



PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras

DEPARTMENT OF BIOCHEMISTRY

2018-2019

COURSE OUTCOMES

YEAR/ SEM: I/ I - CLA1L - TAMIL I

NO.	COURSE OUTCOME
C101.1	நாட்டுப்புற மக்களின் வாழ்வியல் பயன்பாடுகளை அறிகிறார்கள்;.
C101.2	புதுக்கவிதைகளின் வாயிலாகப் புதுமைக் கருத்துக்களையும், சமூக சிக்கல்களையும் உணர்கின்றனர்.
C101.3	சிறுகதைகளின் வாயிலாக சமூக மக்களின் வாழ்க்கை நிலையை அறிகிறார்கள்.
C101.4	சந்திரஹரி நாடகம் வாயிலாக பொய் என்றும் துன்பமே என்று அறிகிறார்கள்.
C101.5	இலக்கிய வரலாற்றின் வாயிலாக நாட்டுப்புறவியல், சிறுகதை, புதினம், நாடகம், கவிதை ஆகியவற்றில் உள்ள சமூக நீதிகளையும், சிறப்புகளையும் அறிகிறார்கள்.

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 Prem Chand 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



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YEAR/ SEM: I/I – CLZ1L - ENGLISH I

NO.	COURSE OUTCOME
C103.1	To read and understand any text in English listening to the inputs given in the classroom.
C103.2	To make a detailed study of a few sample masterpieces of English poetry
C103.3	To write paragraphs and essays
C103.4	To get accurate both in oral and written communication to be strong In Grammar and its usage
C103.5	To imbibe the rules of language unconsciously and tune to deduce language structure and usage

YEAR/ SEM: I/I – TAP1A – NUTRITONAL 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 elucidate the transformation of energy in food to chemical energy available to cells and stored in cells -balanced diet
C104.4	To comprehend the cellular effects of food energy and macronutrients on regulated metabolism
C104.5	To evaluate the concept of human rights and relations

YEAR/ SEM: I/I – TBTA – CHEMISTRY I

NO.	COURSE OUTCOME
C105.1	To understand the basic knowledge of radioactive element and applications of isotopes
C105.2	To evaluate the importance of chemistry in various industries like fuel, polymer and fertilizer
C105.3	To comprehend about the basic concept of organic chemistry, types of reagent and reactions in organic reactions
C105.4	To apply the knowledge on the preparation and uses of the halogenated hydrocarbon and inter halogen compounds



PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

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C105.5	To elucidate the applications of photo chemistry in daily life
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YEAR/ SEM: I/I – TNP1A – HEALTH AND NUTRITION

NO.	COURSE OUTCOME
C106.1	To create awareness about health and its association with nutrition.
C106.2	To understand the role of dietary supplements like vitamins and their crucial role
C106.3	A better analysis about lipids and their role in health
C106.4	To evaluate the role of minerals and trace elements in biological systems.
C106.5	To comprehend the role of proteins and carbohydrates in health with special reference to protein malnutrition.

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 – TSSEA – ESSENTIAL OF LANGUAGE AND COMMUNICATION SKILLS

NO.	COURSE OUTCOME
C108.1	To develop effective communication skills (spoken and written).



PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras

C108.2	To develop effective presentation skills.
C108.3	To conduct effective business correspondence and prepare business reports which produce results.
C108.4	Soft skills are in direct correlation with improved academic achievement.
C108.5	To develop them both for the sake of their education, and the sake of their professional careers.

