BACHELOR OF SCIENCE COMPUTER TECHNOLOGY

SYLLABUS: 2018-2019
(Outcome Based Education)

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

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)
Approved by Government of Tamil Nadu and Accredited by NAAC with 'A' Grade (2nd Cycle)
Dr. N.G.P.- Kalapatti Road, Coimbatore-641048, Tamil Nadu, India
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BACHELOR OF COMPUTER TECHNOLOGY
REGULATIONS

ELIGIBILITY

A candidate who has passed in Higher Secondary Examination with any Academic stream or Vocational stream as one of the subject under Higher Secondary Board of Examination and as per the norms set by the Government of Tamil Nadu or an Examination accepted as equivalent thereto by the Academic Council, subject to such conditions as may be prescribed thereto are permitted to appear and qualify for the Bachelor of Computer Technology Degree Examination of this College after a programme of study of three academic years.

PROGRAMME EDUCATIONAL OBJECTIVES

The Curriculum is designed to attain the following learning goals which students shall achieve by the time of their graduation:

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

SCHEME OF EXAMINATION

Course Code	Course	Hrs of Instruction	Exam Duration (Hrs)	Max Marks			Credit Points
				CA	CE	Total	
First Semester							
Part – I							
17UTL11T/ 17UHL11H/ 17UML11M/ 17UFL11F	Tamil-I/ Hindi-I/ Malayalam-I/ French-I	5	3	25	75	100	3
Part – II							
17UEG12F	English –I	5	3	25	75	100	3
Part – III							
17UCT13A	Core I : C Programming	6	3	25	75	100	5
17UCT13P	Core Lab I : Programming in C	4	3	40	60	100	2
17UCT13Q	Core Lab II : Office Tools Using Internet	3	3	20	30	50	2
17UMT1AA	Allied - 1 : Basic Mathematics	5	3	25	75	100	4
Part – IV							
17UFC1FA	Environmental Studies	2*	2	-	50	50	2
		30				600	21
Second Semester							
Part - I							
17UTL21T/ 17UHL21H/ 17UML21M/ 17UFL21F	Tamil-II/ Hindi-II/ Malayalam-II/ French-II	5	3	25	75	100	3
Part - II							
17UEG22F	English –II	5	3	25	75	100	3
Part - III							
17UCT23A	Core II : C++ Programming	6	3	25	75	100	5
17UCT23P	Core Lab III : Programming in C++	4	3	40	60	100	2
17UCT23Q	Core Lab IV : Digital Media Lab	3	3	20	30	50	2
17UMT2AA	Allied – 2 : Computer Based Optimization Techniques	5	3	25	75	100	4

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

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	Part - IV						
17UFC2FA	Value Education: Human Rights	2*	2	-	50	50	2
		30				**600**	**21**
Third Semester							
	Part - III						
17UCT33A	Core III : Data Structures	5	3	25	75	100	5
17UCT33B	Core IV : Java Programming	5	3	25	75	100	5
17UCT33P	Core Lab V :Programming in Java	4	3	40	60	100	2
17UCT3AA	Allied 3 : Digital Logic and Design	5	3	20	55	75	4
17UCT3SA	Skill Based Course 1 : Web Technology	4	3	20	55	75	4
17UCT3SP	Skill Based Lab 1 : Web Technology	3	3	30	45	75	2
	Part IV						
	NMEC - I	2	2	-	50	50	2
17UFC3FA/ 17UFC3FB/ 17UFC3FC/ 17UFC3FD/ 17UFC3FE	Basic Tamil / Advance Tamil/ Yoga for Human Excellence/ Women's Rights/ Constitution of India	2*	2	-	50	50	2
		30				**625**	**26**
Fourth Semester							
	Part – III						
17UCT43A	Core V : Operating System	5	3	25	75	100	4
17UCT43B	Core VI : Relational Database Management System	5	3	25	75	100	4
17UCT43C	Core VII: Computer Installation and Servicing	5	3	20	55	75	4
17UCT43P	Core Lab VI : Relational Database Management System Lab	4	3	40	60	100	2
17UCT43Q	Core Lab VII : Linux Lab	2	3	20	30	50	2
17UCT4AA	Allied 4 : Software Testing	5	3	20	55	75	4
Part IV							

	NMEC - II	2	2	-	50	50	2
17UFC4FA / 17UFC4FB/ 17UFC4FC	Basic Tamil/ Advanced Tamil / General Awareness	2*	2	-	50	50	2
		30				**600**	**24**

Fifth Semester

	Part – III						
17UCT53A	Core VIII: Data Communication and Networks	6	3	25	75	100	5
17UCT53B	Core IX: C#.Net Programming	6	3	25	75	100	5
17UCT53P	Core Lab VIII: Programming in C#. Net	4	3	30	45	75	2
17UCT5EA/ EB	Elective I :	6	3	20	55	75	4
17UCT5SB	Skill Based Course 2 : Android Technology	5	3	20	55	75	4
17UCT5SP	Skill Based Lab 2 : Android Technology Lab	3	3	30	45	75	2
17UCT53T	Industrial Training	Grade A to C					
		30				**500**	**22**

Sixth Semester

	Part – III						
17UCT63A	Core X: Open Source Tools	5	3	25	75	100	5
17UCT63B	Core XI: Network Security	5	3	25	75	100	5
17UCT63P	Core Lab IX : Open Source Tools Lab	4	3	30	45	75	2
17UCT63Q	Core Lab X: Network Lab	3	3	20	30	50	2
17UCT63V	Core XII : Project Work Lab	3	3	20	30	50	2
17UCT6EA/ EB	ELECTIVE II :	5	3	20	55	75	4
17UCT6EC/ ED	ELECTIVE III :	5	3	20	55	75	4
Part-V							
17UEX65A	Extension Activity	-	-	50	-	50	2
		30				**575**	**26**
					Grand Total	**3500**	**140**

ELECTIVE – I

(Student shall select any one of the following course as Elective in fifth semester)

S. No.	Course Code	Name of the Course
1.	17UCT5EA	Middleware Technologies
2.	17UCT5EB	Cloud Computing

ELECTIVE – II

(Student shall select any one of the following course as Elective in sixth semester)

S. No.	Course Code	Name of the Course
1.	17UCT6EA	Mobile Computing
2.	17UCT6EB	Big Data and Analytics

ELECTIVE – III

(Student shall select any one of the following course as Elective in sixth semester)

S. No.	Course Code	Name of the Course
1.	17UCT6EC	Internet of Things
2.	17UCT6ED	Graphics and Multimedia

Non Major Elective Courses (NMEC)

- The department offers the following two courses as Non Major Elective Courses (NMEC) for non computer science students.

S. No.	Course Code	Name of the Course
1	17UNM34K	Multimedia
2	17UNM44K	ORACLE

FOR PROGRAMME COMPLETION

Students have to complete the following:

1. Part I, II, III, IV and V as mentioned in the scheme.

2. Industrial training: Course code 17UCT53T**.**

   - Student must undergo Industrial training for 15 days during Summer Vacation in IV Semester.

   - Internal and external   Examiner will evaluate the report in V Semester. Based on the performance, Grade will be awarded as follows:

     A- 75marks and above

     B- 60-74 marks

     C- 40-59 marks

     Below 40 marks – Re Appear

Total Credit Distribution

Course	Credits	Total		Credits	Cumulative Total
Part I: Tamil	3	2x 100 =	200	06	
Part II: English	3	2x 100 =	200	06	**12**
Part III:					
Core	5	08x100=	800	40	
Core	4	02x100=	200	08	
Core	4	01x75=	75	04	
Core Lab	2	04x100 =	400	08	
Core Lab	2	02x75=	150	04	
Core Lab	2	04x50=	200	08	
Project Lab	2	01x50=	50	02	**114**
Elective	4	03x75=	225	12	
Allied Theory alone	4	02x100=	200	08	
Allied Theory alone	4	02x75=	150	08	
Skill Based Course	4	02x75=	150	08	
Skill Based Lab	2	02x75=	150	04	
Part IV:					
Value Education	2	2 x 50 =	100	04	
Environmental Studies	2	1 x 50=	50	02	**12**
General Awareness	2	1x50=	50	02	
NMEC	2	2 x 50 =	100	04	
Part V:					
Extension Activity	2	1x50	50	02	**02**
Total			**3500**	**140**	**140**

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Earning Extra credits is not mandatory for programme completion

Extra credits

Part	Course	Credit	Total credits
1	BEC/ Self study courses	1	1
2	Hindi / French/ Other foreign Language approved by certified Institutions	1	1
3	Type Writing / Short Hand Course	1	1
4	Diploma/certificate/CPT/ACS foundation	1	1
5	Representation– Academic/Sports /Social Activities/Extra Curricular / Co-Curricular activities at University/ District/ State/ National/ International	1	1
Total			**5**

Rules:

- The students can earn extra credit only if they complete the above during the programme period (I to V semester) and based on the following criteria. Proof of Completion must be submitted in the beginning of VI Semester. (Earning Extra credits is not mandatory for programme completion)

- Student can opt BEC course/ Self study course to earn one credit. They have to Enroll and complete any one of the course during their programme period in the I to V semester.

Self study Courses offered by the Computer Technology Department

S. No.	Semester	Course Code	Course Title
1.	III	17UCTSS1	Personality Development
2.		17UCTSS2	Social Networking

- Student can opt Hindi/ French/ Other foreign Language approved by certified Institutions to earn one credit. The certificate (Hindi) must be obtained from Dakshina Bharat Hindi Prachar Sabha and He/ she has to enroll and complete during their programme period (first to fifth semester)

- Student can opt for Type writing /short hand course to earn one credit extra. He/she has to enroll and complete the course during their programme period to obtain certificate through TamilNadu Board of Technical Education

- Student can opt for Diploma/certificate/CPT/ACS Foundation to earn one credit extra. Student who opt for Diploma/Certificate course have to enroll any diploma/certificate course offered by Bharathiar University through our Institution.

- Student who opt for CPT/ ACS/CMA have to enroll and complete the foundation level during the programme period provided the course content shall be equivalent to that prescribed by ICAI/ICMA/ICSI.

- Award Winners in Academic/ Representation in Sports /Social Activities/ Extra Curricular/ Co-Curricular Activities at University/ District/ State/ National/ International level can earn one credit extra.

PROGRAMME OUTCOMES

On the successful completion of the programme, the following are the expected outcomes

PO.No	PO Statements
1	Understand proficient, ethical, and social issues and community responsibilities
2	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
3	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
4	Improve the ability to communicate effectively and to work as individual or team in the industry / enterprise / community
5	Ability to excel in the field of IT and ITES by enduring learning to accomplish their goals

17UTL11T	தமிழ் - தாள் -1	SEMESTER - I

குறிக்கோள்:

➢ மொழிப்பாடங்களின் வாயிலாக தமிழரின் பண்பாடு, பகுத்தறிவு, கலை மற்றும் மரபு ஆகியவற்றை அறிந்து மாணவர்களின் படைப்பாக்கத்திறன்களை ஊக்குவித்தல்

பயனடைவுக்கல்வியின் விளைவாக ஏற்படும் பயன்பாடுகள்:

பாடத்திட்டப் பகுப்பு முறை	பாடத்திட்டத்தின் குறிக்கோள்	அறிவுத்திறன் வெளிப்படும் அளவு முறை
CO₁	வாழ்க்கைத் திறன்கள் (Life Skills) - மாணவனின் செயலாக்கத்திறனைத் தாய்மொழி வாயிலாக ஊக்குவித்தல்	K₁, K₂, K₃
CO₂	மதிப்புக்கல்வி (Attitude and Value educations)	K₂, K₄
CO₃	பாட இணைச்செயல்பாடுகள் (Co-curricular activities)	K₂, K₃, K₄
CO₄	சூழலியல் ஆக்கம் (Ecology)	K₄
CO₅	மொழி அறிவு (Tamil knowledge)	K₅, K₆

K₁-Remembering, K₂-Understanding, K₃-Applying, K₄-Analysing, K₅-Evaluating, K₆-Creating

Mapping with Programme outcomes

COs /POs	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	M
CO2	S	M	M	M	M
CO3	S	M	M	M	M
CO4	S	M	M	M	M
CO5	S	M	M	M	M

S – Strong, M – Medium, L – Low

17UTL11T	தமிழ் - தாள் -1	SEMESTER - I

Total Credits: 3
Hours per week: 5

கவிதை – சிறுகதை – இலக்கிய வரலாறு – இலக்கணம்

அலகு -1 கவிதைகள் - நாட்டுப்பற்று

1. பாரததேசம்   – பாரதியார்

2. புத்தகசாலை,புதிய உலகு செய்வோம்– பாரதிதாசன்

3. ஒற்றுமையே உயிர்நிலை – கவிமணி

4. அவனும் அவளும் – நாமக்கல் கவிஞர்

அலகு – 2 சமூகமும், இயற்கையும்

1. ஒப்பில்லாத சமுதாயம்– அப்துல் ரகுமான்

2. காகிதப்பூக்கள் - நா.காமராசன்

3. கரிக்கிறது தாய்ப்பால்- ஆரூர் தமிழ்நாடன்

4. மரங்கள்– மு.மேத்தா

5. ஹைகூ கவிதைகள் (10 கவிதைகள்)

அலகு – 3 பெண்ணியம்

1. தற்காத்தல் – பொன்மணி வைரமுத்து

2. மாங்கல்ய மரமும் தொட்டில் மரமும் – ஆண்டாள் பிரியாதர்சினி

3. அம்மா – செல்வநாயகி

4. நீரில் அலையும் முகம்- அ.வெண்ணிலா

அலகு - 4 சிறுகதைகள்

1. பொன்னகரம் – புதுமைப்பித்தன்

2. விடியுமா? – கு.ப.ரா.

3. குருபீடம் – ஜெயகாந்தன்

4. காய்ச்சமரம் – கி.ராஜநாராயணன்

5. புதியபாலம் – நா. பார்த்தசாரதி

6. பூ .....– மேலாண்மை பொன்னுசாமி

7. வேட்கை- சூர்யகாந்தன்

அலகு- 5 இலக்கிய வரலாறு, இலக்கணம்

1. தமிழ்க் கவிதையின் தோற்றமும் வளர்ச்சியும் (மரபு,புதுக்கவிதைகள்)

2. தமிழ்ச் சிறுகதையின் தோற்றமும் வளர்ச்சியும்

3. வல்லினம் மிகும், மிகா இடங்கள்

4. ர,ற ; ல, ழ, ள ; ண, ந,ன, வேறுபாடு

பார்வை நூல்கள்:

1.செய்யுள் திரட்டு – தமிழ்த்துறை வெளியீடு

2.இலக்கிய வரலாறு - பேராசிரியர் முனைவர் பாக்யமேரி

17UHL11H	HINDI-I	SEMESTER - I

Preamble:
- To develop the writing ability and develop reading skill.

- To learn various concepts and techniques for criticizing literature, to learn the techniques for expansion of ideas and translation process.

Course Outcomes:
On the successful completion of the course, students will be able to

CO Number	CO Statements	Knowledge 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

K1-Remembering, K2- Understanding, K3- Applying

Mapping with Programme Outcomes

COS/POS	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	S
CO2	S	M	M	M	S
CO3	S	M	S	M	S
CO4	S	M	S	M	S
CO5	S	M	S	M	S

S – Strong, M – Medium, L – Low

17UHL11H	HINDI-I	SEMESTER - I

Total Credits: 3

Hours Per Week: 5

CONTENTS

UNIT – I

गद्य – नूतन गद्य संग्रह (जय प्रकाश)

पाठ 1- रजिया

पाठ 2- मक्रील

पाठ 3- बहता पानी निर्मला

पाठ 4- राष्ट्र पता महात्मा गाँधी

प्रकाशक: सु मत्र प्रकाशन

204 लीला अपार्ट्मेंट्स, 15 हेस्टिंग्स रोड'

अशोक नगर इलाहाबाद-211001

UNIT – II

कहानी कुंज- डाँ वी.पी. 'अ मताभ'   (पाठ 1-4)

प्रकाशक: गो वन्द प्रकाशन

सदर बाजार, मथुरा

उत्तर प्रदेश-281001

UNIT – III

व्याकरण : श्ब्द वचार (संज्ञा, सर्वनाम, कारक, वशेश्ण)

पुस्तक: व्याकरण प्रदिप - रामदेव

प्रकाशक: हिन्दी भवन 36

टेगोर नगर

इलाहाबाद-211024

UNIT - IV

अनुवाद अभ्यास-III (केवल अंग्रेजी से हिन्दी में)

(पाठ 1 to 10)

प्रकाशक: द क्षण भारत प्रचार सभा चेनैई -17

17UML11M	MALAYALAM-I	SEMESTER-I

Preamble:
- To develop the writing ability and develop reading skill.

