difference between Relation and Function		K2
CO4	Analyze the concept of Algebraic Structures and Graph theory		K2
CO5	Expose the concept of Language and Finite State Machine		K1
204CG1A2CA	Operating Systems	Semester II	Level
CO1	Understand the windows-client based applications and desktop features		K1, K2
CO2	Rehearsal the procedure of Microsoft System Center Configuration Manager		K2
CO3	Learn Windows Operating Systems - Storage Services		K3
CO4	Customize the user options with PowerShell Scripting in Window OS		K3
CO5	Implement the monitoring set-up in Window Server		K3
204CG1A2CB	Data Structures and Algorithms	Semester II	Level
CO1	Define the basic terminologies of Algorithms and Data Structures		K1

CO2	Apply Stack and Queue techniques on applications		K2
CO3	Construct Linked Lists and Hash Table for data handling		K3
CO4	Trace the data elements by performing Sorting and Searching techniques		K3
CO5	Build the Trees & Graphs		K3
202PY1A2IE	Digital Computer Fundamentals	Semester II	Level
CO1	Understand the fundamental knowledge of Digital Electronics		K1
CO2	Identify and describe the Boolean Algebra laws, Logic Gates with Circuit design		K2
CO3	Outline the operation of Sequential Circuits, Registers and Counters		K3
CO4	Describe the different types of Components, Circuits and Semiconductor Memories		K2
CO5	Employ the 8085 Microprocessor with Instruction Set		K3

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	Programme Outcome
1	To gain an exhaustive acquaintance to lead as accounting professionals
2	To obtain acumen in pursuit of communication and information technology to serve as tax consultants
3	To become cognized to shine as marketing and finance experts
4	To get along with knowledge in banking and insurance laws, policies and operations
5	To shoulder the entrepreneurship in order to contribute for GDP's growth

	Programme Educational Objective
1	To exert the inherent skills to link with the Industrial expectations in the ever - changing and challenging Global Competitive Business Scenario to construe as efficient professionals in accounting and taxation.
2	To get hold of destined critical and analytical positions out of progressive and comprehensive knowledge in banking and insurance
3	To bloom as multifaceted entrepreneurs to offer employment opportunities and to build national economy

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NAAC
3rd Cycle

Criterion I
Metric 1.1.2
PO-PSO-CO

Course Outcome			
195CO1A1CA	**CORE: FINANCIAL ACCOUNTING –I**	**I**	**Level**
CO1	Know the concepts, conventions and rules of accounting to pass journal entries and prepare ledger accounts		K1,K2
CO2	Obtain knowledge to prepare final accounts of a company and to gain skills to detect and prevent errors in journal and ledger accounts		K2,K3
CO3	Capture the procedures relating to bills of exchange, and Average due date		K2
CO4	Acquire stuff to reconcile cash book and pass book and to prepare accounts of Non- trading concerns		K3
CO5	Classify and apply appropriate methods of depreciation		K2,K3
195CO1A1CB	**CORE: BUSINESS ORGANIZATION AND MANAGEMENT**	**I**	**Level**
CO1	Grasp the nature, scope and forms of business		K2
CO2	Locate business and determine the size of the firm		K1,K2,K3
CO3	Acquire the knowledge on various sources of finance for different capital requirement of business		K1,K2
CO4	Learn to administer the office effectively		K1,K2
CO5	Reach out automation of office for data processing and retrieval		K3

195FI1A1IA	IDC : BUSINESS ECONOMICS	I	Level
CO1	To introduce the micro and macroeconomic concept with demand analysis.		K1,K2
CO2	To make them understand the supply side of market and cost analysis		K1,K2,K3
CO3	Basic Knowledge about business cycle and inflation		K2,K3
CO4	To understand the monetary and fiscal policy		K1,K2
CO5	To know basic knowledge about national income		K1,K2
195CO1A2CA	CORE - III: FINANCIAL ACCOUNTING - II	II	Level
CO1	To impart knowledge on Hire Purchase system and to figure out royalties to ascertain the profit or loss of a business.		K2
CO2	Be familiar with the nuances of different systems of accounting followed for branches and departmental businesses.		K3
CO3	Gain knowledge in fixed and fluctuating capital and Prepare Final accounts of Partnership firms.		K3, K4
CO4	To learn the steps to prepare Partnership Accounts at the time of Retirement and Death of a Partner		K3, K4
CO5	To expose the accounting knowledge about the dissolution of partnership firm		K3,K4
195CO1A2CB	CORE : PRINCIPLES OF MANAGEMENT	II	Level

CO1	Understand the nature, scope and principles of management		K2
CO2	Learn the steps in planning and decision making.		K3, K4
CO3	Obtain the skills to delegate authorities and responsibilities to manage the business organization effectively.		K3, K4
CO4	Know the Recruitment process, motivation and leadership styles.		K1
CO5	Comprehend the techniques of control and co-ordination for further implementation and growth.		K3, K4
195CO1S2IA	**CORE : INDIAN ECONOMY**	**II**	**Level**
CO1	Collect the information regarding characteristics of developed and developing economy		K2
CO2	Know about the growth of population and poverty alleviation		K3,K4
CO3	Assort the causes for low productivity in agriculture and need for green revolution.		K3,K4
CO4	Clinch the role of industries in economic development		K2
CO5	Analyze the causes for industrial disputes to adopt appropriate arbitration policies.		K3,K4
195CO1A3CA	**COST ACCOUNTING**	**III**	**Level**
CO1	To impart knowledge on Cost accounting and to figure out cost sheet to accumulate the cost associated with production.		K2, K3

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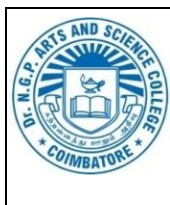**NAAC**
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CO2	Familiarize concept of standard costing and analyzing the variances in material cost.		K3,K4
CO3	Apply appropriate method to calculate labour cost and classify overheads.		K3,K4
CO4	Analyze the basic cost flow model and be able to assign costs in a job cost system		K3,K4
CO5	Summarize process cost accounting and a process cost report		K2,K3, K4
195CO1A3CB	**MODERN MARKETING**	**III**	**Level**
CO1	Understand the concept of marketing and its types		K2
CO2	Learn the functions of marketing		K3,K4
CO3	Analyze the factors determining consumer behavior and market segmentation.		K4
CO4	Classify the marketing mix to adopt suitable pricing and promotional strategy		K3,K4
CO5	Aware of consumerism and Consumer Protection Act.		K3,K4
195CO1A3CC	**COMMERCIAL LAW**	**III**	**Level**
CO1	Know the Concepts and Classification of laws and contracts		K1,K2
CO2	Obtain Knowledge on performance of Contract, discharge of contact and Remedies for breach of Contract		K2,K3

CO3	Be acquainted with the procedures for creating agency and termination of agency		K2,K3
CO4	Aware of Contract of Indemnity and Guarantee		K1,K3
CO5	Understand the law relating to Sale, Agreement to Sell, Conditions Warranties and Transfer of ownership.		K1,K2,K3
192MT1B3IB	**BUSINESS MATHEMATICS**	**III**	**Level**
CO1	Explain the concept of Set operations		K3
CO2	Discuss about Arithmetic and Geometric Progression		K2
CO3	Use the concept of matrix operations in solving simultaneous equations		K3
CO4	Demonstrate the ideas of differentiation		K3
CO5	Solve the maximum and minimum values for a given function		K3
195CO1A3SA	**COMPUTER APPLICATIONS IN BUSINESS**	**III**	**Level**
CO1	Learn the components of computer and its uses		K2
CO2	Acquire knowledge about programming language and operating system		K3,K4
CO3	Grasp the nature, types and components of data base management system.		K3

CO4	Understand the operation of management information system and its benefits		K2,K3
CO5	Know the concept and application of networking in business organization		K2,K3
195CO1A4CA	**CORPORATE ACCOUNTING**	**IV**	**Level**
CO1	Know the procedures, conventions and rules of accounting pertaining to issue of shares and prepare ledger accounts		K2
CO2	Gain the procedures and prospects of redemption of different types of shares and debentures		K3,K4
CO3	Obtain knowledge to prepare final accounts of a company after redemption of shares.		K3
CO4	Attain the knowledge of valuation of goodwill with its methods.		K3,K4
CO5	Comprehend the accounts relating to the liquidation of company		K3, K4
195CO1A4CB	**COMPANY LAW AND SECRETARIAL PRACTICE**	**IV**	**Level**
CO1	Understand the formation and kinds of companies		K1
CO2	Interpret the laws, rules and regulations about the role of shareholders and directors		K3
CO3	Grasp about the role of Managers and Company Secretary		K3

CO4	Analyze the provisions according to Companies Act relating to hold Meetings and pass		K3,K4
CO5	Apply the legal procedures in different situations in a body corporate		K4

195CO1A4CC	**BANKING THEORY, LAW AND PRACTICE**	**IV**	**Level**
CO1	Obtain knowledge in Licensing, Opening of branches, Functions of Banks, Inspection, organization, working and importance, functions		K4
CO2	Acquire stuff about collecting banker's duties and banking technology		K2,K3
CO3	Learn about opening and maintenance of account in Banks		K2
CO4	Understand the types of Negotiable Instruments.		K2,
CO5	Gain knowledge on Loans and advances of commercial banks		K3
192MT1B4IB	**BUSINESS STATISTICS**	**IV**	**Level**
CO1	Learn and know as to how Statistics can be used		K1
CO2	Know the main properties of each Measure of Central Tendency and select the most appropriate one for use with a given set of data		K2
CO3	Understand the Importance and Limitations of Correlation Analysis		K3
CO4	Recognize different components of a Time series		K3
CO5	Analyzing the concept of Test of Significance		K4
195CO1A4SA	**EXECUTIVE BUSINESS COMMUNICATION**	**IV**	**Level**
CO1	Know the importance and methods of Communication		K1, K2

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CO2	Capture the procedures to write trade enquiry letters.		K2, K3
CO3	Obtain the knowledge about banking and Insurance correspondence.		K2 ,K3
CO4	Acquire skills to prepare Agenda and minutes for meetings		K2, K3
CO5	Prepare Resume and Speak in forums		K2 ,K3
195CO1A5CA	**HIGHER CORPORATE ACCOUNTING**	**V**	**Level**
CO1	Prepare ledger accounts relating to amalgamation, absorption and reconstruction		K2
CO2	Consolidate the balance sheets of Holding Companies		K3
CO3	Obtain knowledge in final accounts of Banking Company		K3
CO4	Prepare the final accounts of Insurance Companies		K4
CO5	Gain knowledge in preparing accounts of Electricity Companies		K5
195CO1A5CB	**INDUSTRIAL LAW**	**V**	**Level**
CO1	understands about Factories Act, health, safety and welfare measures.		K1,K2
CO2	acquire knowledge on Trade Union and Industrial Disputes.		K3,K4
CO3	gain knowledge on workmen compensation and its calculation.		K1,K2

CO4	understands about employees insurance and rules relating to payment of wages.		K2,K3,K4
CO5	understand about Bonus Act and Provident Fund schemes available.		K2,K3
195PA1A5CC	**INCOME TAX LAW AND PRACTICE**	**V**	**Level**
CO1	Define the basic concepts of Income Tax Act 1961 and find the residential status of all assesses.		K1
CO2	Outline the provisions of computation of Salaries and determination of Annual value of house property.		K2
CO3	Apply the provisions related to Profits and Gains of Business or Profession.		K3
CO4	Analyse the computation of Capital Gain, Exempted Capital Gain and Deductions from Gross Total Income.		K4
CO5	Obtain knowledge about Income from other sources, Set off and Carry forward of losses.		K5
195CO1A5CC	**PRINCIPLES OF AUDITING**	**V**	**Level**
CO1	grasp the concept of Auditing		K2
CO2	prepare Audit Note Book and Audit Work Papers		K3
CO3	understand the role of auditors		K2
CO4	know the Rights and Duties of Company auditor and preparation of audit report		K2,K4

CO5	adopt of E- Audit System		K3,K4
195CO1A5SA	**STRATEGIC MANAGEMENT**	**V**	**Level**
CO1	understand the concept and process of strategic management.		K1,K2
CO2	know about strategic formulation and SWOT analysis.		K3, K4
CO3	gain knowledge on Corporate level generic strategies and BCG matrix.		K1, K2
CO4	know the concept Strategic Implementation and Strategic Positioning.		K2, K3,K4
CO5	understand the process of Strategic Evaluation and control		K2, K3
195CO1A5DA	**BUSINESS FINANCE**	**V**	**Level**
CO1	grasp the nature, scope and forms of business finance.		K2
CO2	making the skills for formulating business plans to the dynamic corporate scenario.		K3, K4
CO3	understand the theories of capitalization and its applications.		K4
CO4	comprehend the knowledge on capital structure and cost of capital.		K4
CO5	mobilize funds from different sources of finance.		K4
195CO1A5DB	**BRAND MANAGEMENT**	**V**	**Level**
CO1	understand the marketing intelligence acquisition methods		

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				K2
CO2	formulate effective branding strategies for consumers and business products/services			K2,K3
CO3	apply branding principles and marketing communication concepts			K2,k3
CO4	interpret the performance data in quantitative and qualitative manner			K3, K4
CO5	develop a new product based on market			K4
195CO1A5DC	**FUNDAMENTALS OF INSURANCE**	**V**		**Level**
CO1	Know the concepts and needs of insurance			K1, K2
CO2	Become an agent of an insurance company			K2, K3
CO3	understand the functions of an insurance			K2
CO4	obtain the skills to manage the actuarial			K2, K3
CO5	classify the types of insurance with related Components			K2
192MT1A5AA	**RESEARCH METHODOLOGY**	**V**		**Level**
CO1	learn the basics of the research methods and techniques			K1
CO2	remember the hypothesis, laws related to research problem			K1
CO3	understand the limitations of experimentation in research			K2

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195CO1A5DC	FUNDAMENTALS OF INSURANCE	V	Level
CO1	Know the concepts and needs of insurance		K1, K2
CO2	Become an agent of an insurance company		K2, K3
CO3	Understand the functions of an insurance		K2
CO4	Obtain the skills to manage the actuarial		K2, K3
CO5	Classify the types of insurance with related Components		K2
192MT1A5AA	RESEARCH METHODOLOGY	V	Level
CO1	Learn the basics of the research methods and techniques		K1
CO2	Remember the hypothesis, laws related to research problem		K1
CO3	Understand the limitations of experimentation in research		K2
CO4	Illustrate the concept of interdisciplinary and multidisciplinary research		K3
CO5	Analyze the ethics and responsibilities of research		K3

BoS-Chairman 15/11/2019
BoS Chairman/HoD
Department of Commerce
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048

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Programme Outcome	
1	To learn advanced problems in Accounting, Taxation and Finance
2	To handle the complicated situations in business units to reap maximum benefit with minimum cost
3	To hold up the positions as entrepreneurs and intrapreneurs to fetch market share of home country in global business environment
4	To sensitize the methodologies for research and development in industries capitivating professional links
5	To become certified consultants and professionals with resourcefulness to exercise and ensure governments' policies

Programme Educational Objective	
1	To occupy the leading positions in Manufacturing and Service Sectors
2	To sparkle as professionals with cerebral associations and governing capacities in Accounting, Banking, Insurance and Taxation
3	To unfold the chanllenges being versatile in managing finance and human resources in order to contribute to the national economy

Course Outcome			
195CO2A1CA	**CORE-I: MANAGERIAL ECONOMICS**	**I**	**Level**
CO1	Know the role and responsibilities of managerial economist to achieve organizational goals		K1
CO2	Analyze the factors influencing demand for industrial goods and consumer durables		K3,K4
CO3	Realize the cost and production concepts to reduce the cost of production and increase the volume of production		K3,K4
CO4	Interpret pricing and output relationships to adopt appropriate pricing methods under different market situations		K3,K4
CO5	Discern business cycles, national income, monetary and fiscal policy		K2
195CO2A1CB	**CORE-II: ADVANCED CORPORATE ACCOUNTING**	**I**	**Level**
CO1	Prepare the final accounts of companies under schedule VI		K3,K4
CO2	Solve the problems relating to amalgamation, absorption and reconstruction of companies		K3,K4
CO3	Interpret holding company accounts and liquidation of company accounts		K3,K4
CO4	Handle the schedules of banking and insurance company accounts		K3,K4
CO5	Aware of international financial reporting standards, human resource, government and responsibility accounting		K2
195CO2A1CC	**CORE-III: BUSINESS ETHICS AND CORPORATE GOVERNANCE**	**I**	**Level**
CO1	Know the values of corporate and ethical practices of organization		K1
CO2	Grasp the dimensions of corporate culture with professional and social values		K2

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CO3	Exercise laws on business ethics, environmental protection and fair trade practice		K3,K4
CO4	Comprehend benefits and issues of corporate governance		K2
CO5	Understand the reforms of corporate governance towards corporate social responsibility		K2
195CO2A1CD	**CORE-IV: MARKETING MANAGEMENT**	**I**	**Level**
CO1	Identify the core concepts of marketing and the role of marketing		K3,K4
CO2	Know the functions performed by marketing in the economy		K3,K4
CO3	Develop an ability to understand and develop the marketing mix of an organization		K3,K4
CO4	Be familiar with basic elements of marketing mix and develop a framework to develop marketing decisions and initiatives		K3,K4
CO5	Ability to develop marketing strategies based on product , price, place and promotion objectives		K2
195CO2A1CE	**CORE-V: BUSINESS ENVIRONMENT**	**I**	**Level**
CO1	Grasp the Business Environment, Culture and Social Responsibility of Business		K2
CO2	Learn the Economic system, capitalism, socialism & economic Planning		K3
CO3	Understand the benefits of industrial policy and Privatization		K2
CO4	Comprehend the role of financial institutions in India and analyze the factors influencing in technological environment		K3,K4
CO5	Analyze the concept of Globalization		K3,K4
195CO2A1DA	**DSE-I : COMPUTER APPLICATIONS: INTERNET & E-COMMERCE**	**I**	**Level**

CO1	Conglomerate computer technology for e- commerce		K2
CO2	Generate and validate business data for re-engineering		K3,K4
CO3	Aware of cyber laws, securities and threads for effective e- governance		K2
CO4	Solve the issues of e-commerce through technological adoption		K3,K4
CO5	Comprehend the hardware and software updation for business growth		K3,K4
195CO2A1DB	**DSE-I : FINANCIAL MARKETS**	**I**	**Level**
CO1	Know the growth of financial market and global trade		K2
CO2	Obtain the skills to reform the capital structure of an organization		K3,K4
CO3	Acquire the knowledge pertaining to credit rating and information services		K2
CO4	Govern the investment information and credit rating agency		K2
CO5	Get along with RBI regulatory framework for international trade policies		K2
195CO2A2CA	**CORE : FINANCIAL MANAGEMENT**	**II**	**Level**
CO1	Discuss the objectives of financial management and know about sources of finance.		K2
CO2	Use different methods to find cost of capital and techniques in capital budgeting.		K1
CO3	Selecting appropriate capital structure of the firm		K4
CO4	Analyze the method of leverages for analyzing the expected returns		K4
CO5	Selecting appropriate theories for dividend payout		K4
195CO2A2CB	**CORE - COST ACCOUNTING**	**II**	**Level**
CO1	Know the concept of cost accounting and prepare cost sheet.		K2, K3

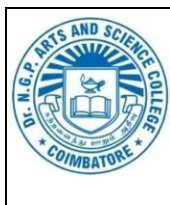| CO2	Use different methods in pricing the material issues		K3,K4
CO3	Apply appropriate method to calculate labour cost and classify overheads		K3, K4
CO4	Ascertain process cost in an organization		K3, K4
CO5	Prepare accounts relating to contract and operating costing		K2, K3, K4
195CO2A2CC	**CORE : ENTREPRENEURIAL DEVELOPMENT**	**II**	**Level**
CO1	Know the concept of Entrepreneurship towards nation building		K1,K2
CO2	Capture the procedures relating to Project identification, Project formulation and Project		K2,K3
CO3	Aware of Institutional Service to entrepreneurs		K2
CO4	Avail institutional finance to entrepreneurs		K2, K4
CO5	Follow the procedures to receive incentives, subsidies and taxation benefits		K2, K3, K4
195CO2A2EA	**EDC : HUMAN RESOURCE MANAGEMENT**	**II**	**Level**
CO1	Understand the organizational structure		K2
CO2	Analyze the job and role to select and recruit personnel		K3
CO3	Measure the performance of an employees for promotion and training		K3
CO4	Capture employee grievance redressal procedures for organizational betterment		K4
CO5	Control the organizational conflict through appropriate leadership styles.		K5
195CO2A2DA	**DSE : MANAGEMENT INFORMATION SYSTEM**	**II**	**Level**
CO1	Describe and distinguish the various types of business information systems and their roles in running a business organization		K2

CO2	Describe the fundamental concepts of database and design simple database using E-R diagram and normalization concepts		K3, K
CO3	Describe business intelligence tools, techniques and its applications		K2
CO4	Describe the new information technologies available to businesses today and its applications		K3, K4
CO5	Demonstrate an awareness of ethical issues related to usage of IS		K3, K4
195CO2A2DB	**DSE : INDIAN STOCK EXCHANGES**	**II**	**Level**
CO1	Learn to trade in stock exchange being an individual and institutional investors		K2
CO2	Comprehend the stock exchange regulatory framework for capital restructuring		K3, K
CO3	Recognize the listing of securities of an organization		K2
CO4	Follow the securities contract regulation act for capitalization of resources		K3, K4
CO5	Unfold internet stock trading for the promotion of e- commerce		K3, K4
195CO2A2DC	**DSE : Banking and Financial Institutions**	**II**	**Level**
CO1	Obtain Knowledge on Banking Regulation Act 1949,RBI and Commercial banks		K2
CO2	Acquire stuff about Banking modernization		K3, K
CO3	Comprehend the stock exchange regulatory framework for capital restructuring		K2
CO4	Learn about the Financial institutions and Services institutions		K3, K4
CO5	Unfold information Credit Rating Agency		K3, K4
195CO2A3CA	**DIRECT TAXES**	**III**	**Level**

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CO1	Aware of income tax laws and determine the residential status of an assesses		K1,K2
CO2	Computation of total income of an assesses under the head salary and house property		K3,K4
CO3	Calculation of total income in business and profession and capital gain		K3,K4
CO4	Ascertain the total income of an individual and computation of tax liability		K3,K4
CO5	Know the powers and functions of income tax authority and procedures in filing of return		K2
195CO2A3CB	**ORGANISATIONAL BEHAVIOUR**	**III**	**Level**
CO1	Develop an Organizational Behaviour model for any type of Organization		K3
CO2	Improve the quality of Leadership		K2
CO3	Aware of Dynamics of Organizational Behaviour		K3,K4
CO4	Evaluate the Common biases and eradication in Decision Making Process		K4
CO5	To understand how to manage the Stress during a job.		K3,K4
195CO2A3CC	**RESEARCH METHODOLOGY**	**III**	**Level**
CO1	Understand about the research methods and techniques		K1
CO2	Identify the research problem and appropriate method for data collection		K2,K3
CO3	Analyze the scaling techniques used for editing and tabulating data		K3,K4
CO4	Acquire the knowledge of statistical tools used for analyzing the data		K3,K4
CO5	Interpret the data and summarize the report		K4
195CO2A3CD	**GOODS AND SERVICE TAX**	**III**	**Level**
CO1	Understand the concept of Goods and Service Tax and describe the administrative structure of GST Council and GSTN		K1

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CO2	Critically examine the provisions of levy and collection of GST		K3,K4
CO3	Demonstrate the importance and benefits of Input Tax Credit		K3,K4
CO4	Outline the provisions concerned with payment of Tax and returns		K2,K3
CO5	Describe the Procedure for levy of penalty		K2
195CO2A3DA	**BUSINESS DATA ANALYTICS**	**III**	**Level**
CO1	Know the concepts, Role of Business Analyst , Rules of Business & Business Analysis.		K3
CO2	Obtain knowledge regarding Business view of Information Technology Applications		K1
CO3	Capture the Information relating to Types of Digital Data.		K1,K2
CO4	Aware of Data Modeling techniques		K2,K3
CO5	Obtain knowledge about Enterprise Reporting and Applications of Analytics.		K3
195CO2A3DB	**SERVICE MARKETING**	**III**	**Level**
CO1	Know the growth of service sector for effective policy		K3,K4
CO2	Manage the demand and supply in service marketing		K3,K4
CO3	Cognize the marketing mix for communication marketing		K3.K4
CO4	Handle consultancy services in insurance, tourism and hospital		K3,K4
CO5	Use the tools for achieving service quality in an organization		K3,K4
195CO2A3DC	**INTERNATIONAL FINANCIAL SYSTEM**	**III**	**Level**
CO1	Identify and explain the main functions of the principal financial markets and institutions in a typical modern financial system		K1
CO2	Demonstrate the main determinants of movements in floating exchange rates,		K3,K4

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Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India
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NAAC
3rd Cycle

Criterion I
Metric 1.1.2
PO-PSO-CO

	and to relate exchange rate policy to monetary policy		
CO3	Describe the objectives of monetary system and Critically evaluate the exchange rate system		K3,K4
CO4	Learn and analyze the factors affecting the balance of payment and exchange rate globally		K2,K3
CO5	Identify and describe futures and options contracts, and to explain the main determinants of the value of an options contract		K2
195CO2A4CA	**SECURTY ANALYSIS AND PORTFOLIO MANAGEMENT**	**IV**	**Level**
CO1	Be explored to different avenues of investment		K1
CO2	Provide insight about the relationship of the risk and return and how risk should be measured to bring about a return according to the expectations of the investors equipped with the knowledge and valuation of security analysis.		K2, K3
CO3	Familiarize the students with the fundamental and technical analysis of the diverse investment avenues		K3, K4
CO4	Apply the concept of portfolio management for the better investment.		K2,K3
CO5	Learn the theories of Portfolio management and also the tools and techniques for efficient portfolio management		K3, K4
195CO2A4CB	**ACCOUNTING ANALYSIS FOR DECISION MAKING**	**IV**	**Level**
CO1	Grasp the functions, tools and techniques of Management Accounting		K1
CO2	Understand the concept of ratio analysis and its applications.		K2, K3

CO3	Prepare Fund Flow and Cash Flow statement.		K1,K3
CO4	Acquire knowledge in Managerial application of Marginal Costing.		K1,K2
CO5	Forecast and prepare the budget.		K3, K4
195CO2A4DA	**SECURITY MARKET OPERATIONS**	**IV**	**Level**
CO1	Know the growth of security market and global trade.		K2
CO2	Obtain the skills to reform the capital structure of an organization.		K3,K4
CO3	Acquire the knowledge pertaining to Secondary Market.		K2
CO4	Govern the role of Depositories Act and SEBI Regulation.		K2
CO5	Get along with Capital market and money market Instruments.		K2

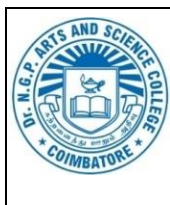| 195CO2A4DB	**EXPORT IMPORT TRADE PROCEDURE**	VI	Level
CO1	Learn foreign trade policy, act governing India's International trade		K1,K2,K3
CO2	Organize import export decisions		K2,K3,K4
CO3	Understand the categories of exporters, status holders and identifying export promotion council.		K2,K3,K4
CO4	Inculcate the procedures for imports		K2,K3,K4
CO5	Students will be able to prepare export import documents		K3,K4,K5
195CO2A4DC	**TAX PLANNING AND MANAGEMENT**	VI	Level
CO1	Aware of income tax laws and determine the residential status of an assesses		K2
CO2	Computation of total income of an assesses under the head salary and house property		K3, K4
CO3	Calculation of total income in business and profession and capital gain		K2
CO4	Ascertain the tax planning and managerial decisions		K2
CO5	Know the powers of various circumstances and Tax incentives for exporters		K2

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B.Com Computer Applications

	Programme Outcome
1	To provide conceptual knowledge and application skills in the domain of Commerce studies with Computer Applications to sharpen students' analytical and decision making skills.
2	To emphasis the students with problem solving in the real business environment by way of Industrial training, case studies and projects
3	To enable professional skill in the application of computer in a globalised environment with effective use of IT tools.
4	To facilitate skills and abilities to become competent and competitive to be assured of good careers and job placements.
5	To develop skilled manpower in the various areas like Banking, Accounting, Marketing Taxation, Entrepreneurship, Finance, Human Resources, Management, Computer and Management Information System, Communication, Business Law, mathematics, statistics etc.,

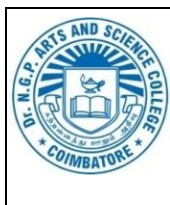|	Programme Educational Objective
1	To demonstrate business knowledge and apply that knowledge in problem Solving
2	To provide right skills, attitude and values among the students by training them in practical situation in modern business organizations
3	To understand the social and ethical dimensions in their chosen discipline.
4	To enable students to carryout action oriented research in Commerce and Computer Applications.
5	To enable professional competence in the application of computer in a globalised environment.
6	To understand the business implications with computer applications.

