



TAKSHASHILA UNIVERSITY

(Tamil Nadu State Private University)
ONGUR, TINDIVANAM TK, VILLUPURAM DT

FACULTY OF SCIENCES SCHOOL OF BASIC SCIENCES

Department of Biotechnology

**REGULATION 2025 NEP
CURRICULUM & SYLLABI
B.SC – BIOTECHNOLOGY**

Semester – I



VISION AND MISSION OF UNIVERSITY

VISION:

To create change makers and world leaders similar to the ancient Takshashila University

MISSION:

The brightest minds and the best resources are used to nurture and develop the leaders of tomorrow, where they are encouraged to be eternally curious and ethically sound.

DEPARTMENT VISION AND MISSION

VISION:

To be a globally recognized center of excellence in biotechnology education and research, fostering innovation and technological advancements that address real-world challenges in healthcare, agriculture, and the environment.

MISSION:

M1: Quality Education	To provide a dynamic curriculum integrated with hands-on laboratory training that meets international standards and prepares students for both industry and academia.
M2: Research and Innovation	To foster an environment that encourages interdisciplinary research, critical thinking, and problem-solving skills to drive scientific and commercial value.
M3: Entrepreneurship & Employability	To bridge the gap between academia and the biotech industry by developing professional competence, leadership qualities, and an aptitude for bio-business and startups.
M4: Ethics & Social Responsibility	To instill ethical values, environmental consciousness, and a commitment to utilizing biotechnological innovations for the betterment of society.

PROGRAMME OUTCOMES

PO1: Disciplinary Knowledge:

Demonstrate comprehensive understanding of core concepts, theories, and methodologies relevant to the chemistry discipline.

PO2: Analytical and Critical Thinking:

Formulate logical conclusions, evaluate evidence objectively, and use critical thinking to solve complex, real-world problems.

PO3: Problem Solving:

Identify, analyze, and devise data-driven solutions while considering societal and environmental impacts.

PO4: Effective Communication:

Articulate complex ideas clearly, prepare coherent reports, and make impactful presentations to diverse audiences.

PO5: Modern Tool Usage:

Select and apply modern IT tools, laboratory equipment, and predictive modeling techniques relevant to research and industry.

PO6: Ethics and Values:

Commit to professional ethics, environmental sustainability, and their responsibilities as informed citizens.

PO7: Teamwork and Leadership:

Function effectively as an individual and as a member or leader in multidisciplinary teams.

PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

PEO1: Professional Preparation

Equip graduates with fundamental theoretical and practical knowledge to excel in the **biotechnology industry, pharmaceuticals, agriculture, and healthcare**

PEO2: Research and Innovation

Foster skills in experimental design, data analysis, and advanced laboratory techniques. This enables graduates to pursue advanced studies or **R&D careers**.

PEO3: Interdisciplinary Problem Solving

Train students to address complex, real-world biological challenges using cutting-edge analytical tools, **bioinformatics**, and modern technology.

PEO4: Ethics and Sustainability

Inculcate an understanding of professional ethics, **biosafety regulations**, and environmental sustainability when developing biotechnological solutions.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Disciplinary Knowledge & Concept Application

Graduates will understand the fundamental principles of molecular biology, genetics, and biochemistry, and can apply these concepts to solve real-world problems in agriculture, medicine, and industry

PSO2: Practical Laboratory & Research Skills

Students will demonstrate proficiency in modern biotechnology techniques—such as recombinant DNA technology, cell culture, and bioprocessing—enabling them to design experiments and analyze scientific data.

PSO3: Industry & Higher Education

Graduates will be equipped with the analytical and professional skills required to meet the demands of the bioscience industry, pursue advanced master's/research programs, or explore entrepreneurial ventures.



**TAKSHASHILA
UNIVERSITY**

(Established under Tamil Nadu State Private Universities Act 2019 &
Recognized by UGC u/s 2(f) of the UGC Act, 1956)

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FACULTY OF SCIENCES
DEPARTMENT OF BIOTECHNOLOGY (B.Sc. BIOTECHNOLOGY)
(REGULATION 2025 NEP)
SEMESTER – I

Sl. No.	Course Code	Course Title	Category	Periods			Credits	Hrs.	Max. Marks								
				L	T	P			CAT I, II, III (Best of Two)	ASS	MCQ	ATT	SEM	PRA	CAM	ESM	Total
1	U25BT01B	Cell and Developmental Biology	DSC	3	0	2	4	75	20	5	5	5	5	50	40	60	150
2	U25BT02B	Biological Chemistry	DSC	3	0	2	4	75	20	5	5	5	5	50	40	60	150
3	U25BT03T	Plant Tissue Culture Techniques	IDC	3	1	0	4	60	20	5	5	5	5	-	40	60	100
4	U25CS61T	Programming in C	MDC	1	0	2	2	45	-	-	-	-	-	-	100	-	100
Total:							14	255									
5	U25TA01T	Tamizhum Ilakkiyamum	AEC	2	0	0	2	30	20	5	5	5	5	-	40	60	100
6	U25EN01T	English for Communication	AEC	1	0	2	2	45	20	5	5	5	5	-	40	60	100
7	U25VA01T	Indian Intellectual Heritage	VAC	2	0	0	2	30	-	-	-	-	-	-	100	-	100
Total:							6	105									
Total:							20	360							100	400	800