- To learn various concepts and techniques for criticizing literature, to learn the techniques for expansion of ideas and translation process.

Course Outcomes:
On the successful completion of the course, students will be able to

CO Number	CO Statements	Knowledge 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

K1-Remembering, K2- Understanding, K3- Applying

Mapping with Programme Outcomes

COS/POS	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	S
CO2	S	M	M	M	S
CO3	S	M	S	M	S
CO4	S	M	S	M	S
CO5	S	M	S	M	S

S – Strong, M – Medium, L - Low

17UML11M	MALAYALAM-I	SEMESTER-I

Total Credits: 3
Hours Per Week: 5

CONTENTS
Paper I Prose, Composition & Translation

This paper will have the following five units:

1. **UNIT I &II**   - Novel
2. **UNIT III & IV**   - Short story
3. **UNIT V**   **-** Composition & Translation

TEXT BOOKS:

1. Unit I &II -Naalukettu – M.T. Vasudevan Nair (D.C. Books, Kottayam, Kerala)

2. Unit III & IV - Manikkianum Mattu Prathana Kathakalum – Lalithampika Antharjanam (D.C.Books, Kottayam, Kerala)

3. Unit V- Expansion of ideas, General Essay and Translation of a simple passage from English about **100** words) to Malayalam

REFERENCE BOOKS:

1. Kavitha Sahithya Charitram –Dr. M.Leelavathi (Kerala Sahithya Academy, Trichur)

2. Malayala Novel sahithya Charitram –K.M.Tharakan(N.B.S. Kottayam)

3. Malayala Nataka Sahithya Charitram-G.Sankarapillai(D.C.Books, Kottayam)

4. Cherukatha Innale Innu –M.Achuyuthan(D.C. Books, Kottayam)

5. Sahithya Charitram Prasthanangalilude-Dr. K.M. George,(Chief Editor) (D.C. Books, Kottayam)

17UFL11F	FRENCH- I	SEMESTER- I

Preamble

 ➢ To Acquire Competence in General Communication Skills – Oral + Written – Comprehension & Expression

 ➢ To Introduce the Culture, life style and the civilization aspects of the French people as well as of France

 ➢ To help the students to acquire Competency in translating simple French sentences into English and vice versa

Course Outcomes:

On the successful completion of the course, students will be able to

CO Number	CO Statements	Knowledge 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
CO5	To learn the Sentiments, life style of the French people and the usage of the conditional tense	K2

K1-Remembering, K2- Understanding, K3- Applying

Mapping with Programme Outcomes

COS/POS	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	S
CO2	S	M	M	M	S
CO3	S	M	S	M	S
CO4	S	M	S	M	S
CO5	S	M	S	M	S

S – Strong, M – Medium, L – Low

17UFL11F	FRENCH- I	SEMESTER- I

Total Credit: 3
Hours per week: 5

Compétence Culturelle	Compétence De communication	Compétence grammaticale
UNITÉ 1 – Ici, en France		
• Moi et les Autres • La France Express	• INTERACTION: s'identifier • RÉCEPTION ECRITE: Comprendre une annonce d'aeroport • RÉCEPTION ORALE: comprendre l'ecrit de la rue (Panneaux, plaques, rues...) • PRODUCTION ÉCRITE: écrire un SMS	• Le présent des verbes: Je suis, je reste,J'arrive • Le lieu: (je suis) à… (je suis) ici • L'infinitif
UNITÉ 2 – Ici, en classe		
• Moi et le francais • Le francais dane le monde	• INTERACTION: Se présenter • RÉCEPTION ORALE: Comprendre des consignes Orales • RÉCEPTION ÉCRITE: Comprendre une fiche D''inscription • PRODUCTION ÉCRITE: écrire un texte à 'impératif	• Tu/vous • Le present des Verbes en-er et de être:je, tu,vous • La forme Impérative (tu ,vous) Des verbes en-er
UNITÉ 3 - Samedi		
• Le fil du temps	• INTERACTION: S'informer • RÉCEPTION ORALE: Comprendre une annonce • RÉCEPTION ÉCRITE: Comprendre un article (titres et illustrations) • PRODUCTION ÉCRITE: écrire des slogans	• Les articles Défines:le,la,les • A,de+le,la,les: Au,aux,du,des,à l', de l' • Être(présent)l'heure • Ll faut+nom Ll faut+infinitive • Pharses

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		verbe+complément, Complément+verbe
UNITÉ 4 - Dimanche		
• Les activités Culturelles des Français	• INTERACTION: Acheter,demander des Informations • RECEPTION ORALE: Comprendre les Titres du journal à la radio • RÉCEPTION ÉCRITE: Comprendre les Informations • PRODUCTION ÉCRITE: Inventer des noms de journaux	• Faire, present • Avior, present • Ll y a • Le présent des verbes en-er: Regarder • Combien? • Quand? • Complément de nom: Tremblement de terre, les noms de pays…. • Du,des,de la(reprise U2) • Les adjectifs possessifs: Mon,ta,son, Ma,ta,sa Mes,tes,ses
UNITÉ 5 – Dommage!		
• Un baby-boom en 2000 et 2001 • L'amour, toujours	• INTERACTION: exprimer la tristesse, la peur, conseiller,encourager • RÉCEPTION ORALE: Comprendre une émission De radio • RÉCEPTION ÉCRITE: Comprendre un sondage • PRODUCTION ÉCRITE: écrire des blogs	• Est-ce que • Le present des verbes pouvoir,Vouloir • Le conditionnel des Verbs pouvoir, Vouloir • Ne…pas

TEXT BOOK:

1. *Marcella Di Giura Jean-Claude Beacco,* **Alors I.** Goyal Publishers Pvt Ltd

   86,University Block Jawahar Nagar (Kamla Nagar),New Delhi – 110007

17UEG12F	ENGLISH – I	SEMESTER - I

PREAMBLE:

To expose students to language competency through literary works and to obtain development in various genres of English Literature and the skills of the language

COURSE OUTCOMES:

On successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	Analyze the genre of prose through the works of Martin Luther King, M. K. Gandhi and Jesse Owens	K 4
CO2	Interpret Poetry through the poems of Tagore, George Herbert and John Milton	K 2
CO3	Analyze the techniques of Short Story writing through the works of R. K. Narayan, Guy De Manupassant and Bonnie Chamberlain.	K 4
CO4	Interpret the techniques of One Act Play through the play by Ramu Ramanathan	K 2
CO5	Explain the fundamentals of basic Grammar through Functional English	K 2

MAPPING WITH PROGRAMME OUTCOME

COS/POS	PO1	PO2	PO3	PO4	PO5
CO1	M	S	S	S	S
CO2	S	M	S	S	S
CO3	S	M	S	S	S
CO4	S	S	S	S	S
CO5	S	S	S	S	M

S – Strong, M – Medium, L – Low

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| 17UEG12F | ENGLISH – I | SEMESTER - I |

Total Credits: 3
Hours per week: 5

CONTENTS

UNIT I – PROSE

      I Have a Dream – Martin Luther King Jr.

      At School – M.K. Gandhi

      My Greatest Olympic Prize – Jesse Owens

UNIT II – POETRY

      Where the Mind is without Fear – Rabindranath Tagore

      Pulley – George Herbert

      On His Blindness – John Milton

UNIT III – SHORT STORY

      The Gateman's Gift – R.K. Narayan

      The Necklace – Guy De Maupassant

      The Face of Judas Iscariot – Bonnie Chamberlain

UNIT IV – ONE ACT PLAY

      The Boy Who Stopped Smiling – Ramu Ramanthan

UNIT V – FUNCTIONAL GRAMMAR AND COMPOSITION

      Sentences ,   Verbs – Tenses and Voice

      Concord,   Letter – Writing

      Dialogue Writing

TEXT BOOK:

1. Board of Editors. 2016. *Stream – A Course book to enhance Language and Life Skills*. Chennai: New Century Book House.

REFRENCE BOOK:

1. Wren and Martin, *High School English Grammar and Composition* S.

Chand Publishing 2006, New Delhi.

17UCT13A	CORE I: C PROGRAMMING	SEMESTER - I

Preamble

- To know the basics of C programming language.
- To understand the basic syntax of decision making and branching statements, arrays, strings, structures, union , pointers and functions.
- To remember the concepts of file management and error handling.

Course Outcomes:
On the successful completion of the course, students will be able to:

CO No.	CO. Statement	Knowledge Level
1	Learn the fundamentals of C programming language	K1
2	Understand the principles of control structures and arrays	K2
3	Apply the knowledge of strings and functions	K3
4	Build programs using structures, union and pointers	K3
5	Expose the concept of file management and error handling	K2 & K3

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	M	M
CO2	M	M	S	M	M
CO3	M	M	S	M	S
CO4	S	S	M	M	M
CO5	M	S	S	M	M

S- Strong , M- Medium , L- Low

17UCT13A	CORE I: C PROGRAMMING	SEMESTER - I

Total Credits : 5
Hours Per Week: 6

CONTENTS

UNIT – I

Overview of C: History of C – Importance of C – Basic structure of C programs. Constants, variables and data types: Character set – C Tokens – Keywords and identifiers – Constants – Variables – Declaration of storage classes – Assigning values to variables Defining symbolic constants. Operators and expression – Evaluation of expressions – Precedence of arithmetic operators – Type conversions in expressions – Operator precedence and associatively – Mathematical functions. Managing input and output operations: Reading and writing a character – Formatted input and output.

UNIT – II

Decision making and branching: Simple IF, IF-ELSE, Nesting of IF-ELSE, ELSE-IF ladder, Switch statements – GOTO statements. Decision making and looping: WHILE statement – DO statement – FOR statement – Jumps in loops. Arrays: Definition & Declaration – One dimensional – Two dimensional – Multi dimensional arrays.

UNIT – III

Character arrays and strings: Introduction – Declaring and initializing string variables – Reading strings from terminal – Writing strings to screen – String handling functions. User Defined functions: Introduction – Needs & Elements of User Defined function –Definition – Return values and their types – Function calls – Function declaration – Category of functions – Nesting of functions – Recursion – Passing arrays and Strings to functions – The scope, lifetime & Visibility of Variables.

UNIT – IV

Structures and Unions: Introduction – Defining a structure – Declaring structure variables – Accessing structure members – Structure initialization – Arrays of structures – Arrays within structures – Structures within structures

– Structures and functions – Unions – Bit fields. Pointers: Introduction – Understanding pointers – Accessing the address of a variable – Initializing of pointer variables. Pointers and arrays – Pointers and character strings – Pointers as function arguments.

UNIT – V

File Management: Introduction – Defining and opening a file –Closing a file – Input /Output operation on files – Error handling during I/O operations – Random access files – Command line arguments.

TEXT BOOK

1. *E. Balagurusamy*, "**Programming in ANSI C"**, Tata McGraw Hall, New Delhi, 7th Edition, 2017.

REFERENCE BOOK

1. *Herbert Schildt*, "**C: The Complete Reference**", Tata McGraw Hill, New Delhi, 4th Edition
2. *B.L.Juneja*, "**Programming In C"** , Cengage Learning, India

17UCT13P	CORE LAB I: PROGRAMMING IN C	SEMESTER - I

Total Credits: 2
Hours Per Week:4

CONTENTS

1. Program to find the sum, average, standard deviation for a given set of numbers.

2. Program to generate n-prime numbers.

3. Program to display transpose of matrix.

4. Program to generate Fibonacci series.

5. Program to print magic square of order n where n > 3 and n is odd.

6. Program to sort the set of n-numbers in ascending order.

7. Program using pointer to check whether the given string is a palindrome or not.

8. Program to count the number of Vowels in any sentence.

9. Program to find the factorial of a number using recursive function.

10. Program to print the student's Mark sheet assuming roll no, name, and marks in 5 subjects as array of structures and print the mark sheet in the university pattern.

11. Program to use function pointers to add two matrices and to return the resultant matrix to the calling function.

12. Program to take a file as command line argument and copy it to another file. At the end of the second file write the total i) no of characters ii) no. of words and iii) no. of lines.

17UCT13Q	CORE LAB II : OFFICE TOOLS USING INTERNET	SEMESTER - I

Total Credits:2
Hours Per Week:3

CONTENTS

MS – WORD

1. Formatting word document using template *

2. Sending letters using mail merge.

3. Table creation and chart preparation*.

MS – EXCEL

4. Prepare mark statement with following conditions using data filter and data sort.

(i) mark-list in ascending order.

(ii) average greater than or equal to 60.

(iii) average between 50 and 60.

(iv) average below 40.

5. Generate EB bill using MACROS

6. Create employee details and make use of any 10 mathematical functions.

MS-POWERPOINT

7. Using slide master design master title style, master sub-title style, master text styles.

8. Download professional slide template and advertise a product.

9. Prepare an organizational chart for MNC using smart art.

MS-ACCESS

10. Create students details table

11. Create employee details table

12. Create movie details table *

*- details can be downloaded from internet

17UMT1AA	ALLIED-1: BASIC MATHEMATICS	SEMESTER - I

PREAMBLE
- Understand the basic concepts of Mathematics.
- To know about the applications of Statistical and Numerical Techniques of Mathematics.

COURSE OUTCOMES

On the successful completion of course, students will be able to

CO Number	CO Statement	Knowledge Level
CO 1	Learn about Numerical Differentiation	K1
CO 2	Learn about Numerical Integration	K1
CO 3	Apply Statistical Techniques for data collection	K2
CO 4	Solve the problems related to Measures of central tendency	K2
CO 5	Solve the problems related to System of Simultaneous Linear Algebraic Equation	K3

MAPPING WITH PROGRAMME OUTCOMES

POS/COS	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	M
CO2	M	M	S	M	S
CO3	M	S	S	M	M
CO4	M	M	S	M	M
CO5	M	M	M	M	M

(S-Strong, M-Medium, L-Low)

17UMT1AA	ALLIED- 1: BASIC MATHEMATICS	SEMESTER - I

Total Credits: 4
Hours Per Week: 5

CONTENTS

UNIT -I

System of Simultaneous Linear algebraic Equation: Gauss elimination - Gauss Jacobi Gauss Jordon - Gauss Seidal methods.

UNIT -II

Numerical Differentiations - Newton's forward Difference - Backward Difference -Stirling's formula.

UNIT-III

Numerical Integration - Trapezoidal Rule & Simpson's rule - Numerical solutions of ordinary differential Equations -Taylor series for first order derivative.

UNIT-IV

Statistics: Meaning - Definition – Collection of data - Classification and Tabulation – Diagrammatic Representation and Graphical Representation.

UNIT-V

Measures of Central Tendency : Mean – Median – Mode - Measures of dispersion : Range – Standard deviation.

TEXT BOOKS:

1. *Kandasamy.P and Thilagavathi.K*, "**Numerical Methods**", S.Chand and Company Ltd., New Delhi, 2004. (Unit I , II &III)
2. *R.S.N.Pillai,V.Bagavathi*, "**Statistics**", S.Chand and Company Pvt. Ltd., 2002.

REFERENCE BOOKS:

1. *Gupta.S.P. and Gupta. M.P* , "**Business Statistics**", Sultan Chand and Sons, 2002.
2. *Venkataraman, M.K, "***Numerical Methods in Science & Engineering**", NPC Revised Edition, 2004.

17UFC1FA	ENVIRONMENTAL STUDIES	SEMESTER - I

Total Credits: 2
Hours per week: 2

CONTENTS

UNIT- I

The Multi Disciplinary Nature of Environmental Studies: Definition, scope and importance-Need for public awareness-Natural resources-Natural resources and associated problems-Role of an individual in conservation of natural resources-Equitable use of resources for sustainable lifestyle…

UNIT- II

Eco System: Concept of an eco system-structure and function of eco system-Producers, consumers and decomposers-Energy flow in the eco system-Ecological succession-Food chain, food webs and ecological pyramids-Forest ecosystem-Grassland eco system-Desert eco system-Aquatic eco system…

UNIT- III

Bio Diversity and its Conservation Introduction Definition: Genetic, Species and Eco System Diversity-Bio Geographical Classification Of India: Value of bio diversity: conceptive use, productive use, social, ethical and option values-bio diversity at global, national and local levels-India as a mega diversity nation, hot spots-threats: habitat loss, poaching of wild life-man wild life conflicts-endangered and endemic species of India, conservation of bio diversity….