YEAR/ SEM: I/II – CLA2H – TAMIL II

NO.	COURSE OUTCOME
C109.1	மூவேந்தர்களின் அகம் மற்றும் புற வாழ்வு பற்றிய செய்திகளை அறிகிறார்கள்
C109.2	சிற்றிலக்கியங்களான தமிழ்விடு தூது, குற்றாலக் குறவஞ்சி, முக்கூடற்பள்ளு வாயிலாக தமிழின் சிறப்பும் மலைவளமும், வேளாண் செய்திகளையும் அறிகிறார்கள்
C109.3	நளவெண்பாவின் வாயிலாக சூதாட்டத்தினால் விளையும் சீர்கேடுகளை அறிகிறார்கள்
C109.4	சீறாப்புராணத்தின் வாயிலாக மனித நேயத்தையும், இரக்கக் குணத்தையும் அறிகிறார்கள்
C109.5	மொழிப்பயிற்சியின் வாயிலாக இலக்கண முறைகளை அறிகிறார்கள்

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 analyze the development of one act play



PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras

YEAR/ SEM: I/II — CLZ2L – ENGLISH II

NO.	COURSE OUTCOME
C111.1	To make a detailed study of a few sample masterpieces of English poetry
C111.2	To apply critical frameworks to analyze the linguistic, cultural and historical background of texts written in English.
C111.3	To get familiar with the conventions of diverse textual genres including fiction, nonfiction, poetry, autobiography, biography, plays, etc.
C111.4	The ability to transfer information in the writing tasks.
C111.5	To perform various speaking and writing tasks, such as roleplays, debates, group discussions apart from the use of correct spelling, punctuation

YEAR/ SEM: I/II — TAP2A – CELL BIOLOGY

NO.	COURSE OUTCOME
C112.1	To create awareness on the concept that cell is the fundamental unit of life
C112.2	To understand the structure and purpose of basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes and organelles
C112.3	To gain insights in membrane structure and transport mechanism
C112.4	To apply the knowledge on cell - cell communication
C112.5	To analyze the concept of chromosomal organization, cell cycle, mitosis and oncogenes

YEAR/ SEM: I/II — TAP21 - CORE PRACTICAL I

NO.	COURSE OUTCOME
C113.1	To apply the knowledge on the preparation of standard molar solutions and normal solutions and other solutions
C113.2	To gain knowledge about the estimation of calcium, iron & vitamin C
C113.3	To comprehend the stages of cell division



PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras

C113.4	To evaluate the plant, animal & bacterial cell
C113.5	To apply the knowledge on the preparation of biochemical compounds like starch, casein and lactalbumin and albumin from potatoes, milk & eggs

YEAR/ SEM: I/II – TBTAB - 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 apply the knowledge to predict the basics of electrochemistry and impact of catalyst in chemical reaction
C114.5	Apply knowledge to select appropriate methods for specific substances by qualitative and quantitative methods

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

NO.	COURSE OUTCOME
C115.1	To evaluate the effectiveness of different detection methods for specific types of adulterants.
C115.2	Apply the principles of titration to solve quantitative problems.
C115.3	Explain the role of functional groups in determining the properties of organic compounds.
C115.4	To comprehend the chemical characteristics of heteroatoms.
C115.5	To analyze the structural features that contribute to aromaticity or saturation in complex organic molecules.

YEAR/ SEM: I/II – TNP2A – HUMAN DISEASES AND PREVENTIVE ASPECTS

NO.	COURSE OUTCOME
C116.1	To gain wide knowledge on diseases their aetiology and symptoms



PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

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C116.2	To gain insight into cancer and its adverse effects.
C116.3	To comprehend the pathophysiology of diabetes mellitus and kidney stones and the influence of diet
C116.4	To create awareness about cardiovascular diseases and its prevention by dietary restrictions
C116.5	To understand the importance of liver in the biological system and the various diseased states of liver

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 – TSSEC – ESSENTIALS OF SPOKEN AND PRESENTATION SKILLS

NO.	COURSE OUTCOME
C118.1	To develop effective communication skills (spoken and written).
C118.2	To develop effective presentation skills.
C118.3	To conduct effective business correspondence and prepare business reports which produce results.
C118.4	Soft skills are in direct correlation with improved academic achievement.
C118.5	To develop them both for the sake of their education, and the sake of them professional careers.