Course Outcome			
195CM1A1CA	FINANCIALACCOUNTING	SEMESTER I	Level
CO1	Know the concepts, conventions and rules of accounting to pass journal entries and prepare ledger accounts		K1
CO2	Obtain knowledge to prepare final accounts of a company and to gain skills to detect and prevent errors in journal and ledger accounts		K3,K4
CO3	Capture the procedures relating to bills of exchange, and Average due date		K2
CO4	Acquire stuff to reconcile cash book and pass book and to prepare accounts of Non-trading concerns		K3,K4
CO5	Classify and apply appropriate methods of depreciation		K3
195CM1A1CB	INFORMATION TECHNOLOGY	SEMESTER I	Level
CO1	Define the fundamentals of information technology and core concepts of computing and modern systems		K1
CO2	Apply different method to analysis level material control		K2
CO3	Classifying documents, Develop worksheets, Derive forms and reports from querying a database and widen the presentation skills		K3
CO4	Relate how computers have changed the way society interacts with business, government, education and other aspects of our life		K2
CO5	Find career opportunities in the computer industry with required preparation and certifications		K1
195CM1A2CA	ADVANCED ACCOUNTING	SEMESTER II	Level
CO1	Retrieve the concept of Consignment and Joint Venture		K1
CO2	Apply the functions and methods of Branch accounts, Hire purchase and Instalment Accounts		K2

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CO3	Carry out the partnership transactions such as formation and Admission of Partners.		K2
CO4	Construct partnership transactions such as Retirement, Death		K3
CO5	Apply the different methods in Dissolution of partnerships.		K3
195CM1A2CB	Modern Banking	SEMESTER II	
CO1	Understand the concepts of banking system and the functions of banking.		K2
CO2	Outline the Role of RBI in regulating and controlling banks		K3
CO3	Explain the concepts and significance of E-Banking		K3
CO4	Identify the types and latest trends in Payment System		K4
CO5	Analyze and evaluate the concepts of Fund Transfer and E-banking Technology.		K5
196BM1A2AA	AECC : HUMAN RIGHTS		
CO1	Understand the concept of human values, personality traits and character formation.		K2
CO2	Acquire the knowledge through value education towards national and global development.		K1
CO3	Introduce the basic concepts of conflict, emotions and adolescent emotions.		K1
CO4	Illustrate the techniques in therapeutic measures like yoga and meditation.		K2
CO5	Learn the concepts of human rights, rights for women and children and domestic violence.		K3
195CM1A3CA	Modern Marketing	SEMESTER III	
CO1	Understanding the concepts of marketing and the role of marketing in business and society.		K1,K2
CO2	Demonstrate effective understanding of relevant functions of marketing.		K2

CO3	Demonstrate the understanding of all components of a marketing mix.		K2
CO4	Apply the skills gained to analyze the behaviour of consumer and identify the purpose of market segmentation.		K3
CO5	Analyze the key concepts related to green marketing and digital marketing.		K4
195CM1A3CB	COST ACCOUNTING	SEMESTER III	
CO1	Discuss the methods of cost accounting and know about cost sheet.		K2
CO2	Apply different method to analysis level material control		K3
CO3	Use different methods of wages & incentives to labour and Absorption of overhead		K3
CO4	Explain a process costing system and compute the Cost of each process of finished produced		K2
CO5	Retrieve the concept of Contract costing and Job costing		K1
195CM1A3CC	DATABASE MANAGEMENT SYSTEM		
CO1	Demonstrating the fundamentals of Database System Architecture and Storage Structure		K1,K2
CO2	Explain in detail about Relational Approaches and its Operations		K2,K3
CO3	Make use of QBE and Normalization concept		K1,K3
CO4	Analyze IMS Data structure and its manipulation		K4,K5
CO5	Evaluate knowledge on Architecture of DBTG System		K5,K6
195PA1A3IA	BUSINESS ECONOMICS	SEMESTER III	
CO1	Discuss the relationship between economics and business and to analyze the application of economic theories in modern business		K1

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Criterion I
Metric 1.1.2
PO-PSO-CO

CO2	Analyze the demand and supply conditions and to give outline on both elasticity of demand and supply		K4
CO3	Compare various cost concepts and identify the cost output relationships		K2
CO4	Evaluate pricing and output relationships to adopt appropriate pricing methods under different market situations		K5
CO5	Make use of the concepts relating to national income and estimation of national income using various methods.		K3
195CM1A3SA	COMMERCIAL LAW		
CO1	State the law relating to Indian Contract Act and define the concept of contract		K1
CO2	Understand the different essential of valid consideration, disqualified by law		K2
CO3	Understand the performance of contract and different modes of discharge of contract		K2
CO4	Understand the indemnity and guarantee		K3
CO5	Explain the concept of special contracts		K3
195BA1A4CA	MANAGEMENT ACOOUNTING	SEMESTER III	
CO1	Discuss the objectives of management accounting and know about tools and techniques.		K2
CO2	Apply different formula to analysis the balance sheet		K3
CO3	Prepare analyses of various special decisions, using relevant cash flow and fund flow		K2
CO4	Analyse cost-volume-profit techniques to determine optimal managerial decisions		K4

CO5	Prepare a budget and demonstrate an understanding of the relationship between the components.		K3
195CM1A4CA	COMMERCIAL CORRESPONDENCE	SEMESTER IV	
CO1	Define the importance of Effective Business Communication and able to use Modern Communication Methods.		K1
CO2	Outline the models of various trade enquiry letters, collection letters, sales letters and circular letters.		K2
CO3	Take part in correspondence with banks for the business purpose		K4
CO4	Classify the different types of insurance correspondence and able to communicate with those companies.		K5
CO5	Construct Application Letters , Resume and to know how to present different business reports		K3
195CM1A4CB	OBJECT ORIENTED PROGRAMMING LANGUAGE WITH C++	SEMESTER IV	
CO1	Infer the concept of OOPS language and methodologies		K2
CO2	Illustrate the Structure of C++, Basic Data Types and Control Structures		K2,K3
CO3	Make use of Functions , Constructor, Destructor and Operator Overloading with Arguments		K3,K4
CO4	Developing the concept of inheritance and its types		K3,K4
CO5	Assessing the Console and unformatted I/O Operations		K5
195PA1A4IA	BUSINESS MANAGEMENT	SEMESTER IV	
CO1	Understand the different management contributions		K1
CO2	Develop the skills in planning and decision making		K2

CO3	Comprehend the methods of organization		K3
CO4	Demonstrate the theories of motivation and leadership style		K3
CO5	Acquire techniques of control		K2
195CM1A4SA	COMPANY LAW AND SECRETARIAL PRACTICES	SEMESTER IV	
CO1	Define the formation and kinds of companies		K1
CO2	Outline the basic documents in a company.		K2
CO3	Analyze the various methods of raising capital and the guidelines of SEBI.		K4
CO4	Examine the qualification, disqualification, appointment and removal of company secretary along with duties and responsibilities.		K4
CO5	Explain the provisions of Companies Act relating to meetings, resolutions and Company Management		K5
17UCM53A	CORPORATE ACCOUNTING	SEMESTER V	
CO1	List out the types of shares and what basis to issue shares		K1
CO2	Outline the redemption of preference and debentures		K2
CO3	Explain the procedure and standards of final accounts as per revised schedule to measure performance of business		K2
CO4	Apply different methods in Amalgamation Absorption and reconstruction		K3
CO5	Apply different methods to find out value of goodwill and value of share.		K4
17UCM53B	E–COMMERCE TECHNOLOGY	SEMESTER V	
CO1	Classification of E-Commerce and its Applications		K2

CO2	Utilize the Electronic Data Interchange and Software Implementation		K3, K4
CO3	Outline of Network Security and Firewalls		K2, K3
CO4	Experiment With Electronic Payment System		K4, K5
CO5	Comparison of Consumer Oriented Application and Mercantile Process Models		K4, K5
17UCM53C	SOFTWARE DEVELOPMENT WITH VISUAL BASIC	SEMESTER V	
CO1	Illustrate Integrated Development Environment And Visual Basic Applications		K2,K3
CO2	Make Use Of Control Structures, Data Types, Variables And Control Flow Statements		K2,K3
CO3	Applying Intrinsic Controls To Develop Visual Basic Applications		K3,K4
CO4	Analyzing The Concept of Menu Editor and Data Controls		K4,K5
CO5	Developing Data Environment and Data Report using Designer Tools		K5,K6
17UCM5SA	RESEARCH METHODOLOGY	SEMESTER V	
CO1	Discuss the objectives of research and the steps involved in research process		K1
CO2	Classifying different types of hypothesis and sampling design techniques in their own research		K3
CO3	identifying appropriate scaling technique for processing and analyzing the data		K3
CO4	Analyse appropriate statistical method for analyzing the data for the purpose of research.		K4
CO5	Evaluate the data and prepare a research report		K5
18UCO003	INDIRECT TAX	SEMESTER V	

CO1	Know the features of indirect tax laws and its impact		K1,K2
CO2	Classify the benefits and limitations of GST		K2,K3
CO3	Understand the procedure for registration under GST		K3,K4
CO4	Calculate the tax payable and amount of tax refund		K2
CO5	Acquire the knowledge in types of customs duties and remission of tax		K3,K4
17UCM63A	MANAGEMENT INFORMATION SYSTEM	SEMESTER VI	
CO1	Interpretation of Management Information System Roles and Its Importance.		K2
CO2	Classification of Management Information Systems and Their Importance		K2,K3
CO3	Extend the Concept of Executive information system and Resource Planning system		K3,K4
CO4	Make use of Data Base Management Systems for Business process		K4,K5
CO5	Functional of individual departments in Management system		K5,K6
17UCM63B	INTERNET AND WEB DESIGNING	SEMESTER VI	
CO1	Illustrate the fundamentals of Internet Terminologies		K2
CO2	Explain the concepts of Internet Protocols and features of E-Mail		K2,K3
CO3	Developing A webpage using HTML Tags		K2,K3
CO4	Interpret links with web pages and Creating Tables		K3,K5
CO5	Construction of Web applications using image and Frames		K3,K6
17UCM6SA	CYBER CRIMES AND CYBER LAW	SEMESTER VI	
CO1	Spell the cyber law concepts and privacy factors in E-Commerce		K1

CO2	Outline the different security aspects for data, copy right and patent.		K2
CO3	Analyze the law of procedures in evidence aspects.		K4
CO4	Identifying the Electronic Data Interchange mechanism in Indian scenario.		K3
CO5	Explain the Information Technology Act 2000 regarding authentication of electronic records, electronic governance and digital signature.		K5
17UCM6ED	BUSINESS FINANCE	SEMESTER VI	
CO1	Define the business finance concepts and its functions in traditional and modern concepts.		K1
CO2	Outline the financial planning and its concepts		K2
CO3	Applying the different theories in over capitalization and under capitalization.		K3
CO4	Examine the different approaches in capital structure and Analyze the cost of capital.		K4
CO5	Explain the different sources and forms of finance.		K5

BoS-Chairman

Head of the Department
Department of Commerce-(CA)
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M.Com Computer Applications

	Programme Outcome
1	To enable the students to acquire professional knowledge over Commerce and Computer related subjects.
2	To impart knowledge in advanced recent concepts and applications in various fields of commerce and to demonstrate an in-depth understanding of technical and quantitative aspects related to financial services, including the study of financial markets, financial instruments and investment decision-making
3	To embed practical knowledge in the minds of students through industrial visits and various training programmes.
4	To enable students to carryout action oriented researches in commerce and computer applications
5	To equip the students to occupy important positions in Business, Industries and related organizations.

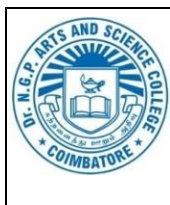|	Programme Educational Objective
1	To educate the learners about the role of finance, technology and its social obligation in the globalised environment
2	To stimulate an enquiring, analytical and creative approach to business issues and to encourage independent judgment and critical awareness.
3	To enable the professional competence in managerial and entrepreneurial skills to start or run a business or to play a significant and responsible role in the business
4	To exhibit decision-making skills conforming to sustainable business practices and upholding business ethics and human values in challenging environments.challenging environments.
5	To embed research knowledge in the minds of leaner's for pursuing research as career in academics and industry
6	To equip with emerging techniques, skills and tools for computing proficiency

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Course Outcome			
195CM2A1CA	CORE : HIGHER CORPORATE ACCOUNTING	SEMESTER I	
CO1	Define the procedure and standards of final accounts as per revised schedule VI to measure performance of business.		K1
CO2	Explain the corporate practice in merging of companies		K2
CO3	Develop the skills in preparation of consolidated balance sheet of holding company		K3
CO4	Assess the permissible formats and special items and adjustments pertaining to Banking companies and Insurance companies		K5
CO5	Apply the latest provisions relating to Government accounting, Inflation accounting, Human Resources accounting and accounting standards (theoretical aspects)		K3
195CM2A1CB	CORE : INTERNATIONAL MARKETING	SEMESTER I	
CO1	Infer the core concepts of marketing and the role of marketing in business and society		K1
CO2	Construct marketing strategies based on product, price, place and promotion objectives.		K3
CO3	Design to create an integrated marketing communications plan which includes promotional strategies and measures of effectiveness.		K3
CO4	Paraphrase to communicate the unique marketing mixes and selling propositions for specific product offerings.		K2
CO5	Analyze the effective channel for distributing a new and existing product to consumers.		K4
195CM2A1CC	CORE : ECONOMICS FOR DECISION MAKING	SEMESTER I	
CO1	Recognize the roles and responsibilities of managers in a firm.		K1
CO2	Analyze the demand and supply conditions and assess the position of accompany		K3
CO3	Design competition strategies, including costing, pricing and product differentiation		K3

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CO4	Evaluate pricing and output relationships to adopt appropriate pricing methods under different market situations.		K5
CO5	Understand the concepts relating to national income, business cycles, monetary and fiscal policy.		K2
195CM2A1CD	CORE : RELATIONAL DATABASE MANAGEMENT SYSTEM	SEMESTER I	
CO1	Remember and understand the Database Management System.		K1
CO2	Summarize Database Architecture and Approaches		K2
CO3	Apply prolonged skill on Relational Approaches		K3
CO4	Structure of DML and Normalization concept		K4
CO5	Develop knowledge on Relational Approaches		K3
195CM2A1DA	DSE: BUSINESS ENVIRONMENT	SEMESTER I	
CO1	Defining the Political, Economic, Legal, Technological, Social and International environment with focus on their impact on business and strategic decisions.		K1
CO2	Demonstrating the current industrial policies prevailing in India and in the world and to describe the privatization and disinvestment.		K2
CO3	Developing the economic system in India and apply theoretical insights to the analysis of such issues in the context of a complex business environment.		K3
CO4	Classifying the various industrial development institutions facilitating business		K4
CO5	Explain the nature of the multinational firm as an institutional structure and to analyze the key decisions that multinational firms make in relation to the choice of markets and entry strategies		K5
195CM2A1DB	DSE : MARKETING OF FINANCIAL SERVICES	SEMESTER I	
CO1	Understand financial markets in India.		K2
CO2	Learn different stock exchanges in India		K2
CO3	Ability to understand types of cards and Bancassurance		K2

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CO4	Identifying the insurance companies and types of insurance.		K2
CO5	Classify real estate industry and securitization.		K2
195CM2A1DC	DSE : CORPORATE GOVERNANCE	SEMESTER I	
CO1	Understanding the Basic concept of Corporate governance and Corporate social responsibility.		K2
CO2	Acquire the knowledge about Corporate Governance system worldwide.		K3
CO3	Explain the role of Auditors and the constitution of Audit committee		K2
CO4	Analyse the investors interest in Corporate Governance Environmental reporting.		K4
CO5	Analyze the recent trends in E-governance.		K4
195CM2A2CA	CORE :ADVANCED FINANCIAL MANAGEMENT	SEMESTER II	
CO1	Discuss the objectives of financial management and know about sources of finance.		K2
CO2	Use different methods to find cost of capital and techniques in capital budgeting.		K1
CO3	Selecting appropriate capital structure of the firm		K5
CO4	Analyse the method of leverages for analyzing the expected returns		K4
CO5	Selecting appropriate theories for dividend payout		K4
195CO2A2EA	CORE : HUMAN RESOURCE MANAGEMENT	SEMESTER II	
CO1	Summarize the employment relations and knowledge to resolve the issues and managing the manpower to motivate and attract them to retain in the organization.		K2
CO2	Relate information regarding the effectiveness of recruiting methods and the validity of selection procedures and make appropriate staffing decisions.		K3
CO3	Design a training program and evaluate the training results		K3
CO4	Outline of interdisciplinary perspective for strategic leadership, HR management and		K4

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	decision-making so as to add value to the overall success of a business enterprise		
CO5	Evaluate personality and perception of employees and able to manage the individual and group conflict in an Organisation		K5
195CM2A2CC	CORE :OBJECT ORIENTED PROGRAMMING WITH C++	SEMESTER II	
CO1	Remember the Oops Concepts		K1
CO2	Interpret on control statements, Array and String functions		K2
CO3	Apply classes and objects		K3
CO4	Construct knowledge on Operator overloading Inheritance.		K3
CO5	Exploit virtual functions and Designing I/O operations		K3
195CM2A2DB	CORE :FINANCIAL MARKETS AND INSTITUTIONS	Semester II	
CO1	Illustrate the basic functions and structures of the major financial markets and financial institutions.		K2
CO2	Relate the mechanisms of capital markets from the perspective of an individual investor and a financial institution		K3
CO3	Categorizing the impact and role of Credit rating in the corporate world		K3
CO4	Interpret students with theoretical and institutional analysis of the operations of stock-markets and banks.		K4
CO5	Interpret students with theoretical and institutional		K5
195CM2A2DA	CORE : STRATEGIC MANAGEMENT	SEMESTER II	
CO1	Understand the basic concepts and principles of strategic management		K2
CO2	Analyze the internal and external environment of business		K2
CO3	Develop and prepare organizational strategies that will be effective for the current business environment		K4
CO4	Devise strategic approaches to managing a business successfully in a global context		K5

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CO5	analyze the competitive situation and strategic dilemma in terms of rapidly changing market trend		K5
195CM2A2DC	CORE : INDIAN STOCK EXCHANGES	SEMESTER II	
CO1	Discuss the basic functions and structures of the major stock exchanges across the world.		K2
CO2	Classify the mechanisms of BSE, NSE and other stock exchanges and regulatory framework under SEBI Act.		K2
CO3	Outline the legal provisions relating to investor protection, listing and insider trading		K4
CO4	Critique the functions and working of Securities and Exchange Board of India.		K5
CO5	Assess the online stock trading and e-IPOs		K5
195CM2A3CA	DIRECT TAX	SEMESTER III	
CO1	Relate the residential status of all assesses and able to classify Capital and Revenue items.		K1, K2
CO2	Make use of the provisions of Salaries like allowances, perquisites, Profit in lieu of salary to calculate taxable salary and Determination of Annual value of house property.		K3
CO3	Analyze the provisions related to business income and capital gains.		K4
CO4	Estimate the individual income considering the previous year losses and deductions available under section 80 of individuals		K5
CO5	Adapt the procedure for assessment regarding filing of returns and identify the powers and functions of CBDT.		K6
195CM2A3CB	BUSINESS RESEARCH METHODS	SEMESTER III	
CO1	Understand the objectives of research and the steps involved in research process.		K1
CO2	Use different data collection methods and sampling design techniques in their own research.		K3
CO3	Selecting appropriate scaling technique for processing and analyzing the data.		K3
CO4	Analyse appropriate statistical method for analyzing the data for the purpose of research.		K5
CO5	Evaluate the data and prepare a research report		K4
195CM2A3CC	INVESTMENT MANAGEMENT	SEMESTER III	

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CO1	Defining the importance and concepts of investment, factors influencing investment, different investment avenues and investment process.		K1
CO2	Analyze capital market, new issue market, stock exchange market and listing of securities.		K2
CO3	Analyze investment opportunities and execute professional services and also outlining the fundamental and technical analysis as well as portfolio construction and portfolio management.		K4
CO4	Creating awareness of the risk return of different investment alternatives and estimate the value of securities so as to make valuable investment decisions		K6
CO5	Identify the nature, scope and SEBI guidelines on portfolio management. Analyse the portfolio investment process and portfolio revision.		K3
195CM2A3CD	VISUAL BASIC	SEMESTER III	
CO1	Rephrase the Integrated Development Environment and form attributes K1		K1, K2
CO2	Experiment with VB Intrinsic Controls		K2, K3
CO3	Applying the Scope and life time of variables and Procedures		K3
CO4	Assessing the databases with SQL Commands		K4, K5
CO5	Creating the Tables and Reports using Controls		K5, K6
195CM2A3DA	ORGANISATIONAL BEHAVIOUR	SEMESTER III	
CO1	Explain the behavior of individuals and groups in organizations in terms of the key factors that influence organisationalbehaviour		K2
CO2	Understand individual behavior in organizations, including emotions, perception, attitudesand learning on managerial performance.		K3
CO3	Understand group behavior in organizations including stress, leadership, conflict and team decision making.		K3

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CO4	Explaining organizational culture and describe its dimensionsto examine various organizational designs and discuss the implementation of organizational change.		K4
CO5	Critically evaluatethe organizational system, including organizational challenges, culture, diversity and changes		K5
195CM2A3DB	INDIRECT TAXES	SEMESTER III	
CO1	Know the features of indirect tax laws and its impact		K1, K2
CO2	Classify the benefits and limitations of GST		K2, K3
CO3	Understand the procedure for registration under GST		K3, K4
CO4	Calculate the tax payable and amount of tax refund		K2
CO5	Acquire the knowledge in types of customs duties and remission of tax.		K3, K4
195CM2A3DC	FUTURES AND OPTIONS	SEMESTER III	
CO1	Define derivatives and explain the characteristics and participants in derivative market.		K1
CO2	Explain the index number, its significance and its desirable attributes.		K2
CO3	Assess the future and forward contract and its operations in call and put options.		K5
CO4	Apply options pay offor buyer and seller in hedging, speculation and arbitrage.		K3
CO5	Examine the commodity markets in India and abroad.		K4
195CM2A4CA	COST AND MANAGEMENT ACCOUNTING	SEMESTER IV	
CO1	Discuss the cost accounting elements and know about cost per unit of product.		K2
CO2	Apply different formula to analyze labor cost and overheads cost		K3
CO3	Discuss the objectives of management accounting and analyses balance sheet using ratios.		K2
CO4	Prepare analyses of various special decisions, using relevant cash flow and fund flow..		K4

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CO5	Analyse cost-volume-profit techniques and Prepare a budget and demonstrate an understanding of the relationship between the components.		K2
195CM2A4CB	JAVA PROGRAMMING AND HTML	SEMESTER IV	
CO1	Evoking the History of Java Language and WWW		K1, K2
CO2	Developing the Branching and Looping Statements		K3
CO3	Classifying the Array and Life Cycle of Thread		K3, K4
CO4	Demonstrate the History of HTML with its generations		K2, K4
CO5	Designing the web pages with HTML Tags		K4, K5
195CM2A4DA	FUNDAMENTAL AND TECHNICAL ANALYSIS	SEMESTER IV	
CO1	Illustrate the importance of investment and security analysis, risk and return analysis, and various approaches to security valuation.		K2
CO2	Classifying the fundamental analysis and market analysis, also demonstrating the importance of indices of NSE and BSE in the corporate sector		K4
CO3	Evaluating industry and company analysis and appraising the methods.		K3
CO4	Interpret the various theories (Dow and Elliot Wave theory) of technical analysis and their consequence.		K2
CO5	Apply the moving average, charts and macd. Also tries to identify the relative strengths.		K5
195CM2A4DB	ENTREPRENEURIAL DEVELOPMENT	SEMESTER IV	
CO1	Demonstrate the ability to provide a self-analysis in the context of an entrepreneurial career		K2
CO2	Identify the role of various financial and promotional institutions in Entrepreneurial Development		K4
CO3	Able to evaluate opportunities for a new venture		K2

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Criterion I
Metric 1.1.2
PO-PSO-CO

CO4	Get insights into their creative, entrepreneurial and team skills.		K3
CO5	To equip them with a platform to develop an entrepreneurial venture.		K4
195CM2A4DC	SUPPLY CHAIN MANAGEMENT	SEMESTER IV	
CO1	Define the Supply Chain Management and inventory management		K2
CO2	Explain the Supply chain Integrates and its impact on grocery and retail industry		K3
CO3	Identify the Frame work of Strategic Alliances and its merits and demerits.		K4
CO4	Outline the Procurement and Outsourcing benefits and risks related with framework for make or buy decision and e-procurement.		K4
CO5	Assess the dimension of customer Value and its measures.		K5

BoS-Chairman

Head of the Department
Department of Commerce-(CA)
Dr. N.G.P. Arts & Science College
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B.Com. Corporate Secretaryship with CA

Programme Outcome	
1	To provide ample exposure to the subjects in the field of Corporate Laws, Business, Accountancy and Management.
2	The course equips the students the necessary skills and knowledge to act as middle level executives in secretarial practice, accounts, personnel executives.
3	To develop knowledge and compete in the areas of law applying to corporate and solve the key issues around the functions and objectives of various laws.
4	To expertise for the entrance requirements of professional courses like ACS, CMA,CA.
5	To acquire knowledge for entry level employability and to nurture the student in intellectual, interpersonal and societal skills.

Programme Educational Objective	
1	To produce Competent Company Secretaries through appropriate teaching programmes.
2	To provide right skills, attitudes and values among the students by imparting training in reputed companies /corporate.
3	To make students competent in taking up wide range of responsible position in the Secretarial, Legal, Finance, Accounts, Personnel and administrative department.
4	To impart the most current knowledge and skills for the individuals to get them placed at middle level professionals in the corporate sector.
5	To make the students to prepare for the Corporate Secretaryship Programme.

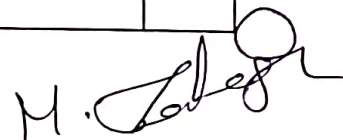| Course Outcome			
195CR1A1CA	**CORE:FINANCIAL ACCOUNTING - I**	**SEMESTER I**	**Level**
CO1	Recall the basic concepts of accounting and book keeping	I	K1
CO2	Identify the effect of BRS in an enterprise and solve the errors in book keeping	I	K3
CO3	Interpret the balance sheet of various companies	I	K2
CO4	Have a comprehensive knowledge in preparing the accounting of non-trading concerns.	I	K3
CO5	Apply the interest rate calculation and due dates for the bills of exchange	I	K3

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Criterion I Metric 1.1.2 PO-PSO-CO

195CR1A1CB	CORE : BUSINESS MANAGEMENT	SEMESTER I	Level
CO1	Understand the management, administration and the characteristics of management.	I	K1
CO2	Demonstrate the importance of good planning and decision making.	I	K2
CO3	Experiment with the organizational structure; apply theories and practice of functions of organization.	I	K3
CO4	Utilize communication and build leadership skills.	I	K3
CO5	Develop the knowledge on social responsibilities and business ethics.	I	K3
195FI1A1IA	IDC : BUSINESS ECONOMICS	SEMESTER I	Level
CO1	To introduce the micro and macroeconomic concept with demand analysis.	I	K1,K2
CO2	To make them understand the supply side of market and cost analysis.	I	K1,K2,K3
CO3	Basic Knowledge about business cycle and inflation.	I	K2,K3
CO4	To understand the monetary and fiscal policy	I	K1,K2
CO5	To know basic knowledge about national income.	I	K1,K2
195CR1A2CA	CORE: FINANCIAL ACCOUNTING - II	SEMESTER II	Level
CO1	Understand the basic concept of consignment accounts	II	K2
CO2	Apply the knowledge on joint ventures accounts	II	K3
CO3	Have a comprehensive knowledge in preparing depreciation accounts	II	K3
CO4	Solve the concept of goodwill calculation in partnership accounts	II	K3
CO5	Utilize the technique to calculate the reconstitution of admission, retirement and death of the partners.	II	K3
195CR1A2CB	CORE: BUSINESS LAW	SEMESTER II	Level
CO1	Understanding the Basic Elements in Indian Contract Act, 1872.	II	K2
CO2	Classify the various Performance of contract and discharge of contract.	II	K2
CO3	Classify Various Special Contracts.	II	K2
CO4	Acquire a comprehensive knowledge on Sale of Goods Act, 1930.	II	K3
CO5	Acquire knowledge on Information Technology Act, 2000.	II	K3
195CO1A2IA	IDC : AUDITING	SEMESTER II	Level

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Criterion I
Metric 1.1.2
PO-PSO-CO

CO1	Understanding the principle aspects of auditing.	II	K2
CO2	Illustrate auditing under the companies act 2013.	II	K2
CO3	Outline an auditing plan.	II	K2
CO4	Identify the procedures for the appointment of auditors in Government companies.	II	K3
CO5	Construct an auditor's report and illustrate the powers and duties of auditors.	II	K3
195CR1A3CA	**CORPORATE ACCOUNTING - I**	**SEMESTER III**	**Level**
CO1	Understand the concept of issue and redemption of preference shares	III	K2
CO2	Analyze the different methods of issue and redemption of debentures	III	K4
CO3	Analyze the final accounts of companies	III	K4
CO4	Understanding methods of accounting for amalgamation	III	K2
CO5	Solve accounting methods for internal and external reconstruction	III	K3
195CR1A3CB	**COMPANY LAW AND SECRETARIAL PRACTICE - I**	**SEMESTER III**	**Level**
CO1	Acquire the knowledge on incorporation and promotion of a company.	III	K3
CO2	Analyze the Articles of Association and Memorandum of Association	III	K4
CO3	Understanding the concept of prospectus and secretarial duties.	III	K2
CO4	Acquire the expertise knowledge in share capital and transfer and transmission of shares.	III	K3
CO5	Examine the borrowing powers of a company	III	K4
195CR1A3CC	**DATABASE MANAGEMENT SYSTEM**	**SEMESTER III**	**Level**
CO1	Understanding the basic concepts of data base.	III	K1
CO2	Acquire the knowledge of Data Models and File Organization.	III	K3
CO3	Identify the Data normalizations and manipulation.	III	K3
CO4	Develop the knowledge Database Security, Integrity and Control.	III	K3
CO5	Analyze the concept of Current Topics in Database.	III	K4
195CR1A3SA	**PRACTICAL BANKING**	**SEMESTER III**	**Level**
CO1	Apply the knowledge on the basic concepts of Banking	III	K3

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CO2	Summarize the Functions of Commercial banks	III	K2
CO3	Demonstrate the concept of Cheques and Endorsement.	III	K2
CO4	Experiment with the operations of Credit Card	III	K3
CO5	Make use of the new facts in Factoring, ATM, Phone banking, Internet banking	III	K3
195CR1A4CA	**CORPORATE ACCOUNTING – II**	**SEMESTER IV**	**Level**
CO1	Understanding the basic concepts of valuation of shares and goodwill.	IV	K2
CO2	Illustrate the holding and subsidiary company.	IV	K3
CO3	Interpret the Liquidator's final statements of accounts.	IV	K2
CO4	Acquire a comprehensive knowledge in preparing the accounts of banking companies.	IV	K3
CO5	Analyze Final Accounts of insurance companies.	IV	K4
195CR1A4CB	**COMPANY LAW AND SECRETARIAL PRACTICE –II**	**SEMESTER IV**	**Level**
CO1	Acquire the knowledge of meeting and learn procedure for voting.	IV	K3
CO2	Acquire the expertise knowledge in appointment of directors, rights and duties.	IV	K3
CO3	Analyzing the director's report and auditor's report.	IV	K4
CO4	Understanding the knowledge on dividends and their statutory provisions.	IV	K2
CO5	Analyzing the winding up of a company and NCLT.	IV	K4
195CR1A4CC	**PROGRAMMING IN C**	**SEMESTER IV**	**Level**
CO1	Learn the fundamentals of C programming language	IV	K1
CO2	Understand the principles of control structures and arrays	IV	K2
CO3	Apply the knowledge of strings and functions	IV	K3
CO4	Understand the Built-in Functions and User Defined functions	IV	K2
CO5	Apply the knowledge in Structure and Pointers	IV	K3
195CR1A4SA	**FINANCIAL MARKETS**	**SEMESTER IV**	**Level**
CO1	Define the basic concepts of investments.	IV	K1
CO2	Explain various roles and functions of SEBI.	IV	K2

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Criterion I
Metric 1.1.2
PO-PSO-CO

CO3	Acquire the knowledge on primary market functions.	IV	K3
CO4	Understanding securities trading in stock markets.	IV	K2
CO5	List the process involve in Dematerialization of Shares.	IV	K4
17UCR53A	**CORE : COST ACCOUNTING**	**SEMESTER V**	**Level**
CO1	Define the basic concepts of cost accounting.	V	K1
CO2	Analyze the issue of material and labour cost.	V	K4
CO3	Compare and identify the difference between cost and financial profit/loss.	V	K2
CO4	Categorize various methods of costing.	V	K4
CO5	Analyze the Material costing and standard Costing.	V	K4
17UCR53B	**CORE : BUSINESS LAW**	**SEMESTER V**	**Level**
CO1	Understanding the Basic Elements in Indian Contract Act, 1872.	V	K2
CO2	Classify Various Special Contracts	V	K2
CO3	Acquire a comprehensive knowledge on Sale of Goods Act 1930	V	K3
CO4	Explain the various provisions of Indian Partnership Act, 1932.	V	K2
CO5	Acquire knowledge on Information Technology Act 2000.	V	K3
17UCR53C	**CORE : INDUSTRIAL LAW**	**SEMESTER V**	**Level**
CO1	Understanding the working conditions in factories.	V	K2
CO2	Analyze the industrial disputes and explore the skills	V	K4
CO3	Understand the rights and privileges of Trade Unions Act, 1926	V	K2
CO4	Understanding the Payment of Bonus Act, 1965.	V	K2
CO5	Acquire a comprehensive knowledge on Minimum Wages Act and Employee's Compensation Act.	V	K3
17UCR53D	**CORE : TAXATION – I**	**SEMESTER V**	**Level**
CO1	Understanding of the basic concept of Income tax Act, 1961.	V	K2
CO2	Acquire the knowledge on Computation of income from salary and House property.	V	K3
CO3	Acquire the knowledge on Computation of income from Business/Profession and Capital gain.	V	K3

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CO4	Understanding the computation of income from other sources and provisions of set-off and carry forward of losses.	V	K2
CO5	Demonstrate the filing of income tax returns.	V	K2
17UCR5EA	**ELECTIVE I: ECONOMIC AND OTHER LEGISLATIONS**	**SEMESTER V**	**Level**
CO1	Acquire the knowledge on competition act and powers of Competition Commission	V	K3
CO2	Explain the Pollution Control Law.	V	K2
CO3	Understanding the concept Foreign Exchange Management.	V	K2
CO4	Examine the provisions of Intellectual Property Laws	V	K4
CO5	Acquire the expertise knowledge in consumer protection act and Right to Information Act	V	K3
17UCR5EB	**ELECTIVE I : INTERNET AND E-COMMERCE**	**SEMESTER V**	**Level**
CO1	Understanding the basic concepts of Internet.	V	K2
CO2	Acquire the knowledge of Internet addressing.	V	K3
CO3	Identify the fundamental concept of E-Commerce.	V	K3
CO4	Develop the knowledge EDI.	V	K3
CO5	Analyze the concept of System analysis and design.	V	K4
17UCR5EC	**ELECTIVE I : BRAND MANAGEMENT**	**SEMESTER V**	**Level**
CO1	Understanding of Brands and its Function.	V	K2
CO2	Acquire the knowledge on Branding in Global Markets.	V	K3
CO3	Construct the knowledge regarding Brand Promotion.	V	K3
CO4	Understanding the Brand adoption practices	V	K2
CO5	Analyze and measuring the Brand Performance.	V	K4
17UCR5SA	**SKILL BASED COURSE III : MUTUAL FUND**	**SEMESTER V**	**Level**
CO1	Understanding the Basics of Mutual Funds and about SEBI.	V	K2
CO2	Acquire the knowledge about various mutual fund products.	V	K3
CO3	Analyze the Gold Exchange traded fund and its advantages.	V	K4
CO4	Acquire knowledge about Debt mutual fund.	V	K3
CO5	Understanding the liquid funds and listing procedures.	V	K2

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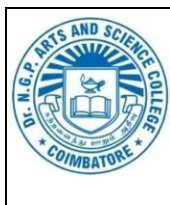**NAAC 3rd Cycle**

Criterion I Metric 1.1.2 PO-PSO-CO

17UCR63A	CORE : MANAGEMENT ACCOUNTING	SEMESTER VI	Level
CO1	Define the basic concepts of management accounting	VI	K1
CO2	Analyse and Interpret the financial statements	VI	K4
CO3	Analyze the fund flow and cash flow statements	VI	K4
CO4	Analyze various types of budgets	VI	K4
CO5	Analyze the concept of capital budgeting	VI	K4
17UCR63B	CORE : TAXATION – II (GST and Customs)	SEMESTER VI	Level
CO1	Understanding the concept and applicability of GST	VI	K2
CO2	Acquire the knowledge on Central Goods and Service Tax Act, 2017	VI	K3
CO3	Acquire the knowledge on Reverse charge mechanism, Registration under GST	VI	K3
CO4	Understanding the basic concept of Customs Law	VI	K2
CO5	Acquire the knowledge on Warehousing, Duty Drawback.	VI	K3
17UCR63C	CORE : VISUAL BASIC THEORY	SEMESTER VI	Level
CO1	Understanding the basic concepts of Visual Basic.	VI	K2
CO2	Acquire the knowledge of Visual Basic Fundamentals.	VI	K3
CO3	Identify the fundamental concept of Controlling Programs in VB.	VI	K3
CO4	Develop the knowledge Managing controls in VB.	VI	K3
CO5	Analyze the concept of Built in VB functions.	VI	K4
17UCR6EA	ELECTIVE II : INDUSTRIAL PSYCHOLOGY	SEMESTER VI	Level
CO1	Acquire the knowledge on the basic concepts of Industrial Psychology	VI	K3
CO2	Construct Work Teams & Groups and Motivation at work	VI	K3
CO3	Develop Decision Making knowledge by Individuals & Groups	VI	K3
CO4	Build the Leadership Qualities	VI	K3
CO5	Demonstrate the Organizational Culture and its Functions	VI	K2

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17UCR6EB	ELECTIVE II : MANAGEMENT INFORMATION SYSTEM	SEMESTER VI	Level
CO1	Explain basic concepts of Information System	VI	K2
CO2	Construct the Information System for Operations and Decision Making	VI	K3
CO3	Analyze the Decision Support System(DSS) and Artificial Intelligence (AI)	VI	K4
CO4	Acquire the comprehensive knowledge on Managing Information Technology	VI	K3
CO5	Experiment with Security and Ethical Challenges	VI	K3
17UCR6EC	ELECTIVE II : CORPORATE GOVERNANCE	SEMESTER VI	Level
CO1	Understanding the Basic concept of Corporate governance and Corporate social responsibility.	VI	K2
CO2	Acquire the knowledge about Corporate Governance system worldwide.	VI	K3
CO3	Explain the role of Auditors and the constitution of Audit committee.	VI	K2
CO4	Analyze the investors interest in Corporate Governance Environmental reporting.	VI	K4
CO5	Analyze the recent trends in E-governance.	VI	K4
17UCR6EP	ELECTIVE III : FINANCIAL MANAGEMENT	SEMESTER VI	Level
CO1	Understanding the fundamentals of the finance	VI	K2
CO2	Analyze the Financial planning and Capital Structure decisions	VI	K4
CO3	Analyze the various types of Cost of Capital	VI	K4
CO4	Analyze the various methods of capital budgeting	VI	K4
CO5	Analyze the Working capital management of the business entities	VI	K4
17UCR6EQ	ELECTIVE III : SOFTWARE ENGINEERING	SEMESTER VI	Level
CO1	Understand the basic concepts of Software Engineering.	VI	K1
CO2	Acquire the knowledge of Software cost estimation.	VI	K2
CO3	Identify the fundamental design concept of software.	VI	K3
CO4	Develop the knowledge Implementation and System testing	VI	K3

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CO5	Analyze the concept of Software Maintenance.	VI	K4
17UCR6ER	**ELECTIVE III : HUMAN RESOURCE MANAGEMENT**	**SEMESTER VI**	**Level**
CO1	Understanding the function of Human Resource Management and role of the Human Resource Manager	VI	K2
CO2	Acquire the knowledge about Human Resources in India	VI	K2
CO3	Develop the expertise knowledge in Human Resource planning and Forecasting	VI	K3
CO4	Analyzing the recruitment policy and selection	VI	K4
CO5	Acquire the knowledge in training and management development	VI	K3
17UCR6SA	**SKILL BASED COURSE IV: ONLINE TRADING**	**SEMESTER VI**	**Level**
CO1	Understanding the Concept, Types and advantages of Online Trading.	VI	K2
CO2	Analyze the FOREX online trading.	VI	K4
CO3	Acquire the comprehensive knowledge on Online Trading Software and tips for successful online trading.	VI	K3
CO4	Outline the Procedure for Opening a Demat Account	VI	K2
CO5	Build Practical knowledge on online Trading.	VI	K3

BoS-Chairman

BoS Chairman/HoD
Department of Corporate Secretaryship
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048

M.Com Corporate Secretaryship

	Programme Outcome
1	To produce competent professionals like Company secretaries, Chartered Accountants, Cost and Management Accountants through appropriate teaching programmes.
2	To provide right skills, attitudes and values by imparting training in reputed Companies / Corporate.
3	To understand the law and best practices in key function matters and to apply them in Secretaryship functions and ensure corporate compliance.
4	To develop the skills of research, analysing, evaluating problems and taking business decisions.
5	To acquire knowledge to nurture in intellectual, interpersonal and societal skills.