UNIT- IV

Environmental Pollution: Definition-causes, effects and control measures of air, water, soil, noise, thermal pollution-soil waste management: causes, effects and control measures of urban and industrial wastes-prevention of pollution-pollution case studies-disaster management: floods, earthquake, cyclone and landslides…

UNIT- V

Social Issues and the Environment: Sustainable development-urban problems related to energy-water conservation, rain water harvesting,

watershed management-resettlement and rehabilitation of people ;its problems and concerns-environmental ethics: issues and possible solutions-climate change, global warming, ozone layer, depletion, acid rain, nuclear accidents and holo caust-consumerism and waste products-environmental protection act-air, water act-wild life protection act-forest conservation act-issues involved in enforcement of environmental legislation-public awareness-human population and the environment.

TEXT BOOK:

1. *Kumaraswamy. K, A. Alagappa Moses and M. Vasanthy. 2001,* **Environmental Studies.** Thanjavur- National Offset Printers.

17UTL21T	தமிழ் - தாள் - 2	SEMESTER - II

குறிக்கோள்:

➢ மொழிப்பாடங்களின் வாயிலாக தமிழரின் பண்பாடு, பகுத்தறிவு, கலை மற்றும் மரபு ஆகியவற்றை அறிந்து மாணவர்களின் படைப்பாக்கத்திறன்களை ஊக்குவித்தல்

பயனடைவுக்கல்வியின் விளைவாக ஏற்படும் பயன்பாடுகள்:

பாடத்திட்டப் பகுப்பு முறை	பாடத்திட்டத்தின் குறிக்கோள்	அறிவுத்திறன் வெளிப்படும் அளவு முறை
CO_1	வாழ்க்கைத் திறன்கள் (Life Skills) - மாணவனின் செயலாக்கத்திறனைத் தாய்மொழி வாயிலாக ஊக்குவித்தல்	K_1, K_2, K_3
CO_2	மதிப்புக்கல்வி (Attitude and Value educations)	K_2, K_4
CO_3	பாட இணைச்செயல்பாடுகள் (Co-curricular activities)	K_2, K_3, K_4
CO_4	சூழலியல் ஆக்கம் (Ecology)	K_4
CO_5	மொழி அறிவு (Tamil knowledge)	K_5, K_6

K_1-Remembering, K_2-Understanding, K_3-Applying, K_4-Analysing, K_5-Evaluating, K_6-**Creating**

Mapping with Programme outcomes

COs /POs	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	M
CO2	S	M	M	M	M
CO3	S	M	M	M	M
CO4	S	M	M	M	M
CO5	S	M	M	M	M

S – Strong, M – Medium, L – Low

17UTL21T	தமிழ் - தாள் -2	SEMESTER - II

Total Credits: 3
Hours per week: 5

செய்யுள் – உரைநடை – இலக்கிய வரலாறும் இலக்கணமும்

அலகு – 1

1.திருக்குறள்   - அ. கூடா நட்பு (அ.எண் 83)

   ஆ.கள்ளுண்ணாமை (அ.எண் 93)

   இ. குறிப்பறிதல் (அ.எண் 110)

   ஈ. காதல் சிறப்புரைத்தல் (அ.எண் 113)

2.மூதுரை –ஒளவையார் (10 பாடல்கள்- 6,7,9,10,14,16,17,23,26,30)

அலகு – 2

1.புரட்சிக்கவி – பாரதிதாசன்

அலகு – 3 உரைநடை

1. சங்க நெறிகள் - வ.சுப.மாணிக்கம்

2. கர்ணனும் கும்பகர்ணனும் - ரா.பி.சேதுப்பிள்ளை

3. அறிவியலும் கலையும்- மு.வரதராசன்

அலகு – 4 உரைநடை

1. வாழ்வியல் இயக்கம் – குன்றக்குடி அடிகளார்

2. பெரியார் உணர்த்தும் சுயமரியாதையும் சமதர்மமும் - வே.ஆனைமுத்து

3. போதைப்பொருள் – அமுதன்

அலகு - 5 இலக்கிய வரலாறும் இலக்கணமும் (பாடத்திட்டம் தழுவியது)

1. பதினெண்கீழ்க்கணக்கு நூல்கள்

2. தமிழ் உரைநடையின் தோற்றமும் வளர்ச்சியும்

3. வழு, வழுவமைதி,வழாநிலை

4. பிறமொழிச் சொற்களைத் தமிழில் மொழிபெயர்த்தல்

பார்வை நூல்கள்:

1.செய்யுள் திரட்டு – தமிழ்த்துறை வெளியீடு

2.இலக்கிய வரலாறு - பேராசிரியர் முனைவர் பாக்யமேரி

17UHL21H	HINDI-II	SEMESTER - II

Preamble:
➢ To develop the writing ability and develop reading skill.

➢ To learn various concepts and techniques for criticizing literature, to learn the techniques for expansion of ideas and translation process.

Course Outcomes:
On the successful completion of the course, students will be able to

CO Number	CO Statements	Knowledge 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

K1-Remembering, K2- Understanding, K3- Applying

Mapping with Programme Outcomes

COS/POS	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	S
CO2	S	M	M	M	S
CO3	S	M	S	M	S
CO4	S	M	S	M	S
CO5	S	M	S	M	S

S – Strong, M – Medium, L – Low

Dr. N.G.P. Arts and Science College (Autonomous)

17UHL21H	HINDI-II	SEMESTER - II

Total Credits: 3
Hours Per Week: 5

CONTENTS

UNIT – I

आधुनिक पद्य – शबरी (श्री नरेश मेहता)

प्रकाशक: लोकभारती प्रकाशन

पहली मंजिल, दरबारी बिल्डिंग,

महात्मा गाँधी मार्ग, इलाहाबाद-211001

UNIT – II

उपन्यास : सेवासदन-प्रेमचन्द

प्रकाशक: सु मत्र प्रकाशन

204 लीला अपार्ट्मेंट्स, 15 हेस्टिंग्स रोड’

अशोक नगर इलाहाबाद-211001

UNIT – III

अनुवाद अभ्यास-III (केवल हिन्दी से अंग्रेजी में)

(पाठ 1 to 10)

प्रकाशक: द क्षण भारत प्रचार सभा चेन्नई -17

UNIT - IV

पत्र लेखन: (औपचारिक या अनौपचारिक)

17UML21M	MALAYALAM-II	SEMESTER-II

Preamble:
- To develop the writing ability and develop reading skill.

- To learn various concepts and techniques for criticizing literature, to learn the techniques for expansion of ideas and translation process.

Course Outcomes:
On the successful completion of the course, students will be able to

CO Number	CO Statements	Knowledge 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

K1-Remembering, K2- Understanding, K3- Applying

Mapping with Programme Outcomes

COS/POS	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	S
CO2	S	M	M	M	S
CO3	S	M	S	M	S
CO4	S	M	S	M	S
CO5	S	M	S	M	S

S – Strong, M – Medium, L - Low

17UML21M	MALAYALAM-II	SEMESTER- II

Total Credits: 3
Hours per week: 5

PAPER II PROSE: NON-FICTION

This Paper will have the following five units:

UNIT I & II

Biography

UNIT III, IV & V

Travelogue

TEXT BOOKS:
1. Unit III, IV & V Kappirikalude Nattil – *S.K. Pottakkadu* (D.C. Books, Kottayam)

2. Kannerum Kinavum – *V.T. Bhatathirippadu* Autobiography (D.C. Books, Kottayam)

REFERENCE BOOKS:
1. **Jeevacharitrasahithyam** – *Dr. K.M. George*(N.B.S. Kottayam)

2. **Jeevacharitrasahithyam Malayalathil** - *Dr. Naduvattom Gopalakrishnan* (Kerala Bhasha Institute, Trivandrum)

3. **Athmakathasahithyam Malayalathil** – *Dr. Vijayalam Jayakumar* (N.B.S. Kottayam)

4. **Sancharasahithyam Malayalathil** - *Prof. Ramesh Chandran. V*, (Kerala Bhasha Institute, Trivandrum)

17UFL21F	FRENCH- II	SEMESTER- II

Preamble
➢ To Acquire Competence in General Communication Skills – Oral + Written – Comprehension & Expression

➢ To Introduce the Culture, life style and the civilization aspects of the French people as well as of France

➢ To help the students to acquire Competency in translating simple French sentences into English and vice versa

Course Outcomes:
On the successful completion of the course, students will be able to

CO Number	CO Statements	Knowledge 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
CO5	To learn the Sentiments, life style of the French people and the usage of the conditional tense	K2

K1-Remembering, K2- Understanding, K3- Applying

Mapping with Programme Outcomes

COS/POS	PO1	PO2	PO3	PO4	PO5
CO1	S	M	M	M	S
CO2	S	M	M	M	S
CO3	S	M	S	M	S
CO4	S	M	S	M	S
CO5	S	M	S	M	S

S – Strong, M – Medium, L – Low

Dr. N.G.P. Arts and Science College (Autonomous)

17UFL21F	FRENCH-II	SEMESTER- II

Total Credits: 3
Hours per week: 5

Compétence Culturelle	Compétence De communication	Compétence grammaticale
UNITÉ 1 – Super!		
• L'égalité homme/femme	• INTERACTION: Exprimer des sentiments, exprimer la joie, le plaisir, le bonheur • RÉCEPTION ORALE: Comprendre un jeu radiophonique • RÉCEPTION ÉCRITE: Comprendre des announces • PRODUCTION ÉCRITE: Écrire des cartes postales	• Les noms de professions masculine/feminine • Le verb finir et less Verbes du groupe en-ir • Le present de l'impératif • Savoir(present) • Le participle passé: Fini, aimé, arrive, dit,écrit • Quel(s), quelle(s)..: Interrogatifet Exclamatif • À + infinitive • Les articles: n,une,des
UNITÉ 2 – Quoi?		
• Le 20 siécle: Petits progrés Grand progrés	• INTERACTION: Decrire quelque chose, une personne • RECEPTION ORALE: Comprendre un message publicitaire • RÉCEPTION ÉCRITE: Comprendre un dépliant touristique • PRODUCTION ÉCRITE: Écrire des petites annonces	• On • Plus, moins • Le verbe aller: • Present, impératif • Aller + infinitife • Le pluriel en –x
UNITÉ 3 – Et aprés		
• Nouvelles du jour	• INTERACTION: Raconteur,situer un récit dans le temps • RÉCEPTION ORALE:	• L'imparfait:: quel-Ques forms pour introduire le récit:Il faisait, il y avait, il Était

	Comprendre une description • RÉCEPTION ÉCRITE: Comprendre un test • PRODUCTION ÉCRITE: écrire des cartes postales	• Un peu, beaucoup, trop,Assez • Trés • Le verbe venir: Présent, impératif • En Suisse, au Maroc, aux Etats-Unis
UNITÉ 4– Mais oui!		
• La génération des 20-30 ans	• INTERACTION: Donner son opinion, Expliquer pourquoi • RÉCEPTION ORALE: Comprendre des informations à la radio • RÉCEPTION ÉCRITE: Comprendre un texte informatif • PRODUCTION ÉCRITE: éncrire un mél de protestation	• Répondre, prendre: Présent, impératif, part Passé • Parce que pourquoi • Tout/tous, toute/s Tous/toutes les… (répétition action)
UNITÉ 5– Mais non!		
• De la ville à la campagne	• INTERACTION: Débat:: exprimer l'accord, exprimer le Désaccord • RECEPTION ORALE: Comprendre un message sur un répondeur téléphonique • RÉCEPTION ÉCRITE: Comprendre un témoignage • PRODUCTION ECRITE: Rediger des petites Announces immobilieres	• Le verbe devoir: Present et participe passé • Le verbe vivre, present • Aller + infinitive • Venir+ infinitive • Etre pour/contre

TEXT BOOK:

1. *Marcella Di Giura Jean-Claude Beacco,* **Alors I.** Goyal Publishers Pvt Ltd 86, University Block Jawahar Nagar (Kamla Nagar) New Delhi – 110007

17UEG22F	ENGLISH – II	SEMESTER - II

PREAMBLE:

To expose students to language competency through literary works and to obtain

development in various genres of English Literature and the skills of the language

COURSE OUTCOMES:

On successful completion of the course, students will be able to

CO Number	CO Statement	Knowledge Level
CO1	Develop the knowledge of prose through the works of Martin Luther King, M. K. Gandhi and Jesse Owens	K 3
CO2	Interpret Poetry through the poems of Tagore, George Herbert and John Milton	K 2
CO3	Identify the techniques of Short Story writing through the works of R. K. Narayan, Guy De Manupassant and Bonnie Chamberlain.	K 3
CO4	Interpret the techniques of One Act Play through the play by Ramu Ramanathan	K 2
CO5	Explain the fundamentals of basic Grammar through Functional English	K 2

MAPPING WITH PROGRAMME OUTCOME

COS/POS	PO1	PO2	PO3	PO4	PO5
CO1	M	S	S	S	S
CO2	S	M	S	S	S
CO3	S	M	S	S	S
CO4	S	S	S	S	S
CO5	S	S	S	S	M

S – Strong, M – Medium, L - Low

17UEG22F	ENGLISH – II	SEMESTER - II

Total Credits: 3
Hours per week: 5

CONTENTS

UNIT I – PROSE
Words of Wisdom – Chetan Bhagat
Acceptance Speech – Noble Peace Prize – Mother Teresa
My Early Days – Dr. A.P.J.Abdul Kalam

UNIT II – POETRY
In the Bazaars of Hyderabad – Sarojini Naidu
Telephonic Conversation – Wole Soyinka
Mending Wall – Robert Frost

UNIT III – SHORT STORY
The Old Man at the Bridge – Ernest Hemingway
The Model Millionaire – Oscar Wilde
White Washing the Fence – Mark Twain

UNIT IV – ONE ACT PLAY
Soul Gone Home – Langston Hughes

UNIT V – FUNCTIONAL GRAMMAR AND COMPOSITION
Relative Pronoun
Degrees of Comparison
Reported Speech
Correction of Sentences
Business Correspondence
Memo, Reports, Proposals, Resume & CV Writing

TEXT BOOK:
1. Board of Editors. 2016. *Stream – A Course book to enhance Language and Life Skills*. Chennai: New Century Book House.

REFRENCE BOOK:
1. Wren and Martin, *High School English Grammar and Composition* S. Chand Publishing 2006, New Delhi.

17UCT23A	CORE II: C++ PROGRAMMING	SEMESTER - II

Preamble

- To understand the basics of OOPs concept and basic syntax of various statements in C++.
- To know about functions, classes and objects, operator overloading and inheritance concepts.
- To remember the concepts of pointers, arrays and virtual functions.

Course Outcomes:
On the successful completion of the course, students will be able to:

CO No.	CO. Statement	Knowledge Level
1	Understand the basics of OOPs concept ,IO Stream, Control structures	K1
2	Demonstrate the structure of functions, classes and objects.	K2
3	Apply the knowledge on operator overloading and inheritance concepts.	K2 & K3
4	Usage of pointers, arrays and virtual functions.	K3
5	Apply the concepts of string, files and exception handling.	K3

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	M	S
CO2	M	M	S	M	M
CO3	M	M	S	M	M
CO4	M	M	M	M	M
CO5	M	S	S	M	M

S- Strong , M- Medium , L- Low

17UCT23A	CORE II: C++ PROGRAMMING	SEMESTER - II

Total Credits : 5
Hours Per Week: 6

CONTENTS

UNIT I

Introduction to C++ - Key concepts of Object-Oriented Programming – Advantages – Object Oriented Languages.
I/O in C++ : Streams in C++-Predefined Streams-Buffering – Stream Classes- Formatted and Unformatted data- Unformatted Console I/O Operation – Type casting with cout statements- C++ Declarations.
Control Structures: - Decision Making and Statements: If.. Else, jump, go to, break, continue, Switch case statements. Loops in C++: For, While, Do.

UNIT II

Functions in C++: Parts of Function – Passing Arguments - Inline functions – Function overloading .
Classes and Objects : Classes in C++- Declaring Objects – Defining Member Functions – Static Member variables and functions – array of objects –friend functions – Overloading member functions.
Constructor and Destructor : Constructor and Destructor - Characteristics – Application with constructors-Overloading Constructor-Destructors.

