

# GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS)



Estd. 1963



0435 – 2401391



principal@gwkc.ac.in



**KUMBAKONAM – 612 001**

*Affiliated to Bharathidasan University*

**DST - CURIE Sponsored Institution**

**IV Cycle of Accreditation**

## **B.SC. BOTANY**


### **PROGRAMME OUTCOMES (POs)**

- PO1 Critical Thinking: Apply the knowledge of Botany to make scientific inquiries and understand about plant diversity.
- PO2 Successful transfer of scientific knowledge both orally and in writing.
- PO3 Practical skills in the field and laboratory experiments.
- PO4 Enhance presentation skills (oral & writing) in Botany.
- PO5 Impart scientific knowledge in Botany and understand fundamental metabolism of plants.
- PO6 Impart knowledge about biodiversity, exploration, estimation and conservation.
- PO7 Develop honesty in work and respect for self and others.
- PO8 Convey and practice social, environmental and biological ethics.
- PO9 Study incessantly by self to cope with growing competition for higher studies and employment.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- PSO1 Educate students in and around Kumbakonam, a granary of South India, about plant science.
- PSO2 Inculcate strong fundamentals on modern classification aspects of Botany.
- PSO3 Build life skills in Edible mushroom cultivation, Biofertilizer production, Greenhouse maintenance and Seed technology through value-added courses.
- PSO4 Understand the nature and basic concepts of cell biology, Taxonomy and ecology.
- PSO5 Analyse the relationships among plants and microbes.
- PSO6 Provide a glimpse of Career and job opportunities.
- PSO7 Create platform for higher studies in Botany.
- PSO8 Facilitate students to take-up successful career in Botany.



  
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## **B.SC. CHEMISTRY**


### **PROGRAMME OUTCOMES (POs)**

- PO 1 Provide a broad foundation of chemistry.
- PO 2 Understand the importance of elements in periodic table and its role in daily life and organize chemical information.
- PO 3 Interpret and analyze quantitative data.
- PO 4 Equip the students to face challenges in the employment domain and instil confidence to turn into entrepreneur, expand their knowledge, available opportunities related to chemistry in government services through exams particularly in field of food safety, health inspector, pharmaceutical industry.
- PO 5 Hone their skills of handling of corrosive, poisonous, explosive and carcinogenic chemicals making themselves employable in any kind of industry.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- PSO 1 Gain the knowledge of chemistry through theory and practical.
- PSO 2 Understand good laboratory practices, safety and research-oriented skills.
- PSO 3 Acquire the ability to synthesize, separate and characterize compounds using laboratory and instrumental techniques.
- PSO 4 Demonstrate an understanding of good laboratory and handling of chemical waste and also explain the applications of chemistry to day-to-day life.
- PSO 5 Competency for competitive exams.



  
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## **M.SC. CHEMISTRY**

### **PROGRAMME OUTCOMES (POs)**

- PO 1 To impart qualitative and quantitative analytical knowledge in Chemistry.
- PO 2 Enhance proficiency in advance level of Chemistry.
- PO 3 Carryout experiments in the area of organic analysis, estimation, separation, derivative process, inorganic semi micro analysis, preparation, conductometric and potentiometric titrations.
- PO 4 Improve career prospects (Inter and intra disciplinary) & enrich individual skills (such as analytical reasoning, critical thinking, problem solving).
- PO 5 Explore new areas of research.
- PO 6 Explain the integral activity of chemistry for addressing social, economic, environmental issues, energy deficiency, human health and medicine.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- PSO1 Have sound knowledge about the fundamentals of chemistry and its applications on various fields.
- PSO2 Will become familiarize with different areas of chemistry.
- PSO3 Acquire an ability to synthesize, separate and characterize compounds using laboratory and instrumental techniques.
- PSO4 Understand the causes of environmental issues and its controlling measures.
- PSO5 To motivate the students to appear for CSIR-NET so that they take up research opportunities at global level.
- PSO6 Create job opportunities at all levels of chemical, pharmaceutical, food products, life-oriented material industries.



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## **B.COM**


### PROGRAMME OUTCOMES (POs)

- PO1 Impart expertise so that students can prove themselves in different professional exams like C.A., C.S, CMA, MPSC, UPSC etc.
- PO2 Apply knowledge of business concepts and functions in an integrated manner.
- PO3 Become familiar with business regulatory framework.
- PO4 Develop entrepreneurial ability.
- PO 5 Promote the ability to work as an individual as well as in team.

### PROGRAMME SPECIFIC OUTCOMES (PSOs)

- PSO1 Acquire the knowledge, skills in different areas like accounting, communication, decision making, innovations and problem solving in day-to-day business activities.
- PSO2 Students will gain thorough knowledge of Finance, Auditing, Taxation, Accounting and Management.
- PSO3 Students can also obtain practical skills to work as an accountant, audit assistant, tax consultant, and in other business supporting services.
- PSO4 Develop the skills of various techniques used in business.
- PSO5 Develop thorough knowledge of accounting of an organization.



  
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## **M.COM**

### **PROGRAMME OUTCOMES (POs)**

- PO1 Integrate all the areas of business activity in an attempt to develop the most reliable strategies that successfully achieves the objectives of a business.
- PO2 Provide employment opportunity in any business enterprise and hence obtain success in the competitive job market.
- PO3 To give a glimpse of research in the field of finance and commerce.
- PO4 Enhance entrepreneurial ability.
- PO5 Acquire technical and decision-making skills in the areas of accounting, taxation and portfolio analysis.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- PSO1 Provide in-depth understanding of all core areas like Accounting, Management, Security market, Business Environment, Research Methodology and Planning.
- PSO2 Comprehend the concepts and applications of business in the areas related to Finance, Marketing, Entrepreneurship, Human Resource Management.
- PSO3 Explore applications of Finance tools in Project and in Real time business decision making.
- PSO4 Use Statistical tools in behavioral research.
- PSO5 Develop the skills of various techniques used in business and in research.



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## **B.SC. COMPUTER SCIENCE**

### **PROGRAMME OUTCOMES (POs)**

- PO 1 Ability to apply knowledge of Computer Science to analyze problems with strong knowledge of practical and theoretical concepts and to provide effective solutions.
- PO 2 Identify, analyze and formulate solutions to computing problems and compare alternative solutions to computing problems.
- PO 3 Ability to apply, design and develop principles in the implementation of software systems.
- PO 4 Adapt to latest trends in the IT industries.
- PO 5 To provide sound academic knowledge in technical, analytical and creative skills and also gain new ideas to get employability and self-employment.
- PO 6 Recognize the social and the Ethical responsibilities of a professional working in the discipline.
- PO 7 Participate in life-long learning to enhance knowledge and skills necessary to contribute to the betterment of profession.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- PSO 1 Impart an understanding of fundamental, theoretical and practical knowledge in the domain of Computer Science.
- PSO 2 Ability to use current technologies and tools for programming practically.
- PSO 3 Ability to apply, design and develop principles in the implementation of software systems.
- PSO 4 Entrusting students with building a career in the field of IT by offering the latest technologies.
- PSO 5 Recognize the social and the ethical responsibilities of a professional working in the discipline.
- PSO 6 Apply problem solving skills and the knowledge of computer science to solve real-world problems.
- PSO 7 Impart employability and entrepreneurship skills.



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## M.SC. COMPUTER SCIENCE


### PROGRAMME OUTCOMES (POs)

- PO 1 To impart knowledge of a broad range of computer science skills, tools and mathematical techniques, and the capability of applying them to analyze and design complex problems.
- PO 2 Design and develop computer programs/computer based systems in the field of computer science.
- PO 3 To develop research and development activity along with academics.
- PO 4 A strong foundation to pursue higher education in the field of teaching and research.
- PO 5 Gain analytical skills in the area of computer science for research fellowship and Lectureship.
- PO 6 To provide sound academic knowledge, technical, analytical and creative skills.
- PO 7 Helps the students to adapt to recent trends in IT Industries.

### PROGRAMME SPECIFIC OUTCOMES (PSOs)

- PSO 1 To make them understand fundamental, theoretical and practical concepts.
- PSO 2 Ability to use current technologies and tools for programming practically.
- PSO 3 Ability to apply, design and develop principles in the implementation of software systems.
- PSO 4 Entrusting students with building their career in the field of IT by providing them with the latest technologies.
- PSO 5 Impart expertise to the students to develop major projects.
- PSO 6 Provide orientation to take up research.



  
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## BA ECONOMICS


### PROGRAMME OUTCOMES (POs)

- PO 1 To provide in-depth understanding of theories and models used in the subject of Economics and also expose the students to practical aspects.
- PO 2 To impart an understanding of economic structure, recent trends in Economics to develop a logical thinking.
- PO 3 To understand thrust areas of research in the field of Economics to enable the students to take up empirical and policy-oriented research.
- PO 4 To equip the students with managerial and entrepreneurial skills for self employment.
- PO 5 To prepare the students to have exposure on examinations for administrative positions and specialized research.

### PROGRAMME SPECIFIC OUTCOMES (PSOs)

- PSO 1 Gain knowledge and skills on the fundamentals of economic theories and models.
- PSO 2 Develop research-oriented knowledge in Economics.
- PSO 3 Develop the skills of data collection and use of sampling techniques in research.
- PSO 4 Gain knowledge of entrepreneurial skills for self employment, agro based cottage industries like bee keeping, mushroom etc.,
- PSO 5 To impart skills and necessary training to initial start-ups within the realm of economic policy.



  
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## MA ECONOMICS


### PROGRAMME OUTCOMES (POs)

- PO 1 Entire study of discipline.
- PO 2 Mastery of subject knowledge.
- PO 3 Mature personality for employability.
- PO 4 Skills of self – employment.
- PO 5 Ability to work / serve.
- PO 6 Critical thinking.
- PO 7 Sense of creativity.
- PO 8 To give a glimpse of areas of research.
- PO 9 Interview technique, team spirit.

### PROGRAMME SPECIFIC OUTCOMES (PSOs)

- PSO 1 To impart in depth knowledge to students about economic theory regarding utilization and allocation of resources including labour, natural resources and capital.
- PSO2 To develop an understanding of how market for goods and services function and how income is generated and distributed.
- PSO3 To give students an in depth knowledge into special fields of choice like agricultural economics, industrial economics, financial market, developmental economics, international trade, urban economics and economic statistics.
- PSO4 To make students familiar with economic theories and their relevance to apply statistics in various fields of economics.
- PSO5 To understand how the Students would know how the economy is influenced by technological advances and demographic conditions.



