



## PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrvakkam, Chennai-600073.

Affiliated to University of Madras

### DEPARTMENT OF MICROBIOLOGY

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 புதுமைக்கருத்துகளையும், 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



**PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE**

Gowrvakkam, Chennai-600073.

Affiliated to University of Madras

**YEAR/ SEM: I/I – CLZ1L - ENGLISH I**

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

**YEAR/ SEM: I/I – TAN1A – GENERAL MICROBIOLOGY AND MICROBIAL PHYSIOLOGY**

NO.	COURSE OUTCOME
<b>C104.1</b>	To understand the contributions of various scientists in microbiology.
<b>C104.2</b>	To illustrate the structure and functions of microorganism.
<b>C104.3</b>	To highlight various culture techniques and identification methods of microorganism.
<b>C104.4</b>	To assess the nutritional requirement of microorganisms and their cultivation techniques.
<b>C104.5</b>	To understand various metabolic pathways occurring in microorganisms and their significance.

**YEAR/ SEM: I/I – TAN21 - GENERAL MICROBIOLOGY AND MICROBIAL PHYSIOLOGY**

NO.	COURSE OUTCOME
<b>C105.1</b>	To implement the concept of sterilization processes in different culture media.
<b>C105.2</b>	To demonstrate on the isolation and identification techniques of microorganism using different culture media.
<b>C105.3</b>	To illustrate and perform microscopy handling techniques and staining procedures.
<b>C105.4</b>	To categorize microbes based on morphological characteristics.
<b>C105.5</b>	To evaluate microbes based on physiological characteristics.



## PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrvakkam, Chennai-600073.

Affiliated to University of Madras

### YEAR/ SEM: I/I – TBPBA – BIOCHEMISTRY I

NO.	COURSE OUTCOME
C106.1	To learn the concept of carbohydrates with their structure, physical & chemical properties and its biological importance.
C106.2	To understand the structure and functions of 20 amino acids and their biological importance
C106.3	To attain the theoretical and practical skills in fats and its classification and its biological importance
C106.4	To recognize the structural levels of organization of proteins, Classification, chemical and physical properties, functions and its denaturation properties
C106.5	To emphasizes the chemistry, structure and functions of DNA and RNA

### YEAR/ SEM: I/I – SNN1A – CELLULAR ORGANISATION

NO.	COURSE OUTCOME
C107.1	To gain knowledge on cell organization and intracellular processes for life and inheritance.
C107.2	To know the structure and contents of the nucleus.
C107.3	To know the process by which a cell builds proteins using the DNA code.
C107.4	To know the functions of various cytoplasmic organelles.
C107.5	To understand how these cellular components are used to generate and utilize energy in cells.

### YEAR/ SEM: I/I – NLT1C – BASIC TAMIL

NO.	COURSE OUTCOME
C108.1	தமிழ் எழுத்துகளைத் தெரிந்து கொள்ளுதல்
C108.2	தமிழ் ஒலியன்களை உச்சரிக்கக் கற்றுக்கொள்ளுதல்
C108.3	எழுத்துக்களைக் கொண்டு சொற்களை உருவாக்குதல்
C108.4	அன்றாடப் பயன்பட்டு சொற்களைப் பயிற்றுவித்தல்
C108.5	தமிழ் மொழியை அறிந்து கொள்ளுதல்.



## PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrvakkam, Chennai-600073.

Affiliated to University of Madras

### YEAR/ SEM: I/I – TSSEA – ESSENTIALS OF LANGUAGE AND COMMUNICATION

NO.	COURSE OUTCOME
C109.1	To develop effective communication skills (spoken and written).
C109.2	To develop effective presentation skills.
C109.3	To conduct effective business correspondence and prepare business reports which produce results.
C109.4	Soft skills are in direct correlation with improved academic achievement.
C109.5	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
C110.1	மூவேந்தர்களின் அகம் மற்றும் புற வாழ்வு பற்றிய செய்திகளை அறிகிறார்கள்
C110.2	சிறுநிலக்கியங்களான தமிழ்விடு தூது, குற்றாலக் குறவஞ்சி, முக்கூடற்பள்ளு வாயிலாக தமிழின் சிறப்பும் மலைவளமும், வேளாண் செய்திகளையும் அறிகிறார்கள்
C110.3	நளவெண்பாவின் வாயிலாக சூதாட்டத்தினால் விளையும் சீர்கேடுகளை அறிகிறார்கள்
C110.4	சீறாப்புராணத்தின் வாயிலாக மனித நேயத்தையும், இரக்கக் குணத்தையும் அறிகிறார்கள்
C110.5	மொழிப்பயிற்சியின் வாயிலாக இலக்கண முறைகளை அறிகிறார்கள்

### YEAR/ SEM: I/II – CLE2G – HINDI II

NO.	COURSE OUTCOME
C111.1	To understand the Drama and the stories based on social problems
C111.2	To develop the approach of Hindi language
C111.3	To understand the change in content and style of expression in short stories in modern period



**PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE**

Gowrvakkam, Chennai-600073.

Affiliated to University of Madras

<b>C111.4</b>	To develop the skills of Translation from Hindi to English by using high technical words
<b>C111.5</b>	To analyse the development of one act play

**YEAR/ SEM: I/II – CLZ2L – ENGLISH II**

NO.	COURSE OUTCOME
<b>C112.1</b>	To make a detailed study of a few sample masterpieces of English poetry.
<b>C112.2</b>	To apply critical frameworks to analyze the linguistic, cultural and historical background of texts written in English.
<b>C112.3</b>	To get familiar with the conventions of diverse textual genres including fiction, nonfiction, poetry, autobiography, biography, plays, etc.
<b>C112.4</b>	The ability to transfer information in the writing tasks.
<b>C112.5</b>	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 – TAN2A – IMMUNOLOGY AND MICROBIAL GENETICS**

NO.	COURSE OUTCOME
<b>C113.1</b>	To understanding the key concepts in immunology and overall organization of the immune system
<b>C113.2</b>	To understanding the structure of antigen and antibody
<b>C113.3</b>	To comprehend the salient features of antigen antibody reaction & its uses in diagnostics and various other studies.
<b>C113.4</b>	To illustratively assess hypersensitivity and auto immune disorders
<b>C113.5</b>	To understand the various aspects of microbial genetics and various modes of natural gene transfer among bacteria

**YEAR/ SEM: I/II – TAN22 – PRACTICAL II - IMMUNOLOGY AND MICROBIAL GENETICS**

NO.	COURSE OUTCOME
<b>C114.1</b>	To demonstrate detailed understanding of immunology and the way it is applied in diagnostic and therapeutic techniques



## PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras

<b>C114.2</b>	To demonstrate literature review skills in undertaking a large survey within immunology
<b>C114.3</b>	To articulate and adhere to safe working practice in a mixed microbiology/immunology laboratory
<b>C114.4</b>	To attain practical skills in conducting blood grouping and other basic immunological tests
<b>C114.5</b>	To demonstrate production of antibodies and anaphylactic reactions in model animals

### YEAR/ SEM: I/II – TBPBB – BIOCHEMISTRY II

NO.	COURSE OUTCOME
<b>C115.1</b>	To helps the students in appreciating the integrated approach of interrelated pathways of catabolism and anabolism.
<b>C115.2</b>	To emphasizes on metabolic disorders at molecular level.
<b>C115.3</b>	To feature the regulatory aspects of metabolism for better understanding of physiology and therapeutic applications.
<b>C115.4</b>	To train the students to gain concepts of assessing the human physiology using biological fluid and vitamins
<b>C115.5</b>	To learn the significant features of the biochemical catalysts and the basic concepts of molecular biology

### YEAR/ SEM: I/II – TBPB1 – BIOCHEMISTRY I&II

NO.	COURSE OUTCOME
<b>C116.1</b>	To identify and analysis of sugars and amino acids from given samples
<b>C116.2</b>	To gain knowledge about the quantitative estimation of vitamin C and calcium from biological source
<b>C116.3</b>	To obtain hands-on training in basic separation techniques in biochemistry such as colorimetry, electrophoresis, chromatography
<b>C116.4</b>	To gain expertise in the estimation / separation of important biomolecules using these techniques.
<b>C116.5</b>	To learn the biochemical techniques of sample analysis and estimation of biomolecules



## PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrvakkam, Chennai-600073.

Affiliated to University of Madras

### 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 – SNN2E – INHERITANCE BIOLOGY

NO.	COURSE OUTCOME
C118.1	To understand the mendelian inheritance.
C118.2	To learn the concepts of linkage.
C118.3	To know the significance of organelles inheritance.
C118.4	To understand the concept of sex determination and sex-linked inheritance.
C118.5	To know the structure of prokaryotic and eukaryotic genes.

### YEAR/ SEM: I/II – TSSEC – ESSENTIAL OF SPOKEN AND PRESENTATION SKILLS

NO.	COURSE OUTCOME
C119.1	To develop effective communication skills (spoken and written).
C119.2	To develop effective presentation skills.
C119.3	To conduct effective business correspondence and prepare business reports which produce results.
C119.4	Soft skills are in direct correlation with improved academic achievement.
C119.5	To develop them both for the sake of their education, and the sake of their professional careers.



## PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrvakkam, Chennai-600073.

Affiliated to University of Madras

### YEAR/ SEM: II/III – CLA3M – 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 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.





## PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras

### YEAR/ SEM: II/III – TAN3A – MOLECULAR BIOLOGY

NO.	COURSE OUTCOME
C204.1	To understand the structure and types of DNA.
C204.2	To analyze the DNA replication, repair and recombination
C204.3	To understand the mechanism of RNA synthesis and processing.
C204.4	To analyze mechanism of Protein synthesis.
C204.5	To assess the control of gene expression at transcription and translation level.

### YEAR/ SEM: II/III – TAN41 – MAJOR PRACTICAL MOLECULAR BIOLOGY

NO.	COURSE OUTCOME
C205.1	To estimate DNA and RNA
C205.2	To isolate Plasmid, Genomic and Chromosomal DNA
C205.3	To isolate RNA and antibiotic resistant mutants
C205.4	To acquire Knowledge in Preparation of competent cells
C205.5	To acquire Knowledge in Transformation of E. coli.

### YEAR/ SEM: II/III – TBN3A - BIOINSTRUMENTATION

NO.	COURSE OUTCOME
C206.1	To gain knowledge on principle and working of various laboratory equipment's.
C206.2	To analyze the principle and application of different chromatographic techniques.
C206.3	To evaluate different electrophoresis techniques.
C206.4	To understand the principle and application of various spectroscopic techniques.
C206.5	To understand the principle & application of radioisotopes in life sciences.



## PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrvakkam, Chennai-600073.

Affiliated to University of Madras

### YEAR/ SEM: II/III – TBN41 – BIOINSTRUMENTATION PRACTICAL

NO.	COURSE OUTCOME
C207.1	To determine pH using various titration methods.
C207.2	To apply chromatographic techniques for the separation of various biomolecules.
C207.3	To evaluate serum protein using gel electrophoresis
C207.4	To evaluate various macromolecules using UV spectroscopy.
C207.5	To demonstrate the estimation of various organic compounds using Gas chromatography.

### YEAR/ SEM: II/III – TSSEG – PERSONALITY ENRICHMENT LEVEL - I

NO.	COURSE OUTCOME
C208.1	To understand, analyse and exhibit accurate sense of self.
C208.2	To think critically.
C208.3	To know about self-awareness, life skill and personal development.
C208.4	To gain knowledge of personal beliefs and values.
C208.5	To balance confidence with humility and overcome problems associated with personality.