	Programme Educational Objective
1	To produce competent Company Secretaries through appropriate teaching programmes. .
2	To provide right skills, attitudes and values among the students by imparting training in reputed Companies / Corporate.
3	To make students competent in taking up wide range of responsible positions in the Secretarial, Legal, Finance, Accounts, Personnel and Administrative departments.
4	To impart the most current knowledge and skills for the individuals to get them placed at middle level professionals in the corporate sector
5	To make the students to prepare for the Company Secretaryship Programme.

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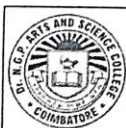(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)

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Course Outcome			
195CR2A1CA	Advanced Company Law and Practice	Semester I	Level
CO1	Understanding the Nature and Forms of Business Enterprise and the concept of Corporate personality	I	K2
CO2	Acquire knowledge on kinds of companies, Formation of companies, various documents involved in Incorporation and alteration of AOA and MOA	I	K3
CO3	Understanding the concept of capital and financing of companies and various methods of raising of owners and debt capital including preparation of prospectus and its provisions of Companies Act, 2013	I	K3
CO4	Examine the provisions of Companies Act, 2013 relating to meetings, resolution and Company Management including appointment of Key Managerial Personnel	I	K5
CO5	Acquire the knowledge on provisions of Companies Act, 2013 relating to acceptance of deposits, making investment, giving guarantee and providing security	I	K3
195CR2A1CB	Advanced Company Accounts - Theory and Practice	Semester I	Level
CO1	Understanding the concept of Share Capital, Accounting Standards and IFRS.	I	K2
CO2	Construct the Final Accounts of Companies.	I	K3
CO3	Evaluate the goodwill and shares and to calculate the Purchase Consideration.	I	K4
CO4	Acquire the Accounting concepts of Holding and Subsidiary Companies	I	K3
CO5	Interpret the defalcation of Banking, Insurance and Electricity Companies.	I	K4
195CR2A1CC	Securities Laws and Financial Markets	Semester I	Level
CO1	Understanding the over view of financial systems in India	I	K2
CO2	understand the significance and regulatory framework of Capital markets	I	K2
CO3	To acquaint with legal aspects of SEBI and measures to protect investors	I	K3

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CO4	To familiarize with financial instruments issued inside and outside India	I	K2
CO5	To have a comprehensive knowledge on role of Primary and secondary markets and the regulations framed by SEBI.	I	K3
195CR2A1CD	Industrial and Labour Legislations	Semester I	Level
CO1	To understand the working conditions in factories	I	K2
CO2	To focus on processes underlying in compensation of employees	I	K2
CO3	To analyse the legislations relating to welfare of the workers	I	K3
CO4	To learn the methods of the payment of bonus	I	K3
CO5	To analyse the industrial disputes and explore contemporary skills	I	K4
195CR2A1CE	Economic and Other Legislations	Semester I	Level
CO1	Understand the provisions relating to competition Act 2002	I	K2
CO2	Classify the roles of consumer protection councils and procedures under Right to Information Act	I	K2
CO3	Identify the regulations under foreign exchange management	I	K3
CO4	List provisions under intellectual property laws	I	K4
CO5	Criticize the various provisions on Pollution control laws	I	K5
195CR2A1DA	Elective : Export Trade Procedure	Semester I	Level
CO1	To understand the concept of export trade and licensing provisions	I	K2
CO2	Gain a comprehensive knowledge on export promotion council	I	K2
CO3	To familiarize with the concept of warehousing and procedure for various exports	I	K3
CO4	To focus on export houses trading houses and rules regarding establishment of units	I	K3
CO5	To know the Indian and foreign regulation, central excise and clearance procedures.	I	K2
195CR2A1DB	Elective : Financial Markets and Institutions	Semester I	Level
CO1	Understanding the concept and overview of Financial Markets	I	K2

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CO2	Acquire knowledge on capital market instruments and the regulations of foreign exchange market	I	K2
CO3	To analyze the different concept in financial Institution	I	K3
CO4	To learn about the Credit Rating Agencies in India	I	K3
CO5	To have a Comprehensive Knowledge on role of EXIM Bank and NABARD	I	K2
195CR2A1DC	Elective : Ethics, Governance and Sustainability	Semester I	Level
CO1	Understanding the concept of Business Ethics, Corporate Governance, Governance through Inner Consciousness and Sustainability	I	K2
CO2	Acquire knowledge on Board Composition Diversity in Board Room, Board's Role and Responsibilities, Chairman, CEO, Separation of Roles	I	K2
CO3	To analyse the Various Board Committees Composition Role and Responsibilities Contribution to Board Governance	I	K3
CO4	To learn about the Legislative Framework of Corporate Governance in India and Corporate Governance and Shareholder Rights	I	K3
CO5	To have a Comprehensive Knowledge on Corporate Sustainability	I	K2
195CR2A2CA	General Law and Practice	Semester II	Level
CO1	Understand the Principles of Interpretation, constitutional rights and directive principles.	II	K2
CO2	Analyze the civil procedure code with jurisdiction and the proceedings for appeals reference and reviews	II	K4
CO3	Demonstrate knowledge on the Transfer of property act and Indian Trust Act.	II	K3
CO4	Identify the legal and other issues arising from Arbitration and Conciliation Act.	II	K3
CO5	Utilise the features of Registration Act and Indian Stamp Act	II	K3
195CR2A2CB	Corporate Financial Management	II	Level
CO1	To know the basic terms of financial management and to acquire knowledge of financial planning	II	K2

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CO2	To familiarize with fundamental process of long term finance and leverages.	II	K3
CO3	To analyse the different aspects of working capital management.	II	K4
CO4	To identify capital budgeting methods and describe the analysis of risk and uncertainty.	II	K3
CO5	To analyse the dividend policies and identify the alternative form of dividends.	II	K4
195CR2A2CC	Managerial Economics	Semester II	Level
CO1	Demonstrate the roles of managers in firms.	II	K2
CO2	Experiment with the concepts of Demand, Supply and Equilibrium and their determinants.	II	K3
CO3	Compare the cost function and the difference between short-run and long-run Cost function.	II	K4
CO4	Compare and contrast four basic market Types.	II	K3
CO5	Analyze the monetary and fiscal policies.	II	K4
195CR2A2CD	Tax Law-I	Semester II	Level
CO1	Determine the Residential status and scope of total income and exempted incomes.	II	K1
CO2	Understanding the provisions of Income tax, 1961 relating to computation of Salary and House property income	II	K2
CO3	Demonstrate the general rule for the determination of gains and losses on the disposition of Capital Assets and Income from other sources.	II	K3
CO4	To acquire the knowledge on provisions relating to set off and carry forward of losses and clubbing of income.	II	K3
CO5	To know the computation of total taxable income and tax liability of Individual, firms and companies.	II	K3
195CO2A2EA	EDC : Human Resource Management	Semester II	Level
CO1	Understand the organizational structure	II	K2
CO2	Analyze the job and role to select and recruit personnel	II	K3
CO3	Measure the performance of an employees for promotion and training	II	K3
CO4	Capture employee grievance redressal procedures for organizational betterment	II	K4

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CO5	Control the organizational conflict through appropriate leadership styles.	II	K5
195CR2A2DA	Elective: Import Trade Procedure	Semester II	Level
CO1	Understand the import trade procedures	II	K2
CO2	Model of export promotion and their schemes	II	K3
CO3	List the import documentation	II	K4
CO4	Examine the provisions relating to bonded warehousing.	II	K4
CO5	Analyse the international trade disputes	II	K4
195CR2A2DB	Elective: Indian Stock Exchanges	Semester II	Level
CO1	Understanding the nature and functions of World Stock Exchange.	II	K2
CO2	To focus on Regulatory Framework on SEBI	II	K2
CO3	To analyse the provisions relating to Listing and Non Listing.	II	K3
CO4	To have a comprehensive knowledge on SEBI Guidelines.	II	K2
CO5	To know the Internet stock trading E-commerce Act and internet stock trading.	II	K3
195CR2A2DC	Elective: Corporate Social Responsibility	Semester II	Level
CO1	Understanding scope, strategies and CSR initiative in India.	II	K2
CO2	To focus on Regulatory Framework on CSR policy	II	K2
CO3	To analyze the provisions relating to CSR	II	K3
CO4	To have a comprehensive knowledge on Corporate Governance	II	K2
CO5	To Analyze the provisions relating to Corporate Governance.	II	K3
195CR2A3CA	Business Research Methods	Semester III	Level
CO1	Understanding the types of research	III	K2
CO2	Constructing questionnaire and the types of Data	III	K3
CO3	Analysis of Data	III	K5
CO4	Interpretation of data with tools	III	K5
CO5	Preparation of Reports	III	K5
195CR2A3CB	Corporate Restructuring Law and Practice	Semester III	Level
CO1	Understanding the need of corporate restructuring, historical background and global scenario.	III	K2

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CO2	Understanding the planning, core competence, disinvestments and strategic alliances.	III	K2
CO3	Evaluate the concepts and legal aspects of merger and amalgamation	III	K3
CO4	Apply the knowledge on legal aspects of takeover and SEBI regulations on takeover	III	K3
CO5	Examine the revival and restructuring of sick companies.	III	K5
195CR2A3CC	Cost and Management Accounting	Semester III	Level
CO1	Understand the basic concepts of various elements of cost	III	K2
CO2	Experiment with various Methods of Costing	III	K3
CO3	Analyze the Marginal Costing and CVP	III	K4
CO4	Interpret financial statements in management accounting	III	K5
CO5	Apply various tools of financial statement analysis	III	K3
195CR2A3CD	Company Secretarial Practice	Semester III	Level
CO1	Understanding the Company Secretary, incorporation of companies and procedure for issue to prospectus.	III	K2
CO2	Acquire knowledge Secretarial procedure for issue of shares and borrowing	III	K3
CO3	Organize the concept of Meetings and its proceedings	III	K3
CO4	Explain the Secretarial procedure for directors and auditors	III	K5
CO5	Acquire the knowledge on Compromise and arrangement, winding up proceedings.	III	K3
195CR2A3DA	International Marketing	Semester III	Level
CO1	Understand the concept of marketing at international level.	III	K2
CO2	Compare direct and indirect marketing channels.	III	K4
CO3	Relate the concept of branding the product and packing decisions	III	K1
CO4	Identify the Pricing strategies in International Marketing and steps in export pricing.	III	K3
CO5	Utilize the Management Information System for Foreign market intelligence.	III	K3

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195CR2A3DB	Futures and Options	Semester III	Level
CO1	Understanding the concept of derivatives and participants in derivative market.	III	K1
CO2	Acquire the knowledge about Index derivatives and derivatives in Nifty and Sensex	III	K3
CO3	Examine about the Forward and Future contracts	III	K4
CO4	Analyze the hedging, speculation and arbitrage	III	K4
CO5	Understand about worldwide commodity markets.	III	K2
195CR2A3DC	Corporate Compliance Management and Due Diligence	Semester III	Level
CO1	Understanding the concept of Compliance Management	III	K1
CO2	Acquire the knowledge about Certification, due diligence and signing.	III	K3
CO3	Examine about the Compliance Certificate.	III	K4
CO4	Analyze Due diligence of Pre –capital issue work	III	K4
CO5	Understand Due diligence of post capital issue work.	III	K5
195CR2A4CB	Tax Law - II (GST and Customs)	Semester IV	Level
CO1	Analyze the existing and present indirect tax structure	IV	K4
CO2	Acquire the knowledge on Central Goods and Service Tax Act, 2017	IV	K3
CO3	Acquire the knowledge on Integrated Goods and Service Tax Act, 2017	IV	K3
CO4	Evaluate the Customs Law	IV	K5
CO5	Acquire the knowledge on Warehousing, Duty Drawback and Confiscation of goods.	IV	K3
195CR2A4CC	Secretarial and Management Audit	Semester IV	Level
CO1	Acquire the knowledge on the basic concepts of Secretarial Audit	IV	K3
CO2	Construct the search and status reports of banks and financial institutions	IV	K3
CO3	Utilise provisions under securities audit and initiatives of SEBI to protect investors	IV	K3
CO4	Evaluate management methods and performance	IV	K5
CO5	Illustrate the functions and responsibilities of internal auditor	IV	K2

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195CR2A4DA	Elective: Foreign Exchange Management	Semester IV	Level
CO1	Understand the concept of administration of foreign exchange.	IV	K1
CO2	Analyze on buying and selling exchange rates	IV	K4
CO3	Analyze the concept fixed and floating exchange rates.	IV	K4
CO4	Demonstrate Interbank deals, BOP accounts and measure	IV	K2
CO5	Identify the concepts of derivative markets in India.	IV	K3
195CR2A4DB	Elective: Portfolio Management	Semester IV	Level
CO1	Understanding the concept of Fundamental Analysis.	IV	K2
CO2	Understand the Technical analysis and various theories	IV	K2
CO3	Analyze portfolio risk and return	IV	K4
CO4	Understand various models and factors	IV	K2
CO5	Analyze the portfolio investment process.	IV	K3
195CR2A4DC	Elective: Drafting, Appearances and Pleadings	Semester IV	Level
CO1	Understanding the concept of Drafting	IV	K1
CO2	Acquire the knowledge about Drafting and Conveyancing relating to Various Deeds and Agreements	IV	K3
CO3	Acquire the knowledge about Drafting of agreements, documents and deeds	IV	K3
CO4	Understanding the basic concepts of Pleadings	IV	K1
CO5	Understanding the concept of Appearances & Art of Advocacy	IV	K1

BoS - Chairman

BoS Chairman/HoD
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B.Com Information Technology

Programme Outcome	
1	Offers and manages business solutions through information supported technology.
2	Apply accounting concept and methods to interpret financial statement for evaluating the financial position and performances of organization.
3	Develop the skills for web page creation, new system architecture and configuration of systems to find solutions to management issues.
4	Demonstrate quantitative and qualitative tools and costing methodologies to support organizational decision making
5	Apply marketing concepts, management principles and supply chain process for ...mer centric focus and effective management Communication skill.

Programme Educational Objective	
1 •	To demonstrate the business knowledge and apply that knowledge in problem solving.
2	To provide right skills, attitudes and values among the students by training them in practical situation in modern business organizations.
3	To understand the social and ethical dimensions in their chosen disciplinary areas.
4	To enable the students to carryout action oriented researches in Commerce and Information Technology.
5	To enable the professional competence in the application of Information Technology (IT) in a globalised environment.
6	To understand the business implications with Information Technology.

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Course Outcome			
Course Code	Subject	Semester	Level
195CM1A1CA	**Financial Accounting**	I	
CO1	Know the concepts, conventions and rules of accounting to pass journal entries and prepare ledger accounts		K1
CO2	Obtain knowledge to prepare final accounts of a company and to gain skills to detect and prevent errors in journal and ledger accounts		K3,K4
CO3	Capture the procedures relating to bills of exchange, and Average due date.		K2
CO4	Acquire stuff to reconcile cash book and pass book and to prepare accounts of Non- trading concerns		K3,K4
CO5	Classify and apply appropriate methods of depreciation		K3
195CI1A1CA	**Fundamentals of Information Technology**	I	
CO1	Understand the concepts of Information Technology		K2
CO2	Study the applied aspects of Information Technology		K3
CO3	Understand how Information Technology can be used business world.		K2
CO4	Study recent concepts of Information Technology		K2
CO5	Apply MS Office concepts in the real world of Commerce		K3
195CI1A2CA	**Advanced Financial Accounting**	II	
CO1	Understand the principles related to Various field of Accounting for Consolidations.		K2
CO2	Apply the concepts of accounting in a real time business entity.		K3
CO3	Demonstrate the accounting for incomplete system.		K2
CO4	Understand the method of maintaining Partner's Capital Account		K2
CO5	Understand the various advanced accounting issues related to Financial Accounting within a global or ethical framework issues and responsibilities of accountants.		K2
195CI1A2CB	**Principles of Marketing**	II	
CO1	Understand the key concepts in marketing and the marketing process		K2

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CO2	Demonstrate conceptual knowledge in the functional area of marketing		K4
CO3	Understand the behavioural nature of consumer and apply Customer Relationship Management strategies.		K4
CO4	Understand the knowledge of effective distribution channels and analyze the components of the marketing mix.		K2
CO5	Analyze the ethical practices and social responsibility in marketing/business practice.		K3
195CM1A3CB	**Cost Accounting**	**III**	
CO1	Discuss the methods of cost accounting and know about cost sheet		K2
CO2	Apply different method to analysis level material control		K3
CO3	Use different methods of wages & incentives to labour and Absorption of overhead.		K3
CO4	Explain a process costing system and compute the Cost of each process of finished produced.		K2
CO5	Retrieve the concept of Contract costing and Job costing		K1
195CI1A3CA	**Multimedia And Desktop Publishing**	**III**	
CO1	Learn the fundamentals of Multimedia and its working environment.		K1
CO2	Understand the concepts of Image processing.		K2
CO3	Understanding Audio and Multimedia.		K3
CO4	Learn the Video concepts and file formats.		K2
CO5	Illustrate the concepts of Animation.		K3
195CI1A3CB	**Principles of Management**	**III**	
CO1	Observe the influence of historical forces on the current practice of management.		K2
CO2	Analyze the problem solving strategies and critical thinking skills in real life situations.		K4
CO3	Practice the process of management's functions: planning, organizing, leading, and controlling.		K2
CO4	Practice the process of management's functions: planning, organizing, leading, and controlling.		K2
CO5	Identify the social responsibility and ethical issues involved in business situations.		K3

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195CM1A3IA	Business Economics	III	
CO1	To discuss the relationship between economics and business and to analyze the application of economic theories in modern business.		K1
CO2	Analyze the demand and supply conditions and to give outline on both elasticity of demand and supply.		K4
CO3	Compare various cost concepts and identify the cost output relationships.		K2
CO4	Evaluate pricing and output relationships to adopt appropriate pricing methods under different market situations.		K5
CO5	Make use of the concepts relating to national income and estimation of national income using various methods.		K3
195CI1A3SA	C – Programming	III	
CO1	Learn the fundamentals of C programming		K1
CO2	Explain the concepts of Operator and Expression		K2
CO3	Understand the principles of control structures and array.		K3
CO4	Apply the knowledge of strings and functions.		K2
CO5	Build programs using structures, unions and pointers.		K2
195BA1A4CA	Management Accounting	IV	
CO1	Perceive the concepts of Management accounting and classifying the financial accounting, management accounting and cost accounting.		K1
CO2	Obtain knowledge to calculate the types of ratio.		K1
CO3	Capture the procedures relating Working Capital and Cash flow statement.		K1 & K4
CO4	Know the concepts, of Marginal costing and Break Even Analysis.		K3
CO5	To gather Knowledge about the Budgeting and classify the types of budget.		K1 & K4
195CI1A4CA	VB.NET	IV	
CO1	Illustrate Integrated Development Environment And Visual Basic Applications		K2
CO2	Make Use Of Control Structures, Data Types, Variables And Control Flow Statements		K2
CO3	Applying Intrinsic Controls To Develop Visual Basic Applications		K3

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Criterion I
Metric 1.1.2
PO-PSO-CO

CO4	Analyzing The Concept of object oriented features		K4
CO5	Developing Data Environment and Data Report using Designer Tools		K5
195CI1A4CB	**Business Communication**	**IV**	
CO1	Using persuasive and professional language in speech and writing		K1
CO2	Communicate the process and findings in a range of business documents and oral presentations.		K3
CO3	Acquire good business writing skills, to produce effective communications documents.		K2
CO4	Demonstrate advanced interpersonal communication, business etiquette and relationship building skills		K3
CO5	Planning for career progression purposes in writing Curriculum vitae and preparing for interview.		K3
195CI1A4CC	**Data Base Management System**	**IV**	
CO1	Understand the concepts of Database and its Administration		K2
CO2	Learn the fundamentals of SQL and its working environment		K3
CO3	Illustrate the concepts of Relational Algebra and Calculus		K2
CO4	Applying the concept offer ER model and Normalization in DBMS		K2
CO5	Explain the concepts of Transaction.		K3
196BM1A41A	**Business Organisation and Office Management**	**IV**	
CO1	Ability to understand the different forms of business organization.		K2
CO2	Understand the importance of location of business		K2
CO3	Acquire knowledge on various sources of finance for different capital requirement of business		K3
CO4	Understand the office functions and its significance on office management and preparation of office documents.		K2
CO5	Understand the office functions and its significance on office management and preparation of office documents.		K3

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18UCI53A	Software Engineering	V	
CO1	Understand various software Development process models		K1
CO2	Illustrate a Planning Strategies for software development		K3
CO3	Demonstrate Software Tea		K2
CO4	Software Quality		K3
CO5	Demonstrate Various Risk		K3
18UCI53B	**Corporate Accounting**	**V**	
CO1	List out the types of shares and what basis to issue shares		K1
CO2	Outline the redemption of preference and debentures		K2
CO3	Explain the procedure and standards of final accounts as per revised schedule to measure performance of business		K2
CO4	Explain the corporate practice in amalgamation , absorption and reconstruction of companies		K3
CO5	Apply different methods to find out value of goodwill and value of share.		K4
18UCI53C	**Principles of web Designing**	**V**	
CO1	Illustrate the fundamentals of HTML		K2
CO2	Explain the concepts of Style Sheet and CSS		K2
CO3	Explain the concepts of Style Sheet and CSS		K3
CO4	Interpret links with web pages and Creating Tables		K3
CO5	Construction of Web applications using GUI		K4
18UCM004	**Income Tax Law and Practice**	**V**	
CO1	Define the basic concepts of income tax and find the residential status of all assesses.		K1
CO2	Outline the provisions of Salaries like allowances, perquisites, Profit in lieu of salary to calculate taxable salary and Determination of Annual value of house property.		K2
CO3	Apply the provisions related to business income and income from other sources.		K3
CO4	Analyze various capital assets which are taxable and to list the various provisions Under section 80.		K4
CO5	Estimate the individual income considering the previous year losses, rebate and relief.		K5

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18UCI5EA	Business Finance	V	
CO1	Acquire and exhibit an understanding of finance and the role that finance plays within an organization		K1
CO2	Identify ethical behaviour in the context of financial management and financial planning		K3
CO3	Acquire and exhibit an understanding of the financial statements and their components, their use and how they relate to each other in determining the financial health of an organization		K2
CO4	Apply the core concepts of financial management for basic project valuation and analyze the capital structure of the company		K3
CO5	Value equities and bonds using the basic financial models.		K3
18UCI5EB	**Entrepreneurial Development**	**V**	
CO1	Understanding the dynamic role of entrepreneurship and small businesses.		K1
CO2	Prepare project setup planning and project report		K3
CO3	Familiarize with the institutional services provided by different institutions to the entrepreneur		K2
CO4	Select appropriate agencies for technical and financial support.		K3
CO5	Develop the ability to select potential areas for self-employment and to give necessary inputs for the creation of the new ventures by accounting legal and tax considerations		K3
18UCI5SA	**Research Methodology**	**V**	
CO1	Identify circumstances in which research is necessary or valuable		K1
CO2	Framing the problem with the correct research methodology and developing hypothesis		K3
CO3	Prepare a preliminary research design for projects in their subject matter areas		K2
CO4	Select and apply the appropriate statistical tools to explore the data		K3
CO5	Apply ethical and culturally relevant strategies for interpreting and reporting the results of research and/or program evaluation studies		K3

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18UCI63A	Management Information System And ERP	VI	
CO1	Interpretation of Management Information System Roles and Its Importance.		K2
CO2	Classification of Management Information Systems and Their Importance		K2,K3
CO3	Extend the Concept of Executive information system and Resource Planning system		K3,K4
CO4	Make use of Data Base Management Systems for Business process.		K3,K4
CO5	Functional of individual departments in Management system.		K4,K5
18UCI63B	Desktop Publishing	VI	
CO1	Learn the fundamentals of Photoshop and its working environment		K2
CO2	Learn the Basic Environment of Corel Draw		K2
CO3	Understanding the Working Principles of Corel Draw		K3
CO4	Learn the basic tools and concepts of Page Maker		K2
CO5	Illustrate the concepts to create a book and its Principles		K4
18UCI6EA	Financial Management	VI	
CO1	Understanding financial management and its importance and its application in business.		K1
CO2	Analyze the time value of money and valuation of securities		K3
CO3	Understand the costs of capital, including debt and equity capital, using financial		K3
CO4	Analyze the significance and evils of excess working capita		K4
CO5	Analyze capital budgeting techniques and dividend policies.		K3
18UCI6EB	Financial Markets	VI	
CO1	Analyze the market in which money is created to the money market.		K4
CO2	To understand "financial markets" is used to refer solely to the markets that are used to raise finance, for longterm finance, capital markets are used; for short-term finance, money markets are used.		K2
CO3	Analyze stock markets and bond markets are two types of capital markets that provide financing through the issuing of shares of stock or the issuing of bonds, respectively. A key		K4

		financing through the issuing of shares of stock or the issuing of bonds, respectively. A key division within the capital markets is between the primary markets and secondary markets.		
	CO4	Understand the significance of the interbank markets in money creation.		K2
	CO5	Understand of and ability to apply the principle analytical skills and tools used in finance.		K2
18UCI6EC		**Investment Management**	VI	
	CO1	Analyze share investments, analytical dimensions of share selection, share valuation and investment decisions		K4
	CO2	Understand Current themes in institutional investment management		K2
	CO3	Understand and quantify risk, make sound and ethical financial decisions in a risky environment, and design financial strategies for managing business risks.		K2
	CO4	Analyze Stock markets and equity investing.		K4
	CO5	Understand the basic principles of portfolio construction, portfolio strategies and styles		K2

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Head of the Department.
Department of Commerce With IT
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B.Com. (Professional Accounting)

Programme Outcome	
1	Apply knowledge of accounting, finance and law in appropriate situations as required by the industry.
2	Communicate to professional and non-professional community by making comprehensible presentations, writing effective reports, designing documentation and providing unambiguous instructions.
3	Think innovatively and convert challenges into opportunities as an employer in the professional field, eventually providing solutions for the betterment of the society.
4	Demonstrate the skill of functioning effectively as an individual and as member/ leader in diverse teams and multi-disciplinary projects giving significant contributions in terms of accounting and management issues.
5	Prepare them for updating knowledge continuously based on their chosen professional career through life long independent learning committed to ethical and social responsibilities pertaining to the professional community.

Programme Educational Objective	
1	Apply strong accounting skills and knowledge to develop smart decisions and solutions for the upliftment of the society.
2	Utilize a rich set of communication, teamwork and leadership skills to excel in their profession, research and entrepreneurship
3	Perform consistent improvement in their professional career as well as in research and entrepreneurial path by inculcating life-long learning, and appreciating human values and ethics.

