



PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras, ISO 9001:2015 Certified Institution

Recognized by UGC under section 2(f) of UGC Act 1956

DEPARTMENT OF BIOCHEMISTRY

2021-2022

COURSE OUTCOMES

YEAR/ SEM: I/ I – LA11A - TAMIL I

NO.	COURSE OUTCOME
C101.1	மரபு மற்றும் புதுக்கவிதைகளின் வாயிலாக அக்காலச் சூழல் மற்றும் சமூகச் சிக்கல்களை அறிகின்றனர்.
C101.2	நாட்டுப்புறப்பாடல்களின் வாயிலாக சமூகஅமைப்பு, வேளாண் செய்திகள் மற்றும் நீர்ப்பாசனம் போன்ற செய்திகளை அறிகின்றனர்.
C101.3	சிறுகதை மற்றும் உரைநடையின் வாயிலாகப் பல்வேறுகாலச் சூழல்களை அறிகின்றனர்.
C101.4	நாற்காலிக்காரர் நாடகத்தின் வாயிலாக தேர்தல் களம் பற்றி அறிகின்றனர்.
C101.5	மொழிப்பயிற்சியின் வாயிலாக வாக்கியங்கள், இருவழக்குகள், சொல்வகைகள் ஆகியவற்றை அறிகின்றனர்.

YEAR/ SEM: I/ I – CLE1E - HINDI I

NO.	COURSE OUTCOME
C102.1	To develop Communicating, Reading and Writing skills in Hindi
C102.2	To understand the vision of Premchand about the poor people
C102.3	To learn the literary work on the basis of foundation laid by the Scholars
C102.4	To understand the meaning and concept of Functional Hindi
C102.5	To understand the various forms of Functional Hindi according to its area of application

YEAR/ SEM: I/ I – LZ11A – COMMUNICATIVE ENGLISH I

NO.	COURSE OUTCOME
C103.1	To develop the knowledge of skillful learning.



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C103.2	Ability to write coherent paragraphs with wide range of vocabulary
C103.3	To teach the aspects of grammar
C103.4	To learn word power and vocabulary skills other aspects of Communicative skill
C103.5	Ability to participate in short group conversations. Ability to use collocations, fixed and semifixed expressions.

YEAR/ SEM: I/I – SB21A – NUTRITIONAL BIOCHEMISTRY

NO.	COURSE OUTCOME
C104.1	To create awareness about the role of nutrients in maintaining proper health to study effect of nutrients in the biochemical process
C104.2	To understand the nutritional significance of carbohydrates, lipids and proteins
C104.3	To learn about balanced diet
C104.4	To analyse the cellular effects of food energy and macronutrients
C104.5	To gain knowledge about human rights and relations, national commission for women and minorities

YEAR/ SEM: I/I – SD3AA – CHEMISTRY I

NO.	COURSE OUTCOME
C105.1	To understand the basic knowledge of radioactive element and applications of isotopes
C105.2	To understand the importance of chemistry in various industries, fertilizers and fuel classification
C105.3	To know about the basic concept of organic chemistry, types of reagents and classification of organic reactions
C105.4	To know the preparation and uses of the halogenated hydrocarbon and inter halogen compounds
C105.5	To understand the applications of photo chemistry in daily life



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YEAR/ SEM: I/I – SC5AC – GOOD LABORATORY PRACTICES

NO.	COURSE OUTCOME
C106.1	To enhances student's knowledge on essential practices that need to be followed inside a laboratory / industry, awareness on safety measures and Industry standards.
C106.2	To minimizes the gap between academics and Industry for the benefit of students
C106.3	To outline the structure of organization of clinical laboratory and safety Regulation
C106.4	To Impart knowledge on biological specimen collection
C106.5	To Study about Laboratory Standard Accreditation Boards

YEAR/ SEM: I/I – NLT1C – BASIC TAMIL

NO.	COURSE OUTCOME
C107.1	தமிழ் எழுத்துகளைத் தெரிந்து கொள்ளுதல்
C107.2	தமிழ் ஒலியன்களை உச்சரிக்கக் கற்றுக்கொள்ளுதல்
C107.3	எழுத்துக்களைக் கொண்டு சொற்களை உருவாக்குதல்
C107.4	அன்றாடப் பயன்பட்டு சொற்களைப் பயிற்றுவித்தல்
C107.5	தமிழ் மொழியை அறிந்து கொள்ளுதல்.