  
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## **B.A ENGLISH**


### PROGRAMME OUTCOMES (POs)

- PO1 Acquire knowledge to deal with various problems in life courageously and confidently.
- PO2 Enhance the overall personality and capacity to think creatively, critically, and sensibly with compassion.
- PO3 Help to pursue Master's degree.
- PO4 Give them eligibility to appear for Competitive Examinations at the State and Central level.
- PO5 Secure a decent job in private organizations.
- PO6 Give empowerment to women.
- PO7 Ability to engage in independent and lifelong learning.

### PROGRAMME SPECIFIC OUTCOMES (PSOs)

- PSO1 Inculcate the aesthetic sense in young minds and appreciate a good piece of literature.
- PSO2 Help students to explore the entire range of human experience through Fiction, Poetry, Non-Fiction, Prose and Drama.
- PSO3 Acquire a thorough knowledge of various concepts or types of literary forms, Criticism and Theory.
- PSO4 Acquire overall linguistic competence and communication skills.
- PSO5 Compare literary works of great writers and philosophers by using literary competency.
- PSO6 Convey clearly specialized information from a technical audience to a non-specialized audience.
- PSO7 To train students on various aspects of business communication like preparing e-mail, agenda, circular, business letters, news reports, academic articles, oral presentations, preparation of charts and drafts with brevity and clarity.
- PSO8 Understand the pattern of English questions for Competitive Examinations and equip them to answer confidently.
- PSO9 Acquire skills in teaching English as a Second Language at secondary level.
- PSO10 Acquire the skills required to translate a text.



  
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## **M.A ENGLISH**

### **PROGRAMME OUTCOMES(POs)**

PO1 In depth knowledge of the subject and gain mastery over it.

PO2 Facilitate research in the respective subject.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

PSO1 To impart expertise in literary history, literary theory, criticism and rhetoric and apply them in research discussion and data interpretation.

PSO2 Acquire the skills of systematic research and write research projects and articles.

PSO3 Gain critical and analytical skills in interpretation and evaluation of literary texts.

PSO4 Gain insight into different cultural history and tradition.

PSO5 Gain knowledge about the historical development of language, grammar and different branches of linguistics.

PSO6 To impart a knowledge on the varieties of English language.

PSO7 Give them an opening in print and visual mass media.


PSO8 Enable the students to clear NET, SET, PGTRB and Pre-Ph.D. Registration Test.

PSO9 Acquaint them with recent developments in language and literature.

PSO10 Obtain adequate information on colonization and postwar consequences through literature.

PSO11 Indicate how theories find application in the works of significant authors.



  
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## **B.SC. GEOGRAPHY**

### **PROGRAMME OUTCOMES (POs)**

- PO1 Create a balance between sustainable development of Human Resource and various needs of society.
- PO2 Exposure to new techniques in Geography.
- PO3 Gain knowledge about the acquisition of data based on quantitative and qualitative techniques.
- PO4 Acquire proficiency to clear competitive exams like UPSC and TNPSC.
- PO5 Understand different resources in the Regional, Local and Global levels.
- PO6 Gain knowledge about the basic skills of Map making.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- PSO1 Students will be able to use the scientific method including critical thinking, sampling, hypothesis formulation and testing, and controlled experimentation to assess environmental problems, and be able to effectively communicate research objectives, methodology, results, interpretations, and conclusions in oral and written formats.
- PSO2 Students will have a general understanding of physical geographic processes, the global distribution of landforms and ecosystems, and the role of the physical environment on human population.
- PSO3 Students will be able to think in spatial terms to explain what has occurred in the past as well as using geographic principles to understand the present and plan for the future.
- PSO4 Students will have a general understanding of the various theoretical and methodological approaches in both physical and human geography and be able to develop research questions and critically analyse both qualitative and quantitative data.
- PSO5 Develop an idea about different types of Mapping Techniques.
- PSO6 Develop an idea about different types of scales, map projections, identifications of rocks and minerals, diagrammatic representation of data, types of surveying instruments.
- PSO7 Interpretation of ariel photographs, satellite images, Indian toposheets and Indian daily weather report.



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## M.SC. GEOGRAPHY


### PROGRAMME OUTCOMES (POs)

- PO1 Understand the unifying themes of both human and environment interactions.
- PO2 Provide working knowledge of the discipline in diversifying fields.
- PO3 Interpret the results via written, Oral, Graphical, Geospatial maps and Quantitative means.
- PO4 Impart expertise so that students can clear in competitive exams like UPSC, NET, SET and TNPSC.

### PROGRAMME SPECIFIC OUTCOMES (PSOs)

- PSO1 Apply knowledge of global issues to a unique scientific problem.
- PSO2 Evaluate and apply geographic methods and associated theories to analyses advance Geographic concepts.
- PSO3 Analyse the problems of physical as well as cultural environments of both rural and urban areas and find solutions.
- PSO4 Create an awareness and responsibility for the environment.
- PSO5 Demonstrate proficiency using Geographical Research tools including spatial statistics, Cartography, Remote sensing, GIS and GPS.
- PSO6 Learn the application of various modern instruments and collect data.
- PSO7 Develop an idea about different types of Mapping Techniques.



  
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## **BA HISTORY**


### PROGRAMME OUTCOMES(POs)

- PO1** Acquire knowledge in the field of social sciences, literature and humanities which will make the students sensitive and sensible enough.
- PO2** Acquaint with the social, economical, historical, geographical, political, ideological and philosophical tradition and thinking.
- PO3** Empower the graduates to appear for various competitive examinations or choose the post graduate programme of their choice.
- PO4** Enable the students to acquire the knowledge with human values to deal with various problems in life with courage and humanity.
- PO5** Impart adequate logical and analytical thinking to look for the solution of various issues in the life of human beings to make the world a better place to live.
- PO6** Provide students with an awareness regarding Civil and Legal Rights.

### PROGRAM SPECIFIC OUTCOMES(PSOs)

- PSO1** Understand the basic themes, concepts, chronology and the scope of Indian History.
- PSO2** Understand the existing social, political, religious and economic conditions of the people.
- PSO3** Develop interests in the study of history and activities relating to history like visiting archaeological sites, museum, collecting old coins etc.,
- PSO4** Promote the skills required for the students to appear for career oriented competitive examinations.
- PSO5** Understand the history of countries other than India with comparative approach.
- PSO6** Enable the students to choose a career in education as a school teacher.
- PSO7** Disseminate the knowledge of various religious administrative, executive and revolutionary ideologies.
- PSO8** Understand Art and Architectural glory of India.
- PSO9** Compare the role of various rulers, leaders, reformers and constitution for the development of administration, society and culture through the ages.



  
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## M.A HISTORY


### PROGRAMME OUTCOMES(POs)

- PO1** To understand the connectivity between the past and the present History of India and Tamil Nadu.
- PO2** Create an awareness on research through collection of data, inquiry, classification of data etc.,
- PO3** Understand the significance of the role of Science and Technology in the process of modernization.
- PO4** Promote the skills like critical thinking and objective understanding for becoming a Scientific historian.
- PO5** Comprehend the lives of great intellectuals of India and the state to imbibe characters and virtues that have enabled them to become leaders.
- PO6** To appear for TNPSC, UPSC and NET, SET Examinations.

### PROGRAMME SPECIFIC OUTCOMES(PSOs)

- PSO1** Understand and evaluate the complexities of historical developments of various nations, societies, and cultures.
- PSO 2** Acquaint with research skills, methodologies, philosophy of history and historiography as being professional historian and researcher.
- PSO 3** Enable the students to choose a career in education as a school teacher or collegiate professor.
- PSO 4** Develop the feeling of patriotism and Nationalism.
- PSO 5** Provide the students with ample opportunities to build their careers.
- PSO 6** Focus on the students to prepare for Competitive Examinations .
- PSO 7** Observe the Historical sources of India and Tamil Nadu.
- PSO 8** Understand the origin and growth of the Empire in India and Tamil Nadu.
- PSO 9** Acquire knowledge in the latest technological tools for their research and career work.



  
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## **B.SC., MATHEMATICS**


### **PROGRAMME OUTCOMES (POs)**

- PO1 Develop the knowledge of Mathematics in problem solving, planning and ability to learn new information.
- PO2 Inculcate the habit of active listening and identify the strategy for solving the problems.
- PO3 Have practical exposure which equips the students to face modern day challenges in the relevant discipline.
- PO4 Exhibit proficiency in arriving at innovation-based knowledge, information to provide valid conclusion.
- PO5 Educate the students to develop their skills for employability.
- PO6 Create, select and apply decision making in research.
- PO7 Communicate effectively on various activities and make effective presentations.
- PO8 Promulgate the ability to learn Mathematics with high moral and ethical values.
- PO9 Formulate profound ability to pursue higher education at global level.
- PO10 Grow civic responsibilities, personality traits and human values through interaction with society.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- PSO1 Communicate mathematics effectively by written, computational and graphical means.
- PSO2 Demonstrate in-depth knowledge of Mathematics, both in theory and applications.
- PSO3 Exhibit in depth knowledge in analytical and critical thinking to identify, formulate and solve problems in the field of Science and Engineering.
- PSO4 Take up Mathematics programme at Master's level anywhere inside and outside India.
- PSO5 Gain a thorough knowledge in preparing for competitive examinations conducted by TNPSC/UPSC/BSRB.



