	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 A++ Grade (3 rd Cycle- 3.64 CGPA) Dr. N.G.P.-Kalapatti Road, Coimbatore-641048, Tamil Nadu, India Web: www.drngpasc.ac.in Email: info@drngpasc.ac.in Phone: +91-422-2369100	BoS
		16th

Board of Studies Meeting

Department of Clinical Laboratory Technology

The minutes of the 16th meeting of Board of Studies held on 16.10.2023 at 10.00 am at the Innovation center.

Members Present:

S.No.	Name	Category
1	Dr. S.Kokila	Chairman
2	Dr.K.R.Muthusami	VC Nominee
3	Dr. T.M. Kartikeyan	Subject Expert
4	Dr. S.Gayathri Devi	Subject Expert
3	Mr. M.Vasanth Kumar	Alumni
4	Dr. M. Thiruselvi	Member
5	Dr.C.Hemalatha	Member
6	Dr. S.Sasikala	Member
7	Dr. K.Anbalagan	Member
8	Dr. A.Adhiselvam	Co-opted Member
23	Ms. R.Swathi	Student Representative- UG

The HoD and Chairman of the department of Clinical Laboratory Technology welcomed and introduced all the members and appreciated them for their continuous support, contribution for the development of academic standard and enrichment of the syllabus.

Further, Chairman informed the inability of the following members to attend the meeting and requested to grant leave of absence.

1. Dr. R. Ragunathan- Industrial Expert
2. Dr. J. Rengaramanujam - Co-opted Member
3. Ms. S. Mavuniq- Member

The items of the agenda were taken one by one for discussion and the following resolutions were passed.



Item 16.1

To review and approve the minutes of the previous meeting held on **09.06.2023**.

The chairman of the Board presented the minutes of the previous meeting held on **09.06.2023** and requested the members to approve. After brief discussion the following resolution was passed

Resolution:

Resolved to approve the minutes of the previous meeting held on 09.06.2023.

Item 16.1(a): To consider and approve the syllabi for II semester for the students admitted during the academic year 2023-24.

The chairman presented the detailed scheme and syllabus for the II semester for the students admitted from the academic year 2023-24 onwards. The details of changes made also presented as follows.

Changes Made:

B.Sc. Clinical Laboratory Technology		
Course	Code	Reason
Core: Bioanalytical Techniques	233CL1A2CA	Unit V: Principle and applications of Refrigerated centrifuge has been included for its applications in separation of biomolecules

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the II semester for the students admitted from the academic year 2023-24 onwards.

Item 16.1(b) : To consider and approve the changes, if any, in the syllabi for IV semester for the students admitted during the academic year 2022-23.

The Chairman presented the detailed syllabus for the IV semester for the students admitted from the academic year 2022-23 onwards. The details of changes made also presented as follows:

Changes Made:

B.Sc. Clinical Laboratory Technology		
Course	Code	Reason
Core: Molecular Biology	223CL1A4CA	Unit III: Micro RNA has been added due to its significance in gene expression



Core: Clinical Biochemistry- Functional Tests	223CL1A4CB	its significance in gene expression Following topics has been included to comprehend the basic concepts Unit III: Types of Jaundice Unit IV: Urine collection and preservation, Clearance formulae Unit V : Diagnostic importance of TSH
Blood Banking and Blood Transfusion	223CL1A4SA	Following topics has been added to emphasize the routine practices followed in blood bank Unit II: Direct and Indirect method, Major and Minor Cross matching – Tube method, Slide method and Gel method. Unit III: Serological screening, Storage of whole blood Unit IV: Documentation in blood bank

After discussion the following resolution was passed with the above changes and modifications.

Resolution:

Resolved to approve the syllabus for the IV semester for the students admitted from the academic year 2022-23 onwards.

Item 16.2: To approve the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2023-24.

The Chairman presented the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2023-24.

Resolution:

Resolved to approve the panel of examiners for question paper setting and evaluation of answer scripts for the even semester of the academic year 2023-2024.

Item 16.3: To consider and approve the syllabus for Value Added Certificate Courses (VACC) for the students admitted during academic year 2022-23.

The Chairman presented the syllabus of VACC on Medical Records Management for the students admitted during academic year 2022-23.

Resolution:

Resolved to approve the VACC on Medical Records Management for the students admitted during the academic year 2022-2023.



Item 16.4: To consider and approve any other item brought forward by the Chairman and the members of the board.

No other item was brought forward.