YEAR/ SEM: I/I – PZ1SB – ENGLISH FOR LIFE SCIENCE

NO.	COURSE OUTCOME
C108.1	Recognize their own ability to improve their own competence in using the language
C108.2	Use language for speaking with confidence in an intelligible and acceptable manner understand the importance of reading for life.
C108.3	To read independently unfamiliar texts with comprehension
C108.4	To understand the importance of writing in academic life



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C108.5	To Write simple sentences without committing errors of spelling or grammar.
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YEAR/ SEM: I/II – LA12A – TAMIL II

NO.	COURSE OUTCOME
C109.1	சங்க இலக்கியங்களின் வாயிலாக அக்கால மக்களின் வாழ்வியலை அறிகின்றனர்
C109.2	புறநானூற்றின் வாயிலாக மன்னர்களின் போர்ச்சமூக அமைப்பை அறிகின்றனர்
C109.3	முல்லைப்பாட்டின் வாயிலாக முல்லைநில மக்களின் வாழ்வியல், பண்பாடு ஆகியவற்றை அறிகின்றனர்
C109.4	திருக்குறள் மற்றும் நாலடியார் வாயிலாக ஈகை மற்றும் ஒழுக்கத்தை அறிகின்றனர்
C109.5	மொழிப்பயிற்சி வாயிலாக தமிழைப் பிழையில்லாமல் எழுதவும் பேசவும் அறிகின்றனர்

YEAR/ SEM: I/II — CLE2G – HINDI II

NO.	COURSE OUTCOME
C110.1	To understand the Drama and the stories based on social problems
C110.2	To develop the approach of Hindi language
C110.3	To understand the change in content and style of expression in short stories in modern period
C110.4	To develop the skills of Translation from Hindi to English by using high technical words
C110.5	To analyse the development of one act play

YEAR/ SEM: I/II — LZ12A – COMMUNICATIVE ENGLISH II

NO.	COURSE OUTCOME
C111.1	Ability to comprehend both the written and spoken texts. Ability to frame questions and answer them. Ability to write/speak grammatically correct sentences.
C111.2	To enroll people in our ideas, our visions, and our visions.



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C111.3	To enhance listening skills
C111.4	Awareness of the art of personal letter/email writing without grammatical errors
C111.5	To analyse crucial for effectiveness – particularly in sales or leadership roles

YEAR/ SEM: I/II — SB22A – CELL BIOLOGY

NO.	COURSE OUTCOME
C112.1	To understand the concept that cell is the fundamental unit of life
C112.2	To understand the structure and purpose of basic components of eukaryotic cells, especially macromolecules, membranes and organelles
C112.3	To gain knowledge about membranes, types of transport and their organization
C112.4	To analyse chromosomes and cell cycle, cell division
C112.5	To evaluate apoptosis, cancer and its prevention. At the end of the course, the student has a strong foundation on the functions of the cell.

YEAR/ SEM: I/II — SB221 - CORE PRACTICAL I

NO.	COURSE OUTCOME
C113.1	To gain knowledge about the preparation of standard buffers and pH determination
C113.2	To create knowledge on volumetric analysis - glycine, calcium and iron
C113.3	To understand about the preparation of biochemical compounds like starch, casein and lactalbumin and albumin from potatoes, milk and eggs.
C113.4	To evaluate BMI measurements.
C113.5	To analyse the morphology of plant & cellular organelles



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YEAR/ SEM: I/II – SD3AC - CHEMISTRY II

NO.	COURSE OUTCOME
C114.1	To understand the features of coordination compounds and its applications
C114.2	To identify the structure and properties of carbohydrates in living system
C114.3	To gain the knowledge of proteins, amino acids - importance, classifications and functions in biological system.
C114.4	To understand basic terminologies of electrochemistry, types of battery and its uses and types of catalyst uses in chemical reaction
C114.5	To gain the knowledge of separation of substance by qualitative and quantitative methods