UNIT III

Operator Overloading: The Keyword Operator- Overloading unary, binary operators – Overloading Friend functions – type conversion.
Inheritance: Types of Inheritance – Single, Multilevel, Multiple, Hierarchal, Hybrid, Multi path inheritance – Virtual base Classes – Abstract Classes.

UNIT IV

Pointers – Declaration – Pointer to Class , Object – this pointer – Pointers to derived classes and Base classes.
Arrays : Characteristics – Initialization of arrays using functions-Memory models – new and delete operators – dynamic object.
Virtual Functions: Rules for Virtual Functions -Pure Virtual Functions.

UNIT V

String – Declaring and Initializing string objects – String Attributes.
Files – File stream classes – file modes – Sequential Read / Write operations-
Error Handling Functions-**Exception Handling**.

TEXT BOOK:

1. *Ashok N. Kamthane*, "**Object-Oriented Programming with ANSI and Turbo C++**", Pearson Education Publication, 2013.

REFERENCE BOOKS:

1. *E. Balagurusamy,* "**Object-Oriented Programming with C++",** Tata Mc-Graw Hill Publication, 2005.

2. *Yashvant. P. Kanetkar*, "**Let us C++**", BPB, New Delhi, 2007.

17UCT23P	CORE LAB III: PROGRAMMING IN C++	SEMESTER - II

Total Credits: 2
Hours Per Week: 4

CONTENTS

1. Program to create a class ARITHMETIC which consists of a FLOAT and an INTEGER variable and the Member functions ADD (), SUB (), MUL (), DIV () to perform addition, subtraction, multiplication, division respectively. Using a member function to get and display values.

2. Program to read an integer number and find the sum of all the digits until it reduces to a single digit using constructors, destructors and inline member functions.

3. Program to create a class FLOAT that contains one float data member, overloading all the four Arithmetic operators so that they operate on the object FLOAT.

4. Program to create a class STRING, with a Member Function to initialize, get and display strings, overload the Operator **+** to Concatenate two Strings, = = to Compare two strings

5. Program to create a class, which consists of EMPLOYEE Detail(E_Number, E_Name, Department, Basic, Salary, Grade), with a member function to get and display them. Derive a class PAY from the above class and write a member function to calculate DA, HRA and PF depending on the grade.

6. Program to create a class SHAPE with two VIRTUAL FUNCTIONS Calculate_Area() and Calculate_Perimeter() to calculate area and perimeter of various figures. Derive three classes SQUARE, RECTANGLE, TRIANGE from class Shape and Calculate Area and Perimeter of each class separately and display the result.

7. Program to create two classes; each consists of two private variables, an integer and a float variable. Write member functions to get and display them. Write a FRIEND Function common to both classes, which takes the object of above two classes as arguments and the integer and float values of both objects separately and display the result.

8. Program using Function Overloading to read two Matrices of different Data Types such as integers and floating point numbers. Find out the sum

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of the above two matrices separately and display the sum of these arrays individually.

9. Program to check whether the given string is a palindrome or not using Pointers.

10. Program to count number of vowels and spaces in a string.

11. Program to create a File and to display the contents of that file.

12. Program to merge two files into a single file.

17UCT23Q	CORE LAB IV : DIGITAL MEDIA LAB	SEMESTER - II

Total Credits : 2
Hours Per Week : 3

CONTENTS

1. Create a Sun Flower.

2. Create Water Drops and See thru text with sceneries.

3. Animate Plane Flying in the Clouds.

4. Create Plastic Surgery for Nose.

5. Create Mouse.

6. Create Military Clothe.

7. Create Stone Texture and Ice Text.

8. Create Rollover Buttons.

9. Create Realistic Stone Structure.

10. Create Web Page.

11. Create Realistic Blood Structure.

12. Create Fog Effects.

17UMT2AA	ALLIED - 2 : COMPUTER BASED OPTIMIZATION TECHNIQUES	SEMESTER- II

PREAMBLE
- Understand various mathematical applications in industries.
- Decision making for real time Problems.

Course Outcomes

On the successful completion of the course, student will be able to

CO Number	CO Statement	Knowledge Level
CO1	Learn about Linear Programming Problem	K1
CO2	Learn about Elements of Queuing System	K1
CO3	Apply game theory to analyze different situations of each player	K2
CO4	Apply Mathematical Techniques to find solution in the real life situations	K2
CO5	Solve the problems related to Network Analysis	K3
CO6	Solve the problems related to Transportation and Assignment	K3

MAPPING WITH PROGRAMME OUTCOMES

POS/COS	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	M	S
CO2	M	S	S	M	M
CO3	M	M	M	M	M
CO4	M	M	S	M	S
CO5	M	S	M	M	M
CO6	M	M	S	M	M

(S-Strong, M-Medium, L-Low)

17UMT2AA	ALLIED - 2 : COMPUTER BASED OPTIMIZATION TECHNIQUES	SEMESTER- II

Total Credits: 4
Hours Per Week: 5

CONTENTS

UNIT I

Linear Programming -Mathematical formulations of linear Programming - Graphical method - Simplex method.

UNIT II

Transportation problem - Assignment problem - Traveling Salesman Problem.

UNIT III

Game Theory -Concept of Pure and Mixed Strategies -Solving 2 x 2 matrixes with and without saddle point -n x 2 -2 x m games.

UNIT IV (Derivations not included)

Queuing Theory : Introduction – Queuing system – Characteristics of Queuing system – symbols and Notation – Classifications of queues – Problems in $(M/M/1) : (\infty/FIFO)$.

UNIT V

PERT & CPM -Network representation -Backward pass -Forward pass - Computation-PERT Network -Probability factor .

TEXT BOOK:

1. *Manmohan, Gupta, P.K and Kanthiswarup.*, "**Operations Research",** S. Chand & sons, 1997.

REFERENCE BOOKS:

1. *Hamdy A Taha.*, "**Operations Research",** Pearson Education. 7th edition, 2002.
2. *Gupta, P.K. and Hira, D.S.,* "**Problems in Operations Research",** S. Chand Publication,2004.

17UFC2FA	**VALUE EDUCATION - HUMAN RIGHTS**	**SEMESTER - II**

Total Credits: 2
Hours per week: 2

CONTENTS

UNIT- I

Concept of Human Values, Value Education Towards Personal Development

Aim of education and value education; Evolution of value oriented education; Concept of Human values; types of values; Components of value education.

Personal Development: Self analysis and introspection; sensitization towards gender equality, physically challenged, intellectually challenged. Respect to - age, experience, maturity, family members, neighbours, co-workers.

Character Formation towards Positive Personality: Truthfulness, Constructivity, Sacrifice, Sincerity, Self Control, Altruism, Tolerance, Scientific Vision.

UNIT - II

Value Education Towards National and Global Development National and International Values: Constitutional or national values - Democracy, socialism, secularism, equality, justice, liberty, freedom and fraternity.

Social Values - Pity and probity, self control, universal brotherhood.

Professional Values - Knowledge thirst, sincerity in profession, regularity, punctuality and faith.

Religious Values - Tolerance, wisdom, character.

Aesthetic values - Love and appreciation of literature and fine arts and respect for the same.

National Integration and international understanding.

UNIT - III

Impact of Global Development on Ethics and Values: Conflict of cross-cultural influences, mass media, cross-border education, materialistic values, professional challenges and compromise.

Modern Challenges of Adolescent Emotions and behave or; Sex and spirituality: Comparison and competition; positive and negative thoughts.

Adolescent Emotions, arrogance, anger, sexual instability, selfishness, defiance.

UNIT – IV

Therapeutic Measures

Control of the mind through

    a. Simplified physical exercise

    b. Meditation – Objectives, types, effect on body, mind and soul

   c. Yoga – Objectives, Types, Asanas
   d. Activities:
      (i) Moralisation of Desires
      (ii) Neutralisation of Anger
      (iii) Eradication of Worries
      (iv) Benefits of Blessings

UNIT- V

Human Rights

1. Concept of Human Rights – Indian and International Perspectives
   a. Evolution of Human Rights
   b. Definitions under Indian and International documents
2. Broad classification of Human Rights and Relevant Constitutional Provisions.
   a. Right to Life, Liberty and Dignity
   b. Right to Equality
   c. Right against Exploitation
   d. Cultural and Educational Rights
   e. Economic Rights
   f. Political Rights
   g. Social Rights
3. Human Rights of Women and Children
   a. Social Practice and Constitutional Safeguards
      (i) Female Foeticide and Infanticide
      (ii) Physical assault and harassment
      (iii) Domestic violence
      (iv) Conditions of Working Women
4. Institutions for Implementation
   a. Human Rights Commission
   b. Judiciary
5. Violations and Redressel
   a. Violation by State
   b. Violation by Individuals
   c. Nuclear Weapons and terrorism
   d. Safeguards.

REFERENCE BOOKS:

1. Dey A. K, **Environmental Chemistry.** New Delhi – Vile Dasaus Ltd,2002.

2. *Gawande . E.N.* **Value Oriented Education.** Vision for better living.New Delhi, Saruptsons.

3. *Brain Trust Aliyar*, **Value Education for health, happiness and harmony.** Vethathiri publications, Erode,2008.

4. *Ignacimuthu S. J. S*, **Values for life.** Bombay Better Yourself, 1999.

5. *Seetharam. R. (Ed)*, **Becoming a better Teacher** Madras Academic Staff College, 1998.

6. *Grose. D. N*, **A text book of Value Education.** Dominant Publishers and Distributors, New Delhi, 2005.

7. *Shrimali K. L*, **A Search for Values in Education**. Vikas Publishers, Delhi, 1974.

8. *Yogesh Kumar Singh & Ruchika Nath*, **Value Education.** P. H Publishing Corporation, New Delhi, 2005.

9. *Venkataram & Sandhiya. N*, **Research in Value Education.**APH Publishing Corporation, New Delhi, 2001.

10. *Ruhela S. P*. **Human Value and Education.** Sterling publishers, New Delhi.

11. *Brain Trust Aliyar*, **Value Education for Health, Happiness and Harmony.** Vethathiri publications , Erode, 2004.

12. *Swami Vivekananda*, **Personality Development.** Advaita Ashrama, Kolkata, 2008.

13. *Swami Jagadatmananda*, **Learn to Live.** Sri Ramakrishna Math, Chennai.

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17UCT33A	CORE III: DATA STRUCTURES	SEMESTER - III

Preamble

- To remember and understand the algorithms
- To understand the fundamentals of linked list
- To learn about various sorting methods.
- To analyze the tree concepts.
- To understand graph & its techniques.

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Apply and analyze various problems using stack & queue techniques.	K2
2	Develop algorithms for linked list methods.	K3
3	Understand searching and sorting techniques.	K1
4	Problem solving approaches in trees.	K3
5	Understand graph and its applications.	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	S	S
CO2	M	M	M	M	S
CO3	M	S	M	M	M
CO4	M	M	S	S	M
CO5	M	S	S	M	M

(S-Strong, M-Medium, L-Low)

17UCT33A	CORE III: DATA STRUCTURES	SEMESTER - III

Total Credits: 5
Hours Per Week: 5

CONTENTS

UNIT- I

Introduction: Introduction of Algorithms, Performance Analysis.
Arrays and structures: Representation of Arrays, Array create, insert and delete of data elements - sparse Matrices.
Stacks and Queues: Stacks - Queues - Circular Queues - Evaluation of Expression -Infix to Postfix Conversion .

UNIT- II

Linked List: Singly Linked List : Insertion – Deletion – reverse the elements - Linked Stacks and Queues - Polynomial Addition – Circular Linked Lists - Doubly Linked List .

UNIT-III

Searching: Linear and Binary Search **Sorting:** Bubble sort - Insertion Sort - Quick Sort - Merge Sort - Heap Sort - **Hashing Techniques** : Static Hashing : Hash Tables - Hashing Functions – Overflow handling – Dynamic Hashing-Directories.

UNIT-IV

Trees: Basic Terminology and Representation - Binary Trees - Binary Tree Representations - Binary Trees Traversals - Threaded Binary Trees - Binary Search Trees – Search , Insert , Delete . Efficient binary search tree: AVL trees.

UNIT-V

Graphs: Terminology and Representations – **Traversals** : Depth First Search, Breath First Search – Minimum cost Spanning Trees- Shortest Paths and Transitive Closure

TEXT BOOKS:

1. Horowitz, Shani, Anderson - Freed **Fundamentals of Data Structures in C** *[*2nd Edition*]* Universities Press.

REFERENCE BOOKS:

1. *Ellis Horowitz, Sartaj Shani*, "**Data and File Structures**", Galgotia Publication.

2. Malik.D.S, "**Data structures using C++**" [1st Edition] ,Cengage learning , 2003.

3.*Vaugha H.Patil*, "**Data Structures Using C++**" [1st Edition]*,*Oxford Higher Education, *2012.*

17UCT33B	CORE IV: JAVA PROGRAMMING	SEMESTER - III

Preamble

- To Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc.
- To Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.
- To be aware of the important features of java programming
- To Apply the concepts of multithreading, packages and string handling functions
- To be able to use the Java SDK environment to create, debug and run simple Java programs.

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Understand the format and use of objects.	K1
2	Learn basic input/output methods and their use.	K1
3	Apply inheritance, interface, exception, packages and its use.	K3
4	Analyze JAVA applets concepts and JAVA applications concepts.	K4
5	Understand the use of various system libraries and to develop the JAVA applets and application programs.	K1

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	M	M
CO2	S	S	M	M	M
CO3	M	M	S	M	M
CO4	M	M	M	S	S
CO5	M	M	S	M	S

(S-Strong, M-Medium, L-Low)

17UCT33B	CORE IV: JAVA PROGRAMMING	SEMESTER - III

Total Credits : 5
Hours Per Week: 5

CONTENTS

UNIT I

Introduction to Object-Oriented Programming – The Java language – Variable Declarations and Arrays – Operators in Java.

Control Statements: An Introduction – Selection Constructs – Iteration Constructs – Jump Constructs.

Introduction to Classes: Instance variables – Class variables – Instance Methods – Constructors – Class Methods – Declaring Objects

UNIT II

Classes and Methods in Detail: Method Overloading – Constructor Overloading – The this Reference – Using Objects in Method – Recursion – Access Modifiers – Inner Classes – Command Line Arguments. Inheritance: Basics of Inheritance – Super Class Variable and Subclass Object – The super reference – Constructor Chaining – Method Overriding – The final Keyword.

Abstract Classes and Interfaces: The abstract Classes and Methods – Defining Interface – Implementing Interfaces – Extending Interface – Interface Reference.

Exception Handling: Types of Exceptions-Uncaught Exceptions – Handling Exceptions – User Defined Exceptions

UNIT III

Multithreaded Programming: Concept of Threads – Thread Creation – Thread's Life Cycle – Thread Scheduling – Synchronization and Deadlock.

Packages and Access Modifiers: Packages – An Introduction – The package Declaration – The import Statement – Illustration Package – The Java Language Packages.

Handling Strings: Creating Strings – Operations on Strings – Character Extractor Methods – String Comparison Methods

UNIT IV

Input Output Classes: Input and Output Operations – Hierarchy of classes in java.io Package – File class – InputStream and OutputStream- RandomAccessFile Class.

Applets: Applet Basics – Applet Life Cycle – Running Applets – Methods of the Applet Class

UNIT V

Abstract Windowing Toolkit: AWT classes – Hierarchy of Classes – Control Fundamentals – Component Class – Basic Component Classes – Various Container Classes – Frame Window in an Applet – Menus. Layout Management and Event Handling: Layout Management Policies – Standard Layout Managers – Handling Events – Hierarchy of Event Classes – Event Delegation Model – Event Classes – Event Listener Interfaces – Adapter Classes

TEXT BOOK:

1. Instructional Software Research and Development (ISRD) Group, "**Introduction to Object Oriented Programming through Java**", Tata McGraw-Hill Publishing Company Limited, New Delhi,2007.

REFERENCE BOOKS:

1. E.BalaGurusamy, " **Programming with JAVA – A Primer**", Tata McGraw-Hill Publishing Company Limited, Third Edition, 2007.
2. John R. Hubbard, " **Schaum's Outline of Programming with Java**", Tata McGraw- Hill Publishing Company Limited, Second Edition, 2007.