Finally the Chairman thanked all the members for their cooperation and contribution in enriching the syllabus with active participation in the meeting and sought the same spirit in the future also. The meeting was closed with formal vote of thanks proposed by Dr. S.Kokila, Head and Chairman- Clinical Laboratory Technology BoS.

Syllabus Revision

Faculty: Biosciences

Board: Clinical Laboratory Technology

Semester: II

Course Code/ Name: 233CL1A2CA, BIOANALYTICAL TECHNIQUES

Unit	Existing	Changes
I	Buffers: pH meter-principle, instrumentation. pH scale, Henderson- Hasselbalch equation, Buffer solutions, Acidic buffer and basic buffers, Buffer systems of bloodHaemoglobin, Protein and Phosphate buffer system. Various ways of expressing the solute and solvent concentrations - molality, molarity, normality, mole fraction - Definitions only.	
II	Chromatographic Techniques: Paper chromatography-principle, materials, methods and applications. Thin Layer chromatography- principle, Technique and applications. Gas liquid chromatography- principle and applications. Ion-exchange chromatography, Affinity chromatography and Molecular sieve chromatography- Principle and applications. High Performance Thin Layer Chromatography (HPTLC) - principle, Instrumentation, Application, High performance Liquid Chromatography (HPLC), Fast protein liquid chromatography (FPLC), Gas chromatography-mass spectrometry (GC-MS) [principles only].	
III	Electrophoretic Techniques and Immunoassays: Principles and applications of paper electrophoresis, Gel electrophoresis- Agarose gel, and SDS-PAGE. Immuno electrophoresis- principle and technique, applications of Immuno electrophoresis. Principles and applications of Immunoassays- Radio immuno Assay, Isoelectric focusing Enzyme Linked Immuno Sorbent Assay.	
IV	Photometry: Colorimetry- Principle- Beer - Lambert's Law. Types of filters, instrumentation and applications of colorimeter. Spectrophotometer- principle, Components of spectrophotometer and its applications, Difference between Colorimeter and spectrophotometer. Spectrofluorimeter- principle, components and applications of spectrofluorimeter. Flame photometry- principle, basic components of flame photometer. Types- Emission flame photometer, Atomic absorption spectrophotometer, Basic maintenance, Quality control and Calibration of instruments.	



V	Centrifugation: Principle of Centrifugation. Centrifuges - Rotors, types - Fixed angle, swinging bucket, vertical rotors and functions of rotor. Types of Centrifuge - Bench top, high speed, ultra centrifuge and analytical centrifuge - Principles and applications. Determination of Molecular weight by sedimentation velocity method. Differential centrifugation - principle, separation of cell organelles by differential centrifugation.	Principle and applications of Refrigerated centrifuge
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PERCENTAGE OF SYLLABUS REVISED: 5%
COURSE FOCUS ON:

<input checked="" type="checkbox"/>	Skill Development	<input checked="" type="checkbox"/>	Entrepreneurial Development
<input checked="" type="checkbox"/>	Employability	<input checked="" type="checkbox"/>	Innovations
<input checked="" type="checkbox"/>	Intellectual Property Rights	<input type="checkbox"/>	Gender Sensitization
<input type="checkbox"/>	Social Awareness/ Environment	<input type="checkbox"/>	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Biosciences

Board: Clinical Laboratory Technology

Semester: IV

Course Code/ Name: 223CLIA4CA, MOLECULAR BIOLOGY

Unit	Existing	Changes
I	Genetic material:DNA- structure and types, DNA as a genetic material: - Griffith, Hershey -Chase experiment. Central dogma of life, Concepts of Gene and Genome. Genetic codeCodon and anticodon.	
II	Replication : DNA replication in Prokaryotes-Enzymes involved- Mechanism of replicationTheta type replication. DNA replication in Eukaryotes - Enzymes and mechanism of replication. Regulation of replication in prokaryotes and eukaryotes	
III	Transcription : Prokaryotic transcription mechanism- Enzymes and Transcription factors, transcription mechanism. Eukaryotic transcription- Enzymes and transcription factors, Mechanism of transcription. Post transcriptional modification- Capping, polyadenylation, splicing, RNA editing and gene silencing.	Micro RNA
IV	Translation : Protein synthesis in prokaryotes and eukaryotes- activation, initiation, elongation and termination of protein synthesis. Inhibitors of protein synthesis, Post translational modification, Gene regulation- lac operons and trp operons.	
V	Mutation : Definition, causes of mutation; mutagens and carcinogens; Types of mutationmissense, nonsense, insertion, deletion, duplication, frame shift mutation; Transposons, site directed mutagenesis. DNA repair mechanisms -Direct enzymatic repair, Base excision repair, Nucleotide excision repair, Mismatch repair, Recombinationalrepair mechanism.	