YEAR/ SEM: II/III – CLA3M – TAMIL III

NO.	COURSE OUTCOME
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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 மற்றும் பிற மொழிக் கலவாமல் தமிழ் எழுத அறிகின்றனர்

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 – CLZ3P – ENGLISH III

NO.	COURSE OUTCOME
C203.1	To refer dictionary and study the correct stress, right accent and right intonation.
C203.2	To ask questions, make requests or to make command
C203.3	They will be familiar with the conventions of diverse textual genres including fiction, nonfiction, poetry, autobiography, biography, Journal, film, plays, editorials etc.
C203.4	To make the students see how Indian English poetry expresses the ethos and culture of India
C203.5	To encourage students to interpret literary works and to develop aptitude for critical analysis



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YEAR/ SEM: II/III – TAP3A – CHEMISTRY OF BIOMOLECULES I

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
C204.5	To elucidate the various levels of organization of Proteins and its biological importance

YEAR/ SEM: II/III – SBANC – MICROBIOLOGY I

NO.	COURSE OUTCOME
C205.1	To understand the contributions of various scientists in microbiology and scope of various branches
C205.2	To classify the bacteria on the basis of various parameters
C205.3	To describe various types of nutrient media for cultivation and isolation of bacteria.
C205.4	To compare various types of stains and dyes
C205.5	To determine the sensitivity of specific bacteria to given antibiotics

YEAR/ SEM: II/III – TSSE1 – COMPUTING SKILL LEVEL - I

NO.	COURSE OUTCOME
C206.1	To impart hands on training to students in Microsoft Office



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C206.2	To claim proficiency in Word and Power point.
C206.3	To independently create professional-looking documents and presentations.
C206.4	To use Word and power point in a variety of professional and educational
C206.5	To be able to create and share presentations

YEAR/ SEM: II/IV – CLA4K – TAMIL IV

NO.	COURSE OUTCOME
C207.1	எட்டுத்தொகையின் வாயிலாக ஐந்நில மக்களின் வாழ்வியல் முறைகளை அறிகின்றனர்
C207.2	புறநானூற்றின் வாயிலாக மன்னர்களின் ஆட்சி மற்றும் போர்ச்செய்திகளை அறிகின்றனர்
C207.3	நெடுநல்வாடையின் வாயிலாக கூதிர்காலத் தன்மைகளை அறிகின்றனர்.
C207.4	இரட்டைக்காப்பியங்களின் வாயிலாக வணிகர்களின் வாழ்வியலை அறிகின்றனர்
C207.5	திருக்குறளின் வாயிலாக மக்களின் வாழ்வியல், கல்வி, கேள்வி, ஒழுக்கம் ஆகியவற்றை அறிகின்றனர். மொழிபெயர்ப்பின் வாயிலாக தமிழ் மற்றும் ஆங்கில மொழியறிவைப் 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 – CLZ4R – ENGLISH IV



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NO.	COURSE OUTCOME
C209.1	To enable learners to appreciate and enjoy a wide range of literary or creative texts and other related cultural forms
C209.2	To perform various speaking and writing tasks, such as roleplays, debates, group discussions apart from the use of correct spelling, punctuation.
C209.3	To enhance the student's awareness in the aesthetics of poetry and to empower them to read, appreciate and critically evaluate poetry independently.
C209.4	To enable students to become competent users of English in real life situation
C209.5	The ability to transfer information in the writing tasks

YEAR/ SEM: II/IV – TAP4A – CHEMISTRY OF BIOMOLECULES - II

NO.	COURSE OUTCOME
C210.1	To gain insight into the classes of lipids and characterization of fats by their constants
C210.2	To establish the diverse role of lipids in biological system
C210.3	To comprehend the role of purine and pyrimidine bases in nucleic acid structure
C210.4	To gain knowledge about isolation and identification of RNA and its various types.
C210.5	To understand the Heterocyclic compounds of biological importance and significance of carotenoids, terpenes, alkaloids and bile pigments

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

NO.	COURSE OUTCOME
C211.1	To learn about the various fermented product and its various stage spoilage
C211.2	To understand the plant microbe interactions in the soil and mechanisms involved in improving crop productivity
C211.3	To Perform the methods and harvesting and product recovery in industrial fermentations
C211.4	To learn about detection of number of bacteria in milk by various methods
C211.5	To understanding the composition of air, air borne organisms and how the organisms cause the diseases and its preventive measures