17UCT33P	CORE LAB V : PROGRAMMING IN JAVA	SEMESTER - III

Total Credits: 2
Hours Per Week:4

CONTENTS

1. Program to implement STACK operations.

2. Program to implement Linked List.

3. Program to implement user define package.

4. Program to implement the concept of multiple inheritance using Interfaces.

5. Program to creating an Exception called payout-of-bounds and throw the exception.

6. Program to implement the concept of multithreading with the use of any three multiplication tables and assign three different priorities to them.

7. Program to draw several shapes in the created windows.

8. Program to create a frame with four text fields name, street, city and pin code with suitable tables. Also add a button called —my details, When the button is clicked its corresponding values are to be appeared in the text fields.

9. Program to demonstrate the Multiple Selection List-box.

10. Program to create frames which respond to the mouse clicks. For each events with mouse such as mouse up, mouse down, etc., the corresponding message to be displayed.

11. Program to draw circle, square, ellipse and rectangle at the mouse click positions.

12. Program which open an existing file and append text to that file.

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17UCT3AA	Allied 3 : DIGITAL LOGIC AND DESIGN	SEMESTER - III

Preamble

- To understand about digital logic circuits and digital components.
- To learn data representation.
- To understand the central processing unit and its functions.
- To learn I/O organization and devices.
- To understand memory organization.

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Learn about digital logic circuits and digital components	K2
2	Understand data representation	K1
3	Learn the central processing unit and its functions	K2
4	Knowledge on I/O organization and devices	K1
5	Knowledge about memory organization	K1

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	M	S
CO2	M	M	M	M	M
CO3	S	M	S	M	M
CO4	M	M	M	M	M
CO5	S	S	M	M	S

(S-Strong, M-Medium, L-Low)

17UCT3AA	**Allied 3 : DIGITAL LOGIC AND DESIGN**	**SEMESTER - III**

Total Credits : 4
Hours Per Week: 5

CONTENTS

UNIT I

Digital Logic Circuits: Digital Computers –Logic Gates – Boolean Algebra-Map Simplification- Combinational Circuits- Flip flops

UNIT II

Digital Components: Integrated Circuits- Decoders – Multiplexers – Registers – Shift Registers- **Data Representation:** Data Types – Complements -Error Detection Codes

UNIT III

Central Processing Unit: Introduction – General Register Organization – Stack Organization – Instruction Formats – Addressing Modes - Data Transfer and Manipulation

UNIT IV

Input – Output Organization: Peripheral Devices - Input – output interface- Asynchronous data transfer-Modes of Transfer- Priority Interrupt – Direct Memory Access – Input- Output Processor

UNIT V

Memory Organization: Memory Hierarchy – Main Memory- Auxiliary Memory - Associative memory- Cache Memory- Virtual Memory

.

TEXT BOOK:

1. M. Morris Mano, "**COMPUTER SYSTEM ARCHITECTURE**", PHI, Third Edition, 1993.

REFERENCE BOOKS:

1. V. K. Puri, "**DIGITAL ELECTRONICS CIRCUITS AND SYSTEMS**", Tata McGraw Hill Publication,2004.

2. M. Carter, "**COMPUTER ARCHITECTURE** ", Schaum's outline series, Tata McGraw Hill Publication, 2006.

3. William Stallings,"**COMPUTER ORGANIZATION AND ARCHITECTURE" ,** 9th Edition, Pearson Education India,2012.

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17UCT3SA	SKILL BASED COURSE 1: WEB TECHNOLOGY	SEMESTER - III

Preamble

- To understand the concepts of Hyper Text Markup Language

- To know the concept of CSS

- To understand and execute Java Script

- To remember conditional statements, looping statements and arrays concepts

- To know the concept of XML

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Learn the basics of Hyper Text Markup Language	K2
2	Knowledge about the concept of CSS	K1
3	Learn and execute Java Script	K2
4	Remember conditional statements, looping statements and arrays concepts	K1
5	Know about the concept of XML	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	M	M
CO2	M	S	S	M	M
CO3	M	S	S	M	M
CO4	M	S	M	M	S
CO5	M	M	S	M	M

(S-Strong, M-Medium, L-Low)

17UCT3SA	SKILL BASED COURSE 1: WEB TECHNOLOGY	SEMESTER - III

Total Credits : 4
Hours Per Week: 4

CONTENTS

UNIT I

HTML: Introduction to HTML- Classifications of HTML Tags – Structure of HTML Document-Basic HTML Tags-List and its types- Creation of Tables-Table attributes-Linking document-Adding Graphics to HTML Document-Meaning of frames-Creation of Frames-Frame Attributes.

UNIT II

DHTML: Introduction to CSS-Advantages of CSS-Style Sheet Basics-Methods of Embedding CSS into HTML-Style Sheet properties: Font properties-Text properties-List properties-Color and Background properties-Box Properties-Display properties.

UNIT III

JAVA Script: Introduction to Java Script-Advantages and uses of Java script-Limitations- Basic syntax of JavaScript- Data types- Variables: Declaration-Scope-Operators and its types.

UNIT IV

Conditional statement: If Else-switch statement-Looping statement: While loop-Do while –For Loop-Arrays-Functions-Dialog box-sample programs

UNIT V

Extensible Markup Language: Introduction to XML-Importance of XML – Features of XML –XML Syntax –XML elements-Naming Rules-XML attributes-Document Type Definition- XML document Object Model-XML query Languages.

TEXT BOOKS:

1.   Dr.P.Rizwan Ahmed "**OPEN SOURCE SOFTWARE**", Margham Publications.
2. M. Sulochana, S. Brinda, "**WEB PROGRAMMING**",   Kalyani Publishers, Fourth Edition ,2013.

REFERENCE BOOK:

1. Deitel, Deitel, Nieto, Lin & Sadhu, "**XML HOW TO PROGRAM**", Pearson   Education,2001.

17UCT3SP	SKILL BASED LAB 1 : WEB TECHNOLOGY	SEMESTER - III

Total Credits : 2
Hours Per Week: 3

CONTENTS

1. Creating a static web page with multiple links and images.

2. Creating a static web page with forms and frames.

3. Creating a web page using CSS.

4. Creating a XML document that marks up a letter.

5. Creating a XML document for a database with DTD.

6. Creating a Microsoft XML Schema document for any XML document and validate.

7. Creating a XML document with Extensible style sheet.

8. Constructing a DTD and a Corresponding XML document with simple links.

9. Create a Java script program for employee information to find DA, HRA, PF,TAX , Gross Pay, Deduction and Net Pay

10. Create a java script program to calculate mark and grade of students using three subjects

11. Write a java script program to display current day, month and year

12. Create a webpage with dynamic effects using java script to include basic animation

Dr. N.G.P. Arts and Science College (Autonomous)

17UNM34K	NMEC - I: MULTIMEDIA	SEMESTER - III

Preamble

- To understand basics of multimedia.
- To understand the text and image concepts.
- To identify the fundamental characteristics of Audio & Video.
- To develop skills on audio / video tools and software
- To understand animation methods.

Course Outcomes

CO No.	CO. Statement	Knowledge Level
1	Understand basics of multimedia.	K1
2	Understand the text and image concepts.	K1
3	Identify the fundamental characteristics of Audio & Video.	K2
4	Develop skills on audio / video tools and softwares	K4
5	Understand animation methods.	K1

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1		S	M		
CO2			M		M
CO3		S			
CO4			S		
CO5			S		M

(S-Strong, M-Medium)

Dr. N.G.P. Arts and Science College (Autonomous)

17UNM34K	NMEC - I: MULTIMEDIA	SEMESTER - III

Total Credits : 2
Hours Per Week: 2

CONTENTS

UNIT I

Text: Types of Text – Unicode Standard – Font – Insertion of Text – Text compression – File formats

UNIT II

Image: Image Types – Seeing Color – Color Models – Basic Steps for Image Processing – Scanner – Digital Camera

UNIT III

Audio: Introduction – Acoustics – Nature of Sound Waves – Fundamental Characteristics of Sound – Microphone – Amplifier – Loudspeaker – Audio Mixer – Digital Audio – Sound Card – Audio Transmission – Audio File formats

UNIT IV

Video: Analog Video Camera – Transmission of Video Signals – Video Signal Formats – Television Broadcasting Standards – PC Video – Video File Formats and CODECs – Video Editing – Video Editing Software.

UNIT V

Animation: Types of Animation – Computer Assisted Animation – Creating Movement – Principles of Animation – Some Techniques of Animation – Animation on the Web

TEXT BOOK:

1. Ranjan Parekh, PRINCIPLES OF MULTIMEDIA, TMH, 2007.

17UFC3FA	பகுதி – 4 : அடிப்படைத்தமிழ்தாள் : 1 (Basic Tamil)	SEMESTER- III

Total Credits: 2
Hours Per Week: 2

இளங்கலை 2017 – 2018 ஆம் கல்வியாண்டு முதல் சேர்வோர்க்குரியது
(10 மற்றும் 12 – ஆம் வகுப்பு வரை தமிழ் மொழிப்பாடம் பயிலாதவர்களுக்கு)
(பருவத் தேர்வு உண்டு)

அலகு : 1. தமிழ் மொழியின் அடிப்படைக் கூறுகள் .
அ) எழுத்துகள் :

- உயிர் எழுத்துக்கள் - குறில் , நெடில் எழுத்துகள்

- மெய் எழுத்துக்கள் - வல்லினம், மெல்லினம், இடையினம்

- உயிர்மெய் எழுத்துக்கள்

ஆ) சொற்களின் வகைகள் :பெயர்ச்சொல், வினைச்சொல் – விளக்கம் (எ.கா.)
அலகு : 2. குறிப்பு எழுதுதல்

- பெயர், முகவரி, பாடப்பிரிவு , கல்லூரியின் முகவரி
- தமிழ் மாதங்கள்(12), வாரநாட்கள்(7), எண்கள் (ஒன்று முதல் பத்து வரை), வடிவங்கள், வண்ணங்கள்
- ஊர்வன, பறப்பன, விலங்குகள், மனிதர்களின் உறவுப்பெயர்கள்
- இந்திய மாநிலங்கள், நதிகள், தேசத் தலைவர்கள் பற்றிய குறிப்புகள்

வினாத்தாள் அமைப்பு முறை - மொத்த மதிப்பெண்கள் - 50			
பகுதி –அ	சரியான விடையைத் தேர்வு செய்தல்	10x2=20	அனைத்து அலகுகளில் இருந்தும் வினாக்கள் அமைதல் வேண்டும்
பகுதி –ஆ	அரைப்பக்க அளவில் விடையளிக்க	5x3=15	
பகுதி-இ	இரண்டு பக்க அளவில் விடையளிக்க	1x15=15	

17UFC3FB	பகுதி – 2 : சிறப்புத் தமிழ்தாள் : 1	SEMESTER- III
	(Advanced Tamil)	

Total Credits: 2
Hours Per Week: 2

இளங்கலை 2017 – 2018 ஆம் கல்வியாண்டு முதல் சேர்வோர்க்குரியது

(10 மற்றும் 12 – ஆம் வகுப்புகளில் தமிழ் மொழிப்பாடம் பயின்றவர்களுக்கு உரியது)

(பருவத் தேர்வு உண்டு)

அலகு – 1: மரபுக் கவிதைகள்

அ)பாரதியார் கவிதைகள்

- தமிழ்நாடு
- மனதில் உறுதி வேண்டும்
- வருகின்ற பாரதம் (பா.எண்.5-8)

ஆ)பாரதிதாசன் கவிதைகள்

- இன்பத்தமிழ்
- நீங்களே சொல்லுங்கள்
- உலக ஒற்றுமை
- வாளினை எடடா!

அலகு – 2 : புதுக்கவிதைகள்

- கம்பன் கவியரங்கக் கவிதை - மு.மேத்தா
- தமிழா! நீ பேசுவது தமிழா! - காசியானந்தன்
- நட்புக் காலம் (10 கவிதைகள்) - அறிவுமதி கவிதைகள்

அலகு – 3 : இலக்கணம்

- வல்லினம் மிகும் மற்றும் மிகா இடங்கள்
- ர, ற, - ல, ழ, எ - ந, ண, ன - வேறுபாடு அறிதல்

அலகு – 4: கடிதங்கள் எழுதுதல்

- பாராட்டுக் கடிதம்
- நன்றிக் கடிதம்
- அழைப்புக் கடிதம்
- அலுவலக விண்ணப்பங்கள்

அலகு – 5: பாடம் தழுவிய வரலாறு

- பாரதியாரின் இலக்கியப் பணி
- பாரதிதாசனின் இலக்கியப்பணி
- மரபுக்கவிதை, புதுக்கவிதை - விளக்கம்

வினாத்தாள் அமைப்பு முறை - மொத்த மதிப்பெண்கள் - 50			
பகுதி –அ	சரியான விடையைத் தேர்வு செய்தல்	10x1=10	ஒவ்வொரு அலகிலும் இரண்டு வினாக்கள்
பகுதி –ஆ	அரைப்பக்க அளவில் விடையளிக்க	5x3=15	ஒவ்வொரு அலகிலும் ஒரு வினா
பகுதி –இ	இரண்டு பக்க அளவில் விடையளிக்க	5x5=25	ஒவ்வொரு அலகிலும் ஒரு வினா
குறிப்பு: பகுதி **ஆ** மற்றும் **இ** –க்கான வினாக்கள் **இது** அல்லது **அது** என்ற அடிப்படையில் அந்தந்த அலகுகளில் அமைதல் வேண்டும்			

17UFC3FC	YOGA FOR HUMAN EXCELLENCE	SEMESTER - III

Total Credits: 2
Hours Per Week: 2

CONTENTS

UNIT – I
Yoga and Physical Health

1.1 Physical Structure-Three bodies-Five limitations

1.2 Simplified physical Exercise – Hand Exercises – Leg Exercises – Breathing Exercises – Eye Exercises –Kapalapathi

1.3 Maharasanas 1-2 Massages - puncture-Relaxation

1.4 Yogasanas – Padmasana- Vajrasanas-Chakrasanas (side) – Viruchasanas –Yoga muthra – Patchimothasanas – Ustrasanas – Vakkarasanas – Salabasanas

UNIT - II
Art of Nurturing the life force and Mind

2.1 Maintaing the youthfulness –Postponing the ageing process

2.2 Sex and Spirituality – Significancew of sexual vital fluid – Married life Chastity

2.3 Ten stages of Mind

2.4 Mental frequency – Methods for concentration

UNIT - III
Sublimation

3.1 Purpose and Philosophy of life

3.2 Introspection – Analysis of Thought

3.3 Moralization of Desires

3.4 Neutralization of Anger

UNIT IV
Human Resources Development

4.1 Eradication of worries

4.2 Benefits of Blessings

4.3 Greatness of Friendship

4.4 Individual Peace and World Peace

UNIT V

Law of Nature

5.1 Unified force – Cause and Effect system

5.2 Purity of Thought and Deed and Genetic Centre

5.3 Love and Compassion

5.4 Cultural Education – Fivefold Culture

17UFC3FD	WOMEN'S RIGHTS	SEMESTER - III

Total Credits : 2
Hours Per Week : 2

UNIT I

Laws, Legal Systems and Change Definition - Constitutional law, CEDAW and International Human Rights – Laws and Norms – Laws and Social Context – Constitutional and Legal Framework.

UNIT II

Politics of land and gender in India Introduction – Faces of Poverty – Land as Productive Resources – Locating Identities – Women's Claims to Land – Right to Property - Case Studies.

UNIT III

Women's Rights: Access to Justice Introduction – Criminal Law – Crime Against Women – Domestic Violence – Dowry Related Harassment and Dowry Deaths – Molestation – Sexual Abuse and Rape – Loopholes in Practice – Law Enforcement Agency.

UNIT IV

Women's Rights Violence Against Women – Domestic Violence - The Protection of Women from Domestic Violence Act, 2005 - The Marriage Validation Act, 1982 - The Hindu Widow Re-marriage Act, 1856 - The Dowry Prohibition Act, 1961

UNIT V

Special Women Welfare Laws Sexual Harassment at Work Places – Rape and Indecent Representation – The Indecedent Representation (Prohibition) Act, 1986 - Immoral Trafficking – The Immoral Traffic

(Prevention) Act, 1956 - Acts Enacted for Women Development and Empowerment - Role of Rape Crisis Centers.