  
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## **M.SC. MATHEMATICS**


### **PROGRAMME OUTCOMES (POs)**

- PO1 Demonstrate an understanding on the foundations and history of Mathematics.
- PO2 Elaborate on the unifying structure of Mathematics.
- PO3 Gain exposure to related areas of Mathematics and other fields.
- PO4 Become involved with professional organizations in gaining insight into future employment prospects and establishing professional contacts.
- PO5 Disseminate mathematical ideas both in writing and orally.
- PO6 Enable the students to acquire manipulative skills of algebra, geometry, trigonometry and calculus.
- PO7 Facilitate the students to communicate ideas effectively and to digest information and concepts independently.
- PO8 Investigate and apply Mathematical problems and solutions in a variety of contexts related to Science and Technology and illustrate these solutions using symbolic, numeric, graphical methods.
- PO9 Impart expertise so that the students will be able to compete at the national, and international level competition.
- PO10 Communicate scientific information and results.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- PSO1 Have a strong foundation in core areas of Mathematics (both pure and applied).
- PSO2 Gain the Ability to understand and deal with abstract concepts.
- PSO3 Develop written and oral communication skills in order to effectively communicate, design and analyse the results.
- PSO4 Use scientific symbolic computing software and demonstrate in the lab.
- PSO5 Gain a thorough knowledge in preparing themselves for the CSIR, NET and SET Examinations.
- PSO6 Take up any project from the fields of Science, Technology, Business and Industry.



  
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## **B.SC., PHYSICS**

### **PROGRAMME OUTCOMES (POs)**

- PO1 Exposure to basic concepts of physical sciences with an eye on their higher studies.
- PO2 Design of the curriculum to enable the students to take up higher education in diversified areas of science.
- PO3 Design of the curriculum to enhance basic, analytical, technical /experimental and creative skills.
- PO4 Syllabus has been framed to understand /acquire basic / appropriate tools/ techniques /equipments and correlate them with day-to-day life.
- PO5 Framework of the curriculum encompasses ethical values, social responsibility, leadership skills/entrepreneurial skills/internship/employability skills.
- PO6 Curriculum design to identify emerging areas of Science and Technology.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- PSO1 Understand the basic principles of physics and relate them with applications in the domain of properties of Matter, Mechanics, Optics, Thermodynamics, Electricity and Magnetism, Atomic and Molecular, Nuclear, Solid-State Physics and Electronics.
- PSO2 Relate theory and applications, harness new ideas related to physics and allied sectors and contribute to multidisciplinary and interdisciplinary domains.
- PSO3 Create scientific temperament and inquisitiveness and an awareness of the impact of Physics on the environment, society and development outside the scientific community.
- PSO4 Summarize interdisciplinary relationship between the concepts of physics with chemistry and mathematics representing multiple representation of scientific information.
- PSO5 Adopt the concepts of Physics / Electronics to design simple physical models / Electronic devices.



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## **MSC. PHYSICS**

### **PROGRAMME OUTCOMES (POs)**

- PO1 Knowledge Development.
- PO2 Employability skills.
- PO3 Developing new projects and designs.
- PO4 Experimental Skills.
- PO5 Grooming the candidates to explore knowledge independently.
- PO6 Design and conduct of demos/create models to analyze/interpret data.
- PO7 Acquire the expertise to solve any dynamical system.
- PO8 Develop skills to contribute to R&D.
- PO9 Groomed to collate information from different sources and gain coherent understanding of the subject.
- PO10 Groomed to become professionally competent to develop independent thinking.
- PO11 Inculcate the skills to exploit learning resources including libraries, e-resources etc.to stay abreast of recent developments.
- PO12 To help the students accomplish tasks either individually or as member of a group in multidisciplinary settings.
- PO13 Framing of the curriculum, to inculcate ethical values, social responsibility, professional competence, pragmatic wisdom, commitment to nation in the area of Science and Technology.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- PSO1 Problem solving skills.
- PSO2 Learn basics of core and applied physics.
- PSO3 Exposure to classical, quantum, mathematical, statistical, condensed matter, electromagnetic theory and nuclear physics.
- PSO4 Specialized understanding of advanced topics like Nonlinear Dynamics, Crystal growth, Thin films and Nano materials.
- PSO5 Expertise to develop coding skills and numerical simulation.
- PSO6 Developing extra disciplinary/interdisciplinary skills to understand natural phenomena.
- PSO7 Research aptitude towards experimental and theoretical physics.
- PSO8 Explore avenues of research in Institute of Plasma Research (IPR), Physical Research Laboratory(PRL), Institute of Physics (IOP),Saha Institute of Nuclear Physics(SINP), Raman Research Institute(RRI), IISc, IISER, CECRI, etc.
- PSO9 To impart expertise to enable the students to characterize materials and understand their properties.



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## B.A TAMIL

### PROGRAMME OUTCOMES (POs)

- PO1 மொழி மற்றும் இலக்கியம் சார்ந்த ஆழ்ந்த அறிவைப்பெற உதவுகிறது.
- PO2 மொழியறிவைப் பெற்ற மாணவிகள் பல்வேறு ஊடகத்துறைக்கு செல்லும் வாய்ப்பைப் பெறுகின்றனர்.
- PO3 இளங்கலை பயின்ற மாணவிகள் கலைகள் தொடர்பான பாடங்கள் மூலம் தங்கள் திறனை மேம்படுத்திக் கொண்டுள்ளனர். (பறையிசை, நாடகத்திறன் மேம்பாடு முதலியன).
- PO4 இலக்கியத்தின் தன்மைகளைப் புரிந்து கொண்டு புதியன படைக்கும் திறனைப் பெற்றுள்ளனர்.
- PO5 மாணவிகளின் தனித்தன்மைகளை கண்டறிந்து வளர்த்துக்கொள்ள பாடத்திட்டம் உதவுகிறது.

### PROGRAMME SPECIFIC OUTCOMES (PSOs)

- PSO1 தமிழ் இலக்கிய இளங்கலைப் பாடத்திட்டங்கள் உயர்கல்வி பயிலப் பயன்படுகிறது.
- PSO2 இளங்கலைப் பாடத்திட்டத்தை தொடர்ந்து பட்ட மேற்படிப்பைத் தொடர்வதற்குப் பயன்படுகிறது.
- PSO3 இளங்கலைப் பாடத்திட்டம் தமிழ் இலக்கிய வகைகளின் அடிப்படைத் தன்மைகளைத் தெரிந்து கொள்ளப் பயன்படுகிறது.
- PSO4 இப்பாடத்திட்டம் மாணவர்களின் மொழியறிவை மேம்படுத்தப் பயன்படுகிறது.
- PSO5 சமூக நீதிகளையும், சமூக அக்கறை, தலைமைப்பண்பு, ஆளுமைத்திறன், சமூக இணக்கம், வேலைவாய்ப்பு ஆகியக் கூறுகளை இப்பாடத்திட்டத்தின் வழி அறியலாம்



  
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## M.A TAMIL

### PROGRAMME OUTCOMES (POs)

- PO1** முதுகலைப் பாடம் பயின்ற மாணவிகள் ஆராய்ச்சிப் படிப்பை மேற்கொள்கின்றனர்.
- PO2** முதுகலைப் பாடத்திட்டம் மானுடத்தின் வளர்ச்சி பற்றிய அறிவை வழங்குகிறது.
- PO3** பாடத்திட்டத்தின் வழி கலைகள் பற்றிய தெளிவைப் பெறுகின்றனர்.
- PO4** ஊடகவியல் துறைக்குச் செல்ல வேண்டிய அறிவுத்தெளிவை முதுகலைப் பாடத்திட்டம் வழங்குகிறது.
- PO5** மாணவியர் வேலை வாய்ப்பு பெறவும் பல்வேறு திறன்களை வளர்த்துக் கொள்ளவும் பாடத்திட்டம் உறுதுணை புரிகின்றது.

### PROGRAMME SPECIFIC OUTCOMES (PSOs)

- PSO1** மொழியின் கட்டமைப்பு, பயன்பாடு, வளர்ச்சி முதலியவற்றை ஆய்வு செய்தல்.
- PSO2** நாகரிகம், பண்பாடு, கலை, கலாச்சாரம் முதலியவற்றின் வேர்களையும் காலத்திற்கேற்ப மாறுபாடுகளையும் ஆய்வு ரீதியாகத் தெரிந்து கொள்ளல்.
- PSO3** சங்க காலம் முதல் நடப்பியல் வரையிலான நவீன இலக்கிய வடிவங்களையும் பொருண்மைகளையும் தெரிந்து கொள்ளல்.
- PSO4** ஊடகம், நவீன தொழில்நுட்பங்கள் வாயிலாக இலக்கியத்தைப் பயன்படுத்துதல் பற்றி அறிந்து கொள்ளல்.
- PSO5** வேலைவாய்ப்பு தொடர்பான போட்டித் தேர்வுகளுக்குத் தயார்படுத்துதல்.
- PSO6** அறிவியல் அணுகுமுறையில் வேற்றுமொழி இலக்கிய வளங்களை மாணவர்களை அறிந்து கொள்ளச் செய்தல்.



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## B.SC. ZOOLOGY


### PROGRAMME OUTCOMES (POs)

- PO1 Obtain functional knowledge of the fundamental, theoretical concepts and experimental methods in science.
- PO2 Develop skills critically to reflect upon the theory they learn.
- PO3 Extend and understand the impact of science on society.
- PO4 Inculcate the ability to engage in life-long learning to improve professional competency.
- PO5 Apply their professional ability for entrepreneurship and self-employment.

### PROGRAMME SPECIFIC OUTCOMES (PSOs)

- PSO1 Gain knowledge and skills in the fundamentals of animal science, understand the complex interactions among various living organisms.
- PSO2 Analyze complex interactions among various animals of different phyla, distribution and their relationship with the environment.
- PSO3 Understand and apply the knowledge of internal structure of cell, its functions in controlling various metabolic functions of organisms, the complex evolutionary processes and behaviour of animals.
- PSO4 Understand the functioning of immune system and its interaction with pathogens, allergens and organ transplants.
- PSO5 Correlate the physiological processes of animals and its relationship with organ systems.
- PSO6 To impart an understanding of environmental conservation processes, and its importance, pollution control, biodiversity and protection of endangered species.
- PSO7 Perform laboratory experiments as per standard protocols in the area of Biology.
- PSO8 Gain knowledge of Agro based small-scale industries like sericulture, fish farming and vermicompost preparation.
- PSO9 To impart skills and necessary training to initiate start-ups within the realm of life sciences.



  
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## **M.SC. ZOOLOGY**


### **PROGRAMME OUTCOMES (POs)**

- PO1 Impart interest in learning the concepts of life sciences.
- PO2 Develop analytical, communication and professional skills.
- PO3 Will help to improve the technical skills for experimental purposes.
- PO4 Impart the ability to adopt scientific methods and hypothesis testing in designing and execution of experiment.