Course Outcome			
17UPA53A	**Corporate Accounting -II**	**Semester – V**	**Level**
CO1	Know the concepts and accounting treatments of Alteration of share capital and Internal Reconstruction.		K1,K2,K3
CO2	Know the concepts and accounting treatments of Amalgamation and		K1,K2,K3
CO3	Obtain knowledge on accounting treatments of Holding Company		K1,K2,K3
CO4	Acquire Knowledge about Banking Company Accounts		K1,K2,K3
CO5	Obtain knowledge about Insurance Company Accounts		K1,K2,K3

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17UPA53B	**Financial Markets and Services**	**Semester – V**	**Level**
CO1	Learn the structure of financial markets in India		K1
CO2	Obtain knowledge about markets		K1,K2
CO3	Understand about secondary markets in India		K2
CO4	Demonstrate the modes of financing		K2
CO5	Learn the concepts of factoring Securitizations		K3
18UCO002	**Principles of Marketing**	**Semester – V**	**Level**
CO1	Understand the concept of marketing and its Types		K2
CO2	Learn the functions of marketing		K3,K4
CO3	Analyze the factors determining behavior and market segmentation		K4
CO4	Classify the marketing mix to adopt suitable pricing and promotional strategy		K3, K4
CO5	Aware of consumerism and Protection Act		K3,K4
18UCM004	**Income Tax Law and Practice**	**Semester – V**	**Level**
CO1	Define the basic concepts of income tax and find the residential status of all assesses.		**K1**
CO2	Outline the provisions of Salaries like allowances, perquisites, Profit in lieu of salary to calculate taxable salary and Determination of Annual value of house property.		**K2**
CO3	Apply the provisions related to business income and income from other sources.		**K3**
CO4	Analyze various capital assets which are taxable and to list the various provisions Under section 80.		**K4**
CO5	Estimate the individual income considering the previous year losses, rebate and relief.		**K5**
17UPA5EA	**Elec. I: Business Environment**	**Semester – V**	**Level**
CO1	Know the concepts of business environment and social responsibilities of Business		K1
CO2	Understand industrial policies and regulations and privatization in India		K2,K3
CO3	Acquire knowledge about Economic systems and Economic planning in India		K2,K3
CO4	Obtain knowledge on technological environment and financial institutions in India		K2,K3

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CO5	Comprehend the effects of Globalization in India		K1,K2
17UPA5EB	**Elec. I : Investment Management**	**Semester – V**	**Level**
CO1	Know the concept of money market and capital market investment instruments		K1
CO2	Acquire knowledge on securities Indian stock market; Guidelines of SEBI		K1, K3
CO3	Understand about Risk analysis		K1,K2
CO4	Aware about stock market analysis and investment decisions		K1,K3
CO5	Explain about portfolio management and various theories relating to that		K1,K3
17UPA5EC	**Elec. I :Entrepreneurial Development**	**Semester – V**	**Level**
CO1	Know the concept of entrepreneurship, types and functions		K1
CO2	Understand the project formulation and evaluation		K2,K3
CO3	Explain about institutions which provide service to entrepreneurs		K2,K3
CO4	Acquire knowledge about sources institutional finance for entrepreneurs		K2,K3
CO5	Aware of incentives and subsidies, taxation benefits for entrepreneurs		K2,K3
17UPA63A	**Strategic Management**	**Semester – VI**	**Level**
CO1	Learn basic concepts in strategic Management		K1
CO2	Obtain knowledge on strategic Analysis and Planning		K2
CO3	Develop the various functional strategies		K2,K3
CO4	Analyze and understand various issues in the process of Strategy Implementation		K2,K3
CO5	Build overview on reaching strategy edge on BPR, Benchmarking, BCG Matrix etc		K2,K3
17UPA63B	**Taxation**	**Semester – VI**	**Level**
CO1	Know the Principles of Taxation and impact of Direct Taxes & Indirect Taxes.		K1
CO2	Understand the Income Tax Authorities, Powers and Administration.		K2
CO3	Learning the Appellate Authorities, Special Provision and Penalties.		K3
CO4	Obtain knowledge of prepare PAN and Appeals		K3
CO5	Obtain the Concepts and Benefits of GST.		K3

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	Explore the Computation of GST.		
17UPA63C	**Financial Management**	**Semester – VI**	**Level**
CO1	Know the concept of Financial Management and Functions of Financial Manager.		K1
CO2	Learn the Sources of Long Term Funds and it's affecting Factors, Capital Structure Theories		K2
CO3	Acquire knowledge about Cost of Capital and Leverages.		K3,K4
CO4	Obtain knowledge about Capital Process and Techniques.		K2,K3
CO5	Understand the Concept of Dividend Policy and Dividend Theories.		K2,K3
17UPA6EA	**Elec. II : Organisational Behaviour**	**Semester – VI**	**Level**
CO1	Understand the concepts of organisational Behavior		K1
CO2	Gain the knowledge about personality and Attitude		K1,K2
CO3	Gain the knowledge about Perception, Learning and Conflict		K1,K2
CO4	Comprehend about the group behaviour in organization		K2,K3
CO5	Demonstrate the management of Organisational culture		K2,K3
17UPA6EB	**Elec. II : Research Methodology**	**Semester – VI**	**Level**
CO1	Learn the Basic Concept of Research		K1
CO2	Use data collection methods and tools to complete the research process		K2,K3
CO3	Perform basic statistical data Analysis from the sources of data		K3,K4
CO4	Able to interpret the analysis and writing the report		K3,K4
CO5	Explore the knowledge of research to apply in practical situations		K2,K3,K4
17UPA6ED	**Elec. III: Human Resource Management**	**Semester – VI**	**Level**
CO1	Know the concept of Human Resource		K1,K2
CO2	Management, policies and procedures		K2,K3
CO3	Obtain the knowledge of manpower planning, training and development		K2,K3
CO4	Understand about performance appraisal and human relations		K2,K3
CO5	Learn the wages and salary administration		K2,K3

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17UPA6EE	Elec. III: E-Business	Semester – VI	Level
CO1	Know the concept of electronic commerce,		K1
CO2	types, value chains and web based tools for E-Business		K1,K2
CO3	Explore security threats; Cryptography; and security control applications		K2,K3
CO4	Able to apply electronic payment systems		K1,K3
CO5	Explore about the business models and revenue models		K1,K3
195CO1A1CA	**Financial Accounting –I**	Semester - I	Level
CO1	Know the concepts, conventions and rules of accounting		K1,K2
CO2	Obtain knowledge to prepare final accounts of a company and to gain skills to detect and prevent errors in journal and ledger accounts		K2,K3
CO3	Capture the procedures relating to bills of exchange, and Average due date		K2
CO4	Acquire stuff to reconcile cash book and pass book and to prepare accounts of Non- trading concerns		K3
CO5	Classify and apply appropriate methods of depreciation		K2,K3
195PA1A1CA	**Legal Aspects Of Business**	Semester - I	Level
CO1	To demonstrate the law relating to Indian contract Act		K1
CO2	To explain the concept of offer and acceptance.		K2
CO3	To Understand the different elements of valid contract and quasi contract.		K2
CO4	To Explain the performance of contract and breach of contract.		K3
CO5	To identify the sale of goods, warranties and ownership of goods according to the Act.		K3
192MT1B1IB	**Business Mathematics**	Semester - I	Level
CO1	Discuss the Mathematical devices		K1
CO2	Discuss the applications of permutation and combination.		K1

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CO3	Explain the concepts of Binomial theorem.		K2
CO4	Apply the concept of compound interest in real life problems.		K3
CO5	Demonstrate the applications of annuities.		K3
195PA1A2CA	**Financial Accounting –II**	**Semester - II**	**Level**
CO1	To understand the accounting		K1
CO2	To learn the accounting treatments relating to Royalty accounts.		K2
CO3	To understand the reasons for difference between single and double entry system and its methods.		K2
CO4	To develop the skills in preparation of branch accounts and departmental accounts.		K3
CO5	To understand various interest calculations relating to hire purchase and installment Purchase system.		K3
195PA1A2CB	**Industrial Law**	**Semester - II**	**Level**
CO1	To Obtain the knowledge about law regulating Occupational Health, Safety, Welfare, proper Working Hours, Leave and other Benefits.		K1
CO2	To Understand the Procedure for Settlement of Industrial Disputes and Authorities under the Act.		K2
CO3	To Impose on obligation upon Employers to pay Compensation to workers for Accidents arising out of and in the Course of Employment.		K2.K3
CO4	To Learn the concepts of Employee's Provident Fund Scheme, Employee's Pension Scheme.		K1,K2,K3
CO5	To Understand the Determination of Bonus and payment of Gratuity.		K1,K2
192MT1B2IC	**Business Statistics**	**Semester - II**	**Level**
CO1	Learn and know as to how Statistics can be used		K1
CO2	Discuss the main concepts of Measure of Central Tendency and Measure of Dispersion		K2

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CO3	Uses of Correlation and Regression		K3
CO4	Demonstrate different components of a Time series		K3
CO5	Analyzing the concept of Test of Significance		K4
195PA1A3CA	**Higher Financial Accounting**	**Semester - III**	**Level**
CO1	Know the concept of partnership accounts.		K1
CO2	Gain the knowledge about the admission of a new partner.		K1,K2
CO3	Understand the accounting treatment and settlement for retirement and death of a partner.		K2,K3
CO4	Learn the amalgamation, its treatments of goodwill and accounting procedures of partnership firm.		K2,K3
CO5	Gain knowledge on dissolution of partnership firm and piecemeal distribution of assets.		K3
195CM1A3CB	**Cost Accounting**	**Semester - III**	**Level**
CO1	Discuss the methods of cost accounting and know about cost sheet.		K2
CO2	Apply different method to analysis level material control		K3
CO3	Usedifferent methods of wages & incentives to labour and Absorption ofoverhead		K3
CO4	Explain a process costing system and compute theCost of each process of finished produced		K2
CO5	Retrieve the concept of Contract costing and Job costing		K1
195PA1A3CB	**Financial Markets And Services**	**Semester - III**	**Level**
CO1	Learn the structure of financial markets in India.		K1
CO2	Obtain knowledge about markets for corporate Securities.		K1,K2
CO3	Understand about secondary markets in India.		K2
CO4	Demonstrate the modes of financing.		K2
CO5	Learn the concepts of factoring and		K3

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	securitizations.		
195PA1A3CC	**IFRS And Accounting Standards**	**Semester - III**	**Level**
CO1	Know the structure of IFRS and its use around the world.		K1
CO2	Obtain knowledge for presentation of financial statements.		K2,k3
CO3	Capture the standards for the revenue received from the customers.		K2
CO4	Acquire the knowledge of standards for accounting assets.		K3
CO5	Classify and understand standards for accounting liabilities.		K2,K3
195CM1A3IA	**Business Economics**	**Semester - III**	**Level**
CO1	Discuss the relationship between economics and business and to analyze the application of economic theories in modern business.		K1
CO2	Analyze the demand and supply conditions and to give outline on both elasticity of demand and supply.		K4
CO3	Compare various cost concepts and identify the cost output relationships.		K2
CO4	Evaluate pricing and output relationships to adopt appropriate pricing methods under different market situations.		K5
CO5	Make use of the concepts relating to national income and estimation of national income using various methods.		K3
195PA1A4CA	**Corporate Accounting**	**Semester – IV**	**Level**
CO1	Know the Issue of Shares, Forfeiture, Re – issue, Surrender, Right Issue and Underwritings.		K1
CO2	Obtain the knowledge of Redemption of Preference Shares, Redemption of Debentures and its various methods.		K2
CO3	Learn the Knowledge of Final Accounts Companies under Companies Act,2013 which include Calculation of Managerial Remuneration.		K1,K2
CO4	Classify the Valuation of Goodwill and Shares with different methods.		K2,K3
CO5	Acquire knowledge about Liquidation of Companies and Modes of Winding-up and its Calculations.		K1,K2,K3

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195BA1A4CA	**Management Accounting**	**Semester – IV**	**Level**
CO1	Perceive the concepts of Management accounting and classifying the financial accounting, management accounting and cost accounting		K1
CO2	Obtain knowledge to calculate the types of ratio		K1
CO3	Capture the procedures relating		K1,K4
CO4	Know the concepts, of Marginal costing and Break Even Analysis		K3
CO5	To gather Knowledge about the Budgeting and classify the types of budget		K1,K4
195PA1A4CB	**Principles of Auditing**	**Semester – IV**	**Level**
CO1	Understand the concepts of Auditing.		K1,K2
CO2	Learn about internal control and Vouching		K2
CO3	Develop the skills to verify and valuation of assets and liabilities		K2,K3
CO4	Learn about audit of Joint Stock Companies.		K2,K3
CO5	Demonstrate the auditing procedures for Computerized Auditing		K2,K3
195CM1A4IA	**Business Management**	**Semester – IV**	**Level**
CO1	Understand the different management contributions		K1
CO2	Develop the skills in planning and decision making		K2
CO3	Comprehend the methods of organization		K3
CO4	Demonstrate the theories of motivation and leadership style		K3
CO5	Acquire techniques of control		K2
195PA1A4SA	**Executive Business Communication**	**Semester – IV**	**Level**
CO1	Know the importance of effective business communication and modern communication methods.		K1,K2
CO2	Understand different writing techniques and styles based on the communication medium being used.		K2,K3
CO3	Obtain the knowledge about banking correspondence and insurance correspondence.		K2

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CO4	Understand the company secretarial correspondence and preparation of report writing		K2,K3
CO5	Obtain the knowledge about preparation of resume and techniques of various types of interviews		K3

BoS-Chairman

BoS Chairman/HoD
Department of Commerce (PA)
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048

B.Com. Finance

Programme Outcome	
1	Gain basic knowledge in commerce and to understand the field of finance to serve the society.
2	Understand the finance industry with creative mind as professional.
3	Obtain the basic skill for their professional excellence at global level.
4	Progress with the socio-economic challenges related to finance and shaping a successful career in finance and its related Course.
5	To have the standard ethics and to serve the society.

Programme Educational Objective	
1	Able to demonstrate a substantial understanding of concepts in the key areas of commerce field and its applications.
2	Construct professional excellence in the finance industry with creative mind.
3	To decide the skill requirement of the financial executives in competitive global business environment.
4	Apply the knowledge obtained in the field of finance as entrepreneur, scholars, researchers and financial analysts.
5	Perform in the field of finance with ethics and to act on their beliefs to serve the society.

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Metric 1.1.2
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Course Outcome			
195CO1A1CA	Financial Accounting-I	Semester I	Level
CO1	Know the concepts, conventions and rules of accounting to pass journal entries and prepare ledger accounts.	I	K 1
CO2	Obtain knowledge to prepare final accounts of a company and to gain skills to detect and prevent errors in journal and ledger accounts	I	K3,K4
CO3	Capture the procedures relating to bills of exchange, and Average due date	I	K2
CO4	Acquire stuff to reconcile cash book and pass book and to prepare accounts of Non-trading concerns	I	K3, K4
CO5	Classify and apply appropriate methods of depreciation	I	K3
195FI1A1CA	Business Organisation	Semester I	Level
CO1	Know the foundation of business activities.	I	K1
CO2	Understand the ownership of Business enterprises.	I	K1,K2
CO3	Basic knowledge about company formation.	I	K2
CO4	Identify Office management tools and documentation requirements.	I	K2
CO5	Adapt business ethics.	I	K3
195FI1A1CA	Business Organisation	Semester I	Level
CO1	To introduce the micro and macroeconomic concept with demand analysis.	I	K1
CO2	To understand the supply side of market and cost analysis.	I	K1
CO3	Basic Knowledge about business cycle and inflation.	I	K2,K3
CO4	To understand the monetary and fiscal policy.	I	K3,K4
CO5	To know basic knowledge about national income.	I	K2

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Course Outcome			
195FI1A2CA	Financial Accounting - II	Semester II	Level
CO1	Relate the concepts about dependent and Independent branches.	II	K2 & K3
CO2	Identify the need for Departmental Accounting	II	K2 &K3
CO3	To understand the Hire Purchase Trading System	II	K2, K3 & K4
CO4	Find out opening or closing capital and profit or loss during the financial year	II	K3 & K4
CO5	Classifying different types of Business Enterprises	II	K2
195FI1A2CB	Principles of Management	Semester I	Level
CO1	Understand the nature, scope and principles of management.	II	K2
CO2	Learn the steps in planning and decision making	II	K3 &K4
CO3	Obtain the skills to delegate authorities and responsibilities to manage the business organization effectively	II	K3 & K4
CO4	Know the Recruitment process, motivation and leadership styles	II	K1
CO5	Comprehend the techniques of control and co-ordination for further implementation	II	K3 & K4
195FI1A2IA	International Business Environment	Semester I	Level
CO1	Learn about basic concept of business environment	II	K1
CO2	Understand economic environments to business	II	K1 & K2
CO3	Understand the international environment to business	II	K1
CO4	International cultural , society and political environment	II	K1 & K3
CO5	To know the various financial environment in business	II	K1

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Course Outcome			
195FI1A3CA	Corporate Accounting - I	Semester III	Level
CO1	Obtain the concept of issue of shares and debentures	III	K1& K2
CO2	Learn about redemption of preference shares and debentures	III	K1& K2
CO3	Know and apply about the preparation of managerial remuneration in final accounts	III	K1& K2
CO4	Classify the various valuation of shares and goodwill	III	K1& K2
CO5	State the requirement of liquidation of companies.	III	K2 & K3
195FI1A3CB	Investment Management	Semester III	Level
CO1	Know the basic concept of investment	III	K1
CO2	Learn about the investment market	III	K1
CO3	Apply the risk and return	III	K2& K3
CO4	Understand listing procedures and stock brokers.	III	K1
CO5	Identify mutual fund in India	III	K1
195FI1A3CC	Financial Services	Semester III	Level
CO1	Know the financial services in Indian financial system	III	K1
CO2	Obtain NBFCs knowledge	III	K1
CO3	State the merchant banking concept	III	K2
CO4	Capture the legal aspects of leasing and hire purchase	III	K2
CO5	Interpret the venture capital in business	III	K3
196BM1A3IA	Entrepreneurship Development	Semester III	Level
CO1	Understand the concept of Entrepreneurship and the Functions of entrepreneurs.	III	K2
CO2	Summarize the Entrepreneurship Development Programmes and Steps for Starting a Small Industry.	III	K2
CO3	Apply the knowledge to Identify, Select, Formulate, Appraise a Project and prepare a Project Report.	III	K3
CO4	Classify the Sources of Finance and Outline the various Financial Institutions	III	K2
CO5	Interpret the kinds of Support provided by the various Institutions to Entrepreneurs	III	K2

Course Outcome			
195FI1A3SA	Communication Skill	Semester III	Level
CO1	Recall basic knowledge about business communication.	III	K1
CO2	Learn about various business letters.	III	K1
CO3	Obtain knowledge in report writing	III	K2
CO4	Develop personality traits.	III	K3
CO5	State the importance skills for career competence.	III	K3
195FI1A4CA	Corporate Accounting - II	Semester IV	Level
CO1	Relate the concepts of amalgamation and reconstruction of companies	IV	K1 & K2
CO2	Understand about the holding company accounts	IV	K1 & K2
CO3	Know about statutory laws in banking company accounts	IV	K1 & K2
CO4	Know about statutory laws relating to insurance company accounts.	IV	K1 & K2
CO5	Prepare the inflation and human resource accounting	IV	K1 & K2
195FI1A4CB	Financial Management	Semester IV	Level
CO1	Basic concepts and objective of financial management	IV	K1
CO2	Know the requirements of finance in business activities	IV	K1
CO3	Computation of overall cost of capital of a firm	IV	K1
CO4	Understand the concept of capital structure	IV	K1
CO5	Specify the dividend policy	IV	K1

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NAAC
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Criterion I
Metric 1.1.2
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Course Outcome			
195FI1A4CC	Business Research Methods	Semester IV	Level
CO1	Know the concepts of business research.	IV	K1
CO2	Identify the research problems and research design.	IV	K1
CO3	Procedures for sampling	IV	K1
CO4	Specify the method of data collection	IV	K1
CO5	Prepare report writing	IV	K1
192MT1B4IB	Business Statistics	Semester IV	Level
CO1	Learn and know as to how Statistics can be used	IV	K1
CO2	Know the main properties of each Measure of Central Tendency and select the most appropriate one for use with a given set of data	IV	K2
CO3	Understand the Importance and Limitations of Correlation Analysis	IV	K3
CO4	Recognize different components of a Time series	IV	K3
CO5	Analysing the concept of Test of Significance	IV	K4
195FI1A4SA	Principles of Marketing	Semester IV	Level
CO1	Identify e-marketing opportunity	IV	K1
CO2	Specify functions of marketing	IV	K1
CO3	Demonstrate different consumer behaviour.	IV	K1
CO4	Understand and acquire skill on advertising	IV	K1
CO5	Use pricing strategy	IV	K1

Course Outcome			
18UCM002	CORE- X: Cost Accounting	Semester V	Level
CO1	Know the basic concepts, classification and costing under various heads	V	K1, K2 & K3
CO2	Obtain knowledge to prepare Levels of material control	V	K2,K3 & K4
CO3	Confine the procedures relating to wage payment, idle time, labour turnover and overhead	V	K3 &K4
CO4	Show various process costing application in manufacturing sector	V	K2, K3 & K4
CO5	Apply operating costing and to prepare reconciliation between cost and financial accounts.	V	K4
18UCM004	Income Tax Law and Practice	Semester V	Level
CO1	Understand the basic concept of Income and Residential status	V	K1 & K2
CO2	Analyse the various Heads of income from salaries Learn the different types allowances and perquisites in salary	V	K1 & K2
CO3	Identity the allowable and disallowable items in Profits and gains of business or profession Classify the Incomes from other sources	V	K1 & K3
CO4	Calculate the Annual rental value in income from house property. Understand the exempted income from house property	V	K1 & K3
CO5	Understand the basis of charges in capital gain Compute the capital gain Classify the various deductions in total income	V	K1 & K3

Course Outcome			
18UFI53C	Financial Management	Semester V	Level
CO1	To recall the basic concepts and objective of financial management.	V	K1
CO2	Understand the mix of debt and equity. Awareness regarding dividend policies practical in share market.	V	K1 & K2
CO3	Obtaining knowledge regarding the day to day needs of business and various ways to manage cash.	V	K2
CO4	Computation of overall cost of capital of a firm.	V	K3
CO5	Analyse the various methods of calculating capital budgeting.	V	K4
18UFI5EA	Financial Institutions	Semester V	Level
CO1	Basic concept of Financial Institutions and its features	V	K1 & K2
CO2	Learn about the Financial Companies and its functions for better proficiency	V	K1 & K2
CO3	To understand EXIM functions	V	K1 & K2
CO4	To know about global financial system	V	K1 & K2
CO5	To study the significant contribution of Asian Development Bank in economic growth	V	K1 & K2
18UFI5EB	Corporate Governance and Business Ethics	Semester V	Level
CO1	To obtain the ethics concepts.	V	K1 & K2
CO2	Learn about the Nature and Scope of Business Ethics	V	K1
CO3	To know about the Corporate Social Responsibility of Business	V	K1 & K2
CO4	To enable students to learn about Growth of Corporate Governance	V	K1 & K2
CO5	To provide knowledge about the Issues and importance of Corporate	V	K1 & K2

Course Outcome			
18UFI5EC	Project Finance	Semester V	Level
CO1	Learn the concept of project finance	V	K1
CO2	Understand about the project appraisal	V	K1
CO3	Know about the debt capital	V	K1
CO4	Awareness on borrowings of foreign currency	V	K1
CO5	To know about the financial indicators	V	K2
18UFI5SA	Principles of Marketing	Semester V	Level
CO1	Test the skill for e-marketing and match the marketing ethics and career opportunity.	V	K2
CO2	To understand functions of marketing and test the skill of different markets.	V	K2
CO3	Demonstrate different consumer behaviour of marketing and test the skill on segmentation.	V	K3
CO4	To know promotion mix and test the skill on advertising.	V	K3
CO5	To apply the pricing strategy and test the skill on pricing.	V	K3
18UCM003	Management Accounting	Semester VI	Level
CO1	Understand the basic concept of various Cost, Financial and Management Accounting	VI	K1 & K2
CO2	Obtain knowledge to prepare Ratio analysis and to gain skills to know liquidity, solvency, profitability and construction of balance sheet	VI	K3 & K4
CO3	Ability to do working capital requirements	VI	K3 & K4
CO4	Capture the procedures relating to marginal costing and break even analysis	VI	K3 & K4
CO5	Acquire stuff to prepare various budgeting	VI	K4

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Course Outcome			
18UFI63B	Principles of Auditing	Semester VI	Level
CO1	Basic concept of Auditing and Investigation with its features	VI	K1
CO2	Learn and verify about internal control with Chartered Accountant	VI	K1 ,K2& K3
CO3	To know about the Verification and valuation of assets and liabilities.	VI	K2
CO4	Aware of Various modes of Appointment of Company Auditors in Joint Stock Companies	VI	K2 & K3
CO5	Classify the various Investigation of auditing.	VI	K2 & K3
18UFI6EA	Business Law	Semester VI	Level
CO1	To make the students aware of what is contract and laws relating to contract	VI	K1
CO2	Outline the students about the laws relating to minor and persons of unsound mind	VI	K2
CO3	Identifying the modes of performance till the discharge of contract	VI	K3
CO4	It explains the students regarding rights of indemnity holder and liabilities of surety	VI	K4
CO5	Discovering the laws relating to the sale of goods	VI	K4
18UFI6EB	Company Law	Semester VI	Level
CO1	Understand the basic concept of kinds of companies and Duties and liabilities of a secretary	VI	K1 & K2
CO2	Learn about the Memorandum of association and Articles of association	VI	K1 & K2
CO3	To enable the students to learn about Prospectus and SEBI Guidelines	VI	K1 & K2
CO4	Obtain knowledge to know the various Issue and allotment of shares and E-filing.	VI	K1 & K2
CO5	To provide knowledge about the Legal provision and Effects of Non-Registration	VI	K1 & K2

Course Outcome			
18UCO003	Indirect Tax	Semester VI	Level
CO1	Discuss the basics and History of Tax system	VI	K1
CO2	Understand the basic concepts about Goods and Service Tax	VI	K1 & K2
CO3	Analyse the Liability and Tax rate system Understand the Filing of GST Return	VI	K1 & K3
CO4	Aware of Eligibilities to Input Tax Credit.	VI	K1 & K2
CO5	Acquire knowledge about Composite levy and advantages	VI	K1 & K2
18UFI6ED	Public & Personal Finance	Semester VI	Level
CO1	Learn about the basic concept of Public finance	VI	K1
CO2	Understand about the Public and Personal expenditure	VI	K1
CO3	Understand about the Public finance sources	VI	K1
CO4	Aware of major planning areas in Personal finance	VI	K2
CO5	Understand about Financial environment	VI	K1
18UFI6EE	Business Organisation and Office Management	Semester VI	Level
CO1	Understand the basic concept of various business organization	VI	K1
CO2	Outline their abilities to organize offices and establish standard office procedures and practices.	VI	K1 & K2
CO3	Ability to plan the office layout.	VI	K3
CO4	Develop the tasks required to work in real Organization.	VI	K1 & K2
CO5	Demonstrate role of information system in business	VI	K1

Course Outcome			
18UFI6SA	Digital Banking and Cyber Law	Semester VI	Level
CO1	To provide knowledge relating to opening of a bank account and operation of a bank account.	VI	K1
CO2	This unit explains the students about what are cheque and types of cheque and the role of paying and collecting banker.	VI	K1 & K2
CO3	To develop the students in digitalized banking.	VI	K4
CO4	To make the students aware of cyber law and scope of cyber law in India.	VI	K4
CO5	Identifying the different types of cyber crime in banking sector.	VI	K3

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BoS Chairman/HoD
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B.Com. Banking and Insurance

Programme Outcome	
1	To develop and inculcate the traits of professionalism among the students. Professional attire, professional communication skills and Professional discipline will be inculcated.
2	Students undertaking the course will have comprehensive and up-to-date knowledge in the courses of Banking and Insurance.
3	Basic investment information is to combine academic work with financial markets.
4	The company's operation, accounting cycle within relevant books, records and financial statements and closing entries, and correction will be able to recognize.
5	Besides the knowledge of the basic law, promotes the development of ethical responsibilities of banking law, insurance law and capital market law.

Programme Educational Objective	
1	To gain a substantial understanding of concepts in key areas of Banking Insurance and its applications.
2	To carry out the required analysis and synthesis involved in Banking, Insurance and its applications.
3	Able to show professional competence in the industry and in its Implementation.
4	To develop and equip the employability skills to meet the requirement of the Banking and Insurance sector.

Course Outcome			
195CO1A1CA	**CORE- I: FINANCIAL ACCOUNTING –I**		
CO Number	**CO Statement**	**Semester**	**Level**
CO 1	Know the concepts, conventions and rules of accounting to pass journal entries and prepare ledger accounts	I	K1
CO 2	Obtain knowledge to prepare final accounts of a company and to gain skills to detect and prevent errors in journal and ledger accounts		K3

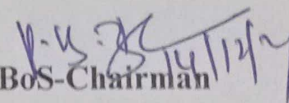|	Dr. N.G.P. ARTS AND SCIENCE COLLEGE	NAAC 3rd Cycle
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CO 3	Capture the procedures relating to bills of exchange, Account current and Average due date		K2
CO 4	Acquire stuff to reconcile cash book and pass book and to prepare accounts of Non- trading concerns		K3
CO 5	Classify and apply appropriate methods of depreciation		K3
195BI1A1CA	**CORE- II:INDIAN BANKING AND FINANCIAL SYSTEM**		
CO 1	Understand the Basics of Banking, Relationship between Banker and Customer and Bank Deposit		K1
CO 2	Understand the structure of a national banking system(tiers, bank types)		K3
CO 3	Provide students insights into Recent Development in Banking Industry	I	K2
CO 4	Understand the Government and RBI's powers to control and regulate banks.		K3
CO 5	Know about the components, classifications and structure of Indian Financial System		K3
195FI1A1IA	**IDC - I: BUSINESS ECONOMICS**		
CO 1	Know the concepts of micro and macroeconomics and Law of demand		K1
CO 2	Classify the market competitions to adopt appropriate pricing methods		K3
CO 3	Understand about the Business Cycle and its effects in economy	I	K2
CO 4	Know about the monetary policy and fiscal policy and its instruments		K1
CO 5	Comprehend the methods of calculation of national income		K3

195BI1A2CA	**CORE : FINANCIAL ACCOUNTING- II**		
CO Number	**CO Statement**	**Semester**	**Level**
CO 1	To understand the various methods of maintaining Branches and departmental accounts.	II	K2

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CO 2	To develop accounting knowledge relating to Hire purchase and Installment System		K3
CO 3	To make the students understand the fundamentals of Partnership Accounts		K3
CO 4	To learn the steps to prepare Partnership Accounts at the time of Admission and Retirement of Partner		K3
CO 5	To expose the accounting knowledge about the dissolution of partnership firm		K3
195BI1A2CB	**CORE : COMPUTER APPLICATION IN BUSINESS**		
CO 1	Gain Knowledge on the basis of computers and its uses in Modern Business.		K2
CO 2	Familiarize on the types of Hardware and Software and its Operations.		K2
CO 3	Obtain Knowledge on the application of word processing.	II	K3
CO 4	Understand the spread sheet application and advanced tools		K3
CO 5	Acquire knowledge on application of power point presentation.		K3
195AT1A2IA	**IDC : FUNDAMENTALS OF GOODS AND SERVICES TAX**		
CO 1	Understand the Goods and Services Tax and its current rates in India		K1
CO 2	Know the functions of various Council and the E-Way bill		K2
CO 3	Aware of the dual concepts and its applicability	II	K3
CO 4	Learn the Registration and Cancellation process of and Services Tax Goods		K3
CO 5	Know the manner of issue of invoice and delivery Challan		K2

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195BI1A3CA	CORE :CORPORATE ACCOUNTING		
CO Number	**CO Statement**	**Semester**	**Level**
CO 1	Familiarize with the accounting treatment adopted for issue and redemption of shares and debentures.	III	K3
CO 2	Prepare final accounts of the company and know the methods of Valuing shares and Goodwill		K3
CO 3	Obtain knowledge about the preparation of accounting for Amalgamation of companies as per IAS.		K3
CO 4	Equip the students in special transaction of Banking companies and able to prepare financial statement.		K3
CO 5	Make acquainted in special transaction of Insurance company Accounts.		K3
195BI1A3CB	**CORE :LEGAL ASPECTS OF BANKING**		
CO 1	Understand about basic banking operations and relationship between banker and customer	III	K2
CO 2	Explain about various legal aspects of banking operations		K3
CO 3	Aware of different modes of charge against securities for loans and advances.		K2
CO 4	Know the provisions of Banking Regulation Act 1949 as applicable to banking business.		K2
CO 5	Show specialized knowledge of Banking related laws.		K3
195BI1A3CC	**CORE :INSURANCE MANAGEMENT**		
CO 1	Gain the basic insurance knowledge and skills	III	K2
CO 2	Apply the procedure for taking insurance policies		K3
CO 3	Acquire knowledge about types of Insurance and its contracts		K2
CO 4	Discuss the different types of Life insurance products		K2
CO 5	Explain the importance of General insurance policies		K2

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Criterion I
Metric 1.1.2
PO-PSO-CO

195BI1A3CD	CORE : BUSINESS ORGANIZATION AND OFFICE MANAGEMENT		
CO 1	Understand the evolution of the business organization and understanding of social ethical and legal responsibilities.	III	K2
CO 2	Abilities to organize offices and establish standard office procedures and practices.		K3
CO 3	Develop the ability to support management in office administration.		K3
CO 4	Demonstrate skills and tasks required to work in real Organization setting.		K3
CO 5	Operate standard office machines and make use of relevant software packages.		K3
192MT1B3IB	IDC: BUSINESS MATHEMATICS		
CO 1	explain the concept of Set operations	III	K2
CO 2	discuss about Arithmetic and Geometric Progression		K3
CO 3	use the concept of matrix operations in solving simultaneous equations		K3
CO 4	demonstrate the ideas of differentiation		K3
CO 5	solve the maximum and minimum values for a given function		K3
195BI1A3SA	SEC: BUSINESS COMMUNICATION		
CO 1	Aware on Importance and Types of Business Communication and its barriers.	III	K1
CO 2	Familiarize on Business Enquires and collection letters with complaints and adjustments.		K1
CO 3	Gain Knowledge on banking correspondence its types and secretarial duties.		K2
CO 4	Cognizant on Business Language its Errors and knowledge on Oral Presentation and Visual Aids.		K1
CO 5	Obtain knowledge on Different types of Interviews and preparing on Resume Relating to Business and Banks.		K2

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Criterion I Metric 1.1.2 PO-PSO-CO

195BI1A4CA	CORE : FINANCIAL MANAGEMENT		
CO Number	CO Statement	Semester	Level
CO 1	Know the concepts of financial management and maximization of profit and wealth		K1
CO 2	Obtain knowledge about different sources of finance		K2
CO 3	Calculate the cost of owner's fund, outsiders fund and various leverages	IV	K3
CO 4	Make acquainted in capital structure and dividend theories		K3
CO 5	Understand the process and techniques of capital budgeting		K2
194BI1A4CB	**CORE : CYBER SECURITY**		
CO 1	Gain knowledge on Basic Concepts of Information System		K1
CO 2	Learn about Information and Application Security		K2
CO 3	Gain knowledge on Security Threats and E-Commerce threats.	IV	K2
CO 4	Build a Development of Secure Information System		K3
CO 5	Demonstrate the Concept of Security Policies		K2
195BI1A4CC	**CORE : ENTREPRENEURIAL DEVELOPMENT**		
CO 1	discover, nourish and nurture entrepreneurial traits and talents among the students		K3
CO 2	Compare their personal characteristics and interests to that of the "successful" entrepreneur.		K3
CO 3	enable students to learn about business idea generation, the sources of ideas, project planning, formulation, appraisal, and implementation strategies	IV	K3
CO 4	sensitize students about various institutions supporting and developing entrepreneurial talent		K3
CO 5	provide knowledge about the need for training and development, and the various phases of		K3