Note:

L – Lecture

P – Practical

ESM – End Semester Exam Marks

ASS – Assignment

CAM – Continuous Assessment Marks

T – Tutorial

CAT – Continuous Assessment Test

ATT – Attendance

SEM – Seminar

K. V. S.
BoS Chairman

U25BT01B	Cell and Developmental Biology	L	T	P	C	Total
		3	0	2	4	75

COURSE OBJECTIVES:

To Analyze the structure and obtain a strong foundation about the functional aspects of cell organelles and cell membrane.
To Study the structure and functions of Nucleic acid and discuss the molecular mechanism of Replication, Transcription and Translation and post translational modifications of proteins.
To Understand the principles and molecular mechanisms involved in cellular differentiation, morphogenesis, growth and Potency of the cell

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Understand the prokaryotic and Eukaryotic cell.
CO2 :	Discussing in detail the cell membrane and function.
CO3 :	Overview of the central dogma of life and various molecular events Learning molecular events in the DNA replication and role of different enzymes-Molecular Events Translation leading to protein synthesis and Post translational modification.
CO4 :	Compare and contrast the events of cell cycle and its regulation Gaining knowledge for cell to cell signaling.
CO5 :	Understands the students about sequential changes from single cell organization to organ level in the development of multicellular organisms.

UNIT I : DISCOVERY AND DIVERSITY OF CELLS	9 Hrs.
Introduction - Cell theory - Structure of prokaryotic (bacteria) and eukaryotic cells (plant and animal cells).	

UNIT II : STRUCTURES AND FUNCTIONS OF CELL ORGANELLES	9 Hrs.
Cell wall - Cell membrane - Cytoplasm - Nucleus - chromosomes -Endoplasmic reticulum - Ribosomes - Golgi bodies - Vacuoles - Lysosomes - Mitochondria - Microbodies - Flagella - Cilia - Centrosome and Centrioles - Cytoskeleton.	

R.V. - 2

UNIT III: CELL CYCLE	9 Hrs.
Cell cycle checkpoints - Cell division - Mitosis and Meiosis - Cellular differentiation - Cell junctions - Cell Adhesion - Extracellular Matrix - Cell to cell communications - Signal transduction - G - Protein Coupled Receptors Signal transduction pathways.	

UNIT IV: SPECIALISED CELLS	9 Hrs.
Motile Cells (Amoeboid, Ciliary, Flagellar Movements, Nerve cells and Nerve impulse conduction, Muscle cells and Muscle contraction, Plant cells (Parenchyma cells, Xylem and Phloem Cells)	

UNIT V: GAMETOGENESIS	9 Hrs.
Spermatogenesis and Oogenesis in mammals- Fertilization- Types of cleavage, blastula formation, gastrulation and formation of germ layers in animals- Organogenesis.	

Total Hours: 45

List of Experiments

1. CELL AND MOLECULAR DEVELOPMENTAL BIOLOGY

- a. Components of a Compound / Light Microscope.
- b. blood smear preparation and Identification of Blood cells
- c. Buccal smear preparation and Identification of squamous epithelial cells.
- d. Isolation and Identification of plant cells and animal cells
- e. Observation of sperm & Egg
- f. Mounting of chick Embryo - 24 hrs, 48 hrs, 72 hrs, 96 hrs.
- g. Cell fractionation and Identification of cell organelles (Demo)

Total Hours: 30

TEXT BOOKS:	
1.	T. Devasena Cell Biology, Oxford University Press.(2012)
2.	Gilbert, S.F. Developmental Biology, 11th edition. Sinauer Associates Inc. Publishers, MA. USA (2016)

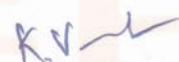
K.V~L

REFERENCE BOOKS:

1.	Karp's Cell and Molecular Biology: Concepts and Experiments. 8th Edition , Wiley Publications(2015).
2.	James D. Watson, Molecular Biology of the Gene, Pearson Publications. 7th Edition (2014)
3.	Geoffrey M. Cooper, The Cell: A Molecular Approach, Sinauer Associates, Oxford University Press 7th Edition (2015).
4.	Bruce Alberts, Molecular Biology of the cell, W. W. Norton & Company.6th Edition (2014).

WEB REFERENCES:

1.	scribd.com/document/605465330/Developmental-Biology-Notes
2.	chrome-extension://efaidnbmnnnibpcajpcglefindmkaj/https://application.wiley-vch.de/books/sample/3527338217_c01.pdf
3.	https://microbenotes.com/developmental-biology/
4.	https://www.youtube.com/watch?v=8-KF0rnhKTU


BoS Chairman

U25BT02B	Biological Chemistry	L	T	P	C	Total
		3	0	2	4	75

COURSE OBJECTIVES:

To learn the importance of Chemistry and Biochemistry through the concept of acids and bases, and chemical bonding
To understand the Understand the Structure, Classification, Chemistry and Properties of proteins amino acids and Identify and explain nutrients in foods and the specific functions in maintaining health.
To Understand the Structure, Classification, Chemistry and Properties of Carbohydrates
To Understand the Various Biochemical Cycles involved in Carbohydrate Metabolism.