### YEAR/ SEM: II/IV – CLA4K – TAMIL IV

NO.	COURSE OUTCOME
C209.1	எட்டுத்தொகையின் வாயிலாக ஐந்நில மக்களின் வாழ்வியல் முறைகளை அறிகின்றனர்
C209.2	புறநானூற்றின் வாயிலாக மன்னர்களின் ஆட்சி மற்றும் போர்ச்செய்திகளை அறிகின்றனர்
C209.3	நெடுநல்வாடையின் வாயிலாக கூதிர்காலத் தன்மைகளை அறிகின்றனர்.
C209.4	இரட்டைக்காப்பியங்களின் வாயிலாக வணிகர்களின் வாழ்வியலை அறிகின்றனர்
C209.5	திருக்குறளின் வாயிலாக மக்களின் வாழ்வியல், கல்வி, கேள்வி, ஒழுக்கம் ஆகியவற்றை அறிகின்றனர். மொழிபெயர்ப்பின் வாயிலாக தமிழ் மற்றும் ஆங்கில மொழியறிவைப் பெறுகின்றனர்.



## PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras

### YEAR/ SEM: II/IV – CLE4J – HINDI IV

NO.	COURSE OUTCOME
<b>C210.1</b>	To make an in-depth study and analysis of the literary work
<b>C210.2</b>	To gain awareness on the importance of literature in addressing contemporary issues
<b>C210.3</b>	To create, select, and apply appropriate approaches to literature, resources and modern literary theories
<b>C210.4</b>	To describe the philosophy of life as well as the poems of modern literature
<b>C210.5</b>	To understand the History of development of drama, short stories, one act play and novel

### YEAR/ SEM: II/IV – CLZ4R – ENGLISH IV

NO.	COURSE OUTCOME
<b>C211.1</b>	To enable learners to appreciate and enjoy a wide range of literary or creative texts and other related cultural forms.
<b>C211.2</b>	To perform various speaking and writing tasks, such as roleplays, debates, group discussions apart from the use of correct spelling, punctuation.
<b>C211.3</b>	To enhance students' awareness in the aesthetics of poetry and to empower them to read, appreciate and critically evaluate poetry independently.
<b>C211.4</b>	To enable students to become competent users of English in real life situations.
<b>C211.5</b>	The ability to transfer information in the writing tasks.

### YEAR/ SEM: II/IV – TAN4A – SOIL AND AGRICULTURAL MICROBIOLOGY

NO.	COURSE OUTCOME
<b>C212.1</b>	To understand microbial flora of soil and its types.
<b>C212.2</b>	To understand the role soil microflora in biogeochemical cycle in the environments
<b>C212.3</b>	To analyze the mechanism of microbial interaction with microbes, plants, animals and insects
<b>C212.4</b>	To assess the role of microorganism in nitrogen fixation and understand the role of biofertilizers and biopesticides.
<b>C212.5</b>	To evaluate the defense mechanism, etiology, epidemiology and management of various plant diseases.



**PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE**

Gowrvakkam, Chennai-600073.

Affiliated to University of Madras

**YEAR/ SEM: II/IV – TAN42 – MAJOR PRACTICAL -SOIL AND AGRICULTURAL MICROBIOLOGY**

NO.	COURSE OUTCOME
C213.1	To apply different methods for the isolation and identification soil microorganisms.
C213.2	To demonstrate the mechanism and application of enzymes produced by soil microbes
C213.3	To apply techniques used for the isolation and identification of Rhizobium and Azotobacter
C213.4	To apply techniques for isolation and identification of nitrogen fixing algae
C213.5	To evaluate various plant diseases.

**YEAR/ SEM: II/IV – TBN4A - BIOSTATISTICS**

NO.	COURSE OUTCOME
C214.1	To evaluate practical problems arising in biostatistics
C214.2	To demonstrate a good understanding of descriptive statistics
C214.3	To analyse different types of data using appropriate statistical treatment
C214.4	To interpret correlation and regression analysis
C214.5	To explain concepts of testing of hypothesis

**YEAR/ SEM: II/IV – TBN42 – BIOSTATISTICS (ALLIED PRACTICAL)**

NO.	COURSE OUTCOME
C215.1	To apply measures of central tendency and measures of variation
C215.2	To analyse relationship between variables using correlation
C215.3	To predict the unknown value of one variable using regression analysis
C215.4	To present the quantitative information in the form of diagram or graph
C215.5	To analyse the variation due to assignable causes and chance cause, and to fit a probability distribution and test the goodness of fit



## PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras

### YEAR/ SEM: II/IV – TSSEH – PERSONALITY ENRICHMENT LEVEL - II

NO.	COURSE OUTCOME
<b>C216.1</b>	To know themselves better.
<b>C216.2</b>	To identify their own potentials and accept their own limitations.
<b>C216.3</b>	To overcome their limitations and move towards self-esteem.
<b>C216.4</b>	To maximize their own potential in enabling a holistic development.
<b>C216.5</b>	To develop positive outlook towards humanity.

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

NO.	COURSE OUTCOME
<b>C217.1</b>	To know the scope and importance of environmental studies and to create public awareness for environmental protection
<b>C217.2</b>	To Elucidate the problems created by the over utilization of resources and to suggest alternate energy to meet our energy crisis/demand
<b>C217.3</b>	To give a neat sketch explanation of ecosystem, ecological succession, ecological pyramid, food chain and food web
<b>C217.4</b>	To know the different methods of biodiversity conservation
<b>C217.5</b>	To analyse the effects of pollution and the role of individual for pollution control programme

### YEAR/ SEM: III/V – TAN5A – MEDICAL BACTERIOLOGY

NO.	COURSE OUTCOME
<b>C301.1</b>	To understand collection and isolation of bacteria from clinical specimens
<b>C301.2</b>	To evaluate the Primary media for isolation of bacteria and their quality control.
<b>C301.3</b>	To assess the general characteristics of Gram positive and Gram-negative bacteria.
<b>C301.4</b>	To evaluate the general characteristics of Enterobacteriaceae.
<b>C301.5</b>	To understand the general characteristics of spirochetes.



**PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE**

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras

**YEAR/ SEM: III/V – TAN5B – MEDICAL MYCOLOGY AND PARASITOLOGY**

NO.	COURSE OUTCOME
<b>C302.1</b>	To understand the morphology and Classification of fungi.
<b>C302.2</b>	To analyze the superficial and systemic fungal infection.
<b>C302.3</b>	To evaluate the collection and isolation of medically important fungi.
<b>C302.4</b>	To assess the medically important protozoa.
<b>C302.5</b>	To understand the medically important helminths.

**YEAR/ SEM: III/V – TAN5C – MEDICAL VIROLOGY**

NO.	COURSE OUTCOME
<b>C303.1</b>	To understand the general Properties of viruses and its detection.
<b>C303.2</b>	To analyze medically important RNA viruses and their diseases.
<b>C303.3</b>	To evaluate medically important DNA viruses and their diseases.
<b>C303.4</b>	To analyze the structure and types of bacteriophages.
<b>C303.5</b>	To study the anti-viral agents and viral vaccines.

**YEAR/ SEM: III/V – TEN5A – GENETIC ENGINEERING**

NO.	COURSE OUTCOME
<b>C304.1</b>	To understand the types of vectors used in genetic engineering.
<b>C304.2</b>	To analyze the principles and methods used in genetic engineering.
<b>C304.3</b>	To understand the basic steps of cloning techniques.
<b>C304.4</b>	To analyze the Recombinant DNA.
<b>C304.5</b>	To understand the DNA and protein sequencing



**PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE**

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras

**YEAR/ SEM: III/V – TAN61 - MAJOR PRACTICAL: MEDICAL BACTERIOLOGY, MYCOLOGY, PARASITOLOGY AND VIROLOGY**

NO.	COURSE OUTCOME
<b>C305.1</b>	To apply skills to identify medically important bacteria from the clinical samples
<b>C305.2</b>	To analyze the processing of clinical sample.
<b>C305.3</b>	To isolate phage from natural sources.
<b>C305.4</b>	To evaluate medically important fungi using microscope.
<b>C305.5</b>	To evaluate the feces and blood sample for the detection of pathogenic parasites.