YEAR/ SEM: I/II – SD3A1 – CHEMISTRY PRACTICAL

NO.	COURSE OUTCOME
C115.1	To Perform the volumetric analysis and estimate the quantity present.
C115.2	To identify and analyze organic compounds
C115.3	To identify the nature of the functional groups
C115.4	To find out the nature of hetero atoms
C115.5	To analyze the nature of compounds - aromaticity, special elements, saturation

YEAR/ SEM: I/II – SC5AB – HERBAL MEDICINE

NO.	COURSE OUTCOME
C116.1	To gain knowledge about plants and their medicinal uses - ethnomedicine
C116.2	To gain a better understanding about the importance of medicinal plants and their role in human health care.
C116.3	They are taught about methods used in traditional medicine to diagnose diseases -tribal medicine
C116.4	To gain traditional knowledge on the utility of medicinal plants in India
C116.5	They are taught on plants used in day-to-day life which have both nutritional and medicinal value.



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YEAR/ SEM: I/II – NLT2D – BASIC TAMIL

NO.	COURSE OUTCOME
C117.1	தமிழ் இலக்கியங்களை அறிந்து கொள்ளுதல்
C117.2	அற இலக்கியங்களைத் தெரிந்து கொள்ளுதல்
C117.3	திருக்குறளின் சிறப்புகளை அறிந்துகொள்ளுதல்
C117.4	தமிழர்களின் பண்பாடு, நாகரிகம் போன்றவற்றைத் தெரிந்துகொள்ளுதல்
C117.5	தமிழகத்தின் விழாக்களை அறிந்துகொள்ளுதல்

YEAR/ SEM: I/II – PZ1SD – ENGLISH FOR LIFE SCIENCE II

NO.	COURSE OUTCOME
C118.1	To attend interviews with boldness and confidence.
C118.2	To imbibe the rules of language unconsciously and tune to deduce language structure and usage
C118.3	To adapt easily into the workplace context, having become communicatively competent.
C118.4	Apply to the Research & Development organizations/ sections in companies and offices with winning proposals.
C118.5	To decipher the mechanism of language and use it for success in competitive examinations and job-related speaking and writing tasks.

YEAR/ SEM: II/III – LA13A – TAMIL III

NO.	COURSE OUTCOME
C201.1	பல்லவர் காலத்தில் நாயன்மார்கள் மற்றும் ஆழ்வார்களின் பக்தி நெறிகளை அறிகின்றனர்
C201.2	இசுலாமியர் மற்றும் கிறித்தவர்கள் தமிழிக்குச் செய்த தொண்டினை அறிகின்றனர்
C201.3	நாயக்கர் காலத்தில் தோன்றிய சிற்றிலக்கியங்களின் வளர்ச்சி நிலைகளை அறிகின்றனர்
C201.4	சமயங்கள் வளர்த்த இலக்கியங்களை அறிகின்றனர்
C201.5	மொழிப்பயிற்சியின் வாயிலாக கடிதம் மற்றும்பிற மொழிக் கலவாமல் தமிழ் எழுத அறிகின்றனர்



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YEAR/ SEM: II/III – CLE3H – HINDI III

NO.	COURSE OUTCOME
C202.1	To understand the division and the concept of Hindi literature
C202.2	To understand the features and evaluate the period Adikaal, Bhakthikaal and Reethikaal in context of social and political condition of that period
C202.3	To identify the eminent Hindi writers of each period
C202.4	To describe the progressive nature of Kabirdas, Soordas and Thulasidas
C202.5	To understand the sudden development of ancient and medieval Hindi literature

YEAR/ SEM: II/III – LZ13B – LANGUAGE THROUGH LITERATURE I

NO.	COURSE OUTCOME
C203.1	To get acquainted with the different forms of poetry, prose, fiction and drama.
C203.2	To get exposed to advanced level of grammatical patterns and usages in English.
C203.3	To improve their skills to speak and write English accurately.
C203.4	To closely analyze texts, applying critical and theoretical approaches
C203.5	To evaluate socio-cultural and historical phenomena influence the literary production of a particular period.