### **PROGRAMME SPECIFIC OUTCOMES (PSOs)**

- PSO1 Develop understanding of key concepts of biology at biochemical, molecular and cellular level.
- PSO2 Observe and understand animal-animal, animal-plant, animal-microbe interactions and their consequences to animals, humans and the environment and its impact on complex evolutionary processes.
- PSO3 The principles of Genetics in the light of advancements in understanding human genome and genomes of other model organisms are strengthened. This enables the students to apply their knowledge in Genetics to understand human traits and genetic disorders.
- PSO4 Imparts the learning of expression of genome revealing multiple levels of regulation and strategies to manipulate it for the benefit of mankind.
- PSO5 Learning, handling DNA sequence data and its analysis to equip the students to get employed in R&D in the industry involved in DNA sequencing services, diagnostics, and microbiome analysis.
- PSO6 Impart an understanding of zoological science for its application in medical entomology, agriculture-based practices like apiculture, aquaculture, and modern medicine provides employment opportunities and entrepreneurial skills.
- PSO7 Develop theoretical and practical knowledge in handling the animals and using them as model organism.
- PSO8 To impart expertise to enable the students to characterize material and understand their properties.



  
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## Course Outcomes(UG)



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## B.Sc., BOTANY

### **ALGAE, FUNGI AND LICHENS- U21BOC101**

- CO1 Acquire knowledge about the general Characteristics cell, structure and nutritional types of bacteria.
- CO2 Identify the morphology and life cycles of different algae.
- CO3 Describe the general characteristics thallus organization, nutrition, reproduction and life cycles of various fungi.
- CO4 Understand the symbiotic association of lichens, its thallus organization structure, reproduction and uses.
- CO5 Learn about the economic importance of algae, fungi, bryophytes and lichen


### **MICROBIOLOGY & PLANT PATHOLOGY AND PLANT PROTECTION-U21BOC203**

- CO1 Get more knowledge about the history and importance of plant pathology.
- CO2 Realize the classification of plant diseases its symptom, process of infection and pathogenesis
- CO3 Understand the various types of chemical and biological control of plant diseases.
- CO4 Identify the symptoms, causal organism, disease cycle and their management in some plant diseases.
- CO5 Know the contribution of Indian plant pathologists and various research institutes.
- CO6 Learn about the scope, importance and equipments used in plant protection.
- CO7 Describe the objectives and methods of seed treatment and soil sterilization.
- CO8 Understand the different techniques and methods of plant protection.

### **BRYOPHYTES, PTERIDOPHYTES, GYMNOSPERMS AND PALEOBOTANY-U21BOC305**

- CO1 Describe the general characteristics and classification of liver worts and mosses
- CO2 Understand the morphology, reproduction and life – history of the following genera, 1. Riccia 2. Marchantia 3. Anthoceros and polytrichum.
- CO3 Explain the general characteristics and classification of pteridophytes by Smith.
- CO4 Learn more about the structure, reproduction and life history of the following genera:- 1. Psilotum 2. Lycopodium 3. Selaginella 4. Equisetum 5. Adiantum and 6. Marsilea
- CO5 Acquire knowledge about stellar evolution in pteridophytes, Heterospory and origin of seed habit.
- CO6 Know the general characteristics and classification of Gymnosperms by Sporne.
- CO7 Realize morphology, mode of reproduction and life history of the following genera :- 1. Cycas 2. Pinus 3. Gnetum.
- CO8 Analyse the types of fossils and methods of fossilization.



  
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## ***ANATOMY, EMBRYOLOGY AND MICROTÉCHNIQUE- U21BOC407***

- CO1 Distinguish the various types of tissue system and stomata types.
- CO2 Identify the primary structures of roots, stem, and leaf in dicots and monocots.
- CO3 Acquire more knowledge about the normal secondary growth in stem and root.
- CO4 Differentiate the annual rings and periderm formation.
- CO5 Compare the anomalous secondary growth in dicot stem and monocot stem.
- CO6 Learn the structure and development of anther, pollen wall and ovules.
- CO7 Understand the types of ovules and Endosperms.

## ***CELL AND MOLECULAR BIOLOGY- U21BOC509***

- CO1 Describe the basic principles of microscopy, ultra structure and functions of plasma membrane and cell inclusions.
- CO2 Differentiate the prokaryotic and Eukaryotic cells.
- CO3 Learn the structure of nucleolus, Euchromatin and Heterochromatin.
- CO4 Familiarize the special types of chromosomes – Lamp brush chromosomes and polytene chromosomes.
- CO5 Analyse the cell cycle and types of cell division: 1. Mitosis and 2. Meiosis
- CO6 Differentiate the features of nucleic acids DNA and RNA
- CO7 Understand the structure, properties and replication of DNA.
- CO8 Learn Griffith Experiment and Hershey – Chase experiment.
- CO9 Explain the structure, functions and types of RNA
- CO10 Distinguish gene regulation in prokaryotes and Eukaryotes
- CO11 Analyse the various techniques – initiation elongation termination, transcription and translation.
- CO12 Learn the genome organization of chloroplast and mitochondria.

## ***GENETICS, BIostatISTICS AND EVOLUTION- U21BOC510***

- CO1 Apply the Mendel law's in monohybrid, Dihybrid, Backcross and test cross.
- CO2 Differentiate allelic and non – Allelic interactions.
- CO3 Learn about the recombination, linkage and crossing over, cytoplasm inheritance and sex determination.
- CO4 Describe the different functional units of gene and operon concept.
- CO5 Understand the classification, types, mechanism and application of mutation.
- CO6 Know the definition and scope of Bio-statistics
- CO7 Explain the sampling and random sampling techniques.
- CO8 Analyse the types of data, presentation of data and graphical methods.
- CO9 Evaluate the measures of central tendency, dispersion and probability distributions.
- CO10 Understand the different concepts, theories of evolution and population genetics



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## **MORPHOLOGY, TAXONOMY OF ANGIOSPERM AND ECONOMIC BOTANY- U21BOC511**

- CO1 Describe the morphological features of vegetative, floral and fruit parts.
- CO2 Explain the types of inflorescence and fruits.
- CO3 Understand the binomial nomenclature and ICBN Rules.
- CO4 Illustrate the systems of classification (Bentham and Hooker's) its merits and demerits and various techniques of Herbarium.
- CO5 Describe the detailed study of selected families and their economic importance.
- CO6 Acquire knowledge about the economic importance of plants Fruits, Edible, Sugar, Fibres, Medicinal plants and Forest products.

## **BIOPHYSICS, BIOCHEMISTRY AND PLANT PHYSIOLOGY- U21BOC613**

- CO1 Understand the plant – Water relationship with various physiological activities and theories.
- CO2 Explain the Translocation of solutes by means of various theory role and deficiency symptoms of minerals.
- CO3 Know the types of spectrum and the role of pigments in photosynthesis.
- CO4 Describe the photosynthesis by different pathways and cycles.
- CO5 Learn the respiration by means of various cycles and its types.
- CO6 Identify the various plant growth hormones, its chemical nature, physiological effects and functions.
- CO7 Understand the physiological effects such as senescence, abscission – and photoperiodism, Vernalization and seed dormancy.
- CO8 Explain the nature, properties and mechanism of enzyme actions.
- CO9 Describe the structure, classification and functions of carbohydrates, lipids and proteins.
- CO10 Apply the laws of physics in biological phenomena.

## **PLANT ECOLOGY AND CONSERVATION- U21BOC614**

- CO1 Know the types of ecology, its relationship with flora plants environment.
- CO2 Understand cause of deforestation and alleopathy.
- CO3 Learn the concepts, components and types ecosystem.
- CO4 Describe the food chain, food web and energy flow.
- CO5 Explain the methods, developments and units of vegetation.
- CO6 Differentiate the plant succession and ecological classification of plants.
- CO7 Realize the different types of pollution and its controlling measures
- CO8 Familiar with phyto geography, climatic conditions and botanical regions of India.
- CO9 Discuss the various vegetational types of Tamil Nadu - Evergreen, Deciduous, Scrub & Mangrove.
- CO10 Identify the types of distribution, endemism and conservation.



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## ***PLANT BREEDING, LANDSCAPING AND HORTICULTURE - U21B06MBEC2:1***

- CO1 Describe the different methods of crop improvement such as introduction, acclimatization and selection.
- CO2 Learn the various techniques of hybridization
- CO3 Understand the Mutation breeding and its application in plant breeding.
- CO4 Know the types polyploidy and its role for crop improvement.
- CO5 Explain the scope and importance of Horticulture.
- CO6 Acquire knowledge about the different methods of plant propagation and plants growth regulator in Horticulture.
- CO7 Realize classification of horticultural crops.
- CO8 Create interest in different Horticultural techniques such as Green House, Indoor Gardening, Bonsai, Flower arrangement and Nursery management.
- CO9 Understand the principle, Elements, design and layout of landscaping.
- CO10 Describe the special types of Gardens in specific area.

## ***PLANT BIOTECHNOLOGY AND BIOINFORMATICS -U21B06MBEC3:1***

- CO1 Definition and scope of Biotechnology.
- CO2 Describe the different techniques use in tissue culture.
- CO3 Explain general feature, types of the varies plasmid are used in vector.
- CO4 Understand the steps, techniques and involved in Genetic Engineering.
- CO5 Realize the role of Agro bacterium in plant genetic engineering.
- CO6 Analysis the importance and application of bio-mass production and Biofertilizers.
- CO7 Know types of waste treatment, solid, liquid and sewage.
- CO8 Familiar the history scope and application of bio-informatics
- CO9 Learn the different types of data-base-biological nucleic acid primary and secondary protein.
- CO10 Identify the structural classification and literature databases.



  
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## **B.Sc., CHEMISTRY**

### **GENERAL CHEMISTRY I- U21CHC101**

- CO1 State the fundamental assumptions of atomic theory and explain the composition of atoms, including electronic configuration.
- CO2 Describe the arrangements of elements in periodic table based on their electronic configuration, bonding and properties.
- CO3 Explain the formation of ionic and covalent bonds and its physico chemical properties

### **GENERAL CHEMISTRY II- U21CHC203**

- CO1 Explain the importance of s, p, block elements and their properties
- CO2 Describe the fundamental concepts of organic chemistry
- CO3 Describe the basic ideas of quantum mechanics and apply them to problems in physical chemistry
- CO4 Demonstrate that quantum mechanics is needed to describe the world around us, and its relationship with descriptive chemistry.
- CO5 Synthesize organic compounds.