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Make students have a strong foundation in chemical biology.
CO2 :	Introduce them to metabolic pathways of the major biomolecules and relevance to clinical conditions.
CO3 :	Correlate Biochemical process with biotechnology applications
CO4 :	Discuss the significance of various metabolic processes occurring in biological system.
CO5 :	Evaluate of both Hormones and Enzymology and also its medical importance in the human life.

UNIT I : ATOMIC THEORY	9 Hrs.
Atomic theory, formation of molecules, electronic configuration of atoms- s & p shapes of atomic orbitals- Periodic table, periodic classification- valency- Types of chemical bonds- Classification of organic compounds -. Hybridization in methane, ethane, acetylene, and benzene.	

UNIT II : ACIDS & BASES PROPERTIES AND DIFFERENCES	9 Hrs.
Concepts of acids and bases- Arrhenius, Lowry-Bronsted and Lewis. Concentration of solution- ways of expressing concentrations of solutions – per cent by weight, normality, molarity, molality, mole fraction-	

pH of solution, pH scale, measurement of pH. Buffer solutions, properties of buffers, Henderson-Hasselbalch equation, mechanism of buffering action of acidic buffer and basic buffer.

UNIT III: CLASSIFICATION OF CARBOHYDRATES

9 Hrs.

Properties of carbohydrates- Metabolism of Carbohydrates – Glycogenesis, Glycogenolysis, Glycolysis, Gluconeogenesis TCA cycle- bioenergetics of carbohydrate metabolism.

UNIT IV: CLASSIFICATION OF LIPIDS

9 Hrs.

Characteristics- Properties and Biological importance of lipids- Metabolism of Fatty acids, phospholipids, cholesterol- B-oxidation of fatty acids.

UNIT V: CLASSIFICATION AND STRUCTURE OF AMINO ACIDS

9 Hrs.

Classification and structure of amino acids- Structural conformation of proteins-Classification of proteins- Properties and biological importance of amino acids and proteins- Degradation of Amino acids and Urea Cycle. Vitamins (Biological functions, daily requirements, deficiency symptoms and diseases- Structure not required) and Hormones.

Total Hours: 45

List of Experiments:

1. Systematic analysis of Organic compounds
2. Functional group tests (Carboxylic acid (Benzoic acid, phthalic acid), Phenol, Urea, Benzaldehyde, Aniline (Aniline not to be given for exam) Detection of elements (N, Halogens)
3. Qualitative Analysis
 - (a) Qualitative analysis of carbohydrates - Glucose, Fructose, Lactose, maltose, sucrose, starch.
 - (b) Qualitative analysis of amino acids - Tyrosine, Tryptophan, Arginine, Proline and Cysteine.Histidine
4. Colorimetric Analysis
 - (a) Estimation of glucose- Ortho toluidine method
 - (b) Estimation of Cholesterol- Zak's method.

Total Hours:30

K.V



TEXT BOOKS:

1.	P.L. Soni , A Text-book of Inorganic Chemistry, 11th Edition, S. Chand & Sons publications
2.	Abhilasha Shourie, Shilpa S, Chapadgoankar & Anamika Singh Textbook of Biochemistry 1st Edition 2020
3.	J.L. Jain, Fundamentals of Biochemistry, S. Chand publication, 7th edition.2016.

REFERENCE BOOKS:

1.	Bahl Arun, Bahl B. S. A Textbook of Organic Chemistry, 22nd Edition, S. Chand & Sons publications.(2016)
2.	Lehninger Principles of Biochemistry 4th edition WH Freeman and Company NY (2013)
3.	Lubert Stryer ,Biochemistry –Stanford University 5th Edition-W H Freemann and company San Francisco .(2007)
4.	Geoffrey L. Zubay, William W. Parson, Dennis E. Vance, 1995, Principles of Biochemistry, W.C. Brown Publishers, 1995, 3rd edition.
5	Murray et al., Harper"s biochemistry 26th edition Appleton and Lange Publishers Florida USA (2003)

WEB REFERENCES:

1.	https://studyhubzone.com/biochemistry-notes/
2.	scribd.com/document/434178430/Biochemistry-notes
3.	chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://samples.jbpub.com/9781449621087/9781449621087_CH01.pdf
4.	https://dhingcollegeonline.co.in/attendance/classnotes/files/1601818679.pdf


BoS Chairman

U25BT03T	Plant Tissue Culture Techniques	L	T	P	C	Total
		3	1	0	4	60

COURSE OBJECTIVES:

To learn the importance of Chemistry and Biochemistry through the concept of acids and bases, and chemical bonding
To understand the Understand the Structure, Classification, Chemistry and Properties of proteins amino acids and Identify and explain nutrients in foods and the specific functions in maintaining health.
To Understand the Structure, Classification, Chemistry and Properties of Carbohydrates
To Understand the Various Biochemical Cycles involved in Carbohydrate Metabolism.