YEAR/ SEM: II/III – SB23A – BIOMOLECULES

NO.	COURSE OUTCOME
C204.1	To demonstrate the chemistry and the role of mono and disaccharides in living systems
C204.2	To elucidate the structural conformation of different types of polysaccharides
C204.3	To gain insight into the reactivity of amino acids and nutritional importance of proteins
C204.4	To apply the relationship between the structure and functions of proteins in biological context



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C204.5	To elucidate the various levels of organization of Proteins and its biological importance.
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YEAR/ SEM: II/III – SN3AA – MICROBIOLOGY I

NO.	COURSE OUTCOME
C205.1	To identify different types of microorganisms.
C205.2	To name and list the growth requirements of micro-organisms.
C205.3	To Know various Culture media and their applications and also understand various physical and chemical means of sterilization.
C205.4	To techniques in microbiology like staining, cultivation of microorganisms.
C205.5	To understand the basic microbial structure and functions of various physiological groups of prokaryotes and eukaryotes

YEAR/ SEM: II/III – TSSEG – PERSONALITY ENRICHMENT I

NO.	COURSE OUTCOME
C206.1	To develop and exhibit an accurate sense of self.
C206.2	To demonstrate knowledge of personal beliefs and values and a commitment to continuing personal reflection and reassessment
C206.3	To learn to evaluate and improve upon personal leadership strengths and weaknesses
C206.4	To build self-awareness, personal development and life skills.
C206.5	To assert strengthened personal character and further, an enhanced ethical sense.

YEAR/ SEM: II/IV – LA14A – TAMIL IV

NO.	COURSE OUTCOME
C207.1	காப்பியங்களின் வாயிலாக வாழ்வியல் அறங்களை அறிகின்றனர்
C207.2	புராணங்களின் வாயிலாக பண்பாடு, ஒழுக்கம் ஆகியவற்றை அறிகின்றனர்
C207.3	தேம்பாவணி, சீறாப்புராணம் வாயிலாக இறைத்தூதர்களின் வாழ்வியல் மற்றும் அருட்செயல்களை அறிகின்றனர்



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C207.4	சிறுநிலக்கியங்களின் வாயிலாக பழங்கால மக்களின் வாழ்வியல் முறைகளை அறிகின்றனர்.
C207.5	மாணாக்கர்கள் கவிதை மற்றும் சிறுகதைப் படைக்கும் ஆற்றலைப் பெறுகின்றனர்

YEAR/ SEM: II/IV – CLE4J – HINDI IV

NO.	COURSE OUTCOME
C208.1	To make an in-depth study and analysis of the literary work
C208.2	To gain awareness on the importance of literature in addressing contemporary issues
C208.3	To create, select, and apply appropriate approaches to literature, resources and modern literary theories
C208.4	To describe the philosophy of life as well as the poems of modern literature
C208.5	To understand the History of development of drama, short stories, one act play and novel

YEAR/ SEM: II/IV – LZ14B – LANGUAGE THROUGH LITERATURE II

NO.	COURSE OUTCOME
C209.1	Ability to comprehend both the written and spoken texts.
C209.2	To broaden their vocabularies and to develop an appreciation of language
C209.3	To develop a deeper appreciation of cultural diversity by introducing them to poetry from a variety of cultures throughout the world
C209.4	Ability to write/speak grammatically correct sentences.
C209.5	To create clear and compelling communication in writing and speaking skills.

YEAR/ SEM: II/IV – SB24A – BIOMOLECULES AND BIOCHEMICAL TECHNIQUES

NO.	COURSE OUTCOME
C210.1	Gain insight into the classes of lipids and characterization of fats by their constants
C210.2	Establish the diverse role of lipids in biological system



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C210.3	Relate the structure of lipids with their reactivity in biological membrane systems and life processes.
C210.4	Establish the role of purine and pyrimidine bases in nucleic acid structure.
C210.5	Acquire knowledge about principle of various centrifugation types and its applications. Appreciate the principle, instrumentation and the difference between various spectroscopic methods to choose analysing biological samples.