### **GENERAL CHEMISTRY III- U21CHC305**

- CO1 Explain basic principles of inorganic analysis and its applications
- CO2 Describe the aromaticity and nucleophilic substitution reactions
- CO3 Explain the fundamental concepts of thermodynamics
- CO4 Explain the fundamental concepts of Organic chemistry and its reaction
- CO5 Apply the fundamentals of organic chemistry to future research

### **GENERAL CHEMISTRY IV- U21CHC407**

- CO1 Learn about noble gases and its electronic configuration
- CO2 Explain the reactions of mono carboxylic acid and dicarboxylic acid
- CO3 The application of thermodynamics third law
- CO4 Explain the importance of free energy and work function



  
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## ***INORGANIC CHEMISTRY I- U21CHC509***

- CO1 Explain the bonding in co-ordination chemistry using Molecular orbital theory and the combination of atomic orbitals. Identify the principles, structure and reactivity of selected co-ordination complexes.
- CO2 Explain the nomenclature of co-ordination complexes
- CO3 Interpret their electronic spectra And magnetic properties
- CO4 Describe the reaction mechanisms of co-ordination compounds.
- CO5 Graduate students will learn the unique properties organic and inorganic solids have with respect to compounds in solution or in the gas phase, and understand the breadth of compositions and structure solids can have.

## ***ORGANIC CHEMISTRY I- U21CHC510***

- CO1 Distinguish between different kinds of isomers and differentiate between mirror images that are superimposable and mirror images that are not super imposable
- CO2 Assign cis/trans or E/Z configuration for alkanes
- CO3 Explain the fundamentals of Heterocyclic compounds
- CO4 Familiarize with structure of heterocyclic compounds
- CO5 Understand the Application of reagents in Organic Synthesis

## ***PHYSICAL CHEMISTRY I- U21CHC511***

- CO1 To learn about concept of phase and derivation of phase
- CO2 Define the importance of phase diagrams in the field of material science and engineering.
- CO3 Students should be able to interpret the phase diagram of pure substance and recognize conditions here phases exist in equilibrium.
- CO4 Explain the fundamentals of electrochemistry.
- CO5 Evaluate the electrodes and cells


## ***ANALYTICAL CHEMISTRY- U21CH5MBE1:1***

- CO1 Evaluate the analytical data in terms of statics
- CO2 To understand the concept of gravimetric analysis
- CO3 Explain the fundamentals and interpretation method of IR, Raman, UV spectra

## ***WATER TREATMENT AND ANALYSIS- U21CH5MBE1:2***

- CO1 Evaluate the quality of water
- CO2 To understand the concept of water analysis
- CO3 Explain about BOD,COD



  
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## ORGANIC SYNTHESIS- U21CH5MBE1:3

- CO1 Explain the concept of Region selectivity
- CO2 To understand the concept of Protecting groups
- CO3 Explain the synthesis method of Hetero cyclic compounds

## ORGANIC CHEMISTRY II- U21CHC613

- CO1 Gained knowledge about amino acids and proteins
- CO2 Understand the rearrangements in chemical reactions
- CO3 Know about the classification and properties of proteins and nucleic acids
- CO4 Explain the importance of antibiotics
- CO5 Understand the procedures of organic synthesis

## PHYSICAL CHEMISTRY II- U21CHC614

- CO1 Determine the rate law ,order of reaction with respect to each reactant, the overall order of the reaction, rate constant and units.
- CO2 To understand the concept of surface chemistry
- CO3 Apply the concept of adsorption in the field of pollution control.
- CO4 Explain the fundamentals of photochemistry and its applications .
- CO5 Understand the basic concepts of chemical kinetics on reactions.


## INORGANIC CHEMISTRY II- U21CH6MBE2:1

- CO1 Aware about the penetrating power of  $\alpha, \beta, \gamma$  radiation
- CO2 Calculate the age of an object
- CO3 How nuclear chemistry and radiation chemistry can be used to make issues more visible and solve problems, particularly in relation to environmental problems and metal production.
- CO4 Understand the role of metals in biological systems
- CO5 Chemistry of f block elements

## FOOD CHEMISTRY- U21CH6MBE2:2

- CO1 Explain the classification of foods, and nutritive value of food
- CO2 Explain the classification of vegetables
- CO3 Analyze the quality of food and food products
- CO4 Analyze the nutrients present in food.



  
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## ***ROLE OF CHEMISTRY IN LIFE- U21CH6MBE2:3***

- CO1 Explain about Health & Hygiene
- CO2 Explain the classification of drugs
- CO3 Explain about blood-fluids
- CO4 Explain enzymes ,Hormones and common diseases.

## ***PHARMACEUTICAL CHEMISTRY- U21CH6MBE3:1***

- CO1 Explain the fundamental concepts of pharmaceutical chemistry
- CO2 Explain the different types of drugs and its applications.
- CO3 Describe the symptoms and remedies of some types of diseases.
- CO4 Understand the importance of indian medicinal plants.


## ***BIO CHEMISTRY- U21CH6MBE3:2***

- CO1 Explain the fundamental concepts in Bio-chemistry
- CO2 Explain the different types of carbohydrates and its applications.
- CO3 Describe about proteins
- CO4 Understand the importance of proteins

## ***APPLIED CHEMISTRY- U21CH6MBE3:3***

- CO1 Explain the fundamental applications of chemistry
- CO2 Explain the different types of petroleum products
- CO3 Describe about paper manufacturing
- CO4 Understand the importance of milk and milk products



  
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## B.COM COMMERCE

### *FINANCIAL ACCOUNTING (U21COC101)*

- CO 1 Prepare final accounts of their business.
- CO 2 Prepare accounts of non-trading organisation.
- CO 3 Prepare accounting in single entry system and able to convert single entry to double entry system
- CO 4 Prepare Bank Reconciliation statement
- CO 5 Calculate average due date and record transactions related to Bills of Exchange.

### *BUSINESS COMMUNICATION (U21COC102)*

- CO 1 Build affinity with the customers and increase sales.
- CO 2 Knowledge and skill in business related communication.
- CO 3 Develop the skills required for preparing business correspondence.
- CO 4 Develop and delivering effective presentation.
- CO 5 Improves effective communication in business.

### *BUSINESS ACCOUNTING (U21COC203)*

- CO 1 Understand the concept of branch accounts.
- CO 2 Prepare hire purchase accounts.
- CO 3 Understand the concept of Consignment and Joint Ventures.
- CO 4 Understand the procedure of preparing royalty accounts.
- CO 5 Gain the knowledge about Insurance claims.

### *PARTNERSHIP ACCOUNTING (U21COC304)*

- CO 1 Understand about partnership, rules and adjustment of partners capital accounts.
- CO 2 Know the adjustments to be followed at the time of Admission.
- CO 3 Prepare the accounts at the time of Retirement.
- CO 4 Gain knowledge about dissolution and apply the rule of Garner Vs Murray.
- CO 5 Understand the procedures of sale of firm to a company.


### *BANKING THEORY LAW AND PRACTICE (U21COC305)*

- CO 1 Define theoretical structure of banking.
- CO 2 Explain the function of commercial banks.
- CO 3 Describe banker and customer relationship.
- CO 4 Make use of modern banking services like e-banking.
- CO 5 Understand the procedure of mobile banking.

### *COST ACCOUNTING (U21COC406)*

- CO 1 Explain the concept of cost, costing and cost accounting.



  
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- CO 2 Apply the various material control techniques.
- CO 3 Compute the labour cost and the rate of labour turnover.
- CO 4 Allocate the overheads to various departments in various systems and compute the machine hour rate.
- CO 5 Compute the job, process and batch cost.

## **FINANCIAL MANAGEMENT (U21COC507)**

- CO 1 Analyse the financial management concept and calculate time value of money and cost of capital.
- CO 2 Take financial decision based on capital structure theories.
- CO 3 Calculate different leverages and determine suitable dividend policy.
- CO 4 Estimate the working capital requirement of a business.
- CO 5 Compare the business proposals and take decisions using capital budgeting.

## **CORPORATE ACCOUNTING (U21COC508)**

- CO 1 Apply various methods to issue shares.
- CO 2 Apply the accounting procedures for redemption of shares and debentures.
- CO 3 Prepare final accounts of companies.
- CO 4 Know the procedures for amalgamation, absorption and reconstruction of the companies.
- CO 5 Prepare holding company accounts and gain an idea about liquidation of companies.

## **AUDITING (U21COC509)**

- CO 1 Understand generally accepted auditing principles and process of auditing.
- CO 2 Understand generally accepted auditing standards and the professional and ethical responsibilities of the independent public accountant.
- CO 3 Demonstrate knowledge of collection of audit evidence and preparation of audit work papers and report.
- CO 4 Explain the fundamental concept of auditing.
- CO 5 Understand the internal audit process and can work in such situation

## **COMPUTER APPLICATIONS IN BUSINESS (U21COC510)**

- CO 1 Create word document with tables, images, hyperlinks and watermarks.
- CO 2 Create worksheets, organize data and create charts in excel.
- CO 3 Work in a computerized accounting environment.
- CO 4 Choose data entry operator, System operator in various concerns.
- CO 5 Handle accounting software.



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## **MANAGEMENT ACCOUNTING (U21COC611)**

- CO 1 Explain the concept and technique of management accounting and preparation of financial statements.
- CO 2 Calculate ratios and construct balance sheet using ratios.
- CO 3 Determine the marginal cost concept and apply in the business decision.
- CO 4 Prepare different types of budget.
- CO 5 Analyse the material, labour and overhead variances using standard cost techniques.


## **INCOME TAX THEORY LAW AND PRACTICE (U21COC612)**

- CO 1 Introduces the basic concepts of income tax regarding residential status and exempted incomes.
- CO 2 Apply the different provisions relating to determination of taxable income from salary.
- CO 3 Calculate income from house property.
- CO 4 Calculate the business or professional income.
- CO 5 Have expertise to compute the taxable income from other sources.