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Make students have a strong foundation in chemical biology.
CO2 :	Introduce them to metabolic pathways of the major biomolecules and relevance to clinical conditions.
CO3 :	Correlate Biochemical process with biotechnology applications
CO4 :	Discuss the significance of various metabolic processes occurring in biological system.
CO5 :	Evaluate of both Hormones and Enzymology and also its medical importance in the human life.

UNIT I : INTRODUCTION TO PLANT TISSUE CULTURE AND LABORATORY PRACTICES	12 Hrs.
History and development of plant tissue culture - Concept of totipotency and its significance - Organization of plant tissue culture laboratory - Good Laboratory Practices (GLP) - Principles of aseptic culture techniques - Sterilization methods for laboratory equipment, media, and work areas - Surface sterilization of explants and factors affecting culture establishment	

UNIT II : CULTURE MEDIA, EXPLANTS, AND IN VITRO CULTURE TECHNIQUES	12 Hrs.
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Components and types of plant tissue culture media - Role of macronutrients, micronutrients, vitamins, amino acids, and organic supplements - Plant growth regulators and growth supplements - Preparation of stock solutions, media preparation, pH adjustment, and sterilization - Selection of explants and initiation of in vitro cultures - Plant cell, tissue, and organ culture techniques - Establishment and maintenance of callus, cell suspension, and somatic cell cultures.

UNIT III: MORPHOGENESIS AND PLANT REGENERATION

12 Hrs.

Morphogenesis and factors influencing differentiation - Direct and indirect organogenesis - Somatic embryogenesis: induction, development, and applications - Plant regeneration from callus and cell cultures - Principles, stages, and applications of micropropagation.

UNIT IV: SPECIALIZED IN VITRO CULTURE TECHNIQUES

12 Hrs.

Meristem culture and production of disease-free plants - In vitro grafting and its applications - Embryo culture - Anther culture and haploid production - Pollen culture - Ovule culture - Ovary culture and their applications.

UNIT V: PROTOPLAST TECHNOLOGY AND COMMERCIAL APPLICATIONS

12 Hrs.

Protoplast isolation, culture, and regeneration - Somatic hybridization and cybridization through protoplast fusion - Somaclonal variation: causes, detection, and applications -Hardening, acclimatization, and transfer of regenerated plants to soil.

Total Hours: 60

TEXT BOOKS:

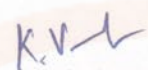
1. Bhojwani, S.S. & Razdan, M.K. (1996). "Plant Tissue Culture: Theory and Practice". Elsevier Science.
2. George, E.F., Hall, M.A. & De Klerk, G.J. (2008). Plant Propagation by Tissue Culture (3rd Edition). Springer.
3. Pierik, R.L.M. (1997). In Vitro Culture of Higher Plants. Springer.
4. Dodds, J.H. & Roberts, L.W. (1995). Experiments in Plant Tissue Culture. Cambridge University Press.
5. Trigiano, R.N. & Gray, D.J. (2016). Plant Tissue Culture, Development and Biotechnology. CRC Press.

REFERENCE BOOKS:

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|----|--|
| 1. | Bhojwani, S.S. & Soh, W.Y. (2001). Current Trends in the Embryology of Angiosperms. Springer. |
| 2. | Smith, R.H. (2013). Plant Tissue Culture: Techniques and Experiments (3rd Edition). Academic Press. |
| 3. | Thorpe, T.A. (Ed.) (2007). Plant Cell Culture: Essential Methods. Wiley-Blackwell. |
| 4. | Razdan, M.K. (2003). Introduction to Plant Tissue Culture (2nd Edition). Science Publishers. |
| 5. | Gamborg, O.L. & Phillips, G.C. (Eds.) (1995). Plant Cell, Tissue and Organ Culture: Fundamental Methods. Springer. |

WEB REFERENCES:

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|----|---|
| 1. | https://www.psscive.ac.in/storage/uploads/textbooks/pdf/english/plant-tissue-culture-technician-english-class-11.pdf |
| 2. | https://www.slideshare.net/slideshow/plant-tissue-culture-media-components/250162141 |
| 3. | https://ugcmoocs.inflibnet.ac.in/assets/uploads/1/35/872/et/P30_M03200219060602021717.pdf |
| 4. | https://ugcmoocs.inflibnet.ac.in/assets/uploads/1/54/1537/et/Lecture%2021%20-%20Text,%20Summar,%20Objectives,%20Glossary%20and%20FAQ200323060603032929.pdf |
| 5. | https://www.youtube.com/watch?v=AYj_5h3hzLQ |


BoS Chairman

U25CS61T	Programming in C	L	T	P	C	Total
		1	0	0	2	45

COURSE OBJECTIVES:

- Understand the fundamentals of the C programming language, including syntax, data types, variables, operators, and program structure
- Apply decision-making and looping constructs to solve computational problems
- Develop modular programs using arrays, strings, and functions, including recursive techniques
- Implement C programs using various programming constructs for practical problem-solving
- Build logical thinking and programming skills through hands-on coding exercises

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Explain the fundamentals of C programming, including program structure, data types, variables, keywords, and operators.
CO2 :	Develop C programs using decision-making, selection, and iterative control statements to solve simple computational problems.
CO3 :	Design modular programs using arrays, strings, functions, parameter passing techniques, and recursion.
CO4 :	Implement C programs involving input/output operations, operators, conditional statements, and switch-case constructs..
CO5 :	Develop and debug C programs using loops, arrays, and recursive/non-recursive functions to solve real-world programming problems.