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References

1. Nitya Rao "Good Women do not Inherit Land" Social Science Press and Orient Blackswan, 2008.

2. International Solidarity Network "Knowing Our Rights" An imprint of Kali for Women ,2006.

3. P.D.Kaushik "Women Rights" Bookwell Publication ,2007.

4. Aruna Goal "Violence Protective Measures for Women Development and Empowerment" Deep and Deep Publications Pvt, 2004.

5. Monica Chawla "Gender Justice" Deep and Deep Publications Pvt Ltd, 2006.

6. Preeti Mishra "Domestic Violence Against Women" Deep and Deep Publications Pvt, 2007.

7. ClairM.Renzetti, Jeffrey L.Edleson, Raquel Kennedy Bergen, Source Book on "Violence Against Women" Sage Publications , 2001.

17UFC3FE	CONSTITUTION OF INDIA	SEMESTER - III

Total Credits: 2
Hours Per Week: 2

CONTENTS

UNIT I

Making of Constitution - Constituent Assembly- Dr. Rajendra Prasath- Dr.B.R.Ambedkar - Salient features - Fundamental Rights.

UNIT II

Union Executive - President of India - Vice-President - Prime Minister - Cabinet - Functions

UNIT III

Union Legislature - Rajiya Sabha - Lok Sabha - Functions and Powers

UNIT IV

Union Judiciary - Supreme Court - Functions - Rule of law

UNIT V

State - Executive - Legislature – Judiciary – Role of Tamilnadu -Public Service Commission.

REFERENCE BOOKS:

1. *Agharwal.R.C,* "**National Moment and Constitutional Development" ,** New Delhi, 1977.
2. *Chapra B.R,* "**Constitution of India",** New Delhi, 1970.
3. *Rao B.V*, **"Modern Indian Constitution",** Hyderabad, 1975.
4. *Nani Palkhivala*, "**Constitution of India"**, New Delhi, 1970.
5. *Krishna Iyer, V.R,* "**Law and Justice**", New Delhi, 2009.
6. Reference Manual from the Govt. of Tamilnadu

SELF STUDY PAPERS

17UCTSS1	SELF STUDY PAPER - I PERSONALITY DEVELOPMENT	SEMESTER - III

Hours/Week: --
Credit Points : 1

CONTENTS

UNIT-I

Communication - Types of communication - Elements of communication - Ways to improve communication - Effective Communication – Public Speaking.

UNIT-II

Attitude – Motivation - Self-confidence - Strategies for developing confidence- Personality Dimensions - Positive Thinking-Body language - Active Listening.

UNIT-III

Life Skills - Targeting life skills (TLS) model - Stress Relaxation Techniques - Critical Thinking - Decision making – Problem Solving.

UNIT-IV

Character Building - Aims of education and value education - Emotional Intelligence - Social intelligence – Assertiveness - Developing Assertiveness.

UNIT-V

Group Discussion - Structured Group Discussion - Unstructured Group Discussion -Resume Preparation - Focus areas of personal interview - Do's and Don'ts in interview.

REFERENCE WEBSITES:
1. http://en.wikipedia.org/wiki/Personality Development.
2. www.indiabix.com/group-discussion/topics.

17UCTSS2	SELF STUDY PAPER - II SOCIAL NETWORKING	SEMESTER - III

Hours/Week:--
Credit Points : 1

CONTENTS

UNIT-I

Social Networking: Introduction - History – Features-Types –Impact on Social Networks among people-Advantages of Social Networking-Issues.

UNIT-II

Facebook: Evolution of Facebook- Design-Facebook IPO- Five hidden dangers of Facebook-Security tips for users and Application Developers-Facebook Security Settings.

UNIT-III

Google Applications: History of Google apps-Gmail-Calendar-Drive-Docs-Sheets-Slides-Hangouts-Advantages of Google Applications.

UNIT-IV

Mobile Applications: Introduction –Definition-Overview-Messenger-Truecaller-Share it -Xender-Adobe reader-INDpay-EPFO.

UNIT-V

Search Engines:Google-Yahoo-Bing-Qwant.P2P Search Engines-Meta Search Engines.

REFERENCE WEBSITES:

1. https://en.wikipedia.org/wiki/Social Networks
2. http://www.google.com/Google Applications

17UCT43A	CORE V: OPERATING SYSTEM	SEMESTER - IV

Preamble

- To know on evolution of OS functions and process.

- To learn CPU scheduling.

- To understand deadlock techniques

- To acquire knowledge on memory management

- To learn on mass storage structure

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Understand the evolution of OS functions and process.	K1
2	Learn CPU scheduling.	K2
3	Understand deadlock techniques	K2
4	Acquire knowledge on memory management	K2
5	Learn on mass storage structure	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	M	S
CO2	M	S	S	M	M
CO3	M	S	M	M	S
CO4	S	M	M	S	M
CO5	M	M	M	M	S

(S-Strong, M-Medium, L-Low)

17UCT43A	CORE V: OPERATING SYSTEM	SEMESTER - IV

Total Credits : 4
Hours Per Week: 5

CONTENTS

UNIT I:

Introduction to Operating Systems: Definition – Mainframe Systems - Desktop Systems - Multiprocessor Systems - Distributed Systems - Real-Time Systems. Process: Process Concept - Process Scheduling - Operations on Processes.

UNIT II:

CPU Scheduling: Basic Concepts - Scheduling Criteria - Scheduling Algorithms: First-Come, First-Served Scheduling - Shortest-Job-First Scheduling-Priority Scheduling - Round-Robin Scheduling - Multilevel Queue Scheduling. Process Synchronization: The Critical-Section Problem-Semaphores.

UNIT III:

Deadlocks: Deadlock Characterization - Methods for Handling Deadlock - Deadlock Prevention - Deadlock Avoidance: Safe State -Resource-Allocation Graph Algorithm-Banker's Algorithm- Deadlock Detection - Recovery from Deadlock.

UNIT IV:

Memory Management: Swapping - Contiguous Memory Allocation - Paging – Segmentation - Segmentation with Paging. Virtual Memory: Demand Paging - Page Replacement: FIFO Page Replacement - Optimal Page Replacement - LRU Page Replacement.

UNIT V:

Mass-Storage Structure : Disk Structure - Disk Scheduling: FCFS Scheduling - SSTF Scheduling-SCAN Scheduling-C-SCAN Scheduling-LOOK Scheduling-Selection of a Disk-Scheduling Algorithm - RAID structure.

TEXT BOOK:

1.   Abraham Silberschatz, Peter Baer Galvin, Greg Gagne, "Operating System Concepts", Sixth Edition 2002, John Wiley & Sons Inc.

17UCT43B	CORE VI: RELATIONAL DATABASE MANAGEMENT SYSTEM	SEMESTER - IV

Preamble

- To understand the basic concepts of database concepts, database design and data modeling and normalization.
- To acquire knowledge on database environment.
- To identify the DML commands.
- To expose the concepts of PL/SQL
- To analyze the various composite data types.

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Understand the basic concepts of database concepts, database design and data modeling and normalization.	K1
2	Obtain knowledge on database environment.	K2
3	Know the DML commands.	K2
4	Learn the concepts of PL/SQL	K3
5	Analyze the various composite data types.	K4

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	M	S
CO2	M	M	M	M	M
CO3	M	M	S	M	S
CO4	M	S	M	M	M
CO5	M	M	S	M	S

(S-Strong, M-Medium, L-Low)

17UCT43B	CORE VI: RELATIONAL DATABASE MANAGEMENT SYSTEM	SEMESTER - IV

Total Credits : 4
Hours Per Week: 5

CONTENTS

UNIT I

Database Concepts: A Relational approach: Database – Relationships – DBMS – Relational Data Model – Integrity Rules – Theoretical Relational Languages. **Database Design: Data Modeling and Normalization:** Data Modeling – Dependency – Database Design – Normal forms – Dependency Diagrams – De -normalization – Another Example of Normalization.

UNIT II

Oracle9i: Oracle9i an introduction – SQL. Oracle Tables: DDL: Naming Rules and conventions – Data Types – Constraints – Creating Oracle Table – Displaying Table Information – Altering an Existing Table – Dropping, Renaming, Truncating Table – Table Types – Spooling – Error codes.

UNIT III

Data Management and Retrieval: DML – adding a new Row/Record – Customized Prompts – Updating and Deleting an Existing Rows/Records – retrieving Data from Table – Arithmetic Operations – restricting Data with WHERE clause – Sorting – Revisiting Substitution Variables – DEFINE command – CASE structure. **Functions and Grouping:** Built-in functions – Grouping Data. **Multiple Tables: Joins and Set operations:** Join – Set operations.

UNIT IV

PL/SQL: History – Fundamentals – Block Structure – Comments – Data Types – Other Data Types – Declaration – Assignment operation – Bind variables – Substitution Variables – Printing – Arithmetic Operators. **Control Structures and Embedded SQL:** Control Structures – Nested Blocks – SQ L in PL/SQL – Data Manipulation – Transaction Control statements. **PL/SQL Cursors and**

Exceptions: Cursors – Implicit & Explicit Cursors and Attributes – Cursor FOR loops – SELECT…FOR UPDATE – WHERE CURRENT OF clause – Exceptions – Types of Exceptions.

UNIT V

PL/SQL Composite Data Types: Records – Tables – arrays. **Named Blocks:** Procedures – Functions – Packages –Triggers.

TEXTBOOK:
 1. Nilesh Shah .2011. 2nd edition DATABASE SYSTEMS USING ORACLE, PHI.

 REFERENCE BOOKS:

1. Arun Majumdar & Pritimoy Bhattacharya. 2007. DATABASE MANAGEMENT SYSTEMS , TMH.
2. Gerald V. Post. 2004. 3rd edition DATABASE MANAGEMENT SYSTEMS , TMH.

Dr. N.G.P. Arts and Science College (Autonomous)

17UCT43C	CORE VII: COMPUTER INSTALLATION AND SERVICING	SEMESTER - IV

Preamble

- To understand the basic concepts of PC

- To acquire knowledge on various controllers

- To identify the input device and adapters.

- To expose the concepts of output device

- To learn trouble shooting various devices.

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Understand the basic concepts of PC	K1
2	Acquire knowledge on various controllers	K2
3	Identify the input device and adapters.	K2
4	Knowledge on output device	K3
5	Learn trouble shooting various devices.	K4

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	S	M	S	S	S
CO2	M	S	M	M	M
CO3	S	M	S	S	S
CO4	M	S	M	S	M
CO5	S	M	S	M	S

(S-Strong, M-Medium, L-Low)

Dr. N.G.P. Arts and Science College (Autonomous)

17UCT43C	**CORE VII: COMPUTER INSTALLATION AND SERVICING**	**SEMESTER - IV**

Total Credits : 4
Hours Per Week: 5

CONTENTS

UNIT I

PC SYSTEM Personal Computer System - Functional Blocks - System Unit - Display Unit - Keyboard. INSIDE PC Motherboard - BIOS - CMOS-RAM - Motherboard types – Processors – Chipsets – USB. ON-BOARD MEMORY PC's Memory Organization - Memory packaging - I/O Ports - USB Port.

UNIT II

Floppy Disk Drive and Controller - Hard Disk Drive and Controller, MMX – Multimedia Extensions.

UNIT III

Input Devices - Monitors and Display Adapters.

UNIT IV

Output Devices DOT Matrix Printer - Printer Controller - Laser Printer - Inkjet Printer. Computer Installation Power supply - PC Installation.

UNIT V

Trouble shooting and servicing POST, Trouble shooting the mother board - Trouble shooting the Keyboard - Trouble shooting the disk devices - Trouble shooting the printer. Maintenance Diagnostic Software's - Data Security. Computers and Communication Networking – Modem - Internet.

TEXT BOOK:

1. D.Balasubramaniam. 2005. Second Edition. " COMPUTER INSTALLATION AND SERVICING", Tata McGraw-Hill.

17UCT43P	CORE LAB VI: RELATIONAL DATABASE MANAGEMENT SYSTEM	SEMESTER - IV

Total Credits : 2
Hours Per Week: 4

CONTENTS

1. a) Create DEPARTMENT, DESIGNATION, EMPLOYEE tables with required constraints.
DEPARTMENT :Deptid (pk) : varchar2, Deptname (nn) : varchar2
DESIGNATION :Desid (pk): varchar2, Designation (nn): varchar2
EMPLOYEE :
Empid(pk): varchar2
Empname (nn): varchar2
Deptid(fk): varchar2
Desid(fk): varchar2
Gender(nn): char
Dob (nn): date
Doj (nn): date
Contactnumber: number
Bpay (nn): number

1.b) Add a new column mailid of varchar type in the EMPLOYEE table

2.a) Insert necessary records in the above tables.
  b) Update the designation id of the employee with empid 'e5' as 'CLS'.

3.a) Display the details of the employees whose designation is manager.
  b) Display the employee details in ascending order based on their name.

4.a) Find the maximum salary of the employee of each department.
  b) Display the name of the employee and their designation.

5) Create a view to display the details of the employee whose designation is junior assistant in sales department.

6) Create a report to display the details of the employee of the accounts department.

7) Create a cursor to display all employee IDs and names from the EMPLOYEE table.

8) Write a procedure to update the basic pay.
Senior Manager: 25% , Junior Manager : 20% , Junior Clerk: 15%, Senior Clerk: 12%, Senior Assistant: 10%, Junior Assistant: 8%.

9) Create a function to find sum of salaries of all employees working in sales department.

10) Write a database trigger before delete for each row not allowing deletion on employee table and give appropriate message.

11) Write a Database trigger before insert for each row on the table EMPLOYEE not allowing transaction on Saturday / Sunday.

12) Display the constraint details of all the above three tables.

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17UCT43Q	**CORE LAB VII:** **LINUX LAB**	**SEMESTER - IV**

Total Credits : 2
Hours Per Week:2

CONTENTS

1. Create Shell script to stimulate the file commands: rm, cp, cat, mv, cmp, wc, split, diff.

2. Create Shell program to read three filenames. Check all the files for read permission, if it has read permission then merge the file content to the new file.

3. Create Shell script for displaying current date, user name, file listing and directories.

4. Create Shell script to remove the files which has file size as zero bytes.

5. Create Shell script to find the sum of the individual digits of a given number.

6. Create Shell script for palindrome checking.

7. Create Shell script to print the multiplication table of the given argument using for loop

8. Create Shell script to implement the filter commands

9. Shell Program to display number pattern

10. Shell Program to sort the number in ascending order

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17UCT4AA	ALLIED 4 : SOFTWARE TESTING	SEMESTER - IV

Preamble

- To obtain knowledge on software development life cycle models and white – box testing concept.
- To learn black – box testing and integration testing.
- To learn system acceptance testing.
- To obtain performance testing and regression testing.
- To understand deep knowledge test planning and test metrics.

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Knowledge on software development life cycle models and white – box testing concept.	K2
2	Understand black – box testing and integration testing.	K2
3	Learn system acceptance testing.	K2
4	Ability to obtain knowledge on performance testing and regression testing.	K2
5	To understand deep knowledge test planning and test metrics.	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	S	M	M
CO2	M	S	M	M	S
CO3	M	S	M	M	M
CO4	M	M	S	S	S
CO5	M	M	M	M	S

(S-Strong, M-Medium, L-Low)

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17UCT4AA	ALLIED 4 : SOFTWARE TESTING	SEMESTER - IV

Total Credits : 4
Hours Per Week: 5

CONTENTS

UNIT I

Software Development Life Cycle models: Phases of Software project – Quality, Quality Assurance, Quality control – Testing, Verification and Validation – Process Model to represent Different Phases - Life Cycle models. **White-Box Testing**: Static Testing – Structural Testing – Challenges in White-Box Testing.

UNIT II

Black-Box Testing: What is Black-Box Testing? - Why Black-Box Testing? – When to do Black-Box Testing? – How to do Black-Box Testing? – Challenges in White Box Testing - **Integration Testing**: Integration Testing as Type of Testing – Integration Testing as a Phase of Testing – Scenario Testing – Defect Bash

UNIT III

System and Acceptance Testing: system Testing Overview – Why System testing is done? – Functional versus Non-functional Testing - Functional testing - Non-functional Testing – Acceptance Testing – Summary of Testing Phases.

UNIT IV

Performance Testing: Factors governing Performance Testing – Methodology of Performance Testing – tools for Performance Testing – Process for Performance Testing – Challenges. **Regression Testing**: What is Regression Testing? – Types of Regression Testing – When to do Regression Testing – How to do Regression Testing – Best Practices in Regression Testing.