PERCENTAGE OF SYLLABUS REVISED: 8 %

COURSE FOCUS ON:

<input checked="" type="checkbox"/>	Skill Development	<input checked="" type="checkbox"/>	Entrepreneurial Development
<input checked="" type="checkbox"/>	Employability	<input checked="" type="checkbox"/>	Innovations
<input checked="" type="checkbox"/>	Intellectual Property Rights	<input type="checkbox"/>	Gender Sensitization
<input type="checkbox"/>	Social Awareness/ Environment	<input type="checkbox"/>	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Biosciences

Board: Clinical Laboratory Technology

Semester: IV

Course Code/Name: 223CL1A4CB, CLINICAL BIOCHEMISTRY - FUNCTIONAL TESTS

Unit	Existing	Changes
I	Gastric function : Introduction, Tests for gastric function - The Insulin Stimulation test, determination of Gastrin in serum and Tubeless gastric analysis. Pancreatic function: Introduction,pancreatic function tests, serum amylase and lipase; direct stimulation test, indirect stimulation test.	
II	Intestinal function : Introduction, Intestinal function ,Test used in the diagnosis of malabsorption, determination of total faecal fat (fat balance test), test of monosaccharide absorption (Xylose excretion test)	
III	Liver function : Introduction, bilirubin metabolism and jaundice, Liver function tests: Estimation of conjugated Unconjugated and total bilirubin in serum (Diazo method), total protein- Albumin globulin ratio, detection of bilirubin and bile salts in urine (Fouchet's test and Hay's sulphur test), Prothrombin time.. Serum enzymes in liver disease – Alkaline Phosphatase, SGPT, SGOT, Gamma GT and Lactate dehydrogenase (LDH).	Types of Jaundice
IV	Kidney Function : Introduction, physical examination of urine, elimination tests, Clearance tests -creatinine clearance and Urea clearance tests, Blood urea, serum creatinine and electrolytes – sodium ,potassium ,calcium and phosphorus, Micro albumin, prote in creatinine ratio, renal blood flow and filtration fraction.	Urine collection and preservation, Clearance formulas
V	Hormone function : Endocrine function tests-T3, T4 and Thyroid stimulating hormone, vitamin D, Pancreatic hormone – Insulin and its clinical significance. Follicle Stimulating hormone, Leutinizing hormone, Growth hormone, Adrenal hormones- cortisol, Gonadal hormone-Testosterone and estradiol- Clinical significance.	Diagnostic importance of TSH

PERCENTAGE OF SYLLABUS REVISED: 10 %

COURSE FOCUS ON:



<input checked="" type="checkbox"/>	Skill Development	<input checked="" type="checkbox"/>	Entrepreneurial Development
<input checked="" type="checkbox"/>	Employability	<input checked="" type="checkbox"/>	Innovations
<input checked="" type="checkbox"/>	Intellectual Property Rights	<input type="checkbox"/>	Gender Sensitization
<input type="checkbox"/>	Social Awareness/ Environment	<input type="checkbox"/>	Constitutional Rights/ Human Values/ Ethics

Syllabus Revision

Faculty: Biosciences

Board: Clinical Laboratory Technology

Semester: IV

Course Code/ Name: 223CL1A4SA, BLOOD BANKING AND BLOOD TRANSFUSION

Unit	Existing	Changes
I	Blood Grouping System; ABO Blood group system, Rh typing and weaker variants in Rh system, Subgroup and weaker variants of A and B and Bombay phenotype.	
II	Antibodies and Cross matching: Coomb's cross matching, Preparation and standardization of anti human globulin reagent, Auto and allo antibodies.	Direct and Indirect method, Major and Minor Cross matching – Tube method, Slide method and Gel method.
III	Donors and blood donation: Donor selection – donor eligibility criteria, Importance of Donor consent. Phlebotomy- Blood collection methods, screening test on donor's blood sample. Autologous donation and specialized donation. Apheresis and plasmapheresis. Role of irradiation, Discarding of positive and expired blood	Serological screening, Storage of whole blood
IV	Transfusion Reaction: Storage of whole blood, Preparation of blood components- Anticoagulants, Preservation and storage. Hemolytic disease of newborn, blood transfusion reaction-acute transfusion reactions and delayed transfusion reactions, Transfusion related complications- Transfusion-related acute lung injury (TRALI), Transfusion associated circulatory overload and investigation of transfusion reaction.	Documentation in blood bank
V	Organization of blood bank: Area for whole blood and components, staff requirement, equipment requirement for whole and component blood preparation, process of licensing. Discarding of blood bank wastes.	