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YEAR/ SEM: II/IV – SBAN1 – MICROBIOLOGY PRACTICAL

NO.	COURSE OUTCOME
C212.1	To attain the practical skills in microscopy and their handling techniques and staining procedures
C212.2	To Prepare various nutrients media for cultivating microbes in laboratory
C212.3	To isolate specific bacteria in pure form from sample.
C212.4	To study microbiological examination of foods, microbiological quality control and quality schemes
C212.5	To Understand and explain the significance of bacteriological analysis of drinking water

YEAR/ SEM: II/IV – TSSE2 – COMPUTING SKILL LEVEL II

NO.	COURSE OUTCOME
C213.1	To impart hands on training to students in Microsoft Office
C213.2	To claim proficiency in Word and power point.
C213.3	To independently create professional-looking documents and presentations.
C213.4	To use Word and power point in a variety of professional and educational
C213.5	To be able to create and share presentations

YEAR/ SEM: II/IV – TAP41 – CORE PRACTICAL II

NO.	COURSE OUTCOME
C214.1	To learn titrimetric methods of characterization of fats
C214.2	To analyze simple sugars by the characteristic tests
C214.3	To analyze amino acids by the characteristic tests
C214.4	To perform the characteristic test for protein
C214.5	To understand and estimate biological compounds using colorimetric methods - proteins, carbohydrate & amino acids.



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

NO.	COURSE OUTCOME
C215.1	To know the scope and importance of environmental studies and to create public awareness for environmental protection
C215.2	To Elucidate the problems created by the over utilization of resources and to suggest alternate energy to meet our energy crisis/demand
C215.3	To give a neat sketch explanation of ecosystem, ecological succession, ecological pyramid, food chain and food web
C215.4	To know the different methods of biodiversity conservation
C215.5	To analyze the effects of pollution and the role of individual for pollution control programme

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	To 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 gain insights on the enzymes & reactions involved in metabolism of carbohydrates



PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

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C302.3	To elucidate various pathways of anabolism and catabolism of carbohydrates and lipids
C302.4	To comprehend the metabolism of amino acids
C302.5	To gain an in-depth knowledge 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
C303.3	To apply the knowledge on chromatography and its applications
C303.4	To evaluate the basic concepts of electrophoresis
C303.5	To elucidate the 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 insights about blood cells and circulatory system
C304.3	To understand about the nervous system
C304.4	To inculcate knowledge about the respiratory system
C304.5	To acquire in-depth knowledge about hormones classification and its types

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

NO.	COURSE OUTCOME
C305.1	To gain knowledge about the importance and of value education



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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/V – TAP6A – CLINICAL BIOCHEMISTRY

NO.	COURSE OUTCOME
C306.1	To gain knowledge on scope of clinical biochemistry - blood glucose homeostasis
C306.2	To comprehend liver function tests and clinical enzymology
C306.3	To evaluate the use of various biochemical parameters in the diagnosis of kidney diseases
C306.4	To understand the disorders of lipid metabolism
C306.5	To gain insights 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 comprehend the process of RNA synthesis, post transcriptional modifications and apply the same
C307.4	To elucidate genetic code, molecular basis of protein synthesis & modification
C307.5	To evaluate 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



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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 and abnormal constituents with clinical significance
C308.3	To analyze the various constituents of urine quantitatively
C308.4	To gain insights on paper chromatography: Separation and detection of amino acids and simple sugars
C308.5	To understand separation of polar lipids by thin layer chromatography

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

NO.	COURSE OUTCOME
C309.1	To evaluate various methods of collect and preservation of blood sample
C309.2	Apply knowledge to select appropriate methods for specific blood tests.
C309.3	Demonstrate the ability to perform blood parameters accurately.
C309.4	Design experiments to simulate abnormal levels of biochemical parameters for clinical purposes
C309.5	To analyze enzyme assays in biological system with clinical interpretation

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



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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 evaluate 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 gain insights on tissue culture techniques, transgenesis, stem cell technology and risks
C311.5	Apprehend the safety aspects and patenting in biotechnology