## **ENTREPRENEURIAL DEVELOPMENT (U21COC613)**

- CO 1 Understand the skills required for organizing and carrying out entrepreneurship activities.
- CO 2 Explore entrepreneurial leadership and management styles.
- CO 3 Apply the systematic process to select and screen a business idea.
- CO 4 Select the best institutions financing and supporting entrepreneurs.
- CO 5 Identify entrepreneurship as a viable, lucrative and preferred career.



  
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## B.Sc., COMPUTER SCIENCE

### *PROGRAMMING IN C(U21CSC101)*

- CO 1** Students learn about the, fundamental of programming language. Know the concept of variable, data types, operators, Expressions
- CO 2** Know the concept of control structures and Looping statements
- CO 3** Learn to create arrays and its types. They learn about functions, strings and storage classes.
- CO 4** To know about how to pass pointers to functions
- CO 5** Gain the knowledge about structure and files. Learn to create file, operations on file, command line arguments in C.

### *OBJECT ORIENTED PROGRAMMING WITH C++(U21CSC203)*

- CO 1** To learn the object oriented programming(OOP), concepts such as abstraction, encapsulation, polymorphism, overloading, inheritance and generic programming
- CO 2** Describe the concepts of inheritance, pointers and virtual functions
- CO 3** To understand the concepts of files, templates and exception handling.
- CO 4** Develop skills to write C++ Programs using to OOPS concepts

### *FUNDAMENTALS OF DATA STRUCTURES AND ALGORITHMS(U21CSC305)*

- CO 1** To give a fundamental knowledge on data structures and exposure to development of algorithms related to data structures.
- CO 2** Choose an appropriate data structure and algorithm design method for a specified problem design.
- CO 3** Assess how the choice of data structure and algorithm design methods impacts the performance of program.
- CO 4** Implement operations like searching, insertion and deletion traversing mechanism etc. on various data structures such as stack queue and linked list.
- CO 5** Implement non-linear data structures are tree and graphs for a specified applications.
- CO 6** Implement appropriate sorting searching technique for a given problem analyze the complexity of given algorithms.
- CO 7** Solve problems using algorithm design methods such as the divide and conquer and dynamic programming and writing programs for these solutions.



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## ***FUNDAMENTALS OF PHOTOSHOP (U21CS3NME1:1)***

- CO 1** To impart the knowledge about the Photoshop in order to improve the employability skills of the learners.
- CO 2** To get basics idea on working with images and colors.
- CO 3** To learn how to select and more an image
- CO 4** To know how to paint and draw an image using various custom tools
- CO 5** To get practical knowledge about layer effect.
- CO 6** To know the uses of various filters.


## ***OFFICE AUTOMATION LAB(U21CS3NME1:2)***

- CO 1** To get the basic ideas of MS Office including Word, Excel &PowerPoint.
- CO 2** To create documents, parts of word window and keyboard operations.
- CO 3** To learn the tabs, commands, tool bars and their icons of MS Word.
- CO 4** To describe the concepts of MS Excel basics such as spreadsheets, creating and editing worksheets and menus, commands, tool bars.
- CO 5** To acquire the knowledge about MS PowerPoint including creating presentations, the ribbon tabs and groups and working with different views.

## ***PROGRAMMING IN JAVA(U21CSC407)***

- CO 1** To give basic knowledge of Object Oriented Programming paradigm and to impart the programming skills in JAVA.
- CO 2** Knowledge on the basic java language features, types and control structures
- CO 3** Use the java programming language for various programming technologies.
- CO 4** Understand the idea inheritance and packages. Propose the use of certain technology by implementing them in the Java programming language to solve the given problem.
- CO 5** Know exception handling, threads are used to perform sub tasks and interthread communication.
- CO 6** Develop applications using an applet will be able to graphics using AWT.
- CO 7** Develop software in the programming language.



  
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## ***E – COMMERCE(U21CS4NME2:1)***

- CO 1 To get basic idea of E-Commerce and its benefits and applications.
- CO 2 To get basic idea of E-Commerce and its benefits and applications.
- CO 3 To learn how to pay online securely and to get knowledge computer crimes.
- CO 4 To know about the search engine used In E-Commerce and how to advertise in Internet.
- CO 5 To acquire knowledge of cyber laws regarding E-Commerce

## ***INTERNET PROGRAMMING(U21CS4NME2:2)***

- CO 1 To get basic idea of Internet.
- CO 2 To know about the connections of Internet.
- CO 3 To learn about E-mail.
- CO 4 To acquire knowledge of HTML

## ***OPERATING SYSTEMS(U21CSC509)***

- CO 1 To learn the fundamentals of OS.
- CO 2 To learn the mechanisms of OS to handle processes and threads and their communications.
- CO 3 To learn the mechanisms involved in memory management in contemporary OS.
- CO 4 To gain knowledge on distributed OS concepts that includes architecture, mutual exclusion algorithms, deadlock detection algorithms and agreement protocols.
- CO 5 To know the components and management aspects of concurrency management.
- CO 6 To learn programmatically to implement simple OS mechanisms.

## ***COMPUTER ARCHITECTURE AND FUNDAMENTALS OF MICROPROCESSORS (U21CSC510)***

- CO 1 To know and understand the guiding principles of digital circuits, their analysis and their design, and their use as components in computers.
- CO 2 Clear understand of computer Architecture.
- CO 3 To know and understand the guiding principles of microprocessors, instruction sets and



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addressing modes.

**CO 4** To learn the architecture and assembly language programming of 8085 microprocessor.

**CO 5** To develop a base for advance microprocessors.

## ***DATA AND COMPUTER COMMUNICATIONS(U21CSC511)***

**CO 1** Show clear understanding of the basic concepts of data communications including the key aspects of networks and their interrelationship, physical structures, types, models & internetworking.

**CO 2** Understand the purpose of network layered concepts networks communications using the layered concept, and able to compare and contrast OSI & TCP/IP.

**CO 3** Show clear & unambiguous understanding of analog transmission of digital and analog data, methods, and the procedures involved in converting digital data and analog to analog signals (modulations -ASK,FSK,PSK,AM,FM,PM).

**CO 4** Can effectively discuss that bandwidth utilization is goal oriented and involves tradeoffs by showing that multiplexing (TDM, FDM, WDM) efficiently use bandwidth while spread spectrum inefficiently use bandwidth to ensure privacy and ant jamming.

**CO 5** Illustrations explain the concept of hamming distance, and its relationship to errors as well as detection & correction of errors in blocks codes and implementation of cyclic redundancy check, data logical link control & media access control.

**CO 6** Understand connectivity LAN's, internetworking principles and how the interrupt protocols IPV4, IPV6 & ICMP operate.

**CO 7** Understanding routing principles and algorithms such as distance vector & link state & demonstrate the mechanics associated with TCP/IP protocols suite (TFTP, SMTP, SNMP, and HTTP).

## ***COMPUTER GRAPHICS(U21CS5MBE1:1)***

**CO 1** To provide comprehensive introduction about computer graphics system and design algorithms.

**CO 2** Discuss various two-dimensional geometric transformation and output primitives.

**CO 3** Extract scene with different clipping methods and its transformation.


**CO 4** To make the students familiar with concepts of 3D graphics & 3D transformation

**CO 5** To get the knowledge of visible surface detection methods.

## ***MULTIMEDIA SYSTEMS(U21CS5MBE1:2)***

**CO 1** To understand and familiar the concepts of Multimedia by creating multimedia applications.



  
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- CO 2 Developed understanding of technical aspects of multimedia systems.
- CO 3 Understand various file formats for audio, video & text media.
- CO 4 Develop various multimedia systems applicable in real time.
- CO 5 Design interactive multimedia s/w.
- CO 6 Apply various networking protocols for multimedia application
- CO 7 To evaluate multimedia application for its performance

***DIGITAL IMAGE PROCESSING (U21CS5MBE1:3)***

- CO 1 Analyze general terminology of Digital Image Processing
- CO 2 Examine various types of images, intensity transformations and spatial filtering.
- CO 3 To learn the techniques of image restoration.
- CO 4 Understanding the concepts of compression and its algorithms
- CO 5 An able to know about the segmentation techniques.

***DATABASE SYSTEM CONCEPTS(U21CSC613)***

- CO 1 Basic concepts of Database management systems.
- CO 2 Analysis how data are stored and maintained using data models.
- CO 3 Draw an E-R diagram using entities, attributes and relationships among them.
- CO 4 Explain the basic database storage structures and access techniques, File organization, indexing methods including B+ tree, B-tree and hashing.
- CO 5 Its specifies basic issues of transaction processing and concurrency control.





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- CO 6** Show clear understand of PL/SQL blocks, works, triggers, and explain and demonstrate the stored procedures and functions, packages, cursors & transactions.

## ***PHP SCRIPTING LANGUAGE (U21CSC614)***

- CO 1** To understand server side scripting
- CO 2** To get the basic knowledge of XHTML & JavaScript
- CO 3** To understand how server-side programming works on the web
- CO 4** To learn PHP basic syntax for variable types calculation and creating conditional structures.
- CO 5** To understanding POST & GET in form submission data
- CO 6** To get the knowledge of cookies & session variables.
- CO 7** To learn the concepts of Read & process data in a MYSQL DB.
- CO 8** To understand the various file handling functions


## ***SOFTWARE ENGINEERING(U21CS6MBE2:1)***

- CO 1** How to apply the software engineering lifecycle by demonstrating competence in communication, planning, analysis, design, construction and deployment.
- CO 2** An ability to work is one or more significant application domains.
- CO 3** Work. and as part of a multidisciplinary learn to develop and deliver quality software.
- CO 4** Demonstrate an understanding of and apply current theories, models and techniques that provide a basis for the software lifecycle.
- CO 5** Demonstrate an ability to use the techniques and tools necessary for software engineering practice.

## ***SYSTEM ANALYSIS AND DESIGN(U21CS6MBE2:2)***

- CO 1** To give basic concepts and facilitate the learners in the concepts of System, System Analysis, Design and Implementation.
- CO 2** To understand the concepts of system & its development.
- CO 3** To identify various types of information system concepts and terminologies.
- CO 4** Able to recognize the function of system analyst.