UNIT I : OVERVIEW OF C

9 Hrs.

Introduction to C Language - Features of C Language - First Program in C - Compilation of C Program - Variables – definition – declaration – Constants - Keywords – Data Types – integer - char – floating point - Operators – arithmetic – relational – logical – conditional.

UNIT II : CONTROL STATEMENTS

9 Hrs.

Decision Making Statements – simple if – if-else – nested if - Switch Statement – Looping Statements – for – while – do-while - Continue Statement - Break Statement.

UNIT III : ARRAYS & FUNCTIONS**9 Hrs.**

Array & String Handling in C: Arrays in C - Strings in C - Multidimensional Arrays in C. Functions in C: Function Prototype – Call by value – Call by reference – Recursion.

UNIT IV : PROGRAMS FOR PRACTICE - I**9 Hrs.**

Program using simple I/O operations - Demonstrate different data types in a program - Program using various operators in C - Program using if-else statement - Program using switch-case statement.

UNIT V : PROGRAMS FOR PRACTICE - II**9 Hrs.**

Program using for loop - Program using while loop - Program using do-while loop - Demonstrate single dimensional array with a C program - Demonstrate two dimensional array with a C program - Program using non-recursive function in C - Program using recursive function in C.

Total Hours: 45**TEXT BOOKS :**

- | | |
|----|--|
| 1. | Programming in ANSI C – E.Balagurusamy, Eighth Edition, 2018. |
| 2. | The C Programming Language – Brian W.Kernighan and Dennis M.Ritchie, 1988, 2nd Edition, Pearson Education. |

REFERENCE BOOKS :

- | | |
|----|---|
| 1. | Programming with C – Byron S. Gottfried, Fourth Edition, 2018. |
| 2. | C: How to Program – Paul Deitel and Harvey Deitel, Ninth Edition, 2024. |
| 3. | Programming in C – Stephen G. Kochan, Fourth Edition, 2015. |
| 4. | Let Us C – Yashavant Kanetkar, 21st Edition, 2025. |

WEB REFERENCES :

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|----|---|
| 1. | https://www.tutorialspoint.com/cprogramming/index.htm |
| 2. | https://www.geeksforgeeks.org/c-programming-language/ |
| 3. | https://www.programiz.com/c-programming |
| 4. | https://www.learn-c.org |
| 5. | https://www.w3schools.com/c/?utm_source=chatgpt.com |


BoS Chairman

U25TA01T	Tamizhum Ilakkiyamum	L	T	P	C	Total
		2	0	0	2	30

பாடத்திட்டத்தின் நோக்கம்:

• தமிழின் தொன்மை இலக்கியங்களான சங்க இலக்கியங்கள் பற்றிய ரசனை மற்றும் அறிவைப் பெறுதல்
• காப்பியங்கள்,பக்தி இலக்கியங்கள் வழி அறநெறிகளை வளரச்செய்தல்
• பாட்டியல் நூல்களின் வரலாற்றினை அறியச்செய்து பிற்கால இலக்கியங்களின் அமைப்பினைத் தெளிவுபெறச்செய்தல்
• பள்ளியிலிருந்து கல்லூரிக்கு வரும் மாணவர்களுக்கு தமிழில் உள்ள அறிவு சார் படைப்புகளை அறிமுகப்படுத்துவது இதன் முதல் நோக்கமாகும்
• சமூக மற்றும் தேசிய அறிவுடன் நவீன காலத்திற்கு ஏற்ற தொடர்புத் திறன்களைப் பெற இப்பாடத்திட்டம் மாணவர்களுக்குப் பயிற்சி அளிக்கிறது

பாடத்திட்டத்தின் பயன்கள்

CO1 :	சங்க இலக்கியங்கள் பற்றியும் சங்ககால மக்களின் அகப்புற வாழ்க்கையையும் அறிந்துக்கொள்ளலாம்.
CO2 :	காப்பியங்கள் வழி பழங்கதை மாந்தர்களின் பண்புகளையும் சமயக்கொள்கைகளையும் மாணவர்கள் அறிந்துக்கொண்டு இலக்கியங்களை படைக்கின்றனர்.
CO3 :	பக்தி இலக்கியங்களை மாணவர்கள் படிப்பதன் வழி அறநெறியையும் பக்தியுணர்வையும் உணர்ந்து வாழ்வர்.
CO4 :	சிற்றிலக்கியங்கள் படிப்பதன் வழி மாணவர்கள் மன்னர்களின் பெருமையையும் தமிழின் சிறப்பையும் உலகறியசெய்வர்.
CO5 :	மொழிப் பாடமாக தமிழைப் பயிலும் மாணவர்களுக்கு கல்லூரி மற்றும் மாநில அளவிலான போட்டித்தேர்விற்கும் தமிழ் இலக்கிய அறிவு தற்கால அரசு வேலை வாய்ப்பிற்கும் உதவுகிறது. இக்கால சூழலுக்கு ஏற்ப இலக்கியங்களை படைக்கும் ஆற்றலைப்பெறுகின்றனர்.