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

NO.	COURSE OUTCOME
<b>C306.1</b>	To understand the importance of value education
<b>C306.2</b>	To learn about salient values for life and problem-solving and decision-making skills
<b>C306.3</b>	To know the importance of human rights & social values
<b>C306.4</b>	To know the importance of environment and ecological balance
<b>C306.5</b>	To learn about social evils and how to tackle them.

**YEAR/ SEM: III/VI – TAN6A – ENVIRONMENTAL MICROBIOLOGY**

NO.	COURSE OUTCOME
<b>C307.1</b>	To understand the microbial communities and their habitat.
<b>C307.2</b>	To analyze microbial life in extreme environments.
<b>C307.3</b>	To analyze microbes in aquatic environments and Water-borne diseases caused by them.
<b>C307.4</b>	To evaluate the microbes in air and air borne diseases caused by them.
<b>C307.5</b>	To assess the role of microbes in treatment of solid and liquid waste.



## PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE

Gowrivakkam, Chennai-600073.

Affiliated to University of Madras

### YEAR/ SEM: III/VI – TAN6B – FOOD AND DAIRY MICROBIOLOGY

NO.	COURSE OUTCOME
<b>C308.1</b>	To gain knowledge about food as a substrate for various microbes.
<b>C308.2</b>	To understand about the principles and application of different types of food preservation technique, chemical preservative and its advantages and disadvantages
<b>C308.3</b>	To understand the contamination and spoilage of various food.
<b>C308.4</b>	To acquire a thorough understanding of food borne diseases, testing methods, and preventive techniques
<b>C308.5</b>	To learn about the various fermented product and its various stage of spoilage

### YEAR/ SEM: III/VI – TEN6A – INDUSTRIAL AND PHARMACEUTICAL MICROBIOLOGY

NO.	COURSE OUTCOME
<b>C309.1</b>	To understand basic concepts of industrial fermentation
<b>C309.2</b>	To analyze the design and function of fermenters.
<b>C309.3</b>	To understand the production of commercial products produced by using microbes.
<b>C309.4</b>	To analyze the extraction and recovery of microbial products produced through fermentation process.
<b>C309.5</b>	To apply good pharmaceutical manufacturing practices and quality control.

### YEAR/ SEM: III/VI – TEN6B – BIOTECHNOLOGY

NO.	COURSE OUTCOME
<b>C310.1</b>	To describe the industrial production of microbial enzymes and their applications in different industries.
<b>C310.2</b>	To analyze the application of genetic recombinant technology.
<b>C310.3</b>	To understand the plant tissue culture and its application.
<b>C310.4</b>	To evaluate genetic engineering methods for crop improvement.
<b>C310.5</b>	To understand animal cell lines culture.





**PRINCE SHRI VENKATESHWARA ARTS AND SCIENCE COLLEGE**

Gowrvakkam, Chennai-600073.

Affiliated to University of Madras

**YEAR/ SEM: III/VI – TAN62 – MAJOR PRACTICAL VI - ENVIRONMENTAL, FOOD AND DAIRY MICROBIOLOGY**

NO.	COURSE OUTCOME
<b>C311.1</b>	To apply different methods for the detection of Bacteria in milk.
<b>C311.2</b>	To assess the quality of milk.
<b>C311.3</b>	To isolate yeast and molds from spoiled food.
<b>C311.4</b>	To determine BOD and COD of wastewater and Water analysis by MPN and membrane filter methods
<b>C311.5</b>	To quantify the microorganisms in air by settle plate and air sampler methods

**YEAR/ SEM: III/VI – CES6Q-EXTENSION ACTIVITIES**

NO.	COURSE OUTCOME
<b>C312.1</b>	It helps to instill social responsibility, groom overall personality and create awareness on social issues.
<b>C312.2</b>	To improve literacy, reduced drug abuse, Hygienic surrounding, improved health, and cleanliness.
<b>C312.3</b>	Gain knowledge to use the target words and definitions during interesting, engaging, and contextualized activities.
<b>C312.4</b>	It helps in generating-knowledge appropriate to the people by finding out their needs and problems.
<b>C312.5</b>	To develop skill needed in the exercise of democratic leadership and programme development to help them get self-employed.