  
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**CO 5** To understand the system analysis & design, implementation and evaluation.

**CO 6** To learn the system development strategies and future considerations.

## ***SOFTWARE PROJECT MANAGEMENT(U21CS6MBE2:3)***

**CO 1** To introduce the basic concepts of Software Project Management and the various phases in Software Management Framework.

**CO 2** To learn about the evaluation of software economics and the ways to improve it.

**CO 3** To understand both theoretical and methodological issues involved in software project management.

**CO 4** To understand the Life Cycle phases of a Software management and learn about the model based software architectures.

**CO 5** To learn about organizational, factors & project manager responsibilities

**CO 6** To develop strategies to calculate risk factors involved in projects.

## ***INTERNET OF THINGS(U21CS6MBE3:1)***

**CO 1** To Understand the different architectures for IoT.

**CO 2** To learn various protocols at the different layers for IoT.

**CO 3** To Understand the different business models for IoT.

**CO 4** To develop a middle ware for IoT.

**CO 5** To develop Applications of IoT in Industrial Contacts.

## ***CYBER SECURITY(U21CS6MBE3:2)***

**CO 1** Ability to know about cyber security basics

**CO 2** Develop knowledge about internet security myths.

**CO 3** Gain through understanding about password security.

**CO 4** Familiarize with safe internet browsing.


**CO 5** Provide clear expose about wireless security.

## ***SOCIAL COMPUTING (U21CS6MBE3:3)***

**CO 1** To develop knowledge about mining the social networks like Twitter, Facebook.

**CO 2** To get analyzing skills about network structures and their properties.



  
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- CO 3** To gain the knowledge about community maintained resources, Supporting technologies and Social information Sharing and social filtering
- CO 4** To know about random walks, link prediction and privacy in social networks.
- CO 5** To learn the knowledge about the Taxonomy of visualizations in social networks.



  
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## B.A ECONOMICS

### *MICRO ECONOMICS – I (U21ECC101)*

- CO 1 Understand the Nature and scope of micro economics.
- CO 2 Explain the cardinal analysis of Cardinal approach .
- CO 3 Differentiate ordinal approach from cardinal approach.
- CO 4 Understand concepts and Laws of Production function.
- CO 5 Demonstrate the concepts and types of costs and Revenues.

### *INDIAN ECONOMIC DEVELOPMENT (U21ECC102)*

- CO 1 Understand the feature of Indian Economy.
- CO 2 Assess the population growth and occupational distribution.
- CO 3 Assessing about Agricultural productivity and Agricultural Development under Five year Plans.
- CO 4 Discuss the Role of Industries in Indian Economy and Industrial policies.
- CO 5 Explain Role of Transport in Indian Economic Development.

### *MICRO ECONOMICS II (U 21ECC203)*

- CO 1 Understand the forms of market.
- CO 2 Explain the price and output determination under perfect competition.
- CO 3 Understand the price and output determination under imperfect competition.
- CO 4 Analyse theories of factor distribution.
- CO 5 Assess the theories of Rent Wage , Interest and Profit.

### *MACRO ECONOMICS (U21ECC304)*

- CO 1 Understand the Nature and scope of macro economics.
- CO 2 Explain measurement of national income and its limitations.
- CO 3 Discuss the consumption and investment functions.
- CO 4 Analyse the classical and Keynes theory of employment.
- CO 5 Assess the changes in General equilibrium.

### *LABOUR ECONOMICS (U21ECC305)*

- CO 1 Understand the Meaning and characteristics of labour and issues related to labour.
- CO 2 Understand how to fix wages.
- CO 3 Explain prevention and settlement of disputes.
- CO 4 Discuss the structure of trade union in India.



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CO 5 Assess the social security measures in India.

## ***INTERNATIONAL ECONOMICS (U21ECC406)***

- CO 1 Understand the principle of comparative advantage and its formal expression and interpretation within different theoretical models.
- CO 2 Apply general equilibrium models in analyzing the economic instruments such as tariffs, quotas, export subsidies, free trade areas, customs unions and common markets.
- CO 3 Familiar with, knowledge about balance of payment deficit and measures to correct disequilibrium.
- CO 4 Familiar with the major recent developments in the world trading system, and be able to critically analysis key issues raised both by the current round of WTO negotiations and by the spread of regional trading arrangements.
- CO 5 Understand the trade relations of various countries, import-export procedures and currency exchange rate procedures.

## ***MONETARY ECONOMICS (U21ECC507)***

- CO 1 Understand The Evolution, Forms And Kinds Of MTwoy.
- CO 2 Evaluate The Various Theories Of MTwoy .
- CO 3 Understand The Types Of Inflation And Deflation
- CO 4 Analyse The Phases Of Trade Cycle.
- CO 5 Understand Banking Functions And Methods Of Credit Control


## ***FISCAL ECONOMICS (U21ECC508)***

- CO 1 Understand the scope of fiscal economics , public and prevent finance and its social advantage.
- CO 2 Gain knowledge sources of deferent types of revenue form the tax, kinds of taxation and its effect of taxation.
- CO 3 Lean about public and privet expenditure to get benefit of the peoplemore , and effect and control expenditure, types of budgets.
- CO 4 Understand the central and state relationship for federal finance, definition of fiscal finance.

## ***ENVIRONMENTAL ECONOMICS (U21ECC509)***

- CO 1 Understand the meaning , significance and various segments of Environmental economics.
- CO 2 gain the knowledge of externality and cost- benefit analysis of environmental economics.
- CO 3 Understand the various types of pollution and protection of Environment.



  
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CO 4 Assess the impact of environmental education and the law in the protection of environment.

CO 5 Assess the current environmental policies.

## ***CAPITAL MARKET (U21ECC510)***

CO 1 Understand the functions and importance of capital market.

CO 2 Analyse the instruments of capital market

CO 3 Understand the characteristics and function of financial institutions.

CO 4 Differentiate primary market from Secondary market.

CO 5 Assess the functioning of Stock Exchange.

## ***HISTORY OF ECONOMIC THOUGHT (U21ECC611)***

Understand the significance of history of economic thought.

CO 1

CO 2 To know about the economic ideas of classical thinkers.

CO 3 Appreciate the ideas of socialistic school.

CO 4 Familiarise the student with the ideas of welfare school.

CO 5 Explain the India leaders views in Economic Thought.

## ***PERSONNEL MANAGEMENT (U21ECC612)***

CO 1 Understand the role that personnel management in man power planning

CO 2 Develop deep insight on of job evaluation , job description , job specification.

CO 3 To provide depth knowledge on the various recruitment and selection processes employed by organisations .

CO 4 Understand the role that personnel management in motivation.

CO 5 Assess theories of leadership.

## ***ENTREPRENEURSHIP DEVELOPMENT (U21ECC613)***

CO 1 Know the importance and Role of Entrepreneur in Economic Development.


CO 2 Understand the problem of small Scale Industries and to Know Significance and incentives and subsidies through different industrial policies and programmes.

CO 3 Know the problem of women Entrepreneur Qualities and prospects of women Entrepreneur in India.

CO 4 Understand the Concept of project and project Formulation and to Know to preparation of project Report.

CO 5 Entrepreneurs Know the Sources of different institutional financial assistance.



  
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## B.A., ENGLISH

### *AGE OF CHAUCER AND SPENSER (U21ELC101)*

- CO 1 Get exposure to the features of Shakespearean writings and other Elizabethan dramatists such as Marlow and Webster.
- CO 2 Gain insight into the growth and development of British drama.
- CO 3 Understand the socio-political context of the period from 14<sup>th</sup> century to 17<sup>th</sup> century.
- CO 4 Apply on how the structure of Shakespearean sonnet varies from Petrarchan sonnet.
- CO 5 Comprehend the development of trends in British drama and poetry.

### *Age of Milton and Pope (U21ELC102)*

- CO 1 Grasp the major theme of satiric poems that belong to 17th-18th century.
- CO 2 Comprehend the different types of humourin drama of that age.
- CO 3 Understand the concept of metaphysical poetry and its various features.
- CO 4 Understand different features of Neoclassicism and its influence on English society.
- CO 5 Appreciate the influence of society and culture on critical and literary thoughts of the time.

### *Eighteenth Century Romantic Literature (U21ELC203)*

- CO 1 Understand the significance of human experience as reflected in the works of Romantic writers.
- CO 2 Foster the sorties of adventure as well as deep faith in God and nature.
- CO 3 Understand the gradual changes from reason to emotion in British Literature.
- CO 4 Understand the prominence of logic and reason in the 18th century British Literature.
- CO 5 Understand the prominence of the historical background and the literary development.

### *Shakespeare (U21ELC304)*

- CO 1 Identify, explicate, and respond to key themes and elements in Shakespearean drama, as presented in both written and spoken form.
- CO 2 Analyze Elizabethan culture and its influence on the West both creatively and philosophically.
- CO 3 Identify the organization of Shakespearean drama, using Aristotle's Poetics as a framework.
- CO 4 Identify a range of literary techniques relevant to the study of a dramatic text.
- CO 5 Respond to key themes and elements in Shakespearean drama.



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## *The Age of Tennyson (U21ELC305)*

- CO 1 Students should be able to analyze a variety of works including poetry and novel.
- CO 2 With both central and more obscure texts from the Romantic period.
- CO 3 Interpret texts creatively in relation to their historical and cultural contexts.
- CO 4 Evaluate and compare various thematic perspectives and styles with English Romanticism.
- CO 5 Interpret the influence of Tennyson's early poetry on Pre-Raphaelite Brotherhood.

## *British Literature: The 20th Century (U21ELC406)*

- CO 1 Comprehend of literary, society, cultural, biographical and historical background of the greatest writings in British literature.
- CO 2 Identify key elements that are distinctive to literary achievement of writers in the Romantic, Victorian and Modernist periods of British literary history.
- CO 3 Reflect and write analytically about the literary works and their contexts.
- CO 4 Develop their own skills of literary critical analysis.
- CO 5 Understand and successfully deploy a range of terms and concepts integral to literary studies.