	Entrepreneurial Development Programmes in India		
195BI1A4CD	**CORE : COMPANY LAW AND SECRETARIAL PRACTICE**		
CO 1	Familiarize with Corporate rules and regulations for establishing the Company form of Organization		K2
CO 2	Acquire knowledge about Qualifications, appointment and removal of Directors and their powers and liabilities		K2
CO 3	Know the standard practice that a corporate secretary should follow	IV	K2
CO 4	Understand the role of Secretary in Company meetings and able to draft the documents relating to the meeting		K2
CO 5	Know Corporate Laws with regards to Winding up of the Company		K2
192MT1B4IB	**IDC: BUSINESS STATISTICS**		
CO 1	Learn and know as to how Statistics can be used		K1
CO 2	Know the main properties of each Measure of Central Tendency and select the most appropriate one for use with a given set of data		K2
CO 3	Understand the Importance and Limitations of Correlation Analysis	IV	K3
CO 4	Recognize different components of a Time series		K3
CO 5	Analyzing the concept of Test of Significance		K4
195BI1A4SA	**SEC: E-COMMERCE**		
CO 1	understand basic of E-Commerce		K2
CO 2	apply various business applications of E-Commerce		K3
CO 3	gain knowledge of business models and Electronic Data Interchange	IV	K2
CO 4	Learn E-marketing and E-Advertising concepts		K2
CO 5	understand the Electronic Payment Systems		K2

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18UCM004	**CORE : INCOME TAX LAW AND PRACTICE**		
CO Number	**CO Statement**	**Semester**	**Level**
CO 1	Familiarize the students with the basic concepts of Income Tax Act	V	K1 and K2
CO 2	Apply the provisions and able to Compute the Salary Income and House Property		K1, K2and K3
CO 3	Equip the students with the application of provisions in the Computations of Business Profits and Professional Gain		K1, K2and K3
CO 4	Acquire knowledge about the computation of Capital Gain and Deduction U/S 80		K1, K2and K3
CO 5	Gain the ability to solve simple problems with the Assessment of Individuals and computation of Tax liability		K1, K2and K3
18UBI53B	**CORE : COMMERCIAL BANK MANAGEMENT**		
CO 1	Familiarize the students with basic principles of credit management in banking.	V	K1 and K2
CO 2	Acquire knowledge regarding Management of Non- Performing Assets.		K1 and K2
CO 3	Know the types of securities and classification of Investment in Banks.		K1 and K2
CO 4	Make acquainted in Risk Management, Assessment and Capital adequacy norms.		K1 and K2
CO 5	Gain knowledge on the Concept of Bank marketing and Customer Relationship Management.		K1 and K2
18UCO002	**CORE : PRINCIPLES OF MARKETING**		
CO 1	Know the concepts of global marketing, green marketing, along with their ethics and career opportunities.	V	K1 and K2
CO 2	Understand the functions of marketing, the risk bearing and gain marketing information.		K1 and K2
CO 3	Aware of needs and factors that influence the consumer Behavior and Scrutinizes the CRM.		K1 and K2
CO 4	Gain knowledge on branding, labeling, promotional mix cognizant about the pricing and its strategies.		K1 and K2

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CO 5	Obtain knowledge on Bureau of Indian standards, Ag-marks and Consumer Protection Act.		K1 and K2
18UCM002	**CORE : COST ACCOUNTING**		
CO 1	Discuss the methods of cost accounting and know about Cost Sheet.		K1 and K2
CO 2	Apply different method to analysis level material control		K1, K2 and K3
CO 3	Use different methods of wages & incentives to labour and Absorption of overhead	V	K1, K2 and K3
CO 4	Explain a process costing system and compute the Cost of each process of finished produced		K1 and K2
CO 5	Retrieve the concept of Contract costing and Job costing		K1
18UBI5SA	**SBC: COMPUTER APPLICATION IN BUSINESS**		
CO 1	Gain Knowledge on the basis of computers and its uses in Modern Business.		K1 and K2
CO 2	Familiarize on the types of Hardware and Software and its Operations.		K1 and K2
CO 3	Obtain Knowledge on the Features of Tally and Creation of Company Accounts and its Configuration	V	K1, K2 and K3
CO 4	Acquainted on Creation and Alteration of Ledger and Groups.		K1, K2 and K3
CO 5	To understand the Vouchers and Generations of Reports with Security Controls.		K1, K2 and K3
18UBI5EA	**DSE-I: RETAIL BANKING**		
CO 1	Know the historical roles and functions of Retail Banking		K1 and K2
CO 2	Acquire knowledge about the Retail Strategy and Delivery Channels.		K1 and K2
CO 3	Understand the impact of customer relationship management	V	K1 and K2
CO 4	Know the Trends in retailing and the growth of E-Banking		K1 and K2
CO 5	Identify various steps followed to recovery of retail loans.		K1 and K2

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18UBI5EB	DSE-I: RURAL BANKING AND MICRO FINANCE		
CO 1	Know the Economic life of rural people and Government policy of Rural Banking		K1 and K2
CO 2	Understand the various schemes introduced by government for extending rural credit.		K1 and K2
CO 3	Understand the impact of Priority Sector Financing and Government initiatives	V	K1 and K2
CO 4	Familiar with the overview of Microfinance concepts and its models.		K1 and K2
CO 5	Identify credit delivery methodology followed by various micro finance associations.		K1 and K2
18UBI5EC	DSE-I: CENTRAL BANKING		
CO 1	Know the historical roles and functions of Central Banks		K1 and K2
CO 2	Acquire knowledge about the evolution , constitution and governance of RBI		K1 and K2
CO 3	Understand the policy that the Central Bank uses to regulate monetary conditions in the economy in order to achieve monetary stability	V	K1 and K2
CO 4	Familiar with the credit policy , importance of budgets and how the Central and State Governments allocates funds		K1 and K2
CO 5	Identify various tools that the Central Bank can use against risks to financial stability		K1 and K2

18UCM003	CORE : MANAGEMENT ACCOUNTING		
CO Number	CO Statement	Semester	Level
CO 1	Know the concept and relationship of Management Accounting with the Cost and Financial Accounting		K1 and K2
CO 2	Calculate the liquidity , Solvency and Profitability ratios and gain the knowledge to analyze the same		K1, K2and K3
CO 3	Prepare statements like Computation of Working Capital, Cash Flow and Fund Flow and its importance in managerial decisions	VI	K1, K2and K3
CO 4	Acquire knowledge and ability to apply the		K1, K2and K3

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	marginal costing techniques for taking managerial decisions		
CO 5	Familiarize in various tools and techniques in cost control like Budgeting and Budgetary control and its preparation		K1, K2and K3
18UBI63B	**CORE : PRINCIPLES OF AUDITING**		
CO 1	Gain Knowledge on the Fundamental Concept of Auditing and Basic Qualities of an Auditor		K1 and K2
CO 2	Familiarize on the Internal Control and various types of Vouchers		K1 and K2
CO 3	Obtain Knowledge on the Verification and valuation of assets and liabilities	VI	K1 and K2
CO 4	Aware on Auditing in Companies and Rights, Duties and Liabilities of an Auditor		K1 and K2
CO 5	Acquire knowledge about Investigation and Computer Based Accounting		K1 and K2
18UBI6SA	**SBC : INSURANCE LEGISLATIVE FRAMEWORK**		
CO 1	Familiarize the students with Indian Insurance Act 1938.		K1 and K2
CO 2	Acquire knowledge in LIC Act 1956 with Role of LIC in National Economy.		K1 and K2
CO 3	Know the IRDA Act 1999, Development, Regulation and Amendment 2000 - 2017.	VI	K1 and K2
CO 4	Make acquainted in Insurance Sector Privatization and Challenges.		K1 and K2
CO 5	Gain knowledge in Ombudsman scheme.		K1 and K2
18UBI6EA	**DSE-II: INSURANCE LAWS AND REGULATION**		
CO 1	Understanding the Historical Evolution and Legal Framework of Insurance Business		K1 and K2
CO 2	Know the Recent Amendments and Powers of authorities to make rules in Insurance Act		K1 and K2
CO 3	Familiarize with Incorporation and Regulatory Framework of LIC	VI	K1 and K2
CO 4	Provide students insights into Recent Amendments in GIC		K1 and K2
CO 5	Know the IRDA Act 1999, Development, Regulation and Amendment.		K1 and K2

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18UBI6EB	DSE-II: PRACTICES OF GENERAL INSURANCE		
CO 1	Understanding the historical evolution of General insurance markets in India		K1 and K2
CO 2	Understand the coverage of a fire and marine insurance policy to mitigate fire and marine loss consequences		K1 and K2
CO 3	Understand the coverage of a miscellaneous insurance policy to mitigate miscellaneous loss consequences	VI	K1 and K2
CO 4	Familiarize with the underwriting practices and procedures in General Insurance		K1 and K2
CO 5	Study the importance of evaluating and assessing claims and the settlement practices.		K1 and K2
18UBI6EC	DSE-II: RISK MANAGEMENT		
CO 1	Understand the concept of risk and its types, pooling and diversification of risk.		K1 and K2
CO 2	Acquire knowledge about the Risk aversion and demand for insurance.		K1 and K2
CO 3	Know the Analytical tools used in corporate Risk management.	VI	K1 and K2
CO 4	Appreciate risk assessment as a tool in the overall scope of risk management.		K1 and K2
CO 5	Aware on the risk management in banking business with risk regulation in banking industry.		K1 and K2
18UBI6ED	DSE-III: FINANCIAL MARKETS AND SERVICES		
CO 1	Gain Knowledge on the Structure of Financial Market, Importance and Classifications on Money and Capital Markets.		K1 and K2
CO 2	Aware on the Securities, New Issue markets and Merchant Bankers.		K1 and K2
CO 3	Acquire knowledge about the functioning of stock exchange and the SEBI guidelines.	VI	K1 and K2
CO 4	Acquainted on Financial Intermediaries, Mutual Funds and Investment Companies.		K1 and K2
CO 5	Obtain knowledge on New Modes of financing, Modus Operandi of Factoring and Securitization in India		K1 and K2

18UCO003	DSE-III: INDIRECT TAX		
CO 1	Discuss the basics and History of Tax system	VI	K1 and K2
CO 2	Understand the basic concepts about Goods and Service Tax		K1 and K2
CO 3	Analyze the Liability and Tax rate system Understand the Filing of GST Return		K1 and K2
CO 4	Aware of Eligibilities to Input Tax Credit.		K1 and K2
CO 5	Acquire knowledge about Composite levy and advantages		K1 and K2

P. Re

BoS-Chairman

BoS Chairman/HoD
Department of Commerce (B & I)
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048

DEPARTMENT OF COMMERCE IN BUSINESS PROCESS SERVICES

Programme Outcome	
1	Develop an understanding, Sound knowledge, skills and attitudes to facilitate careers in Business Process Services.
2	Process students for employment in functional areas like Finance and Accounting, Banking, Insurance, Retail Marketing, Capital Market, Taxation and Corporate Law.
3	Pursue their career in Operations, Research and Training and work inteams with enhanced communication and inter-personal skills.
4	Handle computer based software in areas of Accounting, Taxation,Insurance, Retail Marketing, Capital Market and Banking.
5	Develop self-confidence and ability to apply knowledge acquired in theareas of Business Process Services.

Programme Educational Objective	
1	Equip the graduates with in-depth knowledge of Business Process Services in a continuously changing business environment in the area of Accounting and Finance, Banking, Retail Marketing, Capital Market, Taxation and Business laws.
2	Have basic understanding in Business Mathematics, Economics, Statistics, Operations Research and Management.
3	Build competencies for research activities. Also an informed, aware and active citizen.
4	Equip the students with professional skills, inter personal skills and Leadership qualities.
5	Inculcate ethical values, team work and managerial skills. An inclination towards lifelong learning and acquiring contemporary knowledge.

Course Outcome			
195CM1A1CA	**Financial Accounting**	**Semester**	**Level**
CO1	Know the concepts, conventions and rules of accounting to pass journal entries and prepare ledger accounts.	I	K1
CO2	Obtain knowledge to prepare final accounts of a company and to gain skills to detect and prevent errors in journal and ledger accounts.	I	K3,K4
CO3	Capture the procedures relating to bills of exchange, and Average due date.	I	K2
CO4	Acquire stuff to reconcile cash book and pass book and to prepare accounts of Non- trading concerns.	I	K3,K4
CO5	Classify and apply appropriate methods of depreciation.	I	K3
195BP1A1CA	**Business Management**	**Semester**	**Level**
CO1	Understand the nature, scope and principles of Business Management.	I	K1
CO2	Learn the steps in planning and decision making.	I	K2
CO3	Obtain the skills to delegate authorities and responsibilities to manage the business organization effectively	I	K3
CO4	Know the Staffing essentials, Delegation and Decentralization.	I	K2
CO5	Comprehend the techniques of control and co-ordination for further implementation and growth.	I	K3
192MT1B1IH	**Business Mathematics**	**Semester**	**Level**
CO1	Discuss the concept of set theory.	I	K1

CO2	Describe the applications of permutation and combination.	I	K1
CO3	Explain the concepts of Binomial theorem.	I	K2
CO4	Apply the concept of compound interest in real life problems.	I	K3
CO5	Gain knowledge about the applications of annuities.	I	K3
195BP1A2CA	**Advanced Accounting**	**Semester**	**Level**
CO1	Know the concepts, of consignment , Joint venture and to pass journal entries and prepare ledger accounts	II	K2
CO2	Obtain knowledge to prepare Branch accounts, Hire purchase and Installment system	II	K3
CO3	Capture the procedures relating Partnership Accounts – Division of Profits and to Calculate of Ratios – Goodwill.	II	K3
CO4	Know and Analyze the concepts, of Retirement and Death of a Partner	II	K4
CO5	Apply Knowledge about the Circumstances or modes of Dissolution Garner Vs. Murray Rule.	II	K5
195BP1A2CB	**Finance and Accounting For Business Process Services**	**Semester**	**Level**
CO1	Classifying the accounting principles and guidelines, accounting concepts and conventions and BPS industry in India.	II	K2
CO2	Analyze the inventory management, inputs to MRP, International commercial terms, and optical character reading.	II	K3

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CO3	Explain the customer set up, credit management, chart of accounts and statutory reports.	II	K3
CO4	Define the ERP system, oracle application, accounting standards and IFRS.	II	K1
CO5	Applying the Sarbanes Oxley Act 2002, operating model of BPS, roles and responsibilities of BPS.	II	K4
192MT1B2IH	**Business Statistics And Analytics**	**Semester**	**Level**
CO1	Learn and know as to how Statistics can be used.	II	K1
CO2	Discuss the main concepts of Measure of Central Tendency and Measure of Dispersion.	II	K2
CO3	Uses of Correlation and Regression.	II	K3
CO4	Demonstrate different components of a Time series.	II	K3
CO5	Analyzing the concept of data in business analytics	II	K4
196BM1A2AA	**Human Rights**	**Semester**	**Level**
CO1	Understand the concept of human values, personality traits and character formation.	II	K2
CO2	Acquire the knowledge through value education towards national and global development.	II	K1
CO3	Introduce the basic concepts of conflict, emotions and adolescent emotions.	II	K1
CO4	Illustrate the techniques in therapeutic measures like yoga and meditation.	II	K2
CO5	Learn the concepts of human rights, rights for women and children and domestic violence.	II	K3
195CM1A3CB	**Cost Accounting**	**Semester**	**Level**

CO1	Discuss the methods of cost accounting and know about cost sheet.	III	K2
CO2	Apply different method to analysis level material control	III	K3
CO3	Use different methods of wages & incentives to labour and Absorption of overhead	III	K3
CO4	Explain a process costing system and compute the Cost of each process of finished produced	III	K2
CO5	Retrieve the concept of Contract costing and Job costing	III	K1
195BP1A3CA	**Supply Chain Management**	**Semester**	**Level**
CO1	Know the Concepts and Importance of Supply chain management	III	K1
CO2	Classify the types of sourcing and procurement	III	K2
CO3	Outline the Contract a Legal binding factor and aftermarket services requirement	III	K4
CO4	Obtain the Sales Order & Master Data Management	III	K3
CO5	Predict more knowledge about the Warehouse and Inventory Management	III	K4
195BP1A3CB	**Insurance for Business Process Services**	**Semester**	**Level**
CO1	Describe the knowledge about risk Management and classify the types of insurance	III	K1
CO2	Summarize information about important terminologies in a Life Insurance policy	III	K2

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CO3	Usage of non-life insurance concepts and reinsurance	III	K3
CO4	Examine the concept of Healthcare Insurance and healthcare industry	III	K4
CO5	Identify the retirement Services and categories of Pension in UK	III	K4
192MT1B3IH	**Operations Research**	**Semester**	**Level**
CO1	Explain the concept of optimum solution in linear programming problems	III	K1
CO2	Apply the concept of Transportation Models in transport goods	III	K1
CO3	Demonstrate the concept of Assignment Models in various Job Allocation.	III	K2
CO4	Understand the problems in game theory.	III	K3
CO5	Analyze the network diagram in project management	III	K3
195BP1A3SA	**Business Law**	**Semester**	**Level**
CO1	Discuss the Law of Contract and Rules relating to Offer and Acceptance	III	K2
CO2	Converse the essential of valid consideration and the persons disqualified by law	III	K4
CO3	Explain the performance of contract and mode of discharge of contract	III	K2
CO4	Explore the facts of Consumer Protection Act and FEMA Act.	III	K3

CO5	Explicate the concept of Sale of Goods Act and Consequences of Warranty	III	K4
195BP1A4CA	**Banking For Business Process Services**	**Semester**	**Level**
CO1	Know the concepts and functions of Bank along with Customers service and Processing of mutual funds	IV	K1
CO2	Classify the types of cards and its maintenance of Customer relationship management.	IV	K2
CO3	Analyze the Lead generation requirements, bankruptcy and their Regulatory agencies	IV	K3
CO4	Explain the overview of Cash Management, various types of Fund transfer and STP	IV	K2
CO5	Comprehend the terminology used in International trade and Documentary Credit.	IV	K4
195BP1A4CB	**Retail CPG and Market Research**	**Semester**	**Level**
CO1	Define the concepts of Market Research, Global Consumer packaged goods, Consumer behavior and their Influencers.	IV	K1
CO2	Explain the knowledge about Retailing Marketing Segmentation.	IV	K2
CO3	Identify the Research Methodologies and Marketing.	IV	K4
CO4	Analyze the Product Planning and needs for Advertising and Consumer Research.	IV	K3
CO5	Classify the Retail research and Consumer Panel data.	IV	K4
195BA1A4CA	**Management Accounting**	**Semester**	**Level**

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CO1	Perceive the concepts of Management accounting and classifying the financial accounting, management accounting and cost accounting	IV	K1
CO2	Obtain knowledge to calculate the types of ratio	IV	K1
CO3	Capture the procedures relating Working Capital and Cash flow statement	IV	K1 & K4
CO4	Know the concepts of Marginal costing and Break Even Analysis	IV	K3
CO5	To gather Knowledge about the Budgeting and classify the types of budget	IV	K1 & K4
195BA1A4IA	**Business Economics**	**Semester**	**Level**
CO1	Know the concepts of micro and macroeconomics along with the role and responsibilities of a business economist.	IV	K1
CO2	Analyze the Concepts of Supply and Cost.	IV	K2 & K3
CO3	To gather Knowledge about the Inflation and Deflation, Methods of Calculation and its effect in economy.	IV	K3
CO4	Analyze the instruments of Monetary Policy and Fiscal Policy	IV	K3 & K4
CO5	Comprehend the methods of calculation of national income.	IV	K3 & K4
17UBP53A	**Business Process Services in Capital Market**	**Semester**	**Level**
CO1	Know the concepts of Securities and its regulations in Financial Market.	V	K1
CO2	Explain the basics of Investment banking and Collateral Management.	V	K2
CO3	Applying the knowledge about Mutual funds and Hedge Funds.	V	K3

CO4	Analyze the Private Equity Operations and Reconciliation in Asset Management.	V	K4
CO5	Classify the Credit and Market Risk Management.	V	K2
17UBP53B	**Managing Business Processes - I**	**Semester**	**Level**
CO1	List out the concepts of Process Management and Recognition of Business Processes.	V	K1
CO2	Awareness on life cycle of BPO and their Transition process.	V	K2
CO3	Analyze the Metrics Management and Operations in Metrics.	V	K3
CO4	Comprehend the Mapping Techniques and SIPOC fundamentals.	V	K4
CO5	Classify the Types of risk and Risk Mitigation Plans.	V	K2
18UBP53D	**Corporate Accounting**	**Semester**	**Level**
CO1	Discuss the types of shares and accounting procedure of Issue of Shares at par, Premium and at Discount.	V	K2
CO2	Obtain knowledge about Issue and Redemption of Debentures.	V	K1
CO3	Obtain knowledge to prepare final accounts of companies.	V	K3
CO4	Describe the procedures relating to calculations of Amalgamation, Absorption and Reconstruction.	V	K2
CO5	Predict more knowledge about the valuation of goodwill and shares.	V	K4
17UBP5SA	**Research Methodology**	**Semester**	**Level**
CO1	Discuss the objectives of research and the steps involved in research process.	V	K1

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NAAC
3rd Cycle

Criterion I
Metric 1.1.2
PO-PSO-CO

CO2	Classifying the formulation of Research and developing the hypothesis.	V	K3
CO3	Identifying various methods of Research and Research design.	V	K3
CO4	Analyze the methods of Sampling and types of data.	V	K4
CO5	Interpret The Steps In Drafting The Reports.	V	K3
18UCM004	**Income Tax Law & Practice**	**Semester**	**Level**
CO1	Define the basic concepts of income tax and find the residential status of all assesses.	VI	K1
CO2	Discuss the provisions of Salaries like allowances, perquisites, Profit in lieu of salary to calculate taxable salary and	VI	K2
CO3	Apply the provisions related to business income and income from other sources.	VI	K3
CO4	Analyze various capital assets which are taxable and to list the various provisions Under section 80.	VI	K4
CO5	Explain the individual income considering the previous year losses, rebate and relief.	VI	K2
17UBP63A	**Managing Business Processes - II**	**Semester**	**Level**
CO1	Identifying quality management and quality standards	VI	K1
CO2	Analyze Sampling inspection and Transaction monitoring cycle.	VI	K4
CO3	Differentiate Defect vs. Defective and value stream mapping.	VI	K4
CO4	Illustrate Problem solving tolls and Process Failure Mode Effects Analysis	VI	K3
CO5	Calculating six sigma and lean methodology	VI	K4
18UBP63B	**Financial Management**	**Semester**	**Level**

CO1	Illustrating the financial decisions and sources of finance	VI	K3
CO2	Classifying the cost of capital and capital budgeting	VI	K2
CO3	Define the theories of capital structure.	VI	K1
CO4	Differentiate different types of leverages.	VI	K4
CO5	Examine the dividend theories.	VI	K4
18UBP63C	**Business Communication**	**Semester**	**Level**
CO1	Define the basic concepts of Communication and Kinds of Communication.	VI	K1
CO2	Analyze the trade enquires, Complaints and Adjustments.	VI	K2
CO3	Classifying the Banking correspondents with the Customers.	VI	K3
CO4	Differentiate types of Insurance Correspondence.	VI	K1
CO5	Differentiate CRM and ECRM and its opportunities	VI	K4
17UBP6SA	**Cyber Crimes and Cyber Law**	**Semester**	**Level**
CO1	Classifying the concept of Cyberspace and Cyber law in E- Commerce.	VI	K3
CO2	Defining the technical aspects of Encryption and Intellectual Property Aspects	VI	K1
CO3	Identifying Evidence Aspects and Strategy for prevention of computer crime.	VI	K3
CO4	Analyze the Global Trends and Electronic Data Interchange Scenario in India.	VI	K4
CO5	Discuss the Information Technology Act 2000	VI	K2

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Metric 1.1.2
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18UCO003		INDIRECT TAX	Semester	Level
CO1		Know the features of indirect tax laws and its impact	VI	K1,K2
CO2		Classify the benefits and limitations of GST	VI	K2,K3
CO3		Understand the procedure for registration under GST	VI	K3,K4
CO4		Calculate the tax payable and amount of tax refund	VI	K2
CO5		Acquire the knowledge in types of customs duties and remission of tax	VI	K3,K4

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	Dr. N.G.P. – Kalapatti Road, Coimbatore-641048, Tamil Nadu, India	**Criterion I**
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		PO-PSO-CO

B.Com Business Analytics

Programme Outcome	
1	To assimilate and to shine as Business analyst and finance experts
2	To get along with erudition in accounting concepts , policies and operations
3	To gain a full scale knowledge in data analytics and lead to data scientist in IT sector
4	To procure wisdom in communication and information technology to serve as analytics professionals
5	To accumulate practical Knowledge in Business data Mining, Taxation and E-Filing, R Programming

Programme Educational Objective	
1	On successful completion of the programme, the following are the expected Programme Educational Outcomes
2	To acquire a particular skill-set to succeed in a business analytics career. Inquisitiveness, interpretation skills, thorough understanding of tools and methods, ability to do in-depth research and quantitative skills.
3	Having a basic understanding in analytics, statistics, economics, accounting concepts, operation research
4	To develop students and help them to learn and apply modern decision technology and statistical methods to decision-making.
5	To develop professional skills, ethical values, personal values among the students

Course Outcome			
18UBA53A	Corporate Accounting	Semester V	Level
CO1	Learn about the types of shares, Issue of Shares at par, Premium and at Discount.		K1
CO2	Obtain knowledge about Issue and Redemption of Debentures.		K1& K3
CO3	Obtain knowledge Preparation of Final Accounts Profit and loss account and balance sheet Computation of Managerial remuneration		K3& K4
CO4	Aware about problems relating to Amalgamation, absorption and re-construction of company		K3& K2

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CO5	Acquire stuff to calculate the Valuation of Goodwill and Shares		K1& K3
17UBA53B	PYTHON FOR DATA ANALYTICS	Semester V	Level
CO1	Understand the Basic of python programming concepts.		K1 & K2
CO2	Acquire stuff Pandas Library and data base concepts.		K1 & K2
CO3	To Aware and working on Data Cleaning and Preparation.		K2 & K3
CO4	To gain stuff NumPy Library and Indexing concepts.		K2 & K3
CO5	Analyse and learn the Data Visualization with matplotlib, Charts and working on case study analysis		K3 & K4
18UBA53C	PRINCIPLES OF MANAGEMENT	Semester V	Level
CO1	Know the concepts of Management and Administration		K1 & K2
CO2	Know the concepts of Planning and Methods of Types of plans.		K2 & K4
CO3	Aware of – Organization Structure and Process of Organization.		K2 & K4
CO4	Classify the leadership types and gain information regarding departmentation.		K2 & K4
CO5	To Know the concept of communication and process involved in communication.		K2 & K4
17UBA53D	BUSINESS COMMUNICATION	SEMESTER -V	Level
CO1	To Comprehend the Business Communication concept and Communication Methods		K1
CO2	Know about Trade Enquiries concept		K1
CO3	Obtain knowledge about Banking Correspondence		K1 & K3
CO4	Aware about the Insurance Correspondence and classify the types of insurance		K3 & K4
CO5	To consummate Application Letters, Preparation of Resume and Interviews		K3 & K4
17UBA5SA	COMPANY LAW AND SECRETARIAL PRACTICE	SEMESTER – V	Level

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CO1	Understand the features of the company and types of companies		K1
CO2	Cognize about the Memorandum of Association and Articles of Association		K3
CO3	Capture the Prospectus concepts and classify the Kinds of Shares and Debentures		K1 & K4
CO4	To gather knowledge in Qualification and disqualification regarding directors and secretary		K1 & K2
CO5	Classify about the types of meeting and study about the modes of winding up.		K1 & K3
18UCM004	INCOME TAX LAW AND PRACTICE	SEMESTER – V	Level
CO1	Procure the knowledge about Income Tax Act and Residential Status		K1
CO2	Obtain knowledge about Income from Salaries , Income from House Property		K1 & K4
CO3	Cognize the concept of Profit and Gains of Business or Profession , Income from other source		K1 & K4
CO4	Acquire stuff to calculate Capital gain, Deductions from Gross Total Income – Deduction under sec 80C to GGA, 801A to 80U		K3
CO5	Acquire stuff to calculate the Set off and Carry forward of losses		K3
17UBA63A	E-COMMERCE	SEMESTER -VI	Level
CO1	To Comprehend the E-Commerce and its applications		K1
CO2	To learn about E- Business concepts and modes of E-payment		K1 & K4
CO3	To gain knowledge about E-Banking concepts and mobile banking		K1
CO4	Aware about electronic signature and E-Technology		K3 & K4
CO5	To consummate about E-communication		K3 & K4
17UBA63B	R PROGRAMMING	SEMESTER -VI	Level
CO1	To Comprehend the data structures (vector, Matrix, Factors, List and Data Frames) in R		K1

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Metric 1.1.2
PO-PSO-CO

CO2	To gain the knowledge different types of data sources and the R Packages.		K1 & K2
CO3	Aware and working the Data manipulation using SQL to prepare data for analysis.		K3
CO4	Aware and working on different plots and implement the Regression.		K3
CO5	To consummate and implement the Hypothesis Testing		K3 & K4
17UBA6SA	INFORMATION SECURITY	SEMESTER -VI	Level
CO1	To Comprehend about IS history and security system life cycle Model		K1
CO2	Cognize in encryption and decryption principles, authentication methods and keys		K1 & K2
CO3	Obtain knowledge about working Principles of Firewall, viruses and worms		K1 & K3
CO4	Aware about the different types of hacking (Network, Web, Windows and Wireless hacking)		K3
CO5	To discuss about different types of security issues in social media		K2 & K3
18UCO003	INDIRECT TAX	SEMESTER -VI	Level
CO1	Know the features of indirect tax laws and its impact		K1,K2
CO2	Classify the benefits and limitations of GST		K2,K3
CO3	Understand the procedure for registration under GST		K3,K4
CO4	Calculate the tax payable and amount of tax refund		K2
CO5	Acquire the knowledge in types of customs duties and remission of tax.		K3,K4

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B.Com. Business Analytics

Programme Outcome	
1	To assimilate and to shine as Business analyst and finance experts
2	To get along with erudition in accounting concepts, policies and operations
3	To gain a full scale knowledge in data analytics and lead to data scientist in IT sector
4	To procure wisdom in communication and information technology to serve as analytics professionals
5	To accumulate practical Knowledge in Business data Mining, Taxation and EFiling, R Programming

Programme Educational Objective	
1	On successful completion of the programme, the following are the expected Programme Educational Outcomes
2	To acquire a particular skill-set to succeed in a business analytics career. Inquisitiveness, interpretation skills, thorough understanding of tools and methods, ability to do in-depth research and quantitative skills.
3	Having a basic understanding in analytics, statistics, economics, accounting concepts, operation research
4	To develop students and help them to learn and apply modern decision technology and statistical methods to decision-making.
5	To develop professional skills, ethical values, personal values among the students

Course Outcome			
195CM1A1CA	**Financial Accounting**	**Semester I**	**Level**
CO1	Know the concepts, conventions andrules of accounting to pass journal entries and prepare ledger accounts	I	K1
CO2	Obtain knowledge to prepare final accounts of a company and to gain skills to detect and prevent errors in journal and ledger accounts	I	K2,K3
CO3	Capture the procedures relating to bills of	I	K2

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	exchange, and Average due date		
CO4	Acquire stuff to reconcile cashbook and passbook and to prepare accounts of Non-trading concerns	I	K2,K3
CO5	Classify and apply appropriate methods of depreciation	I	K3
195BA1A1CA	**Fundamentals of Business Analytics**	**Semester I**	**Level**
CO1	Know the concepts, Role of Business Analyst, Rules of Business& Business Analysis.	I	K3
CO2	Obtain knowledge regarding Business view of Information Technology Applications	I	K1
CO3	Capture the Information relating to Types of Digital Data	I	K1&K2
CO4	Aware of Data Modeling techniques	I	K2&K3
CO5	Obtain knowledge about Enterprise Reporting and Applications of Analytics	I	K3
195BP1A2CA	**Advanced Accounting**	**Semester II**	**Level**
CO1	Know the concepts, of consignment , Joint venture and to pass journal entries and prepare ledger accounts	II	K2
CO2	Obtain knowledge to prepare Branch accounts, Hire purchase and Installment system	II	K3
CO3	Capture the procedures relating Partnership Accounts – Division of Profits and to Calculate of Ratios – Goodwill	II	K3
CO4	Know and Analyze the concepts, of Retirement and Death of a Partner	II	K3
CO5	Apply Knowledge about the Circumstances or modes of Dissolution Garner Vs. Murray Rule	II	K3
195BA1A2CA	**Enterprise resource planning**	**Semester II**	**Level**
CO1	To know about the History and Components of ERP	II	K1
CO2	To gain Knowledge about the Supply Chain Management, Product life cycle management and Customer relationship management	II	K1 &K3
CO3	Obtain knowledge about CAD/CAM/ DRP/ JIT	II	K2
CO4	Aware about the ERP Modules	II	K1
CO5	To understand the ERP Life Cycle and different	II	K3 & K2

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	phases of ERP Implementation life cycle		
195BA1A3CA	**Marketing Analytics**	**Semester III**	**Level**
CO1	Comprehend the marketing concept, evolution and functions, Market segmentation adopted in marketing analytics	III	K1
CO2	Cognize about elements of branding, product life cycle and analytics using statistical techniques	III	K2 & K3
CO3	Classify the promotion mix, channels of distribution by analytics using statistical techniques .	III	K3
CO4	Acquaint in Consumer behaviour, Commodity Exchange and regulated, Organized markets, agriculture marketing in India	III	K2 & K4
CO5	consummate Knowledge about Green, Digital Marketing strategic, E- Business models and marketing research and Market Survey	III	K1
195CM1A3CB	**Cost Accounting**	**Semester III**	**Level**
CO1	Discuss the methods of cost accounting and know about cost sheet.	III	K2
CO2	Apply different method to analysis level material control	III	K3
CO3	Use different methods of wages & incentives to labour and Absorption of overhead	III	K3
CO4	Explain a process costing system and compute the Cost of each process of finished produced	III	K2
CO5	Retrieve the concept of Contract costing and Job costing	III	K1
195BA1A3CB	**Relational Database Management System**	**Semester III**	**Level**
CO1	Perceive the knowledge about Databases and its model, DBA's task and concepts of ER Modeling.	III	K1 & K2
CO2	Gain depth knowledge about the DB Architecture and classification of Data Structures of DB	III	K1 & K3
CO3	Acquainted of Relational Algebra and the deep process about the normalization	III	K3
CO4	Apply the DDL, DML, constraints, aggregate & logical operations and Joins concepts through Structure Query Language.	III	K3 & K4
CO5	Learn about Transaction Management and	III	K1 & K3

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	Concurrency Control		
195BA1A3SA	**Corporate Business Communication**	**Semester III**	**Level**
CO1	Comprehend the Corporate Business Communication concept and Communication Methods	III	K1
CO2	Discuss about kinds of business letters	III	K1
CO3	Obtain knowledge about Banking and Insurance Correspondence	III	K3
CO4	Aware about the Corporate Etiquettes	III	K3
CO5	Aware about written analysis and communication	III	K4
195BA1A4CA	**Management Accounting**	**Semester IV**	**Level**
CO1	Perceive the concepts of Management accounting and classifying the financial accounting, management accounting and cost accounting	IV	K1
CO2	Obtain knowledge to calculate the types of ratio	IV	K1
CO3	Capture the procedures relating Working Capital and Cash flow statement	IV	K1 & K4
CO4	Know the concepts, of Marginal costing and Break Even Analysis	IV	K3
CO5	To gather Knowledge about the Budgeting and classify the types of budget	IV	K1 & K4
195BA1A4CB	**Financial Management and Portfolio Analysis**	**Semester IV**	**Level**
CO1	To Comprehend the Financial Management and sources of finance	IV	K1
CO2	Know about Cost of Capital and methods of calculating cost of capital	IV	K2
CO3	Classify the leverages concepts and study about the theories relating to capital structure	IV	K3
CO4	Classify the Leasing concept and gain knowledge regarding Dividend Theories	IV	K3 &K4
CO5	To consummate Knowledge about Working Capital Management and Computation of Working Capital.	IV	K3 &K4
195BA1A4CC	**Data Mining and Business Intelligence**	**Semester IV**	**Level**
CO1	To aware about basics of Data Mining	IV	K1
CO2	Analyze and Aware the Data preprocessing and Visualization techniques	IV	K2
CO3			

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	Analytics process and its tools		
CO4	To Consummate Dashboards and Data Mining Tools and SDLC	IV	K3
CO5	To consummate Knowledge BI with Databases,knowing the privacy, ethics in BI	IV	K1 &K3
195BA1A4SA	Organizational Behaviour and Management	Semester IV	Level
CO1	Know About the concept and relevance of Organizational Behaviour in management	IV	K1
CO2	Identify the factors influencing perception and relate the Characteristic of attitudes to understand behavior	IV	K2
CO3	Demonstrate the ability to use theories in the practice of Leadership	IV	K2
CO4	Gain knowledge about Planning and decision making process	IV	K3
CO5	Discuss about Direction and controlling	IV	K3

M.s [signature]

BoS-Chairman

BoS Chairman/HoD
Department of Commerce (BA)
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B.Com. Accounting & Taxation

Programme Outcome	
1	Gain basic knowledge in Accounting and to understand the Field of Taxation to serve the society.
2	Understand the corporate world with professional skill
3	Obtain the basic traits for their professional excellence at global level.
4	Progress with the socio-economic challenges related to accounting & taxation and shaping a successful individual.
5	To act with ethics and to serve the society.