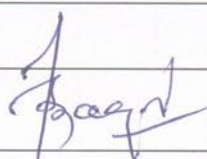


அலகு I: சங்க இலக்கியம்	6 மணிநேரம்
எட்டுத்தொகை, பத்துப்பாட்டு அறிமுகச் செய்திகள் நற்றிணை - நின்ற சொல்லர்; நீடுதோன்று இனியர்; சிறுமை உறுபவோ? செய்பு அறியலரே! (கபிலர், பாடல்: 1) குறுந்தொகை - யாயும் ஞாயும் யார் ஆகியரோ?..... அன்புடை நெஞ்சம் தாம் கலந்தனவே. (செம்புலப் பெயனீரார், பாடல்-40) புறநானூறு - ஈன்று புறந்தருதல் எந்தலைக் கடனே..... களிறு எறிந்து பெயர்தல் காளைக்குக் கடனே. (பொன்முடியார், பாடல்.312).	

அலகு II : காப்பிய இலக்கியம்	6 மணிநேரம்
காப்பியங்களின் தோற்றமும் வளர்ச்சியும் - ஐம்பெரும் காப்பியங்கள் (சிலப்பதிகாரம் - மணிமேகலை - சீவக சிந்தாமணி - வளையாபதி - குண்டலகேசி) - ஐஞ்சிறுகாப்பியங்கள். சிலப்பதிகாரம் - மதுரைக்காண்டம் - வழக்குரை காதை.	

அலகு III : பக்தி இலக்கியம்	6 மணிநேரம்
பக்தி இலக்கியங்கள் தோற்றமும் வளர்ச்சியும்- (சைவம்,வைணவம் - இஸ்லாமியம், கிறித்துவம்-பௌத்தம்-சமணம்.) சைவம் - மாசில் வீணையும் மாலை மதியமும் ஈசன் எந்தை இணையடி நீழலே (திருநாவுக்கரசர். பாடல்1) வைணவம் - செடியாய வல்வினைகள் தீர்க்கும் திருமாலே படியாய்க் கிடந்து உன் பவளவாய் காண்பேனே! (குலசேகர ஆழ்வார். பாடல்.66).	

அலகு IV: சிற்றிலக்கியங்கள்	6 மணிநேரம்
சிற்றிலக்கியங்கள் தோற்றமும் வளர்ச்சியும் - (பரணி - பிள்ளைத்தமிழ் - தூது - உலா - கலம்பகம் - குறவஞ்சி- பள்ளு - அந்தாதி) . தமிழ் விடு தூது அறிமுகம்- சீர்கொண்ட கூடற் சிவராச தானிபுரந்..... நினையும் படிப்பெல்லா நின்னைப் படிப்பார் -1-10, 11-20, 21-27. (27 கண்ணிகள்)	

அலகு V- தற்கால இலக்கியங்கள்	6 மணிநேரம்
	

ஹைக்கூ தோற்றமும் வளர்ச்சியும், ஹைக்கூ கவிதைகள் - சிறுகதை தோற்றமும் வளர்ச்சியும், சிறுகதை-பிரபஞ்சன்-மனுஷி, (கதைக்கரு,கதாப்பாத்திரங்கள்)

மாணவர்களுக்கு சிறுகதை, ஹைக்கூ, ஒரு நிமிட கதை, ஒரு பக்க சிறுகதை படைக்கும் பயிற்சி அளித்தல் .

Total Hours: 30

பாடநூல்கள்:

1.	முனைவர். மு.அருணாசலம் & இராஜா வரதராஜா., தமிழ் இலக்கிய வரலாறு, அருண் பதிப்பகம், கண்டோன்மென்ட், திருச்சி, 2017.
2.	முனைவர்.ச.வே.சுப்பிரமணியன்., சங்க இலக்கியம் (மூலம் முழுவதும்), மணிவாசகர் பதிப்பகம், சென்னை, 2006.
3.	புலியூர்கேசிகன்., சிலப்பதிகாரம்(மூலம் முழுவதும்), சரண் பக்ஸ், சென்னை,2021.
4.	முனைவர்.கதிர் முருகு., தமிழ்விடுதாது., கௌரா பதிப்பகம், சென்னை,2020.
5.	யுகன்(தொகுப்பாசிரியர்).General Tamil III, பிரபஞ்சனின் சிறுகதைகள்., நற்றிணை பதிப்பகம், சென்னை,2024.