YEAR/ SEM: II/IV – SN3AB – MICROBIOLOGY II

NO.	COURSE OUTCOME
C211.1	To define and analyse the role microorganisms in dairy, food, and environment
C211.2	To inter relate the microorganisms and elemental cycles in nature.
C211.3	To Understand the various biogeochemical cycles - microbes involved and biochemical mechanisms of Carbon, Nitrogen.
C211.4	To give examples of industrially important micro-organisms and their applications
C211.5	To summarise the role of microorganisms in agriculture

YEAR/ SEM: II/IV – SN3A1 – MICROBIOLOGY I & II PRACTICAL

NO.	COURSE OUTCOME
C212.1	To identify types of microorganisms with the help of microscope.
C212.2	To understand the microbial physiology and to identify the microorganisms
C212.3	To train with various techniques carried out in industries like fermentation, food and dairy.
C212.4	To understand the isolation, characterization and identification of soil microorganisms
C212.5	To distinguish between air waste microflora



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YEAR/ SEM: II/IV – TSSEH – PERSONALITY ENRICHMENT II

NO.	COURSE OUTCOME
C213.1	To develop the strategies to work with others to achieve specific goals
C213.2	To learn to manage conflict
C213.3	To understand and appropriately apply the skills of problem solving, conflict management and resolution
C213.4	To learn how personal values connect to motivation to serve to benefit teamwork
C213.5	To contribute to an inclusive and engaging environment

YEAR/ SEM: II/IV – SB241 – PRACTICAL II

NO.	COURSE OUTCOME
C214.1	To study about qualitative test for carbohydrates and amino acids
C214.2	To learn and understand the principles of reactions involved in titrimetric methods – saponification number, iodine number and acid number from an edible oil
C214.3	To study about colorimetric estimation – Protein, DNA, RNA, carbohydrates and amino acids
C214.4	To learn about Isolation and assay of glycogen from animal tissue
C214.5	To study about separation and Identification of Amino acids and carbohydrate by paper chromatography.

YEAR/ SEM: II/IV – ENV4B – ENVIRONMENTAL STUDIES

NO.	COURSE OUTCOME
C215.1	To understand the scope and importance of environmental studies and to create public awareness for environmental protection
C215.2	To evaluate the problems created by the over utilization of resources and to suggest alternate energy to meet our energy crisis/demand
C215.3	To analyse ecosystem, ecological succession, ecological pyramid, food chain and food web
C215.4	To apply the different methods of biodiversity conservation.



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C215.5	To create awareness on the effects of pollution and the role of individual for pollution control programme.
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YEAR/ SEM: III/V – TAP5A - ENZYMES

NO.	COURSE OUTCOME
C301.1	To obtain a thorough knowledge about the nature, classification, specificity, kinetics, inhibition, mechanism of action, co-enzymes, isolation, Purification and characterization, immobilization and applications of enzymes.
C301.2	To gain insights about the isolation of enzymes
C301.3	Analyze the theories proposed for active site, multi enzyme complex, enzyme inhibition, functions of coenzyme, enzymes in medical diagnosis
C301.4	To explore the extraction and purification of enzymes, enzyme kinetics, mechanism of action of lysozyme, methods of immobilized enzyme, biosensor techniques.
C301.5	To elucidate the structure and kinetics of enzymes, functions of coenzyme, enzyme technology and enzyme biosensor

YEAR/ SEM: III/V – TAP5B - METABOLISM

NO.	COURSE OUTCOME
C302.1	To study the concepts of biosynthesis and degradation of amino acids
C302.2	To learn the enzymes & reactions involved in metabolism of carbohydrates
C302.3	To study various pathways of anabolism and catabolism of carbohydrates and lipids
C302.4	To obtain an in-depth knowledge in the metabolism of amino acids
C302.5	To learn more about the redox reactions

YEAR/ SEM: III/V – TAP5C – ANALYTICAL BIOCHEMISTRY

NO.	COURSE OUTCOME
C303.1	To understand the concepts of acids, bases, buffers, various units used in expressing their strength and measuring their pH, buffers in body fluids.
C303.2	To gain in depth knowledge about the centrifugation and its types



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C303.3	To gain in depth knowledge about chromatography and its applications
C303.4	To gain in depth knowledge about basic concepts of electrophoresis
C303.5	To understand the concept and techniques of spectroscopy

YEAR/ SEM: III/V – TEP5A - PHYSIOLOGY

NO.	COURSE OUTCOME
C304.1	To understand the structure, function and different components of digestive and excretory system
C304.2	To gain knowledge about blood cells and circulatory system
C304.3	To gain knowledge about nervous system
C304.4	To inculcate knowledge about the respiratory system
C304.5	To acquire in-depth knowledge about hormones classification and it's types

YEAR/ SEM: III/V — VAE5Q – VALUE EDUCATION

NO.	COURSE OUTCOME
C305.1	To gain knowledge about the importance of value education
C305.2	To learn about salient values for life and problem-solving and decision-making skills
C305.3	To create awareness about the importance of human rights & social values
C305.4	To evaluate the environmental and ecological balance.
C305.5	To apply human rights to combat social evils.