Programme Educational Objective	
1	Able to demonstrate a substantial understanding of concepts in the key areas of accounting and its applications.
2	Build professional excellence in the area of Taxation with creative mind.
3	Attain the skill in the Field of Accountancy & Taxation as Accountant, Entrepreneur, Scholars, Researchers and Tax Consultants.
4	Perform with corporate ethics and abide with law to serve the society.

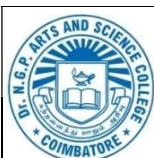| Course Outcome			
195AT1A1CA	**CORE I: FINANCIAL ACCOUNTING-I**	Semester I	Level
CO1	To know the basic concepts in accounting		K1
CO2	To acquire knowledge in solving the errors and to prepare Bank Reconciliation Statement		K2 ,K3
CO3	To obtain knowledge in preparing final accounts		K2,K3
CO4	To impart knowledge in the accounting process of non trading concerns and various methods of depreciation		K3
CO5	To know the accounting procedures in Consignment and Joint venture		K2,K3

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195AT1A1CB	**CORE - II: BUSINESS MANAGEMENT**		Level
CO1	To understand the nature, scope and principles of Management		K1
CO2	To learn the steps in planning and decision making.	Semester I	K2 & K3
CO3	To know the importance of organizing and delegation of Authority.		K2 & K3
CO4	To learn the process of recruitment, leadership styles and motivation		K3
CO5	To know the various controlling techniques.		K2 & K3
195AT1A2CA	**CORE – III: FINANCIAL ACCOUNTING - II**		Level
CO1	Relate the concepts about dependent and Independent branches. And Departmental Accounting, inter departmental transfers		K1& K2
CO2	Understand the Hire Purchase Trading System and the Interest and Installments Purchase system.	Semester II	K3
CO3	Examine the accounting principles and their implementation in partnership firms		K3
CO4	Understand the concepts related with retirement and death of partners		K3
CO5	Discuss the insolvency of partners under Garner Vs Murray		K3
195AT1A3CA	**CORE –V : CORPORATE ACCOUNTING I**		Level
CO1	Learn the concept of issue, reissue and underwriting of shares		K1&K2
CO2	Acquire knowledge about issue and redemption of debentures and acquisition of company.	Semester III	K2&K3
CO3	Know and apply the managerial remuneration calculations and preparation of final accounts.		K2&K3
CO4	Classify the various methods of valuation of shares and goodwill		K2&K3
CO5	Assess the requirement of liquidation of companies		K2&K3

195AT1A3CB	CORE VI : INCOME TAX LAW AND PRACTICE-I		Level
CO1	Know the basic concepts of income and residential status		K1,K2
CO2	Understand the calculation of salary income	Semester III	K2,K3
CO3	Understand the calculation of income from house property		K2,K3
CO4	Identify the allowable and disallowable expenses in profits and gains of business or profession.		K2,K3
CO5	Know the various sources of income and its calculations		K2,K3
195AT1A3CC	CORE –VII: FINANCIAL SERVICES		Level
CO1	Know the concepts of financial services in Indian Financial System.		K1
CO2	Acquire knowledge about Merchant banking and its Regulations.	Semester III	K2&K3
CO3	Discover the need of venture capital and lease financing		K2&K3
CO4	Identify the functions of factoring and forfeiting in India		K2&K3
CO5	Classify the types of stock brokers and their responsibilities.		K2&K3
195AT1A4CA	CORE –VIII: CORPORATEACCOUNTING II		Level
CO1	Acquire the knowledge of Amalgamation, Absorption and Reconstruction.		K1
CO2	Know and apply the format of Banking Company Accounts.		K2 & K3
CO3	Identify the concept and prepare the Balance sheet of Insurance companies	Semester IV	K2 & K3
CO4	Develop the skills in preparation of consolidated Balance Sheet of Holding company and Subsidiary company		K2 & K3
CO5	Apply the latest provisions to Electricity Company Accounts.		K2 & K3

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195AT1A4CB	**Core IX: INCOME TAX LAW AND PRACTICE - II**		Level
CO1	Understand the provisions concerning set off and carry forward of losses and to apply the deductions against total income.	Semester IV	K2
CO2	Apply the provisions regarding computation of tax liability		K3
CO3	Evaluate the provisions regarding assessment of individuals and assessment of HUF.		K3
CO4	Use the provisions involved in assessment of Firms, AOP and Companies		K2,K3
CO5	Identify the various provisions concerning collection, payment, recovery and refund of tax		K2,K3
195AT1A4CC	**CORE –X: FINANCIAL MANAGEMENT**		Level
CO1	Recall the basic concepts and objectives of financial management.	Semester IV	K1
CO2	Know the various methods to find out the optimum capital structure		K2
CO3	Computation of overall cost of capital of a firm		K3
CO4	Understand the various dividend policies in practical market.		K3
CO5	Get knowledge regarding day to day needs of business and various ways to manage them.		K2&K3
18UAT53A	**CORE –XI: COST ACCOUNTING**		Level
CO1	To understand the Elements of Cost and Preparation ofCost Sheet	Semester V	K1& K2
CO2	To know the material requirements and its methods of issuing materials.		K2
CO3	To familiarize with the different wage payment systems.		K3
CO4	To identify the classification and allocation of overheads and find out the machine hour rate.		K3
CO5	To recognize the various types of losses and gains and its inter process		K3

18UAT53B	**CORE - XI: INDIRECT TAX- I**	Semester V	Level
CO1	To understand the concepts of Indirect tax and its advantages.		K1
CO2	To know the current Customs Law.		K2
CO3	To identify the procedures for computation of Customs duty.		K3
CO4	To evaluate the process of abatement of duty in damaged or deteriorated Goods.		K3
CO5	To understand the concepts of GST.		K2
18UAT53C	**CORE - XII: ACCOUNTING STANDARDS**	Semester V	Level
CO1	To know the basic concepts and principles of Accounting standards.		K1
CO2	To understand the disclosure of accounting policies and valuation of inventories.		K2
CO3	To prepare Cash Flow Statement by applying direct method.		K3
CO4	To analyze the Contingencies and events occurring after the balance sheet and Changes in Accounting Policies under Accounting Standards 5.		K4
CO5	To identify the Government Grants under Accounting Standards 12.		K3
18UAT5EA	**Elective I CORPORATE TAX PLANNING AND MANAGEMENT**	Semester V	Level
CO1	To know the various types of companies and its residential status.		K1
CO2	To understand the Tax planning relating to setting of new business and scientific research assets.		K2
CO3	To apply the tax planning with reference to specific management decisions.		K3
CO4	To illustrate the special provisions relating to Non residents		K2
CO5	To familiarize in Tax Planning with reference to Business Restructuring.		K2

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18UAT5EB	**Elective – I** **CORPORATE GOVERNANCE AND BUSINESS ETHICS**	Semester V	Level
CO1	To know the concepts and fundamental principles of Corporate Governance.		K1
CO2	To understand the issues and challenges of Board committees.		K2
CO3	To identify the problems related with disclosure.		K1
CO4	To understand the motives of Corporate Social Responsibility		K2
CO5	To apply the ethics in business decision making.		K3
18UAT5EC	**Elective I CUSTOMS LAW & PROCEDURE**	Semester V	Level
CO1	To know the concessions available for small scale industries.		K1
CO2	To identify the role of customs in International trade.		K1
CO3	To understand the customs clearance procedure under export.		K2
CO4	To get awareness about the Central Sales Tax Provisions relating to interstate sales.		K3
CO5	To familiarize the Customs Tariff Act 1985 and its drawbacks.		K3
18UAT5SA	**SKILL BASED COURSE-III : COMPANY LAW**	Semester V	Level
CO1	To know the kinds of companies and documents to be filed		K1
CO2	To understand the provisions related to Memorandum of Association and Prospectus.		K2
CO3	To identify the provisions related to allotment of shares and transfer of shares.		K3
CO4	To learn the procedures related to conduct a meeting.		K1
CO5	To examine the provisions relating to appointment, powers duties and qualifications of Board of Directors and Company Secretary..		K3

18UAT63A	CORE - XIII : MANAGEMENT ACCOUNTING	Semester VI	Level
CO1	To know the significance of management accounting and the preparation of Comparative statement analysis		K1, K2
CO2	To apply the ratio analysis as management tool and prepare the Balance sheet		K3,K4
CO3	To know the working capital requirement and its applicability in Fund flow and cash flow analysis under AS 3		K3,K4
CO4	To prepare the various budget for the organization		K3
CO5	To apply the Marginal costing in Managerial decision makings		K3
18UAT63B	CORE - XIV-PRACTICAL AUDITING	Semester VI	Level
CO1	To Understand the basic auditing principles, concepts, planning of an audit		K2
CO2	To Illustrate the steps required to perform Internal control and Internal check.		K3
CO3	To Gain expert knowledge in vouching.		K2
CO4	To acquire knowledge regarding Verification and Valuation of Assets and Liabilities		K1
CO5	To familiarize with the appointment of company auditor and their powers and duties.		K3
18UAT63C	CORE – XV- INDIRECT TAX-II	Semester VI	Level
CO1	To Know the functions of various Council and the EWay bill.		K1
CO2	To get the awareness of the dual concepts and its applicability.		K3
CO3	To understand the supply under GST.		K3
CO4	To familiar with the time and value of supply.		K2
CO5	To identify the exemptions under GST..		K2

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18UAT6EA	**ELECTIVE II - BUSINESS LAW**	Semester VI	Level
CO1	To know the basics of contracts and agreements.		K1
CO2	To identify the capacity of persons to enter into the contracts.		K2
CO3	To familiarize with performance of contract and Quasi contract.		K3
CO4	To understand the concepts of Bailment.		K1 & K 2
CO5	To get awareness about the Sale of Goods Act 1930.		K2
18UAT6EB	**Elective II - BANKING LAW**	Semester VI	Level
CO1	To know the relationship between banker and customer		K1
CO2	To understand the procedure for opening an account		K2
CO3	To get awareness on the provisions related to Negotiable Instruments Act,1881.		K3
CO4	To identify the functions of RBI		K 2
CO5	To evaluate the various electronic payment methods.		K3
18UAT6EC	**ELECTIVE II - CYBER LAW**	Semester VI	Level
CO1	To know the Cyber law in E-Commerce.		K1
CO2	To understand the Intellectual Property Aspects.		K2
CO3	To aware The Indian Evidence Act 1872		K3
CO4	To familiarize with the Electronic Data Interchange		K 3
CO5	To know the formalities and procedures for Digital Signature & E Certificates.		K1

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18UAT6ED	**ELECTIVE III BUSINESS RESEARCH METHODS**	Semester VI	Level
CO1	To know the importance of Research and the methods of sampling		K1
CO2	To aware about the preparation of Interview schedule and Questionnaire.		K2
CO3	To apply the statistical tools in Research.		K3,K4
CO4	To evaluate the data and its interpretation.		K3
CO5	To understand the application of research in various fields		K2
18UAT6EE	**ELECTIVE III – PROJECT MANAGEMENTMETHODS**	Semester VI	Level
CO1	To get awareness about the concepts of project management.		K1
CO2	To know the various classifications of Budget and its functions		K2
CO3	To familiarize with the Role and Function of IFCI, ICICI & IDBI.		K3
CO4	To interpret the Importance of Communication in Project Management		K3
CO5	To acquire knowledge on Guidelines of project Audit.		K2
18UAT6SA	**SKILL BASED COURSE- IV MARKETING MANAGEMENT**	Semester VI	Level
CO1	To know the importance of marketing.		K1
CO2	To understand the product life cycle and its different stages in marketing.		K2
CO3	To aware the Channels of Distribution in marketing.		K3
CO4	To identify the various Sales promotion techniques in marketing.		K2
CO5	To analyze the various types of Advertising and the recent trends in advertising.		K3

BoS-Chairman

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B.Com. International Business

Programme Outcome	
1	Impart the knowledge in the practical application of accounting.
2	Employ the functions of supply chain in international business.
3	Ability to communicate effectively and efficiently with written and oral means.
4	Demonstrate the skills in the field of logistics management and Port operations.
5	Exhibit management functions to international business decision making.

Programme Educational Objective	
1	To instil positive attitude and ethical values among the students to be successful in personal and professional career.
2	To equip students with current development in the field of International Business which cater the current needs of the industry.
3	To build a strong foundation of knowledge and skills in the area of commerce.
4	To enable students with an ability of problem solving and decision making.
5	To expose students in the area of export/import procedures.

Course Outcome			
195CO1A1CA	**FINANCIAL ACCOUNTING -I**	**SEMESTER - I**	**Level**
CO1	Know the concepts, conventions and rules of accounting to pass journal entries and prepare	**SEMESTER - I**	K1
CO2	Obtain knowledge to prepare final accounts of a company and to gain skills to detect and prevent errors in journal and ledger accounts	**SEMESTER - I**	K3,K4
CO3	Capture the procedures relating to bills of exchange, and Average due date	**SEMESTER - I**	K3
CO4	Acquire stuff to reconcile cash book and pass book and to prepare accounts of Non- trading	**SEMESTER - I**	K3,K4
CO5	Classify and apply appropriate methods of depreciation	**SEMESTER - I**	K4

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Course Outcome			
195IB1A1CA	**MODERN MARKETING**	**SEMESTER - I**	**Level**
CO1	Know the concepts of global marketing, green marketing, along with their ethics and career opportunities.	**SEMESTER - I**	K1,K2
CO2	Understand the functions of marketing, the risk bearing and gain marketing information.	**SEMESTER - I**	K1,K2
CO3	Aware of needs and factors that influence the consumer Behavior and Scrutinizes the CRM.	**SEMESTER - I**	K1,K2
CO4	Gain knowledge on branding, labeling, promotional mix cognizant about the pricing and its strategies.	**SEMESTER - I**	K1,K2
CO5	Obtain knowledge on Bureau of Indian standards, Agmark and Consumer Protection Act	**SEMESTER - I**	K1,K2

Course Outcome			
195FI1A1IA	**BUSINESS ECONOMICS**	SEMESTER - I	Level
CO1	To introduce the micro and macroeconomic concept with demand analysis	SEMESTER - I	K1,K4
CO2	To make them understand the supply side of market and cost analysis	SEMESTER - I	K1,K4
CO3	Basic Knowledge about business cycle and inflation	SEMESTER - I	K2,K3
CO4	To understand the monetary and fiscal policy	SEMESTER - I	K3,K4
CO5	To know basic knowledge about national income	SEMESTER - I	K2

Course Outcome			
195IB1A2CA	**FINANCIAL ACCOUNTING II**	SEMESTER - II	Level
CO1	Interpret and explain the performance of branches and familiarize the accounting treatments of royalties.	SEMESTER - II	K2,K3,K4
CO2	Demonstrate the procedure in Departmental accounting and to understand the accounting treatment for hire purchase system.	SEMESTER - II	K2,K3,K4
CO3	Understand the concepts of partnership accounting and the accounting treatment of admission of partners	SEMESTER - II	K2,K3,K4
CO4	Interpret the financial result after retirement and death of a partner.	SEMESTER - II	K2,K3,K4

CO5	Discuss and solve problems relating to insolvency of partners.	SEMESTER - II	K2,K3,K4

Course Outcome			
195IB1A2CB	**PRINCIPLES OF MANAGEMENT**	SEMESTER - II	Level
CO1	Understand management	SEMESTER - II	K2,K3,K4
CO2	Learn the steps in planning and decision making	SEMESTER - II	K2,K3,K4
CO3	Obtain the skills to delegate authorities and responsibilities to manage the business organization effectively.	SEMESTER - II	K2,K3,K4
CO4	Know the Recruitment process, motivation and leadership styles	SEMESTER - II	K2,K3,K4
CO5	Comprehend the techniques of control and co-ordination for further implementation and growth	SEMESTER - II	K2,K3,K4
Course Outcome			
192MT1B2IC	IDC: BUSINESS STATISTICS	SEMESTER - II	Level
CO1	Learn and know as to how Statistics can be used	SEMESTER - II	K1
CO2	Discuss the main concepts of Measure of Central Tendency and Measure of Dispersion	SEMESTER - II	K2
CO3	Uses of Correlation and Regression	SEMESTER - II	K3
CO4	Demonstrate different components of a Time series	SEMESTER - II	K3
CO5	Analyzing the concept of Test of Significance	SEMESTER - II	K4

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Course Outcome			
195IB1A3CA	**INTERNATIONAL TRADE PROCEDURES**	SEMESTER - III	Level
CO1	Familiarize the concept of International trade and to have the understanding on India's Foreign trade.	SEMESTER - III	K1,K2,K3
CO2	Inculcate the basic knowledge on the Export procedure.	SEMESTER - III	K2,K3,K4
CO3	Learn the various documents involved in International trade.	SEMESTER - III	K2,K3,K4
CO4	Understand the various export promotion measures.	SEMESTER - III	K2,K3,K4
CO5	Enabling the understanding on Import procedures and documentation.	SEMESTER - III	K2,K3,K4
Course Outcome			
195IB1A3CB	**INTERNATIONAL BUSINESS STRATEGY**	SEMESTER - III	Level
CO1	To obtain knowledge on the concept of business strategy.	SEMESTER - III	K2,K3
CO2	Know the concepts of business environment.	SEMESTER - III	K2,K3,K4
CO3	To comprehend the business level strategies in International business.	SEMESTER - III	K2,K3,K4
CO4	Analyse the corporate level strategies in International business.	SEMESTER - III	K2,K3,K4
CO5	Analyse the Choice of strategy and its implementation	SEMESTER - III	K4,K5

Course Outcome			
195IB1A3CC	**COMMERCIAL LAW**	SEMESTER - III	Level
CO1	Understand the rules governing Indian Contract Act.	SEMESTER - III	K1,K2,K3
CO2	Familiarize the rights and discharges of duties by parties in indemnity,	SEMESTER - III	K2,K3,K4

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	guaranty, bailment and pledge.		
CO3	Acquire knowledge of rules governs setting up of agency and termination of agency.	SEMESTER - III	K2,K3 ,K4
CO4	Understand the legal provisions of Sale of Goods act.	SEMESTER - III	K2,K3 ,K4
CO5	Know the legal provisions of the laws relating to business.	SEMESTER - III	K2,K3 ,K4
Course Outcome
195CM1A3CB	**COST ACCOUNTING**	SEMESTER - III	Level
CO1	Discuss the methods of cost accounting and know about cost sheet.	SEMESTER - III	K2
CO2	Apply different method to analysis level material control	SEMESTER - III	K3
CO3	Use different methods of wages & incentives to labour and Absorption of overhead	SEMESTER - III	K3
CO4	Explain a process costing system and compute theCost of each process of finished produced	SEMESTER - III	K2
CO5	Retrieve the concept of Contract costing and Job costing	SEMESTER - III	K1
Course Outcome
192MT1B3IB	**BUSINESS MATHEMATICS**	SEMESTER - III	Level
CO1	explain the concept of Set operations	SEMESTER - III	K3
CO2	Discuss about Arithmetic and Geometric Progression	SEMESTER - III	K2
CO3	Use the concept of matrix operations in solving simultaneous equations	SEMESTER - III	K3
CO4	Demonstrate the ideas of differentiation	SEMESTER - III	K3
CO5	Solve the maximum and minimum values for a given function	SEMESTER -	K3

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		III	
Course Outcome			
195IB1A3SA	**INFORMATION TECHNOLOGY**	SEMESTER - III	Level
CO1	Understand the concepts of Information Technology.	SEMESTER - III	K1,K2,K3
CO2	Gain knowledge on the various operating systems.	SEMESTER - III	K2,K3,K4
CO3	Study about networking.	SEMESTER - III	K2,K3,K4
CO4	Obtain knowledge on cyber law.	SEMESTER - III	K2,K3,K4
CO5	Aware of needs of security aspects.	SEMESTER - III	K2,K3,K4
Course Outcome			
195IB1A4CA	**WORLD ECONOMIC RESOURCES**	SEMESTER - IV	Level
CO1	To understand the importance of natural resources and its link towards trade.	SEMESTER - IV	K3
CO2	Identify different environment supporting trade	SEMESTER - IV	K3
CO3	Ability to understand allied resources of agriculture.	SEMESTER - IV	K3
CO4	Analyze the importance of conventional energy.	SEMESTER - IV	K4
CO5	Ability to learn manufacturing and software industries .	SEMESTER - IV	K4
Course Outcome			
195IB1A4CB	**FINANCIAL MARKETS AND INSTRUMENTS**	SEMESTER - IV	Level
CO1	Understand the financial system and financial regulators in India	SEMESTER - IV	K3
CO2	Ability to understand money, capital and bond markets operations	SEMESTER - IV	K4
CO3	Ability to learn the operations of stock and derivative markets	SEMESTER - IV	K4
CO4	Insight into functioning of foreign exchange markets and foreign rate determination	SEMESTER - IV	K4

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CO5	Understand the different international financial instruments	SEMESTER - IV	K4
Course Outcome			
195IB1A4CC	**BRAND MANAGEMENT**	SEMESTER - IV	Level
CO1	Understand the basic principles of branding.	SEMESTER - IV	K3
CO2	Create awareness on the key issues in crafting and evaluating brand strategies.	SEMESTER - IV	K4
CO3	Improve the skills in delivering persuasive brand presentations.	SEMESTER - IV	K4
CO4	Evaluate brand extension and its contribution to parent brand.	SEMESTER - IV	K4
CO5	Develop an understanding of brand equity and a range of performance related outcomes.	SEMESTER - IV	K4
Course Outcome			
196BM1A4IB	**RETAIL MANAGEMENT**	SEMESTER - IV	Level
CO1	Understand the retailing infrastructure in Indian climate.	SEMESTER - IV	K3
CO2	Enrich the retail domain concepts and practice.	SEMESTER - IV	K3
CO3	Inculcate the importance of retail management.	SEMESTER - IV	K3
CO4	Learn global retail Management practice.	SEMESTER - IV	K3
CO5	Adopt emerging practice of modern retail management.	SEMESTER - IV	K3
Course Outcome			
195IB1A4SA	**BUSINESS COMMUNICATION**	SEMESTER - IV	Level
CO1	Understand and learn the concept of communication.	SEMESTER - IV	K3
CO2	Demonstrate and exhibit the procedure in writing business letters.	SEMESTER - IV	K3
CO3	Using persuasive and professional language in writing a letter.	SEMESTER - IV	K3

CO4	Acquire good business writing skills, to produce effective communications documents.	SEMESTER - IV	K3
CO5	Planning for career progression purposes in writing curriculum vitae and preparing for interview.	SEMESTER - IV	K3
Course Outcome			
195CI1A5CA	CORPORATE ACCOUNTING	SEMESTER - V	Level
CO1	List out the types of shares and what basis to issue Shares	SEMESTER - V	K1
CO2	Outline the redemption of preference and debentures	SEMESTER - V	K2
CO3	Explain the procedure and standards of final accounts as per revised schedule to measure performance of business.	SEMESTER - V	K2
CO4	Explain the corporate practice in amalgamation , absorption and reconstruction of companies	SEMESTER - V	K3
CO5	Apply different methods to find out value of goodwill and value of share.	SEMESTER - V	K4
Course Outcome			
195IB1A5CA	LOGISTICS AND SUPPLY CHAIN MANAGEMENT	SEMESTER - V	Level
CO1	Understand the basic concept of logistics and to create an awareness of its importance in international business	SEMESTER - V	K2
CO2	Learn the various modes of transportation and to gain knowledge regarding ports.	SEMESTER - V	K3
CO3	Educate the concept of containerization	SEMESTER - V	K3
CO4	Acquire the knowledge on basic concept of supply chain management.	SEMESTER - V	K3
CO5	Understand the strategies used in supply chain management and the application of IT in SCM	SEMESTER - V	K3

Course Outcome			
195IB1A5CB	**TAXATION**	SEMESTER - V	Level
CO1	Examine the basic concepts of schedule of rates of tax, tax liability, penalties and prosecution	SEMESTER - V	K4
CO2	Understand the computation of income from house property and profits and gains from business and profession	SEMESTER - V	K4
CO3	Understand the basic principles underlying the Indirect Taxation Statutes	SEMESTER - V	K4
CO4	Educate the basic concepts of GST	SEMESTER - V	K4
CO5	Understand the procedure in filing of returns under GST and to familiarize the customs act.	SEMESTER - V	K4
Course Outcome			
195IB1A5SA	**HUMAN RESOURCE MANAGEMENT**	SEMESTER - V	Level
CO1	Understand the contribution of social work to the field of human resource management	SEMESTER - V	K2
CO2	Emphasize the importance of job analysis and recruitment	SEMESTER - V	K3
CO3	Learn the processes of employee training	SEMESTER - V	K3
CO4	Ability to demonstrate modern methods of performance appraisal	SEMESTER - V	K3
CO5	Learn about job satisfaction and how to manage stress	SEMESTER - V	K3
Course Outcome			
195IB1A5DA	**ORGANISATIONAL BEHAVIOUR**	SEMESTER - V	Level
CO1	Understand the concept of organizational behavior.	SEMESTER - V	K3
CO2	Know about the features, theories of personality and elements of individual behavior.	SEMESTER - V	K4

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Criterion I Metric 1.1.2 PO-PSO-CO

CO3	Understand about the importance of group behavior.	SEMESTER - V	K4
CO4	Learn and understand about job satisfaction and leadership skills.	SEMESTER - V	K4
CO5	Learn about organizational climate and culture.	SEMESTER - V	K4

Course Outcome			
195IB1A5DB	**GARMENT MERCHANDISING**	SEMESTER - V	Level
CO1	Generalize the students with basic concepts of merchandising	SEMESTER - V	K3
CO2	Create an understanding on execution tactics and pricing strategies followed in garment industry	SEMESTER - V	K4
CO3	Educate with the quality standards adopted in garment industry	SEMESTER - V	K4
CO4	Familiarize the sourcing strategies used in garment industry	SEMESTER - V	K4
CO5	Developing the idea on visual merchandising.	SEMESTER - V	K4

Course Outcome			
195IB1A5DC	**BUSINESS ANALYTICS**	SEMESTER - V	Level
CO1	Outline the role of business analytics	SEMESTER - V	K2
CO2	Educate the concept of data and digital data	SEMESTER - V	K2
CO3	Explain the concepts of OLTP, OLAP and BI	SEMESTER - V	K3
CO4	Demonstrate the data integration and data modeling concepts	SEMESTER - V	K3
CO5	List the concepts of Enterprise reporting and BI in real world.	SEMESTER - V	K3

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Course Outcome			
192MT1A5AA	**RESEARCH METHODOLOGY**	**SEMESTER - V**	**Level**
CO1	learn the basics of the research methods and techniques	SEMESTER - V	K1
CO2	remember the hypothesis, laws related to research problem	SEMESTER - V	K1
CO3	understand the limitations of experimentation in research	SEMESTER - V	K2
CO4	Illustrate the concept of interdisciplinary and multidisciplinary research	SEMESTER - V	K3
CO5	analyze the ethics and responsibilities of research	SEMESTER - V	K3

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M.Com. International Business

Programme Outcome	
1	Employ the concepts in FOREX operations and Decision Making
2	Apply supply chain models in real time business process.
3	Communicate effectively with written, oral and visual means.
4	Ability to perform customs clearance operations and logistics activities.
5	Exhibit international marketing abilities, plan financial operations , Predicting different business environment and identifying different service industries .

Programme Educational Objective	
1	The course incorporates current developments in global marketing to acquaint students with the present-day challenges in global scenario
2	To equip the students with the essential traits needed to be a successful entrepreneur in global business
3	To train the business strategy needed to remain competitive in a global environment.
4	To Develop skills in strategic planning, dynamic decision-making, problem-solving, and technology management
5	The course prepares students for a professional career in operations, logistics and supply chain management to meet the challenges of a rapidly globalizing Industry.