பார்வை நூல்கள்:

1.	தேவி. இராசேந்திரன் (தேவிரா), தமிழ் இலக்கணம், நந்தினி பதிப்பகம், அண்ணாநகர், சென்னை,2012.
2.	தமிழண்ணல்., புதிய நோக்கில் தமிழ் இலக்கிய வரலாறு, மீனாட்சி புத்தக நிலையம், மதுரை,1960.
3.	தற்காலத் தமிழ் இலக்கியம்., பாரி நிலையம், சென்னை,1985.
4.	மா.இராசமாணிக்கனார், பத்துப்பாட்டு ஆராய்ச்சி.,சாரதா பதிப்பகம்,சென்னை,2012.
5.	இரா.சந்திரசேகரன், தமிழ்ச் சிற்றிலக்கியங்கள்., கௌரா பதிப்பகம், சென்னை,2012.

இணைய

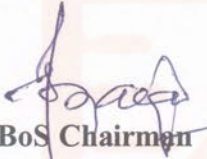
1.	https://www.tamilvu.org/courses/degree/c031/c0313/html/c0313211.htm
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3.	https://www.tamilvu.org/ta/courses-degree-p203-p2031-html-p2031662-29949
4.	https://arangameena.blogspot.com/2022/11/blog-post.html
5.	https://shorturl.at/qhnMC

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2.	Konar, N. (2009). How to Teach Vocabulary in ELT Classroom? <i>The Journal of English Language Teaching (India)</i> , 8-12.
3.	Savignon, S. J. (1991). Communicative Language Teaching: State of the Art. <i>TESOL Quarterly</i> , 25(2), 261–278. https://doi.org/10.2307/358746

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1.	https://www.bbc.co.uk/learningenglish/english/features/pronunciation
2.	https://www.bbc.co.uk/learningenglish
3.	https://www.skillsyouneed.com/ips/active-listening.html
4.	https://learnenglish.britishcouncil.org/skills/speaking
5.	https://www.cambridgeenglish.org/learning-english/


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U25EN01T	English for Communication	L	T	P	C	Total
		1	0	2	2	45

COURSE OBJECTIVES:

• To master communication fundamentals and overcome barriers.
• To boost listening comprehension across contexts.
• To enhance speaking fluency, accuracy, and interpersonal skills.
• To develop strong reading comprehension and summarization.
• To acquire essential paragraph and letter writing abilities.

COURSE OUTCOMES:

After completion of the course, the students will be able to

CO1 :	Effectively communicate, identify communication types, and address barriers.
CO2 :	Actively listen to comprehend spoken English and take notes.
CO3 :	Speak clearly and confidently, improving fluency and pronunciation.
CO4:	Read effectively, grasping main ideas and summarizing texts.
CO5 :	Write well-structured paragraphs and various letters.

UNIT I : FOUNDATIONS OF LANGUAGE AND COMMUNICATION	9 Hrs.
Introduction to Communication - Definition, process, importance, types (verbal, non-verbal, formal, informal) – 7 Cs of effective communication – Barriers to Communication: Semantic, psychological, physical, cultural, and how to overcome barriers.	

UNIT II : RECEPTIVE SKILLS I: LISTENING	9 Hrs.
Listening Skills: Importance of active listening – Types of listening - Intensive, Extensive, Attentive – Strategies for listening comprehension - Listening for gist, specific information, inference – Listening to short talks, news snippets, and simple conversations– Note-taking.	



UNIT III : PRODUCTIVE SKILLS I: SPEAKING	9 Hrs.
Intrapersonal and Interpersonal Communication & Differences – Speaking sub-skills: Fluency, Accuracy, Vocabulary and Pronunciation – Factors influencing Speaking Skills: Performance conditions, Affective factors, Listening Skill, Feedback, Linguistic Components & Speaking – Form, Content & Use.	

UNIT IV : RECEPTIVE SKILLS II: READING	9 Hrs.
Reading Skills – Types of reading - skimming, scanning, intensive, extensive; Strategies for reading comprehension - Identifying main ideas, topic sentences, supporting details, inferencing. Summarizing and paraphrasing short passages.	

UNIT V: PRODUCTIVE SKILLS II: WRITING	9 Hrs.
Paragraph Writing: Elements of a good paragraph (topic sentence, supporting sentences, concluding sentence) – Cohesion and coherence – Types of paragraphs (descriptive, narrative, persuasive - basic) – Letter Writing: Formal letters (application for leave, complaint letter, simple inquiry letter) – Informal letters (personal letter to a friend/relative).	

Total Hours: 45

TEXT BOOKS :	
1.	C.Richards, Jack and Theodore S.Rodgers. <i>Approaches and Methods in Language Teaching</i> . 2nd Edition. Cambridge: Cambridge University Press, 2010.
2.	Adler, Ronald B., et al. <i>Understanding Human Communication</i> . 13th ed., Oxford University Press, 2013.
3.	Hacker, Diana, and Nancy Sommers. <i>A Writer's Reference</i> . 9th ed., Bedford/St. Martin's, 2018.
4.	H.H, Stern. <i>Fundamental Concepts of Language Teaching</i> . New York: Oxford University Press, 2015.
5.	Mohan, Krishna, and Meera Banerji. <i>Developing Communication Skills</i> . 2nd ed., Macmillan Education India, 2018.