UNIT V

Test Planning, Management, Execution and Reporting: Test Planning – Test Management – Test Process – Test Reporting –Best Practices. **Test Metrics and Measurements**: Project Metrics – Progress Metrics –Productivity Metrics – Release Metrics – Software Testing Case Studies in Mobile Applications.

TEXT BOOK:

1. Srinivasan Desikan, Gopalswamy Ramesh. 2006. SOFTWARE TESTING PRINCIPLES AND PRACTICES, Pearson Education.

REFERENCE BOOKS:

1. WilliamE.Perry. 2007. 3rd Edition. EFFECTIVE METHODS OF SOFTWARE TESTING, Wiley India.
2. Renu Rajani, Pradeep Oak. 2007. SOFTWARE TESTING, TMH.

17UNM44K	NON MAJOR ELECTIVE -II: ORACLE	SEMESTER - IV

Preamble

- To understand the basic concepts of data base.

- To acquire the knowledge of DDL commands.

- To identify the DML commands.

- To experiments the various operations involved in table.

- To create the outline of data base

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Acquire the knowledge of data base.	K2
2	Ability to design data model in ORACLE	K2
3	Ability to construct queries in ORACLE.	K2
4	Work with DML commands.	K3
5	Understand various operations in tables.	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1		M			M
CO2			S		
CO3		S			M
CO4			S		
CO5		S			M

(S-Strong, M-Medium)

17UNM44K	NON MAJOR ELECTIVE - II : ORACLE	SEMESTER - IV

Total Credits : 2
Hours Per Week: 2

CONTENTS

UNIT I

Database Concepts: A Relational approach: Database – Relationships – DBMS – Relational Data Model – Integrity Rules – Theoretical Relational Languages.

UNIT II

Oracle Tables: DDL: Naming Rules and conventions – Data Types – Constraints – Creating Oracle Table – Displaying Table Information – Altering an Existing Table – Dropping, Renaming, Truncating Table – Table Types – Spooling – Error codes.

UNIT III

Working with Table: Data Management and Retrieval: DML Commands adding a new Row/Record – Customized Prompts – Updating and Deleting an Existing Rows/Records – retrieving Data from Table

UNIT IV

Arithmetic Operations – restricting Data with WHERE clause – Sorting

UNIT V

DEFINE command – Multiple Tables: Joins and Set operations: Join – Set operations.

TEXT BOOK:

1. Nilesh Shah.2005. 2nd edition. DATABASE SYSTEMS USING ORACLE, PHI.

17UCT53A	CORE VIII : DATA COMMUNICATION AND NETWORKS	SEMESTER - V

Preamble

- To understands modes of data transmission, transmission media and network topologies.
- To remember OSI layers, routing algorithms and ISDN architecture.
- To obtain knowledge on internetworking devices and analyze the problems in internetworking.

Course Outcome

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Know about data communications and transmission methods	K2
2	Describe modes of data transmission, transmission media and network topologies	K3
3	Memorize OSI layers, routing algorithms and ISDN architecture	K2
4	Know about internetworking devices and problems in internetworking	K2
5	Remember TCP and UDP communication and classify various application level protocols	K1

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	S	S	M	S	M
CO2	S	S	M	M	M
CO3	M	M	S	S	S
CO4	M	M	M	M	S
CO5	M	S	M	S	S

(S-Strong, M-Medium, L-Low)

17UCT53A	**CORE VIII :** **DATA COMMUNICATION AND** **NETWORKS**	**SEMESTER - V**

Total Credits : 5
Hours Per Week: 6

CONTENTS

UNIT I

Introduction to Data Communications and Networking – Information Encoding – Analog and Digital Transmission Methods.

UNIT II

Modes of Data Transmission and Multiplexing -Transmission Errors: Introduction –Error Classification -Types of error- Error Detection and Correction
Transmission Media: Guided Media, Unguided Media – Network Topologies: Mesh, Star, Tree, Ring, Bus – Switching: Circuit switching, Message switching, Packet switching.

UNIT III

Routing Algorithms: Routers and Routing – Factors affecting Routing Algorithms – Routing Algorithms-Network Protocols and OSI Model-Integrated Services Digital Network (ISDN).

UNIT IV

Internetworking Concepts: Introduction – The Problems in Internetworking -Internetworking Devices- Introduction to TCP / IP, IP, ARP, RARP, ICMP

UNIT V

TCP: Features of TCP, Relationship between TCP and IP, Ports and Sockets, TCP connections, What makes TCP Reliable, TCP Packet Format – User Datagram Protocol (UDP): UDP Packet, Difference between UDP and TCP – Domain Name System (DNS) – Electronic Mail (Email) – File Transfer Protocol (FTP).

TEXT BOOK:

1. Achyut S.Godbole. 2007. DATA COMMUNICATIONS AND NETWORKS, Tata McGraw Hill Publications.

REFERENCE BOOKS:

1. Behrouz A. Forouzan. 19th reprint, 2007. DATA COMMUNICATIONS AND NETWORKING – SECOND EDITION UPDATE, Tata McGraw-Hill Publication.
2. Andrew S. Tanenbaum. 3rd Edition, 2000. COMPUTER NETWORKS, Prentice Hall of India.

17UCT53B	CORE IX: C#.NET PROGRAMMING	SEMESTER - V

Preamble

- To Understand arrays , strings , structure and classes and objects in .NET Environment

- To remember inheritance ,polymorphism, operator overloading and understand delegates

- To learn Exceptions ,multithread and web based applications

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Obtain knowledge on .NET platform	K2
2	Remember arrays, strings, structure and classes and objects	K1
3	Remember inheritance, polymorphism, operator overloading and understand delegates	K1
4	Learn Exceptions, multithread and web based applications	K2
5	Know the web form components	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	S
CO2	M	S	M	M	S
CO3	S	M	S	M	S
CO4	M	S	M	M	M
CO5	S	M	S	M	M

(S-Strong, M-Medium, L-Low)

17UCT53B	CORE IX : C#.NET PROGRAMMING	SEMESTER - V

Total Credits : 5
Hours Per Week: 6

CONTENTS

UNIT – I

Understanding .NET: The C# environment - Over view of C# - Literals, Variables and Data Types - Methods in C# -Operators -Control Statements – Branching and Looping statement.

UNIT – II

Handling Arrays-Manipulating Strings - Structures and Enumerators -Classes and Objects.

UNIT – III

Inheritance and Polymorphism- Interface: Multiple Inheritance -Operator Overloading - Delegates and Events- Managing Errors and Exceptions.

UNIT - IV

Windows and Web-based Application Development on .NET - Web Forms in C# - Buttons – Text boxes - Labels – Literals – File Upload - Place holders – Check box – Radio buttons – Tables – Panels – Images – Image Buttons – Image Maps – List boxes – Drop-down list – hyperlinks – link buttons – Tree view – Menu – Validation Controls – Validation Groups

UNIT – V

Architecture of ADO.NET- Connected and Disconnected database – Working with Data Binding and Data sets.

TEXT BOOKS:

1. Balagurusamy, E. 2010. "Programming in C# A Primer, [III Edition], Tata McGraw Hill.(Unit I,II,III)

2. Matt Telles ,"C# 2005 Programming - Black Book", dreamtech press. (Unit IV)
3. John Sharp, 2013." Visual C# 2005 step by step" , Microsoft, Prentice Hall of India (P) Ltd.,(Unit V)

REFERENCE BOOKS:

1. Art Gittleman.2008. C#.Net Illustrated Viva Bark Pvt Ltd
2. Geff Ferguson .2007. C# Programming Bible[1st Edition] Willy India

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17UCT53P	**CORE LAB VIII :** **PROGRAMMING IN C#.NET**	**SEMESTER - V**

Total Credits : 2
Hours Per Week:4

CONTENTS

1. Create a C# program implementing the various types of parameters.

2. Create a C# program demonstrating boxing and unboxing.

3. Create a C# program to find the sum of all the elements present in a jagged array.

4. Create a C# program demonstrating Operator Overloading.

5. Create a C# program in C# to demonstrate error handling.

6. Create a C# program implementing overriding methods.

7. Create a C# program implementing interface.

8. Create a C# program implementing properties.

9. Create a C# program demonstrating delegates and events.

10. Develop a C# application for a simple Quiz.

11. Develop a C# application implementing control validators.

12. Develop a C# application for Student detail manipulation.

17UCT5SB	SKILL BASED COURSE 2: ANDROID TECHNOLOGY	SEMESTER - V

Preamble

- To obtain knowledge on android environment
- To learn components and layouts with design interface tools.
- To know about JSON

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Knowledge on android environment	K2
2	Learn components and layouts	K1
3	Learn design interface tools	K1
4	Acquire Knowledge on activity	K2
5	Know about JSON	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	S
CO2	M	S	M	M	S
CO3	S	M	S	M	S
CO4	M	S	M	M	M
CO5	S	M	S	M	M

(S-Strong, M-Medium, L-Low)

17UCT5SB	SKILL BASED COURSE 2: ANDROID TECHNOLOGY	SEMESTER - V

Total Credits : 4
Hours Per Week: 5

CONTENTS

UNIT I

Introduction to Android OS : What is android ? – Android ecosystem- Why Android? – Versions – Activity – Features – Architecture- Stack Linux Kernel. Configuration of Android Environment: Operating System – Java JDK- Android SDK- Android Development Tools(ADT)- Android Virtual Devices(AVD)-Emulators- Dalvik Virtual Machine- Difference between JVM and DVM-Steps to install and configure Eclipse and SDK.

UNIT II

Directory Structure - Android User Interface: Understanding the Components on Screen- Linear layout- Absolute layout- Frame layout- Relative layout- Table layout.

UNIT III

Designing user Interface with View: Text view- Button – Image button - Edit text- Check box-Toggle button- Radio button and Radio group-Progress bar- Text View – Spinner-List View –Grid View- Image View-Scroll View-Custom toast alert-Time and Date Picker.

UNIT IV

Activity: Introduction – Intent - Intent filter-Activity life cycle-Broadcast life cycle services—Multimedia-Android System Architecture-Play Audio and Video-Text and Speech.

UNIT V

JSON: What is JSON?-XML and JSON - Use of JSON- Syntax and rule of JSON- JSON name/value pairs –JSON values- Objects – Array-How to JSON use java script syntax- Parsing JSON and XML.

TEXT BOOK:

1. Prasannakumar Dixit , 2014,"Android", Vikas Publishing House Private Limited.

REFERENCE BOOK:

1. E-Book: 'Android Application Development' by Abhi Android. www.abhiandroid.com

17UCT5SP	SKILL BASED LAB 2 : ANDROID TECHNOLOGY LAB	SEMESTER - V

Total Credits : 2
Hours Per Week: 3

CONTENTS

1. Android Program to Change the Image Displayed on the Screen

2. Android Program to Demonstrate Tip Calculator

3. Android Program to Demonstrate Linkify Class in Android

4. Android Program to Demonstrate Toast in an Application

5. Android Program to Demonstrate a Simple Video View

6. Android Program to Demonstrate Shape Drawables

7. Android Program to Demonstrate Date Picker Dialog in Android.

8. Android Program to Cancel an Alarm Intent

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17UCT63A	CORE X : OPEN SOURCE TOOLS	SEMESTER - VI

Preamble
- To understand basics, functions and objects in PHP
- To understand working with MySQL database using PHP.
- To remember the core functions and techniques used in Python

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Understand basics of PHP	K2
2	Learn functions and objects in PHP.	K1
3	Understand working with MySQL database using PHP.	K2
4	Learn fundamental concepts of Python language	K1
5	Remember the core functions and techniques used in Python	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	S
CO2	M	S	M	M	S
CO3	S	M	S	M	S
CO4	M	S	M	M	M
CO5	S	M	S	M	M

(S-Strong, M-Medium, L-Low)

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17UCT63A	CORE X : OPEN SOURCE TOOLS	SEMESTER - VI

Total Credits : 5
Hours Per Week: 5

CONTENTS

UNIT I

Introduction to PHP: Incorporating PHP within HTML – The Structure of PHP. Expressions and Control flow in PHP: Expressions – Operators – Conditionals – Looping – Implicit and Explicit Casting.

UNIT II

PHP Functions and Objects: PHP Functions – Including and Requiring Files – PHP Version Compatibility – PHP Objects. PHP Arrays: Basic Access – The foreach… as Loop – Multidimensional Arrays.

UNIT III

Working with Database and Tables: Creating Databases – Creating Tables Altering Tables – Backup and Restoring Databases and Tables – Dropping Databases and Tables – Viewing Databases, Table and Field Information. Editing Records and performing Queries: Inserting Records – Editing and Deleting Records – Performing Queries: Retrieving Specific Columns – Filtering Records with a WHERE Clause. Querying a MYSQL Database with PHP: Using MYSQL and PHP Together – Managing Database Connections – Performing Queries – Processing Result Sets.

UNIT IV

Python: Introduction – Lexical Conventions and Syntax: Identifiers and Reserve Words – Literals – Operators, Delimiters and Special Symbols. Types and Objects: Built in Types – Special Methods. Operators and Expressions – Control Flow: Conditionals – Loops and Iterations – Exceptions.

UNIT V

Functions and Functional Programming – Classes and Object Oriented Programming – Input and Output – String and Text Handling – Threads.

TEXT BOOKS:

1. Robin Nixon, "Learning PHP, MYSQL, JavaScript, CSS & HTML 5", O'REILLY, Fourth Edition 2014

2. Vikram Vaswani, "PHP and MySQL", McGraw Hill Education, 2005

3. David Beazley, "Python Essential Reference", Sams Publishing, Third Edition, 2006

REFERENCE BOOKS:

1. Steven Holzner, "The PHP Complete Reference", McGraw Hill Education, First Edition 2007.

2. Vikram Vaswani, "PHP: A Beginner's Guide", McGraw Hill Education, First Edition 2009.

3. Guido Van Rossum and Fred L. Drake Jr, "An Introduction to Python", published by Network Theory Ltd., 2011.

17UCT63B	CORE XI : NETWORK SECURITY	SEMESTER – VI

Preamble

- To understand the various risks involved with computer networks.

- To acquire the knowledge on various security tools and techniques.

- To learn basic concept of cyber security with the tools.

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Understand the various risks involved with network computers	K2
2	Acquire the knowledge various security tools and techniques	K1
3	Understand internet security protocols	K1
4	Learn basic concept of cyber security	K1
5	Knowledge on cybercrime methods and tools	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	S
CO2	M	S	M	M	S
CO3	S	M	S	M	S
CO4	M	S	M	M	M
CO5	S	M	S	M	M

(S-Strong, M-Medium, L-Low)

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17UCT63B	**CORE XI :** **NETWORK SECURITY**	**SEMESTER – VI**

Total Credits : 5
Hours Per Week: 5

CONTENTS

UNIT I

Attacks on computers and computer security: Introduction –Need for security – Security approaches – Principles of security –Types of attacks. Cryptography: Concepts and techniques - Introduction – Plain text and cipher text – Substitution techniques - Transposition techniques - Encryption and decryption - Symmetric and Asymmetric key cryptography.

UNIT II

Symmetric Key Algorithms: Introduction - Algorithm Types and modes – An overview of symmetric key cryptography – Data encryption Standard (DES) – International Data Encryption Algorithm (IDEA)- Asymmetric Key Algorithms: RSA.

UNIT III

Internet Security Protocols : Introduction – Basic concepts – Secure Socket Layer – (SSL) – Transport Layer Security(TLS) – Secure Hyper Text Transfer Protocol (SHTTP) – Time Stamping Protocol (TSP) – Secure Electronic Transaction (SET) – SSL Versus SET – 3-D secure Protocol – Electronic Money - Email security – Wireless Application Protocol (WIP).

UNIT IV

Introduction to Cyber Crime and law - Cyber Crimes - Types of Cybercrime- Hacking, Attack vectors, Cyberspace and Criminal Behavior, Clarification of Terms, Traditional Problems Associated with Computer Crime - Introduction to Incident Response-Digital Forensics, Computer Language-Network Language -Realms of the Cyber world-A Brief History of the Internet - Recognizing and Defining Computer Crime-Contemporary Crimes - Computers as Targets- Contaminants and Destruction of Data-Indian IT ACT 2000.

UNIT V:

Introduction to Cyber Crime Investigation -Firewalls and Packet Filters - password Cracking, Key loggers and Spyware-Virus and Warms-Trojan and backdoors – Steganography- DOS and DDOS attack.