PERCENTAGE OF SYLLABUS REVISED: 19 %

COURSE FOCUS ON:



Dr. NGPASC
COIMBATORE | INDIA

<input checked="" type="checkbox"/>	Skill Development	<input checked="" type="checkbox"/>	Entrepreneurial Development
<input checked="" type="checkbox"/>	Employability	<input checked="" type="checkbox"/>	Innovations
<input checked="" type="checkbox"/>	Intellectual Property Rights	<input type="checkbox"/>	Gender Sensitization
<input type="checkbox"/>	Social Awareness/ Environment	<input type="checkbox"/>	Constitutional Rights/ Human Values/ Ethics





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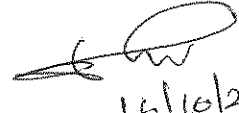
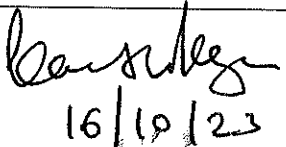
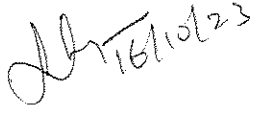


APPROVAL

AY 2023-24

ATTENDANCE OF THE SIXTEENTH BOARD OF STUDIES MEETING

Faculty: Biosciences

Board: Clinical Laboratory Technology

S. No.	Name	Position	Signature
1	Dr.S.Kokila Assistant Professor & Head Department of Clinical Lab Technology Dr. N. G. P. Arts and Science College, Coimbatore	Chairman	 16/10/23
2	Dr.K.R.Muthusami Chief Biochemist, Deptment of Biochemistry KMCH Institute of Laboratory Medicine KMCH, Coimbatore - 641 048.	Member (Subject Expert) VC Nominee	 16/10/23
3	Dr. T.M. Kartikeyan Professor, Department of Pathology KMCH Institute of Health Sciences & Research, Coimbatore - 641 014.	Member (Subject Expert)	 16/10/23
4	Dr. S.Gayathri Devi Professor, Department of Biochemistry Biotechnology & Bioinformatics Avinashilingam University Coimbatore - 641043	Member (Subject Expert)	 16/10/23
5	Dr.R.Ragunathan Director, Centre for Bioscience and Nanoscience Research Coimbatore – 641021	Member (Industry Expert)	ABSENT
6	M. Vasanth Kumar Assistant Professor, Department of Criminology, CMS College of Science and Commerce ,Coimbatore .	Alumni	 16/10/23
7	Dr.A. Adhiselvam Associate Professor & Head i/c Department of Information Technology Dr. N. G. P. Arts and Science College, Coimbatore	Co-opted Member	 16/10/23

8	Dr.J. Renga Ramanujam Professor & Head Department of Microbiology Dr. N. G. P. Arts and Science College, Coimbatore	Co-opted Member	ABSENT
9	Ms.R. Swathi III B.Sc. CLT Dr.N.G.P. Arts and science College	Student Representatives	<i>[Signature]</i>
10	Dr.C.Hemalatha Assistant Professor Dept of CLT Dr.N.G.P.Arts and science College	Member	<i>[Signature]</i>
11	Dr.M.Thiruselvi Professor Dept of CLT Dr.N.G.P.Arts and science College	Member	<i>[Signature]</i>
12	Dr.S.Sasikala Associate Professor Dept of CLT Dr.N.G.P.Arts and science College	Member	<i>[Signature]</i> 16/10/23
13	Dr.K.Anbalagan Assistant Professor Dept of CLT Dr.N.G.P.Arts and science College	Member	<i>[Signature]</i> 16/10/23
14	Ms. S. Mavuniq Assistant Professor Dept of CLT Dr.N.G.P.Arts and science College	Member	ABSENT

Date: 16.10.23



[Signature]
16/10/23
BoS Chairman/Head
Department of Microbiology
Dr. N. G. P. Arts and Science College
Coimbatore - 641 040

Board Chairman
(Dr.S.Kokila)