REFERENCE BOOKS :	
1.	Alrasheedi, S. (2020). Investigation of Factors Influencing Speaking Performance of Saudi EFL Learners. <i>Arab World English Journal</i> , 11(4), 66–77. https://doi.org/10.24093/awej/vol11no4.5

U25VA01T	Indian Intellectual Heritage	L	T	P	C	Total
		2	0	0	2	30

COURSE OBJECTIVES:

• To understand the concept of Bhāratīyata (Indianness) and the fundamentals of the Indian Knowledge System (IKS)
• To understand the evolution, scope, and interdisciplinary nature of Indian Knowledge Systems
• To learn about India's contributions to science, engineering, technology, humanities, and social sciences
• To appreciate India's rich cultural, philosophical, and scientific heritage and its relevance in the modern world
• To promote ethical values, national integration, innovation, and sustainable development through Indian Knowledge Systems

COURSE OUTCOMES:

After completion of the course– the students will be able to

CO1 :	Explain the concepts of Bhāratīyata (Indianness) and Indian Knowledge Systems.
CO2 :	Describe the evolution, sources, and scope of Indian Knowledge Systems.
CO3 :	Identify India's contributions to science, engineering, technology, and health.
CO4 :	Examine the role of Indian Knowledge Systems in humanities, culture, and governance.
CO5 :	Evaluate the relevance of Indian Knowledge Systems for ethical, sustainable, and value-based development.

UNIT I: INTRODUCTION TO BHĀRATĪYATA (INDIANNESS)	6 Hrs.
Concept of Bhāratīyata (Indianness) – Core values of Indianness – Unity in Diversity – Indian Identity and National Integration – Indian cultural heritage and civilizational ethos – Role of Bhāratīyata in promoting social harmony and national development.	

K.V.L

UNIT II: FOUNDATIONAL CONCEPTS IN IKS FOR SCIENCE, ENGINEERING & TECHNOLOGY	6 Hrs.
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Concept and scope of Indian Knowledge Systems (IKS) – Evolution of Indian knowledge traditions – Sources of IKS: Vedas, Upanishads, Itihasas, and Puranas – Interdisciplinary nature of IKS – Relevance of IKS in science, engineering, technology, and contemporary education.

UNIT III: SCIENCE, ENGINEERING & TECHNOLOGY IN IKS	6 Hrs.
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Indian contributions to **Mathematics** (Decimal system, Zero, Algebra, Geometry) and **Astronomy** – Engineering, metallurgy, water resource management, and indigenous technologies – Ayurveda, Yoga, medicinal plants, and traditional healthcare systems – Environmental conservation, biodiversity, and sustainable practices.

UNIT IV: HUMANITIES & SOCIAL SCIENCES IN IKS	6 Hrs.
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Indian society and cultural heritage – Family system, traditions, customs, and cultural diversity – Indian literature, Vedas, Upanishads, Itihasas, Puranas, and philosophical traditions – Governance, ethics, leadership, and public administration – Contemporary relevance of IKS in humanities, social sciences, and nation-building.

UNIT V: INTRODUCTION TO INDIAN KNOWLEDGE SYSTEMS	6 Hrs.
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Applications of IKS in science and technology – IKS for sustainable development and environmental stewardship – Value-based education, ethical living, and holistic well-being – Indigenous knowledge for innovation, entrepreneurship, and nation-building – Global relevance of Indian Knowledge Systems.

Total Hours: 30

TEXT BOOKS :	
1.	Mahadevan, B., Bhat, V. R., & Pavana, R. N. (2022). Indian knowledge systems. PHI Learning Pvt. Ltd.
2.	Kapoor, K., & Danino, M. (Eds.). (2019). Indian knowledge systems. Indian Institute of Advanced Study.
3.	Central Board of Secondary Education. (2012). Knowledge traditions and practices of India. CBSE.
4.	Dharampal. (2000). The beautiful tree: Indigenous Indian education in the eighteenth century. Other India Press.

5.	Mahadevan, B., Bhat, V. R., & Pavana, R. N. (2022). <i>Indian knowledge systems</i> . PHI Learning Pvt. Ltd.
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REFERENCE BOOKS :

1.	Basham, A. L. (2021). <i>The wonder that was India</i> (3rd ed.). Picador India.
2.	Chatterjee, S. C., & Datta, D. M. (2016). <i>An introduction to Indian philosophy</i> (8th ed.). Rupa Publications.
3.	Dasgupta, S. (1991). <i>A history of Indian philosophy</i> (Vols. 1–5). Motilal Banarsidass.
4.	Hiriyanna, M. (2015). <i>The essentials of Indian philosophy</i> . Motilal Banarsidass.
5.	Radhakrishnan, S. (2008). <i>Indian philosophy</i> (Vols. 1–2). Oxford University Press.

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1.	https://culture.gov.in/indian-culture-0
2.	https://ncert.nic.in/pdf/publication/otherpublications/Unity_cultural.pdf
3.	https://nptel.ac.in/courses/109106137
4.	https://estudentdavedanta.net/Cultural_Heritage_Vol_I.pdf
5.	https://onlinecourses.swayam2.ac.in/e-learning/preview/ntr26_ed18


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