YEAR/ SEM: III/VI – TAP6A – CLINICAL BIOCHEMISTRY

NO.	COURSE OUTCOME
C306.1	To gain knowledge on scope of clinical biochemistry - blood glucose homeostasis



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C306.2	To understand the alteration in biochemical components during various clinical conditions- Liver function tests
C306.3	To highlight the importance of various biochemical parameters in the diagnosis of kidney diseases
C306.4	To understand the disorders of lipid metabolism
C306.5	To study about hormonal diseases

YEAR/ SEM: III/VI – TAP6B – MOLECULAR BIOLOGY

NO.	COURSE OUTCOME
C307.1	To gain knowledge about the various types of DNA, the organization of genes to chromosomes in prokaryotes and eukaryotes
C307.2	To understand the molecular basis of DNA synthesis; Know the importance of the process and the role of inhibitors of DNA as drugs
C307.3	To understand the process of RNA synthesis, post transcriptional modifications and apply the same
C307.4	To understand the role of antibiotics. Discuss about the genetic code, molecular basis of protein synthesis & modification
C307.5	To study the mechanism of DNA mutation, repair system and understand the use of molecular process in disease diagnosis

YEAR/ SEM: III/VI – TAP61 – CORE PRACTICAL III

NO.	COURSE OUTCOME
C308.1	To study about collection and preservation of urine sample
C308.2	To learn qualitative analysis of normal constituents of urine such as urea, creatinine, phosphorus, calcium and abnormal constituents such as calcium, sugar, protein, amino acid, ketone bodies and bile pigments with clinical significance
C308.3	To study quantitative analysis of urine a. Urea b. Uric acid c. Creatinine d. Calcium
C308.4	To understand paper chromatography: Separation and detection of amino acids and simple sugars
C308.5	To learn separation of polar lipids by thin layer chromatography



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YEAR/ SEM: III/VI – TAP62 – CORE PRACTICAL IV

NO.	COURSE OUTCOME
C309.1	To collect and preservation of blood sample
C309.2	To study hematological studies a. RBC counting b. Total and differential count of white blood cells c. Packed Cell Volume
C309.3	To learn erythrocyte sedimentation rate, blood clotting time and blood grouping
C309.4	To study quantitative estimation in blood hemoglobin, glucose, cholesterol, urea, creatinine, protein by Lowry's method
C309.5	To analyze enzyme assay a. AST b. ALT c. Alkaline phosphatase

YEAR/ SEM: III/VI – TEP6A - IMMUNOLOGY

NO.	COURSE OUTCOME
C310.1	To understand about the types of immunity, lymphoid organs and the cellular basis of immunity
C310.2	To obtain knowledge on types of antigens, antibodies and activation of complements
C310.3	To gain insight into various in vitro reactions between antigen and antibody and its application in clinical diagnosis
C310.4	To apprehend the enormous scope of different types of vaccines
C310.5	To acquire knowledge on autoimmunity, hypersensitivity and transplantation immunology

YEAR/ SEM: III/VI – TEP6B - BIOTECHNOLOGY

NO.	COURSE OUTCOME
C311.1	To acquire basic knowledge of recombinant DNA technology, DNA manipulation in prokaryotes and eukaryotes, engineering of DNA molecules using restriction and modification enzymes
C311.2	To get acquainted with the use of cloning and vectors, creation of genomic and cDNA libraries and their applications
C311.3	To understand the methods for production of proteins using recombinant DNA technology and their applications
C311.4	To get basics of tissue culture, transgenesis, stem cell technology and risks
C311.5	To learn safety aspects and patenting in biotechnology