TEXT BOOKS:

1. Atul Kahate. Second Edition. 2003. "Cryptography and Network Security", Tata McGraw-Hill.
2. Nina Godbole, 2011 ,"Cyber Security: Understanding Cyber Crimes, Computer Forensics and Legal Perspectives" ,Wiley India Publication

17UCT63P	CORE LAB IX : OPEN SOURCE TOOLS LAB	SEMESTER - VI

Total Credits : 2
Hours Per Week: 4

1. Create PHP program to find if the given year is leap year or not.

2. Create PHP program to add two numbers using Functions.

3. Design a web page that should compute one's age on a given date.

4. Program to upload a file in PHP

5. Program using Include () and Session ().

6. Create a Database 'Marks' with two tables to perform Insertion, Updation and Deletion operations of rows in MYSQL Database.

7. Design an authentication web page in PHP with MySQL to check username and password.

8. Program to find the GCD of two numbers using user-defined functions using Python.

9. Program to perform change, add, append and extend elements to a list using Python.

10. Program to perform string manipulation using Python.

11. Program to access a range of items in a tuple by using slicing operator using Python.

12. Program to perform exception handling mechanism using Python.

17UCT63Q	CORE LAB X : NETWORK LAB	SEMESTER - VI

Total Credits : 2
Hours Per Week:3

CONTENTS

1. Program to Client – Server chat using TCP

2. Program to Detect Errors using Vertical Redundancy Check (VRC).

3. Program to Detect Errors using Cyclic Redundancy Check (CRC).

4. Socket program to implement Asynchronous Communication.

5. Program to implement Stop & Wait Protocol

6. Program to implement RSA Algorithm.

7. Program to Encrypt and Decrypt the given text.

8.Program to implement Remote Procedure call under Client / Server Environment

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17UCT63V	CORE XII : PROJECT WORK	SEMESTER - VI

Total Credits : 2
Hours Per Week:3

1. Each student should carry out individually one Project Work and it may be a work using the software packages that they have learnt or the implementation of Concepts from the papers studied or implementation of any innovative idea.

2. The Project work should be compulsorily done in the college only under the supervision of the Department staff concerned.

3. No candidate will be allowed to change the title of the Project work.

4. Final Viva-Voce will be conducted with both the Internal (Respective Guides) and External Examiners (20+30)

ELECTIVE COURSE SYLLABUS

17UCT5EA	ELECTIVE I : MIDDLEWARE TECHNOLOGIES	SEMESTER - V

Preamble

- To learn architecture of client/server
- To know about presentation services
- To study the component model

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Learn architecture of client/server	K2
2	Know about presentation services	K1
3	Study the component model	K1
4	Learn ASP.Net	K2
5	Know about ADO connectivity	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	S
CO2	M	S	M	M	S
CO3	S	M	S	M	S
CO4	M	S	M	M	M
CO5	S	M	S	M	M

(S-Strong, M-Medium, L-Low)

17UCT5EA	ELECTIVE I : MIDDLEWARE TECHNOLOGIES	SEMESTER - V

Total Credits : 4
Hours Per Week: 6

CONTENTS

UNIT I

Client – Server – File server, Database server, Group server, Object server, Web server.Middleware – General middleware – Service specific middleware. Client / Server Building blocks – RPC – Messaging – Peer–to-Peer.

UNIT II

EJB – EJB Architecture – Overview of EJB software architecture – View of EJB – Conversation – Building and Deploying EJBs – Roles in EJB

UNIT III

EJB Session Beans – EJB entity beans – EJB clients – EJB Deployment – Building an application with EJB

UNIT IV

CORBA – Distributed Systems – Purpose – Exploring CORBA alternatives – Architecture overview – CORBA and networking model – CORBA object model – IDL – ORB – Building an application with CORBA.

UNIT V

COM – Data types – Interfaces – Proxy and Stub – Marshalling – Implementing Server / Client – Interface Pointers – Object Creation, Invocation, Destruction – Comparison COM and CORBA.

TEXT BOOKS:

1. Robert Orfali, Dan Harkey and Jeri Edwards, "The Essential Client/Server Survival Guide", Galgotia Publications Pvt. Ltd., 2002. (Unit 1)

2. Tom Valesky, "Enterprise Java Beans",Pearson Education, 2008.(Unit 2 & 3)

3.Jason Pritchard, "COM and CORBA side by side", Addison Wesley, 2000

 (Unit 4 & 5)

17UCT5EB	ELECTIVE I: CLOUD COMPUTING	SEMESTER - V

Preamble
- To understand the basics, benefits, limitations of Cloud computing
- To understand the concepts of Cloud infrastructure and on cloud platforms
- To gain knowledge on developing cloud applications

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Understand the basics, benefits, limitations of Cloud computing	K2
2	Understand the concepts of Cloud infrastructure	K1
3	Knowledge on cloud platforms	K1
4	Understand about cloud computing services	K2
5	Knowledge on developing cloud applications	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	S
CO2	M	S	M	M	S
CO3	S	M	S	M	S
CO4	M	S	M	M	M
CO5	S	M	S	M	M

(S-Strong, M-Medium, L-Low)

17UCT5EB	ELECTIVE I: CLOUD COMPUTING	SEMESTER - V

Total Credits:4
Hours Per Week: 6

CONTENTS

UNIT I

Cloud Computing Basics - Cloud Computing Overview – Applications-Intranets and the cloud-First Movers in the cloud. When you can use cloud computing – Benefits-Limitations – Security concerns.

UNIT II

Cloud Computing Services – Operational, economic, staffing benefits – Thomson Reuters. Cloud Computing Technology: Hardware and Infrastructure: Clients – Security – Network-Services

UNIT III

Accessing the cloud: Platforms – Web applications – Web API- Web browsers. Cloud Storage: Overview- providers – Standards: Applications-Client – Infrastructure-Service.

UNIT IV

Cloud Computing at work: Software as a Service: Overview – Driving forces - Company offerings – Industries. Software Plus Services: Overview – Mobile device integration – Providers –Microsoft Online.

UNIT V

Developing Applications: Google – Microsoft-Intuit Quick Base- Cast Iron Cloud –Bungee Connect- Development – Trouble shooting –Application Management-Virtualizations –Server solutions-Cloud Service-Best Practices.

TEXT BOOK

1. Anthony TVelte, TobyJVelte, Robert Elsenpeter.2009. "CLOUD

   COMPUTING- A LAB APPROACH" , Tata McGraw-Hill Publications

17UCT6EA	ELECTIVE II : MOBILE COMPUTING	SEMESTER - VI

Total Credits : 4
Hours Per Week: 5

Preamble

- To obtain knowledge on cellular phones, satellite communication, WLANs, Bluetooth and protocols
- To study on wireless communication systems and to remember various standards
- To acquire wider knowledge on CDMA and GSM

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Understand the basics of mobile computing	K2
2	Knowledge on cellular phones, satellite communication,WLANs, Bluetooth and protocols	K1
3	Study on wireless communication systems and to remembervarious standards	K1
4	Knowledge on cellular networks	K2
5	Acquire wider knowledge on CDMA and GSM	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	S
CO2	M	S	M	M	S
CO3	S	M	S	M	S
CO4	M	S	M	M	M
CO5	S	M	S	M	M

(S-Strong, M-Medium, L-Low)

17UCT6EA	ELECTIVE II : MOBILE COMPUTING	SEMESTER - VI

Total Credits : 4
Hours Per Week: 5

CONTENTS

UNIT I

Introduction to mobile computing – Introduction – Evolution of mobile computing – Types – Mobile communication – Applications of mobile computing – Advantages and limitations.

UNIT II

Cellular phones – Mobile telephone systems – Satellite communication – Wireless LANs – Bluetooth – Protocols.

UNIT III

Wireless communication systems – Introduction – Spectrum allocation – 2G / 2.5G / 3G / 4G wireless networks and standards: AMPS – FDMA – DAMPS – TDMA – GSM GPRS – Wireless networks and standards.

UNIT IV

Cellular networks: Introduction – Mobile radio propagation – Basic cellular network structure – Operations of cellular networks – Digital modulation for cellular networks – Multiple access schemes of cellular networks

UNIT V

CDMA – What is GSM? – Why GSM? – GSM Protocol stack – GSM architecture – location tracking and call setup – Security – GSM services – SMS architecture and protocol hierarchy.

TEXT BOOK:

1. Er. Gurjeet Singh, Er. Rachhpal Singh, Er. Amardeep Singh, "Mobile Computing", Kalyani publishers, 2012.

17UCT6EB	ELECTIVE II: BIG DATA AND ANALYTICS	SEMESTER - VI

Preamble
- To understand digital data
- To know about data science and analytics
- To acquire knowledge NoSQL and Hadoop

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Understand digital data	K2
2	Know about data science and analytics	K1
3	Acquire knowledge NoSQL	K1
4	Understand the concepts of Hadoop	K2
5	Study the Hadoop file System	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	S
CO2	M	S	M	M	S
CO3	S	M	S	M	S
CO4	M	S	M	M	M
CO5	S	M	S	M	M

(S-Strong, M-Medium, L-Low)

17UCT6EB	ELECTIVE II: BIG DATA AND ANALYTICS	SEMESTER - VI

Total Credits : 4
Hours Per Week: 5

CONTENTS

UNIT I

Types of Digital data: Classification of Digital Data-Introduction to Big Data: Definition-Challenges – What is big data- Why big data- Traditional business intelligence (BI) vs big data- A typical data warehouse environment – A typical Hadoop environment- What is new today – What is changing in the realm of big data

UNIT II

Big data analytics –Classification of Analytics - Data Science – Terminologies used in Big Data Environment

UNIT III

The Big Data Technology Landscape: NoSQL-Types – Advantages – Use of NoSQL in industry- NoSQL vendors- Comparsion SQL, NoSQL and NewSQL. Hadoop: Features-Advantages – Version – Overview – Distributors- Hadoop Vs SQL- Cloud based Hadoop solutions

UNIT IV

Introduction to Hadoop: Introducing Hadoop- Why Hadoop- Why not RDBMS-RDBMS Vs Hadoop- Distributors computing challenges- History of Hadoop- Overview –Use case of Hadoop- Hadoop distributors

UNIT V

HDFS: Hadoop Distributed File System-HDFS daemons-Anatomy of file read-Anatomy of file write- Placement strategy-Working with Hadoop command-Special feature-Processing data with Hadoop-Managing resource and application with Hadoop YARN- Interaction with Hadoop ecosystem

TEXT BOOK:
1. Seema Acharya, Subhashini chellappan, "Big Data and Analystics", WILEYINDIA publication, 2015.

17UCT6EC	ELECTIVE III: INTERNET OF THINGS	SEMESTER - VI

Preamble
- To Vision and Introduction to IoT.
- To Understand IoT Market perspective.
- To Know about Data and Knowledge Management and use of Devices in IoT Technology and real world IoT Design Constraints

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Vision and Introduction to IoT.	K2
2	Understand IoT Market perspective.	K1
3	Know about Data and Knowledge Management and use of Devices in IoT Technology.	K1
4	Understand State of the Art – IoT Architecture.	K2
5	Learn Real World IoT Design Constraints, Industrial Automation and Commercial Building Automation in IoT.	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	S
CO2	M	S	M	M	S
CO3	S	M	S	M	S
CO4	M	S	M	M	M
CO5	S	M	S	M	M

 (S-Strong, M-Medium, L-Low)

Dr. N.G.P. Arts and Science College (Autonomous)

17UCT6EC	ELECTIVE III: INTERNET OF THINGS	SEMESTER - VI

Total Credits : 4
Hours Per Week: 5

CONTENTS

UNIT I

M2M to IoT-The Vision-Introduction, From M2M to IoT, M2M towards IoT-The global context, A use case example, Differing Characteristics.

UNIT II

M2M to IoT – A Market Perspective– Introduction, Some Definitions, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies. M2M to IoT-An Architectural Overview– Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations.

UNIT III

M2M and IoT Technology Fundamentals- Devices and gateways, Local and wide area networking, Data management, Business processes in IoT, Everything as a Service(XaaS), M2M and IoT Analytics, Knowledge Management

UNIT IV

IoT Architecture-State of the Art – Introduction, State of the art, Architecture Reference Model- Introduction, Reference Model and architecture, IoT reference Model-IoT Reference Architecture- Introduction, Functional View, Information View, Deployment and Operational View, Other Relevant architectural views.

UNIT V

Real-World Design Constraints- Introduction, Technical Design constraints-hardware is popular again, Data representation and visualization, Interaction and remote control. Industrial Automation- Service-oriented architecture-based device integration, SOCRADES: Realizing the enterprise integrated

Web of Things, IMC-AESOP: from the Web of Things to the Cloud of Things, Commercial Building Automation - Introduction, Case study: Phase one-commercial building automation today, Case study: Phase two- Commercial building automation in the future.

TEXT BOOK:

1. Jan Holler, Vlasios Tsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle, "From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence", 1st Edition, Academic Press, 2014.

REFERENCE BOOKS:

1. Vijay Madisetti and Arshdeep Bahga, "Internet of Things (A Hands-on-Approach)", 1st Edition, VPT, 2014.
2. Francis daCosta, "Rethinking the Internet of Things: A Scalable Approach to Connecting Everything", 1st Edition, A press Publications, 2013

17UCT6ED	ELECTIVE III: GRAPHICS AND MULTIMEDIA	SEMESTER - VI

Preamble

- To understand various output primitives

- To acquire the knowledge of 2D, text and image concepts

- To develop skills in animation & compression methods

Course Outcomes

On the successful completion of the course, student will be able to

CO No.	CO. Statement	Knowledge Level
1	Understand various output primitives	K2
2	Acquire the knowledge of 2D	K1
3	Analyze the text and image concepts	K1
4	Identify the fundamental characteristics of Audio & Video	K2
5	Develop skills in animation & compression methods	K2

Mapping with Programme Outcomes

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	M	M	M	M	S
CO2	M	S	M	M	S
CO3	S	M	S	M	S
CO4	M	S	M	M	M
CO5	S	M	S	M	M

(S-Strong, M-Medium, L-Low)

Dr. N.G.P. Arts and Science College (Autonomous)

17UCT6ED	ELECTIVE III: GRAPHICS AND MULTIMEDIA	SEMESTER - VI

Total Credits : 4
Hours Per Week: 5

CONTENTS

UNIT I

Output Primitives: Points and Lines – Line-Drawing algorithms – Loading frame Buffer – Line function – Circle-Generating algorithms – Ellipsegenerating algorithms. Attributes of Output Primitives: Line Attributes – Curve attributes – Color and Grayscale Levels – Area-fill attributes – Character Attributes.

UNIT II

2D Geometric Transformations: Basic Transformations – Matrix Representations – Composite Transformations – Other Transformations. 2D Viewing: The Viewing Pipeline – Viewing Co-ordinate Reference Frame – Window-to-Viewport Co-ordinate Transformation - 2D Viewing Functions – Clipping Operations.

UNIT III

Text: Types of Text – Unicode Standard – Font – Insertion of Text -Text compression – File formats. Image: Image Types – Seeing Color – Color Models – Basic Steps for Image Processing –Scanner – Digital Camera – Interface Standards – Specification of Digital Images – CMS – Device Independent Color Models – Image Processing software – File Formats – Image Output on Monitor and Printer.

UNIT IV

Audio: Introduction – Acoustics – Nature of Sound Waves – Fundamental Characteristics of Sound – Microphone – Amplifier – Loudspeaker – Audio Mixer – Digital Audio – Synthesizers – MIDI –Basics of Staff Notation – Sound Card – Audio Transmission – Audio File formats and CODECs – Audio Recording Systems – Audio and Multimedia – Voice Recognition and Response - Audio Processing Software.

UNIT V

Video: Analog Video Camera – Transmission of Video Signals – Video Signal Formats –Television Broadcasting Standards – PC Video – Video File Formats

Compression: MPEG-1 Audio – MPEG-1 Video - MPEG-2Audio –MPEG-2 Video.

TEXTBOOKS:

1. Donald Hearn, M.Pauline Baker. 2001. 2nd edition. "COMPUTER GRAPHICS", PHI.
2. Ranjan Parekh.2007."PRINCIPLES OF MULTIMEDIA", TMH.

REFERENCE BOOKS:

1. Amarendra N Sinha, Arun D Udai. 2008."COMPUTER GRAPHICS", TMH.
2. Tay Vaughan.Seventh Edition. 2006." MULTIMEDIA: Making it Work", TMH.

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