Course Outcome			
195IB2A1CA	**CORE : INTERNATIONAL MARKETING MANAGEMENT**	**SEMESTER - I**	**Level**
CO1	Understand the process of International Marketing and identifying the barriers in International Marketing	**SEMESTER - I**	**K2**
CO2	Apply the concept of value chain, customer retention and competitive marketing strategies.	**SEMESTER - I**	**K3**
CO3	Comply the concept of International marketing decisions.	**SEMESTER - I**	**K3**
CO4	Identify the types and latest trends in	**SEMESTER**	**K4**

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	International marketing	- I	
CO5	Analyze and evaluate the concepts of International marketing in real time business operations.	SEMESTER - I	K5

Course Outcome			
195IB2A1CB	CORE : BUSINESS COMMUNICATION	SEMESTER - I	Level
CO1	Understand the types of communication and identifying barriers.	SEMESTER - I	K2
CO2	Demonstrate and exhibit the procedure in writing business letters	SEMESTER - I	K4
CO3	Construct and impart export import correspondence	SEMESTER - I	K4
CO4	Transform basic contents to final summarized reports	SEMESTER - I	K5
CO5	Explore the skill of oral communication	SEMESTER - I	K5

Course Outcome			
195IB2A1CC	ECONOMICS FOR DECISION MAKING	SEMESTER - I	Level
CO1	Learn scope and nature of managerial economics and role of managerial economist.	SEMESTER - I	K1
CO2	Understand National economic policies and economic terms	SEMESTER - I	K2
CO3	Analyze the demands and its techniques	SEMESTER - I	K4
CO4	Determine the cost and pricing techniques	SEMESTER - I	K5
CO5	Build knowledge in International theories.	SEMESTER - I	K3

Course Outcome			
195IB2A1CD	CORE : GLOBAL BUSINESS ENVIRONMENT	SEMESTER - I	Level
CO1	Understand different cultural and business environment	SEMESTER - I	K2
CO2	Ability to demonstrate knowledge on infrastructure	SEMESTER - I	K4
CO3	Able to analysis influence of culture	SEMESTER	K4

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	in business activity	**- I**	
CO4	Identify different international legal system and dispute resolution	**SEMESTER - I**	**K2**
CO5	Learn environmental protection and regulation relating to it	**SEMESTER - I**	**K2**
Course Outcome		
195IB2A1CE	INTERNATIONAL BUSINESS RELATIONS	**SEMESTER - I**	**Level**
CO1	Learn about International Relations and Politics.	**SEMESTER - I**	**K2**
CO2	Students will be able to understand International Law, collective security, Balance of Power and Peaceful settlement.	**SEMESTER - I**	**K2**
CO3	Analyze the role Regional groups.	**SEMESTER - I**	**K5**
CO4	Identifying the relationship of India with other Nation's.	**SEMESTER - I**	**K2**
CO5	Applying the knowledge of India's International Relations in business.	**SEMESTER - I**	**K3**
Course Outcome		
195IB2A1DA	DSE : AIR TRANSPORT MANAGEMENT	**SEMESTER - I**	**Level**
CO1	Understand Airline Industry, Air cargo industry, Air transportation industry	**SEMESTER - I**	K2
CO2	Identify air transport infrastructure and its benefits	**SEMESTER - I**	K3
CO3	Ability to classify types of air cargo and air cargo tariffs	**SEMESTER - I**	K4
CO4	Learn air port and air craft classifications	**SEMESTER - I**	K2
CO5	Understand international regulations in aviation	**SEMESTER - I**	K2
Course Outcome		
195IB2A1DB	DSE : PRINCIPLES AND PRACTICES OF MARKETING OF SERVICES	**SEMESTER - I**	**Level**
CO1	Learn business services and its industries	**SEMESTER - I**	**K1**
CO2	Understand services marketing.	**SEMESTER**	**K2**

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		- I	
CO3	Ability in making marketing decisions.	**SEMESTER - I**	**K3**
CO4	Identify the opportunities in services industries	**SEMESTER - I**	**K3**
CO5	Analyze problems and measuring service quality	**SEMESTER - I**	**K4**
Course Outcome			
195IB2A1DC	DSE : FINANCIAL MARKETS AND INSTITUTIONS	**SEMESTER - I**	**Level**
CO1	Understand different financial markets in India.	**SEMESTER - I**	**K2**
CO2	Classify capital markets and derivatives market	**SEMESTER - I**	**K2**
CO3	Identify different financial service institutions.	**SEMESTER - I**	**K2**
CO4	Analyze the credit rating agencies of India.	**SEMESTER - I**	**K4**
CO5	Summarize financial institutions, money market, capital market and EXIM bank	**SEMESTER - I**	**K3**
Course Outcome			
195IB2A2CA	CORE: FINANCIAL AND MANAGEMENT ACCOUNTING	**SEMESTER - II**	**Level**
CO1	Familiarize the students with basic accounting concepts and conventions and accounting in double entry system.	**SEMESTER - II**	K1,K2,K3
CO2	Grasp the accounting treatments relating to the preparation of final accounts and bill of exchange	**SEMESTER - II**	K2,K3,K4
CO3	Prepare budgets and demonstrate budget control techniques	**SEMESTER - II**	K2,K3,K4
CO4	Find and apply tools and techniques used to plan, control and make decision	**SEMESTER - II**	K2,K3,K4
CO5	Illustrate and Build the knowledge of Cash flow and Fund flow analysis.	**SEMESTER - II**	K3,K4,K5
Course Outcome			

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Criterion I Metric 1.1.2 PO-PSO-CO

195IB2A2CB	CORE :FOREIGN TRADE PROCEDURES AND DOCUMENTATION	SEMESTER - II SEMESTER - II	Level
CO1	Learn foreign trade policy, acts governing India's International trade	SEMESTER - II	K2
CO2	Obtain the skills relating to import export decisions.	SEMESTER - II	K3
CO3	Understand the categories of exporters, status holders and identifying export promotion council.	SEMESTER - II	K3
CO4	Educate the procedures for imports.	SEMESTER - II	K4
CO5	Inculcate the ability to prepare export import documents.	SEMESTER - II	K5
Course Outcome			
195CO2A2EA	EDC : HUMAN RESOURCE MANAGEMENT	SEMESTER - II	Level
CO1	Understand the organizational structure	SEMESTER - II	K2
CO2	Analyze the job and role to select and recruit personnel	SEMESTER - II	K3
CO3	Measure the performance of an employees for promotion and training	SEMESTER - II	K3
CO4	Capture employee grievance redressal procedures for organizational betterment	SEMESTER - II	K4
CO5	Control the organizational conflict through appropriate leadership styles.	SEMESTER - II	K5
Course Outcome			
195IB2A2DA	DSE: INDUSTRIAL PSYCHOLOGY	SEMESTER - II	Level
CO1	Educate the concept of industrial psychology and individual behaviour in industries.	SEMESTER - II	K2,K3,K4
CO2	Emphasis the importance of group behaviour and motivation in industries.	SEMESTER - II	K2,K3,K4
CO3	Understand the process of decision making in the industries by both the individuals and groups.	SEMESTER - II	K3,K4,K5

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CO4	Familiarize the concept of organizational culture.	**SEMESTER - II**	K3,K4.K5
CO5	Showcase the ways to manage the changes and recent trends in industrial psychology	**SEMESTER - II**	K3,K4,K5
Course Outcome			
195IB2A2DB	**DSE : INTERNATIONALHUMAN RESOURCE MANAGEMENT**	**SEMESTER - II**	**Level**
CO1	Familiarize the basic concepts of International Human Resource Management and its role in effective business administration	**SEMESTER - II**	K1, K2,K3
CO2	Interpret the elements related to various aspects of IHRM, such as Planning, Recruitment, Staffing and Training.	**SEMESTER - II**	K2,K3,K4
CO3	Create awareness on various compensation and benefits related to IHRM	**SEMESTER - II**	K3,K4,K5
CO4	Understanding the importance of performance management in Global context	**SEMESTER - II**	K3,K4,K5
CO5	Educate the importance of ethics to be followed and social responsibility of MNCs.	**SEMESTER - II**	K3,K4,K5
Course Outcome			
195IB2A2DC	DSE: TOTAL QUALITY MANAGEMENT	**SEMESTER - II**	**Level**
CO1	Understanding the basic concept of TQM	**SEMESTER - II**	K2,K3,K4
CO2	Develop an idea towards the principles of TQM	**SEMESTER - II**	K2,K3,K4
CO3	Learn and understand about the tool and technique I of TQM	**SEMESTER - II**	K2,K3,K4
CO4	Analyze and identify the other tools and technique II of TQM.	**SEMESTER - II**	K3,K4,K5
CO5	Understand the application and processes of the various quality Awards.	**SEMESTER - II**	K2,K4,K5
Course Outcome			
195IB2A3CA	**EXPORT – IMPORT FINANCE**	**SEMESTER - III**	**Level**
CO1	Learning basic elements of EXIM transactions and the sources of/	**SEMESTER - III**	**K2,K3,K4**

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	financing those transactions.		
CO2	Identifying the requirements for Pre & Post Shipment finance.	**SEMESTER - III**	**K2,K3,K4**
CO3	Organize import transactions and its procedures.	**SEMESTER - III**	**K2,K3,K4**
CO4	Exploring the agencies funding for the long term finance and analyzing the deferred payment procedures.	**SEMESTER - III**	**K2,K3,K4**
CO5	Analyzing and applying the concepts of EXIM finance.	**SEMESTER - III**	**K3,K4K5**

Course Outcome			
195IB2A3CB	**FOREIGN EXCHANGE MANAGEMENT**	**SEMESTER - III**	**Level**
CO1	Understand foreign exchange Administration and Foreign exchange market	**SEMESTER - III**	K1,K2,K3
CO2	Educate exchange rates and foreign exchange Transactions	**SEMESTER - III**	K2,K3,K4
CO3	Analyse and understand Interbank deals	**SEMESTER - III**	K2,K3,K4
CO4	Explore foreign exchange Risk and exposure	**SEMESTER - III**	K2,K3,K4
CO5	Learn the techniques adopted in the management of Foreign exchange risk.	**SEMESTER - III**	K3,K4,K5

Course Outcome			
195IB2A3CC	**LOGISTICS MANAGEMENT**	**SEMESTER - III**	**Level**
CO1	Understand objectives and introduction of Logistics and importance of Logistics.	**SEMESTER - III**	K1,K2,K3
CO2	Identify the modes of transport and transportation and major and minor ports in India.	**SEMESTER - III**	K2,K3,K4
CO3	Formulate the ocean freight calculation and recognize the ship classification.	**SEMESTER - III**	K3,K4,K5
CO4	Exploring the containerization and movements of containers.	**SEMESTER - III**	K2,K3,K4

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CO5	Learn to interpret Airline industry and international air transport.	**SEMESTER - III**	K2,K3,K4
Course Outcome		
195IB2A3CD	**BUSINESS RESEARCH METHODS**	**SEMESTER - III**	**Level**
CO1	Understand the basic concepts in Research.	**SEMESTER - III**	K2,K3,K4
CO2	Build hypothesis and to understand the sampling and methods of data Collection.	**SEMESTER - III**	K2,K3,K4
CO3	Prepare the research report.	**SEMESTER - III**	K3,K4,K5
CO4	Apply statistical tools in research.	**SEMESTER - III**	K3,K4,K5
CO5	Apply various tests inresearch.	**SEMESTER - III**	K3,K4,K5
Course Outcome		
195IB2A3DA	**RETAIL MANAGEMENT**	**SEMESTER - III**	**Level**
CO1	Demonstrate the introduction of retailing.	**SEMESTER - III**	K1,K2,K3
CO2	Understand the retailing market segmentation and strategies.	**SEMESTER - III**	K1,K2,K3
CO3	Analyze the various retail operations..	**SEMESTER - III**	K1,K2,K3
CO4	Identify the retail marketing mix	**SEMESTER - III**	K2,K3,K4
CO5	Build knowledge in future of retailing.	**SEMESTER - III**	K2,K3,K4
Course Outcome		
195IB2A3DB	**TRAVEL AND HOSPITALITY SERVICES**	**SEMESTER - III**	**Level**
CO1	Understand tourism.	**SEMESTER - III**	K1,K2,K3
CO2	Identify tourist destinations and future of tourism in India.	**SEMESTER - III**	K2,K3,K4
CO3	Learn to understand marketing mix of tourism.	**SEMESTER - III**	K2,K3,K4
CO4	Understand Hospitality services.	**SEMESTER - III**	K2,K3,K4

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CO5	Learn marketing mix forhotels.	**SEMESTER - III**	K2,K3,K4
Course Outcome			
195IB2A3DC	**INSTITUTIONS FACILITATING INTERNATIONAL TRADE**	**SEMESTER - III**	**Level**
CO1	Acquire Knowledge on Export Promotion in India	**SEMESTER - III**	K1,K2,K3
CO2	Understandtheroleoffinancial institutionsinthegrowth of India's foreigntrade.	**SEMESTER - III**	K2,K3,K4
CO3	Know the importance of World trade organization in International trade.	**SEMESTER - III**	K2,K3,K4
CO4	Educate the role of International Monetary Funds	**SEMESTER - III**	K2,K3,K4
CO5	Learn the role of International financial institutions.	**SEMESTER - III**	K2,K3,K4
Course Outcome			
195IB2A4CA	**SUPPLY CHAIN MANAGEMENT**	**SEMESTER - IV**	**Level**
CO1	To obtain knowledge on the concept of supply chain management.	**SEMESTER - IV**	K4
CO2	To know the concepts of supply chain drivers.	**SEMESTER - IV**	K4
CO3	Understand the importance of an effective supply chain network.	**SEMESTER - IV**	K5
CO4	Evaluate the supply chain performance.	**SEMESTER - IV**	K5
CO5	Analyze the importance of information technology in supply chain.	**SEMESTER - IV**	K5

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Course Outcome			
195IB2A4CB	STRATEGIC MANAGEMENT	SEMESTER - IV	Level
CO1	Understand the features and limitations of strategy and strategic management.	SEMESTER - IV	K2
CO2	Learn strategic planning, organizational structure and strategy.	SEMESTER - IV	K3
CO3	Identifying the competitive cost dynamic techniques.	SEMESTER - IV	K3
CO4	Ability to demonstrate knowledge on implementation and evaluation of strategy.	SEMESTER - IV	K4
CO5	Analyze the strategic decisions in business environment.	SEMESTER - IV	K5
Course Outcome			
195IB2A4CC	GLOBAL FINANCIAL MANAGEMENT	SEMESTER - IV	Level
CO1	Learn the types of international financial markets.	SEMESTER - IV	K3
CO2	Understand the flow of goods and funds in financial markets.	SEMESTER - IV	K3
CO3	Summarize financial environment, BOP, international financial institutions.	SEMESTER - IV	K3
CO4	Identify the recent changes in international financing.	SEMESTER - IV	K4
CO5	Analyze the multinational working capital management.	SEMESTER - IV	K5

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B.Com. Cost Accounting

Programme Outcome

1	To gain a thorough grounding in key areas of accounting, commerce and finance and its applications to meet the current and future expectations of business.
2	To become intelligent users of cost information to compute and control cost for decision making.
3	To develop appropriate and effective written and oral communication skills relevant to cost accounting.
4	To prepare for professions in the field of Accountancy - Chartered Accountancy, Cost and Management accountancy, Capital and Commodity markets, Insurance and Banks by passing the respective examinations of the concerned professional bodies.
5	To inculcate a sense of civic responsibility, social commitment, and moral accountability among the students through social activities.

Programme Specific Outcome

1	To provide a conducive environment that holistically engage students to attain professional excellence by being innovative, efficient and ever ready to take up challenging roles in Industry and Academics.
2	Develop, restructure and apply cost accounting approaches, principles and concepts relevant to cost accounting to solve practical problems.
3	Inhibit an understanding of the conceptual framework of Cost Accounting which helps the students to acquire the knowledge in Cost Accounting as a managerial tool in business decision making.
4	To train and develop students with the much needed business education, so that they are more competitive for professional career.
5	To nurture the young minds, to make them better employable and socially responsible citizens by encapsulating them with the right set of knowledge for a better tomorrow.

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Criterion 1
Metric 1.1.2
PO-PSO-CO

Course Outcome

205CO1A1CA	CORE:FINANCIAL ACCOUNTING - I	SEMESTER I	Level
CO1	Know the concepts, conventions and rules of accounting to pass journal entries and prepare ledger accounts.	I	K1,K2
CO2	Obtain knowledge to prepare final accounts of a company and to gain skills to detect and prevent errors in journal and ledger accounts.	I	K2,K3
CO3	Capture the procedures relating to bills of exchange, and Average due date.	I	K2
CO4	Acquire stuff to reconcile cash book and pass book and to prepare accounts of Non- trading concerns.	I	K3
CO5	Classify and apply appropriate methods of depreciation.	I	K2,K3
205CC1A1CA	**CORE : BANKING LAW**	**SEMESTER I**	**Level**
CO1	Understand the relationship between a banker and a customer	I	K1
CO2	Acquire the knowledge of opening an account, types of customers and types of deposits	I	K1,K2
CO3	Handle the queries regarding cheques effectively.	I	K2
CO4	Analyse the functions of Reserve.	I	K3
CO5	Employ the application of e-banking services.	I	K3
202MT1B11B	**IDC : BUSINESS MATHEMATICS**	**SEMESTER I**	**Level**
CO1	Explain the concept of Set operations	I	K3
CO2	Discuss about Arithmetic and Geometric Progression	I	K2
CO3	Use the concept of matrix operations in solving simultaneous equations	I	K3
CO4	Demonstrate the ideas of differentiation	I	K3
CO5	Solve the maximum and minimum values for a given function	I	K3
205CC1A2CA	**CORE: PRINCIPLES OF COSTING**	**SEMESTER II**	**Level**
CO1	Discuss the methods of cost accounting and know about cost sheet.	II	K1,K2
CO2	Apply different method to analyze level of material control.	II	K2,K3
CO3	Use different methods of wages & incentives to labour and Absorption of overhead.	II	K2
CO4	Classify and apply apportionment of overheads.	II	K3
CO5	How to reconcile cost and financial accounts.	II	K2,K3

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205CC1A2CB	CORE: FINANCIAL ACCOUNTING–II	SEMESTER II	Level
CO1	To understand the accounting treatments for joint venture.	II	K1,K2
CO2	To learn the accounting treatments relating to Royalty accounts.	II	K2,K3
CO3	To understand the reasons for difference between single and double entry system and its methods.	II	K2
CO4	To develop the skills in preparation of branch accounts and departmental accounts.	II	K3
CO5	To understand various interest calculations relating to hire purchase and instalment purchase system.	II	K2,K3
205CC1A2CC	**CORE : COMMERCIAL LAW**	**SEMESTER II**	**Level**
CO1	To demonstrate the law relating to Indian contract Act.	II	K1
CO2	To explain the concept of offer and acceptance.	II	K2
CO3	To understand the different elements of valid contract and quasi contract.	II	K2
CO4	To explain the performance of contract and breach of contract.	II	K3
CO5	To identify the sale of goods, warranties and ownership of goods according to the Act.	II	K2,K3
192MT1B2IC	**IDC: BUSINESS STATISTICS**	**SEMESTER II**	**Level**
CO1	Learn and know as to how Statistics can be used	II	K1
CO2	Know the main properties of each Measure of Central Tendency and select the most appropriate one for use with a given set of data	II	K2
CO3	Understand the Importance and Limitations of Correlation Analysis	II	K3
CO4	Recognize different components of a Time series	II	K3
CO5	Analyzing the concept of Test of Significance	II	K4
205CC1A3CA	**CORE : APPLIED COSTING**	**SEMESTER III**	**Level**
CO1	Retrieve the concept of Contract costing and Job costing.	III	K1
CO2	Examine about the operation costing	III	K2
CO3	Explain a process costing system and compute the cost of each process of finished produced.	III	K2,K3
CO4	Gain knowledge on Standard Costing and Variance Analysis.	III	K2,K3
CO5	Understand the modern methods of costing and Costing Standards.	III	K3

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205CC1A3CB	**CORE: HIGHER FINANCIAL ACCOUNTING**	**SEMESTER III**	**Level**
CO1	Know the concept of partnership accounts and the admission of a partner.	III	K1
CO2	Understand the accounting treatment and settlement for retirement and death of a partner.	III	K1,K2
CO3	Learn the amalgamation, its treatments of goodwill and accounting procedures of partnership firm.	III	K2,K3
CO4	Gain knowledge on dissolution of partnership firm and piecemeal distribution of assets.	III	K2,K3
CO5	Understand the Voyage, Human Resource and Inflation Accounting.	III	K3
205CC1A3CC	**CORE : MODERN MARKETING**	**SEMESTER III**	**Level**
CO1	Understanding the concepts of marketing and the role of marketing in business and society.	III	K1,K2
CO2	Demonstrate effective understanding of relevant functions of marketing.	III	K2
CO3	Demonstrate the understanding of all components of a marketing mix.	III	K2
CO4	Apply the skills gained to analyze the behavior of consumer and identify the purpose of market segmentation.	III	K3
CO5	Analyze the key concepts related to green marketing and digital marketing.	III	K2,K3
205FI1A31B	**IDC : BUSINESS ECONOMICS**	**SEMESTER III**	**Level**
CO1	Understand micro and macroeconomic concepts.	III	K1
CO2	Know the supply side of market and cost analysis.	III	K1
CO3	Recall business cycle and inflation.	III	K2,K3
CO4	State the monetary and fiscal policy.	III	K3
CO5	Specify factors for national income.	III	K3
205CC1A3SA	**SEC : BUSINESS APPLICATION SOFTWARE**	**SEMESTER III**	**Level**
CO1	Understand the concepts of Ms Word.	III	K1
CO2	Gain knowledge on usage of Ms Excel and its Applications.	III	K2,K3
CO3	Apply the Ms PowerPoint and its tools.	III	K2,K3
CO4	Understand the basics Ms Access and its use.	III	K1,K2
CO5	Understand the concepts of Tally.	III	K1

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B.B.A.(CA)

Programme Outcome

1	Recognize the meaning of business and the requirements for its success in various forms of business organizations.
2	Recognize the meaning of business and the requirements for its success in various forms of business organizations.
3	Carry out the decisions with the support of planning, objectives and policies.
4	Illustrate the organizational structure, selection process and training.
5	Implement the process of directing and controlling for better co-ordination

Programme Specific Outcome

1	To integrate both theoretical and practical knowledge and to imbibe managerial skills and confidence.
2	To stimulate the interest among the entrepreneurial skills among the students.
3	To develop academically competent motivated personnel with abstract objective and productive skills.
4	To facilitate the learners to develop skills for employment and positive work.
5	To develop competency in research and happenings in and around the globe .

Course Outcome

196BM1A1CA	MANAGEMENT CONCEPTS	SEMESTER I	LEVEL
CO1	Recognize the meaning of business and the requirements for its success in various forms of business organizations.		K1
CO2	Interpret whether the management is a science or an art through the evolution of management theory.		K2
CO3	Carryout the decisions with the support of planning, objectives and policies.		K3
CO4	Illustrate the organizational structure, selection process and training.		K3
CO5	Implement the process of directing and controlling for better co-ordination.		K3

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196BM1A1CB	BUSINESS INFORMATION SYSTEM	SEMESTER I	LEVEL
CO1	Describe about the Generations, Types of computers and Networks.		K1
CO2	Explain the Input, Output & Storage devices and Programming Languages.		K2
CO3	Summarize the Hardware and importance of computer in business and computer related jobs		K2
CO4	Explain the Emerging Trends in IT, E-Commerce		K3
CO5	Apply the data input, process and various computer based information system		K3
192MT1B1IA	MATHEMATICS FOR MANAGEMENT-I	SEMESTER I	LEVEL
CO1	Discuss the applications of permutation and combination.		K1
CO2	Discuss the applications of sets		K2
CO3	Illustrate the applications of Arithmetic and Geometric progression.		K3
CO4	Estimation of measures of central tendencies from given data		K2
CO5	Compute Correlation and Regressions for given data.		K3
191TL1A2HA	HINDI-II	SEMESTER II	LEVEL
CO1	Learn the fundamentals of novels and stories		K1
CO2	Understand the principles of translation work		K2
CO3	Apply the knowledge writing critical views on fiction		K3
CO4	Build creative ability		K3
CO5	Expose the power of creative reading		K2
191TL1A2FA	FRENCH- II	SEMESTER II	LEVEL
CO1	Learn the Basic verbs, numbers and accents		K1
CO2	To learn the adjectives and the classroom environment in France		K2
CO3	Learn the Plural, Articles and the Hobbies		K3
CO4	To learn the Cultural Activity in France		K3

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CO5	To learn the Sentiments, life style of the French people and the usage of the conditional tense		K2
191TL1A2MA	**MALAYALAM-II**	**SEMESTER II**	**LEVEL**
CO1	Learn the fundamentals of novels and stories		K1
CO2	Understand the principles of translation work		K2
CO3	Apply the knowledge writing critical views on fiction		K3
CO4	Build creative ability		K3
CO5	Expose the power of creative reading		K2
191EL1A2EA	**ENGLISH - II**	**SEMESTER II**	**LEVEL**
CO1	Interpret skills in communication and to shape their attitude		K2
CO2	Develop oral and written language skills in a business context		K3
CO3	Analyze to gain key strategies and expressions for communicating with professionals		K4
CO4	Inspect the knowledge to the corporate needs		K4
CO5	Formulate Inter and Intrapersonal skills		K6
196BM1A2CA	**BUSINESS COMMUNICATION**	**SEMESTER II**	**LEVEL**
CO1	Describe the media, types of business communication and its barriers.		K2
CO2	Draft the various business letters.		K3
CO3	Carry out Bank correspondence and other business correspondences.		K3
CO4	Develop the various reports.		K3
CO5	Illustrate the internal communication and various major devices.		K3
196BM1A2CB	**INTERNET AND WEBPAGE DESIGN**	**SEMESTER II**	**LEVEL**
CO1	Describe about the Internet and Basics of Web Design and Web Designing Rules.		K1
CO2	Describe the overview of HTML, Applications and Basics Tags, and Font Tags.		K2
CO3	Describe the HTML Formatting and Link.		K3

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CO4	Describe the HTML List and Tables.		K3
CO5	Summarize the DHTML and CSS.		K3
192MT1B2IA	**MATHEMATICS FOR MANAGEMENT**	**SEMESTER II**	**LEVEL**
CO1	Learn the concept of Linear Programming in Industry level		K1
CO2	Discuss Operation and Function of Transport		K2
CO3	Use Assignment Problem in Job allocation		K3
CO4	Demonstrate Games and serves as a model of an interactive situation among rational players		K3
CO5	Analyzing Plan and Schedule of the project in various field		K4
196BM1A2AA	**HUMAN RIGHTS**	**SEMESTER II**	**LEVEL**
CO1	Understand the concept of human values, personality traits and character formation		K2
CO2	Acquire the knowledge through value education towards national and global development		K1
CO3	Introduce the basic concepts of conflict, emotions and adolescent emotions		K1
CO4	Illustrate the techniques in therapeutic measures like yoga and meditation.		K2
CO5	Learn the concepts of human rights, rights for women and children and domestic violence		K3
196BM1A3CA	**MARKETING MANAGEMENT**	**SEMESTER III**	**LEVEL**
CO1	Define the meaning of marketing, concepts and importance in various areas of marketing environment.		K1
CO2	Know the buyer behavior in order to make market segmentation through market strategy		K2
CO3	Interpret the product and its life cycle, selecting the product mix and packing decisions..		K3
CO4	Discover pricing policies to meet competitions and selecting physical distribution to tackle the risk		K3

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CO5	Highlight the various promotional mix strategies to make the real time advertising media		K3
196BM1A3CB	**ORGANIZATIONAL BEHAVIOUR**	**SEMESTER III**	**LEVEL**
CO1	Describe industrial psychology and behavioral outcome		K1
CO2	Illustrate the personality, perception, motivation and brain storming.		K3
CO3	Summarize the group norms and conflict.		K2
CO4	Demonstrate leadership skills, power and politics.		K3
CO5	Carryout the stress, work life balance and organizational change.		K3
196BM1A3CC	**FINANCIAL ACCOUNTING**	**SEMESTER III**	**LEVEL**
CO1	Explain about the accounting concepts and understand the rules of double entry system, journalizing the business transactions and posting to ledger accounts.		K1
CO2	Understand the features, causes of depreciation and calculation of various methods of depreciation.		K2
CO3	Construct the manufacturing, trading, profit & loss account and balance sheet		K3
CO4	Illustrate the accounts for non-trading institutions through income & expenditure account and receipts & payments account		K3
CO5	Prepare the accounts from incomplete records by calculating the capital and profit through statement of affairs.		K3
195FI1A3IA	**BUSINESS LAW**	**SEMESTER III**	**LEVEL**
CO1	Know essentials of contracts, offer and acceptance.		K2
CO2	Identify the rules of consideration and consent		K3
CO3	Differentiates the various agreement, contract of sales and breach of contract.		K3

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CO4	Know the transfer of property and right of resale		K4
CO5	Interpret agency		K5
196BM1A4CA	ENTREPRENEURSHIP AND PROJECT MANAGEMENT	SEMESTER IV	LEVEL
CO1	Introduce the basic concept of entrepreneurship and the various role played by an entrepreneur in the emerging world		K1
CO2	Foster the students in the areas of entrepreneurial growth and equip with different entrepreneurial development programmes		K2
CO3	Project management is a powerful discipline in the core areas of project life cycle and to know about the roles and responsibilities of a project manager		K1
CO4	Understand the benefits of delivering the project identification and selecting the successful project with the various guidelines issued by the authorities		K2
CO5	Classify the various sources of business finance and identify the different institutions that supporting entrepreneurs		K3
196BM1A4CB	COST AND MANAGEMENT ACCOUNTING	SEMESTER IV	LEVEL
CO1	Recognize the merits and demerits of cost and management accounting along with the elements of cost concepts.		K1
CO2	Prepare the cost sheets for the purpose of stores control through economic order quantity, pricing and material issues.		K2
CO3	Interpret the financial statements through comparative and common size by using various financial ratios		K3

CO4	Sketch the fund flow and cash flow statements by calculating funds and cash from operations.		K3
CO5	Produce various functional budgets and apply marginal costing for cost volume profit.		K3
196BM1A4CC	**VISUAL BASIC**	**SEMESTER IV**	**LEVEL**
CO1	To understand the Visual Basic Environment Tools, Tool bars, Forms, Controls and Components.		K1
CO2	Describe the overview of Code Window, Form Window, Basic Control and Functions		K2
CO3	Describe the Array, Variable and MDI Forms		K3
CO4	Describe the Graphics and Files.		K2
CO5	To Demonstrate the Databases, Data Controls used in SQL.		K3
195IB1A4IA	**EXPORT MANAGEMENT**	**SEMESTER IV**	**LEVEL**
CO1	Obtain knowledge on the international trade		K3
CO2	Acquire knowledge on export registration procedures		K3
CO3	Understand the process involved in executing an export order.		K3
CO4	Have an clear view on export management		K3
CO5	Understand and learn about the export finance		K3

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BoS Chairman/HoD
Department of Management Studies
Dr. N. G. P. Arts and Science College
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M.H.A Hospital Administration

Programme Outcome	
1	To understand the major concepts in the functional areas of accounting, marketing, finance, information technology, and management with relation to hospitals.
2	To build skills in the use of managerial tools of planning, organising, and achieve optimal resource utilization in hospital settings
3	Use oral and written communication skills to meet the needs of various audiences.
4	Use team, and organizational skills, supervision, and coaching techniques to effectively lead across organization, department, and work group units to meet diverse stakeholder and organizational goals in a variety of healthcare environment.
5	Develop innovative solutions to strategic, tactical and operational issues in managing healthcare systems and associated information technology through the combined use of information, data analytics, organizational knowledge, talent management, and critical and design thinking..

Programme Educational Objective	
1	To learn efficient methods of Hospital Administration
2	To understand the concepts of management with relation to modern hospitals
3	To prepare and train qualified and efficient administrators to manage hospitals
4	To offer platform for working professionals in hospitals to achieve desired knowledge, skills and attitude in the field of hospital administration.

Course Outcome			
196HA2A1CA	PRINCIPLES AND PRACTICES OF MANAGEMENT	Semester	Level
CO1	Understand fundamental concepts and principles of management and demonstrate knowledge trends developments in management		K3
CO2	Apply organizational planning systems and Decision making in health care		K3
CO3	Analyze, evaluate and develop organizational skills in health care management.	I	K5
CO4	Analyze and interpret the elements of directing and its importance in health care management		K5
CO5	Propose controlling techniques for health care organizations.		K6

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196HA2A1CB	CORE: CONCEPT OF HEALTH AND MEDICAL TERMINOLOGY		Level
CO1	Understand about concept of health , and compare different types of disease causation, concepts of disease prevention		K4
CO2	Understand and demonstrate the knowledge on basic anatomy , physiology		K4
CO3	Understand and analyze various epidemiological principles and strategic models.	I	K4
CO4	Distinguish and compare Indian healthcare system and analyze the various health policies		K5
CO5	Understand and asses various health programmes in India and criticize their current progress on public Health		K5
196HA2A1CC	CORE: HOSPITAL OPERATIONS MANAGEMENT		Level
CO1	Understand, Compare and analyze the changing role of hospitals.		K4
CO2	Select and elaborate the concept of planning required to build a hospital.		K4
CO3	To Learn and compare the different types of functions and services performed in the clinical areas of the Hospital.	I	K4
CO4	To Learn and compare the different types of functions, activities and services performed in the supportive areas of the Hospital.		K5
CO5	Understand and analyze the various departments and its importance in health care management		K5
196HA2A1CD	CORE : ORGANISATIONAL BEHAVIOUR		Level
CO1	To build knowledge on healthcare organizational behaviour concepts, evolution, process, and challenges		K3
CO2	To analyze and apply the principles of organizational behaviour concerned with personnel behavioural dimensions in healthcare management prospect.		K4
CO3	Understand and analyze various epidemiological principles and strategic models.	I	K4
CO4	To explain and determine knowledge under concepts of organizational structure, organizational climate and quality of work life in healthcare organization		K5
CO5	To assess and apply overall effectiveness of healthcare organizational administration skills using concepts of change and development		K5
196HA2A1CE	CORE : BIOSTATISTICS AND OPERATION RESEARCH		Level
CO1	To understand and evaluate the concepts of Central Tendency and Variation		K4

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CO2	To measure and utilize the Probability concepts in healthcare		K4
CO3	To learn and apply the knowledge of Correlation and Regression in healthcare	I	K4
CO4	To learn and measure the various distribution skills associated with healthcare operations research		K5
CO5	To understand various network models in Healthcare environment		K5
196HA2A1DA	**ELECTIVE : TOTAL QUALITY MANAGEMENT-TOOLS AND TECHNIQUES**		Level
CO1	Understand the concept and origin of TQM		K3
CO2	Analyze various strategies of TQM (TEI, GLP, WITs, GMP)		K4
CO3	Evaluate the various role in continuous improvement in TQM	I	K5
CO4	Create and evaluate the various documentation on Quality Manual and Procedure		K6
CO5	Understand and analyze various Internal Auditing in ISO systems		K4
196HA2A1DB	**ELECTIVE: HOSPITAL RECORDS STANDARDS AND POLICIES**		Level
CO1	Understand the history of Medical records, Policies, and legal aspects of Medical record Department		K3
CO2	Analyze various types of Medical records, Quality Assurance Aspects and presentation of medical Records		K4
CO3	Evaluate the retention and disposal of medical record Practices	I	K5
CO4	Evaluate the Medical record documentation issues		K5
CO5	Create and Understand the E-Medical records and its concerns		K6
196HA2A1DC	**ELECTIVE: HEALTH SECTOR IN INDIA**		Level
CO1	Understand the Evolution and Development of Healthcare System		K3
CO2	Analyze various system of medicines and its Operations		K4
CO3	Evaluate the administrative structure and various functions of health ministry Department		K5
CO4	Evaluate the Medical Infrastructure Hospitals	I	K5
CO5	Create and review of different reports on Healthcare and recent trends in Hospitals		K6
196HA2A2CA	**CORE : HOSPITAL ARCHITECTURE, PLANNING, DESIGN AND MAINTENANCE**		Level
CO1	Compare and analyze the changing role of hospitals		K4

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CO2	Select and elaborate the concept of planning required to build a hospital		K5
CO3	List and adopt the various legal and other documents and drawing required for hospital project	II	K5
CO4	Choose effective hospital standards and design		K5
CO5	Design and create models of various departments of Hospitals		K6
196HA2A2CB	**CORE : HEALTHCARE ECONOMICS**		Level
CO1	Understand economic terminology and apply the concepts of demand in healthcare scenario		K4
CO2	Understand and apply the concept of supply and different costs involved in decision making skills and their analysis		K6
CO3	Analyze the necessary conditions for market economies and to develop strategic pricing	II	K5
CO4	Understand and analyze healthcare market functions and assess effective management of resources		K6
CO5	Compare economic problems in healthcare using various budgeting techniques.		K6
196HA2A2CC	**CORE : HUMAN RESOURCE MANAGEMENT AND INDUSTRIAL RELATIONS**		Level
CO1	To demonstrate the concepts of HR on the nature, importance and functional skills of Human Resource Management among the healthcare personnel.		K4
CO2	To understand the functional regions of demand and supply forecast used for HR management and to built skill on familiar job terminologies.	II	K4
CO3	To understand the importance of recruitment, placement, training and development process of Human Resource Management in the Healthcare Industry in a strategic manner.		K5
CO4	To assess various employee welfare acts and to implement the skill based concepts to current healthcare industrial setup		K5
CO5	To measure, improve and inculcate the different types of performance appraisal strategies used in the healthcare industries.		K5, K6
196HA2A2CB	**CORE : MATERIALS MANAGEMENT**		Level
CO1	Learn and compare the different concepts of Materials Management in healthcare industry		K4
CO2	Build knowledge on the processes involved in Purchasing and to develop skills on the same.		K6
CO3	List and adopt the various legal and other documents and drawing required for hospital project	II	K5
CO4	Analyze, interpret and develop the strategic concepts of inventory management in Healthcare		K5
CO5	Apply and propose Materials Management concept for better decision making in Healthcare Institution		K6

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Criterion I Metric 1.1.2 PO-PSO-CO

196HA2A22EA	EDC: FINANCIAL AND MANAGEMENT ACCOUNTING		Level
CO1	Understand the Accounting Information and Concept		K2
CO2	Know the theoretical internal processes for business Transactions		K2
CO3	Apply the inflow and outflow of cash in business Transaction	II	K3
CO4	Prepare the total cost and cost unit for business		K3
CO5	Classify and Point out effective planning and Decision Making		K4
196HA2A2DA	DSE II : HEALTH RECORD MANAGEMENT		Level
CO1	Understand the concept and organization of Health record Department		K3
CO2	Evaluate the Health record filling and retrieval system.		K5
CO3	Evaluate the various roles of health record officers and Operations	II	K5
CO4	Create and evaluate the requirement of health record department and tracking system.		K6
CO5	Understand and analyze health record services and periodic evaluation.		K4
196HA2A2DB	DSE II : ORGANISATION AND ADMINISTRATION OF HEALTH SYSTEM		Level
CO1	Understand the concept of Health, various levels of Healthcare system.		K3
CO2	Analyze various ratios related to Birth rate, Death rate and Morbidity rate		K4
CO3	Evaluate the International classification of various diseases.	II	K5
CO4	Evaluate various roles of All National Health Programmes and its objectives.		K5
CO5	Understand the role of International Health Agencies		K3
196HA2A3CA	QUALITY ASSURANCE IN HEALTH CARE		Level
CO1	identify prerequisites of evolution of quality management and apply the concepts in the organizations		K3
CO2	evaluate and apply the principles of quality and peculiarities of their implementation		K3
CO3	analyze statistical process control data to improve, production, processes & influence strategic decision making	II	K5
CO4	distinguish, apply and compare various quality concepts ,tools and techniques in process improvement		K5
CO5	evaluate process capabilities & use quality management certification methods in solving problems of healthcare sector		K5

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Criterion I Metric 1.1.2 PO-PSO-CO

196HA2A3CB	HEALTHCARE LAWS		Level
CO1	Understand the concept of law in healthcare and explain its relevance information to all its stakeholders		K3
CO2	understand and evaluate the needs for the law, and its relevance in healthcare industry and general public		K5
CO3	understand the necessary conditions for Laws related to functional areas of Hospital Administration.	II	K5
CO4	understand the healthcare laws related to supportive functions and maximize effective healthcare services		K6
CO5	analyze pharmaceutical concepts of law and develop skills to meet the client needs and provide solutions.		K6
196HA2A3CC	HOSPITAL INFORMATION SYSTEM		Level
CO1	Understand and analyze various concepts and Prerequisites of health informatics		K4
CO2	understand and categorize different data and identify different healthcare organizational cultures		K4
CO3	understand, analyze and compare privacy and confidentiality laws involved in maintaining quality health systems	II	K4
CO4	learn , apply and criticize the concept of EMR and telemedicine in healthcare		K5
CO5	asses and compare administrative application skills of computer technology in healthcare		K5
196HA2A3CD	HEALTHCARE MARKETING AND STRATEGIC MANAGEMENT		Level
CO1	build and apply knowledge on general aspects of service marketing.		K3
CO2	assess marketing mix variables and a practical application in context to marketing management.		K4
CO3	analyze the Nature of Business Policy and Strategic Management, and Business Ethics	II	K4
CO4	explain in detail about Strategic Management process subjective to marketing management.		K5
CO5	explain and develop detailed idea about the environmental analysis and its industrial applications.		K6
196HA2A3CD	HEALTHCARE MARKETING AND STRATEGIC MANAGEMENT		Level
CO1	build and apply knowledge on general aspects of service marketing.		K3
CO2	assess marketing mix variables and a practical application in context to marketing management.		K4
CO3	analyze the Nature of Business Policy and Strategic Management, and Business Ethics	II	K4
CO4	explain in detail about Strategic Management process subjective to marketing management.		K5

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Criterion I Metric 1.1.2 PO-PSO-CO

CO5	explain and develop detailed idea about the environmental analysis and its industrial applications.		K6
196HA2A3CE	**RESEARCH METHODS FOR MANAGEMENT**		Level
CO1	understand the research approach, process, and design		K4
CO2	understand and categorize different sampling techniques		K4
CO3	understand methods of data collection and techniques	II	K5
CO4	understand and apply SPSS for data analysis		K6
CO5	understand documentation, report writing		K6
196HA2A3DA	**INTERNATIONAL CLASSIFICATION OF DISEASES**		Level
CO1	understand the history and uses- ICD design and structure		K3
CO2	analyze Basic coding guidelines and principles.		K4
CO3	evaluate the Diseases Indexing and Operations.	II	K5
CO4	evaluate Amendments of ICD 9 and ICD 10		K5
CO5	analyze the role of electronic medical records and its importance		K4
196HA2A3DB	**NGOs IN HEALTH CARE SECTOR**		Level
CO1	understand the concept and functions of NGOs		K3
CO2	understand the role of NGOs in Primary Health care		K4
CO3	understand the implementation of Healthcare projects		K5
CO4	analyze the NGOs Governance and Legal Aspects		K5
CO5	analyze the various schemes of NGOs in Healthcare Sector	II	K6
196HA2A3DC	**QUALITY ACCREDITATIONS IN HEALTHCARE**		Level
CO1	understand the overview of Quality		K3
CO2	understand the concept of accreditation & Standards of Quality		K4
CO3	understand the Quality Certification System	II	K5
CO4	analyze the NABH Accreditation in hospital sectors		K5
CO5	analyze the JCI Accreditation in hospital sectors		K5

BoS-Chairman

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B.A. English Literature

Programme Outcome

1	To identify the literary essence of various genres like prose, poetry, drama, fiction and criticism
2	To label the classical touch of England through Allied papers like Social History of English, History of English Literature, Literary Forms and Literary Criticism
3	To develop historical aspects and literary importance of prose, poetry, fiction, drama and criticism
4	To construct the transformation of nature in poetry, prose, fiction, drama and criticism
5	To apply grammar modules in sentences, to develop Communication Skills and to bridge the communication gaps

Programme Specific Outcome

1	To enhance a broad awareness and perception of historical and cultural context in English Literature and Languages
2	To acquire various major philosophical and cultural issues emphasized in Literature
3	To familiarize different genres of literature and its approaches with intensity and sagacity
4	To augment fluency in written and oral communication for academic purposes
5	To cultivate an interest in interdisciplinary research and analysis

2018-2019

Course Outcome

17UEL53A	CORE- IX: SHAKESPEARE	V	Level
CO1	Examine the historical elements of Julius Caesar	V	K4
CO2	Experiment with the critical perspectives of Shakespeare's Othello	V	K3
CO3	Interpret The Merchant of Venice for its language and literature	V	K2
CO4	Explain the way characters, plot, form, language, setting and theme contribute to the effects of the plays on an audience	V	K3
CO5	Relate the development of modern thoughts through comedy in Shakespearean play	V	K2

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Criterion I
Metric 1.1.2
PO-PSO-CO

17UEL53B	CORE- X: AMERICAN LITERATURE	V	Level
CO1	Infer the historical perspectives of American Literature	V	K2
CO2	Demonstrate the usage of metaphorical, symbolic and figurative nature of poetic diction	V	K2
CO3	Analyze narrative techniques and the structure of the language	V	K4
CO4	Interpret dialogue sequences and criticize the plots	V	K5
CO5	Organize students to construct an analytical essay on the use of vivid language in fiction	V	K3
17UEL53C	CORE- XI: INTENSIVE STUDY OF AN AUTHOR- R. K. NARAYAN	V	Level
CO1	Illustrate episodes of R. K. Narayan's personal and literary life	V	K2
CO2	Assume the aspects of Indian cultural background through multiple short stories	V	K4
CO3	Categorize the work as a realistic one of typical south Indian life	V	K4
CO4	Estimate the employment of R. K. Narayan's narrative techniques, usage of words and his setting in an imaginary town	V	K5
CO5	Build models to evaluate, explore and synthesize texts	V	K5
17UEL53D	CORE- XII: 20th CENTURY BRITISH LITERATURE	V	Level
CO1	Illustrate the multitudes of the age through an interpretation of poems	V	K2
CO2	Demonstrate the features of 20th century British prose through an analysis of the prescribed writer	V	K2
CO3	Define the meaning of the term 'Absurd Drama	V	K1
CO4	Extend understanding of Nature Writings through an interpretation of Ruskin Bond	V	K2
CO5	Develop an understanding of the characteristics of modernist novel	V	K3
17UEL5SA	SKILL BASED COURSE- III: COMMUNICATIVE ENGLISH- III	V	Level
CO1	Develop the writing, revising and drafting skills	V	K3
CO2	Relate communication skills in different imperative situations	V	K1
CO3	Interpret the right pronunciation of words and sentences	V	K2

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CO4	Apply the skill of writing through sentence and paragraph writing	V	K3
CO5	Identify spelling errors and follow spelling rules	V	K3
17UEL63A	**CORE- XIII: LINGUISTICS AND ENGLISH LANGUAGE TEACHING**	**VI**	**Level**
CO1	Outline the understanding of Linguistics in general with specification to Phonology and Semantics	VI	K2
CO2	Explain the Fundamentals of Linguistics theories like Chomsky's Theories, Government and Binding theory and Transformational Generative Grammar	VI	K2
CO3	Infer various forms of Linguistics like Anthropology linguistics, Sociolinguistics and Educational linguistics	VI	K2
CO4	Assume the methods of teaching English starting from Grammar Translation method to Neurolinguistic Programming	VI	K4
CO5	Determine the recent developmental phase in ELT from Communicative Language Learning to the Post-modern era	VI	K5
17UEL63B	**CORE- XIV: NEW LITERATURES IN ENGLISH**	**VI**	**Level**
CO1	Define different poets in New Literature	VI	K1
CO2	Summarize the qualities of a novelist as the teacher	VI	K2
CO3	Identify the Yoruba culture in African society	VI	K3
CO4	Analyze the short stories of different nations	VI	K4
CO5	Experiment with the views on India- Pakistan partition through the novel	VI	K3
17UEL63C	**CORE- XV: TRANSLATION STUDIES**	**VI**	**Level**
CO1	Infer the concept, history and definition of Translation	VI	K2
CO2	Recall the kinds and methods of Translation	VI	K1
CO3	Interpret the problems of Translation in translating Prose, Poetry and Short Story	VI	K2
CO4	Identify the theories of Translation; Romans Translation and The Bible Translation and early theories	VI	K3
CO5	Analyze the Proverbs, Poems, Short Stories and Prose Translations	VI	K4
17UEL6SA	**SKILL BASED SUBJECT- IV: COMMUNICATIVE ENGLISH- IV**	**VI**	**Level**
CO1	Recall the strengths and weaknesses of a language	VI	K1

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	and format associated with letter writing		
CO2	Explain an audience with brief legible information about themselves to others in a friendly manner	VI	K2
CO3	Make use of polite speech besides expressions for accepting or declining invitation	VI	K3
CO4	Develop coherent content and support with relevant details using a variety of grammatical and sentence structures accurately	VI	K3
CO5	Categorize academic, personal and social domain through guided experiences and structured reflection	VI	K4

2019-2020

Course Outcome			
191EL1A3EA	**ENGLISH - III**	**III**	**Level**
CO1	Learn English grammar and its specific usage	III	K2
CO2	Know the methods of improving reading skills	III	K3
CO3	Understand	III	K3
CO4	Comprehend the basic steps of reading and its necessity	III	K3
CO5	Acquire	III	K4
191EL1A3CA	**AGEOFVICTORIANTOMODERNAGE**	**III**	**Level**
CO1	Relate the similitude in the British poetry	III	K2
CO2	Identify the morale in life through prose piece	III	K2
CO3	Produce the difference in dramatic techniques	III	K3
CO4	Experiment various narrative style in novels	III	K3
CO5	Apply the elements of critical insights in writing	III	K3
191EL1A3CB	**ENGLISH LANGUAGETEACHING**	**III**	**Level**
CO1	Acquire the basic concepts and meanings of English language teaching	III	K3
CO2	Learn the language acquisitions theories and psychological approach in languageteaching	III	K3
CO3	Understand the types of approaches and its importance in English language teaching	III	K3
CO4	Know the teaching aids and tools in English language teaching	III	K4
CO5	Understand the scheme of marking answers, framing questions and grading accordingly	III	K4

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191EL1A3IC	HISTORY OF ENGLISH LITERATURE	III	Level
CO1	Discover the knowledge in the age of Chaucer, Shakespeare andMilton	III	K1
CO2	Demonstrate the various literary genres of Dryden and Pope during late 1750s	III	K2
CO3	Relate the writing style and the plot setting in the age of Wordsworth and Johnson	III	K3
CO4	Analyze the devices of poetry and novel settings during 18th century	III	K4
CO5	Assess the social setup of 19th century and 20th century English Literature	III	K5
191EL1A3SA	DIGITAL HUMANITIES - I	III	Level
CO1	Tell the basic Humanities Computing	III	K1
CO2	Examine the Computational Linguistics skills	III	K1
CO3	Enumerate Classification and its Structures in Digital Humanities	III	K1
CO4	Explain Text Encoding in Digital Humanities	III	K2
CO5	Apply in Electronic Text	III	K3
191EL1A4EA	ENGLISH- IV	IV	Level
CO1	Learn English grammar and its specific usage	IV	K2
CO2	Know the ways of improving English language vocabulary	IV	K3
CO3	Understand the importance of English language in competitiveexams	IV	K3
CO4	Acquire the basic needs of communication skills and methods	IV	K3
CO5	Comprehend the composition writing and similar skills	IV	K4
191EL1A4CA	20 thCENTURY BRITISH LITERATURE	IV	Level
CO1	Identify the multitudes of modern writings through an interpretation of poetry	IV	K1
CO2	Distinguish the features of twentieth century British prose about the prescribed writer	IV	K2
CO3	Demonstrate the dramatic techniques of the contemporaryliterature	IV	K2
CO4	Apply the new dimension of interpreting short stories	IV	K3
CO5	Examine and Interpret the characteristics of modernist novel	IV	K3

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Criterion I
Metric 1.1.2
PO-PSO-CO

191EL1A4CB	ECO LITERATURE	IV	Level
CO1	Relate students to ecological concepts through the poems of different writers	IV	K2
CO2	Interpret the concepts of ecology through the prose works of both global and local	IV	K2
CO3	Explain dramatic concepts based on ecological factors through character study	IV	K3
CO4	Identify ecological concepts in the novels through their themes and symbols	IV	K4
CO5	Analyze the critical concepts of Eco-literature with the knowledge of environment	IV	K4
191EL1A4ID	**LITERARY CRITICISM**	IV	Level
CO1	Explain the Literary Devices of Sir Philip Sidney and Ben Johnson	IV	K2
CO2	Identify the writers responsibility for the elation of Classicism	IV	K3
CO3	Compare the critical aspects of writers belonging to the period of Romantic Revolt	IV	K3
CO4	Infer the period of Victorian compromise with the varied theories	IV	K3
CO5	Analyze the importance of the Age of Interrogation and employ selected theories to unique literary works	IV	K4
191EL1A4SA	**DIGITAL HUMANITIES - II**	IV	Level
CO1	Identify Humanities Computing in Language and Literature	IV	K1
CO2	Label Textual Analysis and Research Editing	IV	K1
CO3	Predict Multivariate Narratives and Discourse in Digital Humanities	IV	K2
CO4	Explain Robotic Poetics and Real Texts in Literature	IV	K2
CO5	Experiment with Digital Conversion in Primary Sources	IV	K3

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2020-2021

Course Outcome			
191EL1A1EA	**ENGLISH - I**	**I**	**Level**
CO1	Extend interest in and appreciation of the works of eminent writers from various literatures	I	K2
CO2	Interpret the genres in literature through the master works of greatvisionaries	I	K3
CO3	Perceive the language gaps through a clear model of the grammatical structure	I	K5
CO4	Analyze the concepts of texts in the course of different lessons which are realistic and discursive in nature	I	K4
CO5	Value the integral concepts of English grammar necessarily required in their linguisticcompetence	I	K5
201EL1A1CA	**AGE OF CHAUCER TO MILTON**	**I**	**Level**
CO1	Relate the knowledge of historical and cultural context of age of Chaucer, Shakespeare and Milton	I	K1
CO2	Explain the epic poems of John Milton and John Donne	I	K2
CO3	Rephrase the writing style of both public and private life in Bacon'sessays	I	K2
CO4	Construct theatrical ideas related to the playhouses of William Shakespeare and Christopher Marlowe	I	K3
CO5	Classify five approaches of Literary Criticism	I	K4
201EL1A1CB	**GRAMMAR AND USAGE**	**I**	**Level**
CO1	Apply grammar modules in sentences	I	K2
CO2	Select "Be" forms in sentences	I	K2
CO3	Evaluate tenses through sentences	I	K3
CO4	Measure the action verbs in sentences	I	K3
CO5	Demonstrate writing skills throughcomposition	I	K4
191EL1A1IA	**SOCIAL HISTORY OF ENGLAND**	**I**	**Level**
CO1	Outline the revival and rebirth of England	I	K1
CO2	Identifythecultureandrestorationstatusofmonarch'sin England	I	K2
CO3	Relate the historical events of America and England	I	K2
CO4	Summarize the transition and reformation of voting opportunities in England	I	K3

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CO5	Show the aftermath progress of Science and Technology	I	K4
201EL1A2EA	**ENGLISH - II**	**II**	**Level**
CO1	Interpret skills in communication and to shape their attitude	II	K2
CO2	Develop oral and written language skills in a business context	II	K3
CO3	Analyze to gain key strategies and expressions for communicating withprofessionals	II	K3
CO4	Inspect the knowledge to the corporate needs	II	K4
CO5	Formulate Inter and Intrapersonal skills	II	K5
201EL1A2CA	**AGE OF DRYDEN TO ROMANTIC**	**II**	**Level**
CO1	Relate the knowledge of historical and cultural context ranging from the age of Dryden to the Romantic period	II	K1
CO2	Interpret the life style and reminiscences of Charles Lamb and William Hazlitt	II	K2
CO3	Demonstrate the dramatic and theatrical conventions of theperiod	II	K2
CO4	Categorize the deeper understanding of characters in literature through the techniques	II	K4
CO5	Analyze the major concepts applied in Criticism	II	K4
191EL1A2CB	**INTRODUCTION TO LINGUISTICS**	**II**	**Level**
CO1	Infer the origin, history and development of English language	II	K1
CO2	Apply the basics of phonetics and English phonology scientific systems of the language	II	K2
CO3	Examine the term morpheme and be familiar with the processes of word formation	II	K2
CO4	Assume the sentence structure of language and obtain meaning of the form and content	II	K4
CO5	Determine the theory and practice of linguistics in real life situation	II	K4
201EL1A2IA	**LITERARY FORMS**	**II**	**Level**
CO1	Classify various kinds and types of poetry and stanza forms	II	K2
CO2	Identify different dramatic art forms, types and devices	II	K3
CO3	Show the diverse categories of essays	II	K2
CO4	Identify the origin, structure, development and	II	

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Metric 1.1.2
PO-PSO-CO

	types of novels from the Elizabethan age to the post-modern trends		K3
CO5	Compare and contrast short stories, novels, biography and autobiography	II	K4

R.V—ρ ρe
BoS-Chairman

BoS Chairman/HoD
Department of English
Dr. N. G. P. Arts and Science College
Coimbatore – 641 048

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M.A. English Literature

Programme Outcome	
1	To advocate both the artistry and utility of the recent developments in English language and literature
2	To hone the cognitive skills to demonstrate mastery of theoretical knowledge and its application
3	To enhance aesthetic sensibility, critical and intellectual faculties in analysis of literary texts
4	To develop Linguistic skills and new insights in literature and acumen for understanding of the diversity of human experiences
5	To assist in developing the challenges of life and have enhanced career prospects and employability that pursue in life-long learning

Programme Educational Objective	
1	To contextualize and judge wide range of popular literary works
2	To procure the course knowledge by analysing the critical theories and methodologies in Literature
3	To identify language as a human trait, that includes socio-linguistic aspects in language teaching
4	To develop analytical knowledge and skills of a specialized field through their scholarly research
5	To attain advanced professionalization and pedagogical goals that paves way for distinctive Careers

Course Outcome			
191EL2A3CA	**GENRE STUDIES III: AMERICAN LITERATURE**	**III**	**Level**
CO1	Illustrate the use of poetic devices of the American Poets	III	K3
CO2	Interpret the writing skills of select prose writers	III	K3
CO3	Infer the dramatic traits of American playwrights	III	K4
CO4	Analyze the narrative techniques of the novels of American novelists	III	K4
CO5	Evaluate the critical aspects of American critics	III	K5
191EL2A3CB	**INTRODUCTION TO LINGUISTICS AND ELT**	**III**	**Level**
CO1	Explain theories	III	K3

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CO2	Develop general	III	K3
CO3	Examine the various forms and classifications of Macro- linguistics	III	K3
CO4	Analyze the approaches and methods of teaching English from Grammar- Translation Method to Neuro- Linguistic Programming	III	K4
CO5	Utilize the trendy developmental phase of Communicative approaches in ELT	III	K4
191EL2A3CC	**RESEARCH METHODOLOGY**	**III**	**Level**
CO1	Identify the fundamentals of planning the research	III	K2
CO2	Design the Mechanics of Scholarly Prose	III	K3
CO3	Understand the research ethics while writing the Works Cited	III	K3
CO4	Utilize the simplification of formatting the research paper	III	K4
CO5	Develop the art of writing In-Text Citations	III	K5
191EL2A3CD	**LITERARY THEORY AND CRITICISM**	**III**	**Level**
CO1	Apply the concepts of classicism in reading theories	III	K2
CO2	Identify the significance of renaissance and neoclassicism through select works	III	K2
CO3	Distinguish the modes of studying in romantic criticism	III	K3
CO4	Extend the critical aspect to Victorian criticism	III	K3
CO5	Analyze the new criticisms and epochs in literature	III	K4
191EL2A3CE	**METHODS OF TEACHING ENGLISH**	**III**	**Level**
CO1	Assess the nature of human language comprehension psychology	III	K3
CO2	Develop the thorough background of the approaches, methods and techniques of English language teaching	III	K3
CO3	List the techniques used to enhance grammar and vocabulary	III	K4
CO4	Classify the methods used for developing reading skills	III	K4
CO5	Enable to adapt the ICT methods used for teaching prose and poetry	III	K5
191EL2A3DA	**GREEN STUDIES**	**III**	**Level**
CO1	Apply ecological concepts through the poems of	III	K3

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	different writers		
CO2	Experiment with the prose concepts of ecology and make students to explore with responsibility	III	K3
CO3	Analyze dramatic concepts based on ecological factors through literary texts	III	K4
CO4	Examine ecological concepts through the character study of the novels	III	K4
CO5	Evaluate the critical concepts of Ecoliterature through the works of literary imagination	III	K5
191EL2A4CA	**SUBALTERN LITERATURE**	**IV**	**Level**
CO1	Interpret the poetic style of Subaltern writers	IV	К3
CO2	Illustrate the themes connected with Subaltern ideology	IV	К3
CO3	Explain the impact of colonialism on the subaltern people and dramatic techniques employed	IV	К4
CO4	Appraise the short stories of select Subaltern authors	IV	К4
CO5	Evaluate the narrative techniques and Subaltern concepts in the novels	IV	К5
191EL2A4DB	**BIOGRAPHY AND TRAVELOGUE**	**IV**	**Level**
CO1	Interpret the biographies of great rulers from the perspectives of their administration capability	IV	K3
CO2	Decipher the biographical history of the revolutionists	IV	K3
CO3	Explain the achievements of great writers and their works	IV	K4
CO4	Analyze the structures and concepts of the travelogue writing	IV	K4
CO5	Appraise the core ideas and elements of narration in Life writing	IV	K5

2020-2021

Course Outcome			
201EL2A1CA	**GENRE STUDIES - I: BRITISH LITERATURE - I**	**I**	**Level**
CO1	Outline the use of poetic devices of the British writers and recognize the rhythms, metrics and other musical aspects of poetry	IV	K3
CO2	Interpret the various themes and forms of plays	IV	K3

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CO3	Analyze the human values and behavioral patterns through the elements of novel	IV	K4
CO4	Enrich the literary essays in terms of genre and the canon	IV	K4
CO5	Employ the interpretation	IV	K5
191EL2A1CB	**SHAKESPEARE**	**I**	**Level**
CO1	Analyze the comic and historic plays of Shakespeare	IV	K4
CO2	Infer Shakespeare's works critically and develop literary interpretations	IV	K4
CO3	Categorize Shakespeare's play and relate it to practicality of lives	IV	K4
CO4	Evaluate Shakespearean sonnets with the perspective to explore and engage in critical debate	IV	K5
CO5	Criticize Shakespeare's audience, theatre and characters	IV	K5
201EL2A1CC	**HISTORY OF ENGLISH LANGUAGE AND LITERATURE I**	**I**	**Level**
CO1	Relate the Beginnings of English: Old and Middle English	IV	K1
CO2	Explain the Renaissance with its context and conditions	IV	K2
CO3	Rephrase Renaissance from Shakespeare's writing	IV	K2
CO4	Construct Restoration and Romanticism in a simple and lucid manner	IV	K3
CO5	Examine the Romantic Period and its nuances	IV	K4
201EL2A1CD	**INDIAN WRITING IN ENGLISH**	**I**	**Level**
CO1	Expose the art of Indian poetry through the prescribed poems	IV	K3
CO2	Explain the Indian traditional and mythological standards through Indian Drama	IV	K3
CO3	Interpret the prescribed Indian novels to the current social standards of India	IV	K4
CO4	Examine the essence of Indianness through the prose works	IV	K4
CO5	Utilize the variety of Indian critical standards	IV	K5
201EL2A1CE	**POSTCOLONIAL LITERATURE**	**I**	**Level**
CO1	Examine the human consequences undertook by colonialism and traditional discourse	IV	K4
CO2	Compare excellency in reclaiming the past, searching for cultural and personal identity	IV	K4
CO3	Distinguish readers to question the history and politics of postcolonial site through the remedies for imperialism	IV	K4
CO4	Evaluate the racial discrimination and violence that arose from decolonization	IV	K5
CO5	Construct a critical look at imperialism and its legacy	IV	K6

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201EL2A1DC	**DALIT LITERATURE**	**I**	**Level**
CO1	Interpret the hegemonic versions of aesthetics and promote a polyphonic reading of aesthetics	IV	K2
CO2	Infer the Dalit renewal of the discussion on democracy, humanism and literature	IV	K2
CO3	Develop Infer the dramatic techniques replicated in the works	IV	K3
CO4	Analyze the issues related to representation and resistance of Dalit's	IV	K4
CO5	Evaluate a sensitivity and a sensibility towards the underprivileged sections in literature	IV	K5
191EL2A2CA	**GENRE STUDIES II : BRITISH LITERATURE II**	**I**	**Level**
CO1	Outline the use of poetic devices of the British writers and their influence	IV	K2
CO2	Interpret the social, historical and critical writing prose styles	IV	K3
CO3	Develop the theatrical advancements in the usage of modern techniques existed in the British literature	IV	K3
CO4	Analyze the novels and extend the skills of reading by knowing the techniques adopted in the works	IV	K4
CO5	Examine the acquired knowledge in the criticism works of various authors	IV	K4
201EL2A2CB	**HISTORY OF ENGLISH LANGUAGE AND LITERATURE - II**	**I**	**Level**
CO1	Relate the Nineteenth Century Victorian Drama, Novel and poetry	IV	K3
CO2	Explain the Twentieth Century with its context and conditions	IV	K3
CO3	Rephrase the Twentieth Century's popular tradition for better understanding	IV	K4
CO4	Construct Twentieth Century's Drama and Novel since 2000 in a simple and lucid manner	IV	K4
CO5	Examine the Twenty-First Century and its nuances	IV	K4
191EL2A2CC	**WORLD CLASSICS IN TRANSLATION**	**I**	**Level**
CO1	Examine the contents of Thirukurral with its universality and secular nature	IV	K3
CO2	Experiment the translation parameters of Greek mythology into English works	IV	K3
CO3	Integrate the theoretical polarization between perform ability and readability in translation	IV	K4
CO4	Review the set of criteria used in the translation	IV	K5

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CO5	Validate the cultural and the linguistic crisis in the Turkish literature	IV	K5
191EL2A2CD	**ENGLISH LITERATURE FOR COMPETITIVE EXAMINATIONS**	**I**	**Level**
CO1	Outline the life and works of major authors in English Literature	IV	K2
CO2	List the Literary Forms and terms in Literary Criticism	IV	K3
CO3	Relate Literary Criticism and theories to gain quintessential notion of criticism	IV	K4
CO4	Categorize the important events and movements in English Literature	IV	K4
CO5	Analyze the major literary characters and well known quotations from the plays, essays and novels of British writers	IV	K4
191EL2A2EA	**GENDER STUDIES**	**I**	**Level**
CO1	Outline the use of poetic devices of the women writers and their influence on gender issues	IV	K2
CO2	Make use of the different prose styles of feminist writers	IV	K3
CO3	Classify the feminist ideas and arguments in the plays through the Feminist Lens	IV	K4
CO4	Examine the determination of difference between the genders in the novels	IV	K4

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CO5	Analyze the critique views of the engendering theory and queer theory	II	K5
191EL2A2DA	**INDIAN MYTH AND FOLKLORE**	**II**	**Level**
CO1	Examine the Myth and Folklore through the poems of Indian poets	II	K3
CO2	Integrating the past spirituality in relevant to new trend and Hindu mythology	II	K4
CO3	Assess the significance of folkloric elements through short stories	II	K4
CO4	Review certain beliefs and make justification between modern and conventional practices	II	K5
CO5	Experiment and comprehend the development of Folklore with reference to the past and present	II	K5
191EL2A2DB	**CONTENT DEVELOPMENT AND CREATIVE WRITING**	**II**	**Level**
CO1	Relate the idea that creative writing is a varied Phenomenon	II	K2
CO2	Identify ideas about the language varieties and the nuances of language usage	II	K3
CO3	Apply the grammatical modules for better creative writing	II	K3
CO4	Classify the language and types of media writingacrossforms and genres	II	K4
CO5	Interpret the textual analyses and proofreading the text	II	K5

R. V—t p-e
BoS-Chairman
BoS Chairman/HoD
Department of English
Dr. N. G. P. Arts and Science Cu..
Coimbatore – 641 048

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