## *Literary Theory (U21ELC507)*

- CO 1 Demonstrate familiarity with the history of literary theory in the West, including prominent theorists and critics, important schools and movements, and the historical and cultural contexts important to those theories.
- CO 2 Demonstrate an understanding of key concepts in literary theory.
- CO 3 Explain to others the meaning, significance, and value of specific literary theoretical works.
- CO 4 Use literary theoretical concepts to develop your own interpretations of literary texts.
- CO 5 Analyze specific literary theories in order to distinguish them from other theories and to identify the structure and logic of their arguments.

## *Diasporic Literature (U21ELC508)*

- CO 1 Get an understanding of issues of Diaspora, location, history and geography in literature and awareness of the relationship between literary texts and their historical, political and cultural contexts.
- CO 2 Gain an insight into the complex traumatic and fragmented history of South Asia, which led to territorial, national and cultural reformulations, which in turn shaped modern South Asian cultural imaginaries of home identity and belonging.

## *Indian Writing in English (U21ELC509)*

- CO 1 Understand the masterpieces in Indian Writing in English.



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- CO 2 Enable to make a comparative study of English literature and Indian Literature.
- CO 3 Understanding of the socio cultural aspect would have been reached.
- CO 4 Understand the growth of Indian writing in English in the context of India's contact with English.
- CO 5 Aware of the superstitious practices prevalent in Indian Society.

### *American Literature (U21ELC510)*

- CO 1 Understand how the great American themes of self-reliance individualism, sin and redemption were shaped through its rich and varied literature.
- CO 2 Gain knowledge about how multiculturalism was shaped through its rich literature.
- CO 3 Learn some aspects of American English usage and diction.
- CO 4 Gain an understanding of how society, culture and politics affect literature.
- CO 5 Understand the historical background of American literature and the American dream.

### *English Critical Tradition (U21ELC611)*

- CO 1 Analyze the evolution literary theories from Greek to Modern age.
- CO 2 examine how theory and criticism has shaped the discipline we study.
- CO 3 Emphasis is on the continuity of key ideas in the history of criticism.
- CO 4 Write formal and informal responses to literary and critical theory that demonstrate engagement, reflective thought, effective inquiry, perception of patterns in language features, and responsible generalization.
- CO 5 Recognize and critique the argument underlying critical writings.


### *Popular Literature (U21ELC612)*

- CO 1 Explain with representative literary and cultural texts within a significant number of historical, geographical, and cultural contexts.
- CO 2 Apply critical and theoretical approaches to the reading and analysis of literary and cultural texts in multiple genres.
- CO 3 Identify, analyze, interpret and describe the critical ideas, values, and themes that appear in literary and cultural texts and understand the way these ideas, values, and themes inform and impact culture and society, both now and in the past.
- CO 4 Write analytically in a variety of formats, including essays, research papers, reflective writing, and critical reviews of secondary sources.
- CO 5 Ethically gather, understand, evaluate and synthesize information from a variety of written and electronic sources.

### *NEW LITERATURES (U21ELC613)*

- CO 1 Possess a coherent knowledge and a critical understanding of postcolonial literature and its key historical, cultural and theoretical developments.
- CO 2 Compare, discuss and explain interconnections and functions of postcolonial literature and its contexts, including comparative and interdisciplinary issues



  
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- CO 3 Critically evaluate arguments and assumptions about postcolonial literature, texts, and modes of interpretation.
- CO 4 Communicate arguments effectively and show a degree of independent thinking in so doing.



  
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## B.Sc., GEOGRAPHY

### *EARTH SYSTEM SCIENCE (U21GC101)*

- CO 1 Understand the functioning of Earth systems in real time and analyze how the natural and anthropogenic operating factors affects the development of landforms
- CO 2 Students will able to demonstrate the knowledge of origin of the earth with suitable theories.
- CO 3 They know about the interior and exterior parts of the earth.
- CO 4 Students know about the continental drift and how the continents are formed, plate tectonics and the movements of plates and its impact on the Earth.

### *MAP SCALE AND REPRESENTATION OF RELIEF (U21GC102P)*

- CO 1 Understand the functioning of Earth systems in real time and analyze how the natural and anthropogenic operating factors affects the development of landforms
- CO 2 Students will able to demonstrate the knowledge of origin of the earth with suitable theories.
- CO 3 They know about the interior and exterior parts of the earth.
- CO 4 Students know about the continental drift and how the continents are formed, plate tectonics and the movements of plates and its impact on the Earth.

### *CLIMATOLOGY (U21GC203)*

- CO 1 Understand the basic concepts and provide essential background for further studies in weather and climate.
- CO 2 Explain the causes of atmospheric instability and disturbances, climate variability and climate change.

### *CLIMATIC DATA ANALYSIS (U21GC204P)*

- CO 1 Describe the climatic data using diagrams.
- CO 2 Draw suitable diagrams to represent climatic data.
- CO 3 Interpret Indian weather reports.

### *GEOMORPHOLOGY (U21GC305)*

- CO 1 Differentiate geomorphic agents and their work on the Earth's Surface
- CO 2 Understand various landforms of the earth surface



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## ***APPRECIATION AND INTERPRETATION OF TOPOSHEETS (U21GC306P)***

- CO 1** Student would able to understand various signs and symbols that used in Indian topographical maps and independently interpret physical and cultural features of an area using topo sheets.

## ***CARTOGRAPHY (U21GC407)***

- CO 1** After completion of course the students will understand thoroughly the arts and science of map making.
- CO 2** Students able to design the map with proper cartographic procedures.

## ***MAP PROJECTION (U21GC408P)***

- CO 1** After completion of course the students will understand thoroughly the arts and science of map making.
- CO 2** Students able to design the map with proper cartographic procedures.

## ***OCEANOGRAPHY (U21GC509 )***

- CO 1** The students will having the knowledge about the significance of ocean and resources
- CO 2** Students will understand the causes and consequences of ocean waves, tides and currents.


## ***HUMAN GEOGRAPHY (U21GC510)***

- CO 1** Understand the basic concepts in various sub-fields of human geography
- CO 2** Appreciate the growth, distribution and composition of population in different parts of the world.
- CO 3** Analyze the types and patterns of rural and urban settlements, urbanization and related issues in India and other regions of the world.

## ***GEOGRAPHY OF RESOURCES (U21GC511 )***

- CO 1** The students will have ability to explain the production and distribution of agricultural crops, minerals, basic industrial products, patterns of major transport types and the impacts of world trade and globalization.



  
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## ***SURVEYING (U21GC512P)***

- CO 1** The students will have ability to make use of proper tools and surveying methods for ground data collection.
- CO 2** The course will enable students to handle a range of surveying instruments to measure distance, height and angle of physical features on the ground.

## ***GEOINFORMATICS (U21GC613)***

- CO 1** Understand the principles of remote sensing and characteristics of different satellite sensors.
- CO 2** Understand the components of GIS and various geospatial data models.
- CO 3** Apply the knowledge of remote sensing and GIS to various problems on earth surface.

## ***GEOGRAPHY OF INDIA (U21GC614)***

- CO 1** The students will have a proper understanding of the physical, cultural, economic and demographic aspects of India which will help them to pursue it for competitive exams.

## ***REMOTE SENSING IMAGE INTERPRETATION (U21GC615P)***

- CO 1** The students will have practical ability to interpret the aerial and satellite images and to extract physical and cultural features for different geographical problems.



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## B.A HISTORY

### *HISTORY OF INDIA UPTO 1206 A.D. (U2IHSC101)*

- CO 1 Perceive various sources to study of Ancient India.
- CO 2 Know about the development and the achievements of man in the Stone Age.
- CO 3 Understand the glory of Indian history in the age of Harappan Civilization.
- CO 4 Comprehend the history of Vedic period.
- CO 5 Understand the philosophy of Jainism and Buddhism.

### *HISTORY OF INDIA 1206 A.D TO 1526 A.D (U2IHSC202)*

- CO 1 Understand early dynasties of Sultans in India
- CO 2 Grasp territorial expansion of Sultanate Period.
- CO 3 Understand the administrative setup of Sultanate from central to local level.
- CO 4 Know the system of trade & commerce during the period of Sultanate .
- CO 5 Understand the nature of village community & the relationship between the different sections of society.

### *HISTORY OF TAMILNADU UPTO 1565 A.D (U2IHSC203)*

- CO 1 Know the Socio – Economic Condition of the Sangam Age.
- CO 2 Emergence of the Empires in Tamilnadu.
- CO 3 Understand the glory of Tamilnadu under the Cholas.
- CO 4 Know the advent of Islam in Tamilnadu.
- CO 5 Useful to appear in the NET/ SET Examination.


### *HISTORY OF INDIA 1526 A.D TO 1757 A.D (U2IHSC304)*

- CO 1 Identify the Condition of India Under Mughals .
- CO 2 Evaluate the administration of the Mughals.
- CO 3 Analyse the Contribution of the Mughals to the Art and Architectural development.
- CO 4 Understand the necessary of the emergence of Maratha power.
- CO 5 Acquire knowledge on the European settlements.

### *HISTORY OF TAMILNADU FROM 1565 A.D to 2000 A.D (U2IHSC305)*

- CO 1 Evaluate the Socio – economic cultural condition under the Nayaks.
- CO 2 Know the social reform movement in Tamil Nadu.
- CO 3 Recognize the role of Tamil Nadu in the Freedom Movements.
- CO 4 Analyse the development of education, press, literature, Industries etc.



  
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CO 5 Understand the various government contributed to the economic growth of Tamil Nadu.

## **HISTORY OF BRITISH ADMINISTRATION FROM A.D 1757 TO A.D 1947 (U2IHSC406)**

CO 1 British contribution to the Indian Administration and its impact.

CO 2 Evaluate the reforms of various Governor Generals.

CO 3 Understand the growth of Civil Services in India.

CO 4 Analyse the participation Indians in the administration under British rule.

CO 5 Assess the central legislature development under the British rule.

## **THE INDIAN NATIONAL MOVEMENT (U2IHSC507)**

CO 1 Identify the early attempts of freedom Movements.

CO 2 Understand the growth of nationalism.

CO 3 Evaluate the role of Indian National Congress.

CO 4 Analyse the Contributions of the great leaders to the freedom Movement.

CO 5 Understand the role of revolutionaries, Press and literature in the freedom Movement.

## **HISTORY OF WORLD CIVILIZATIONS (U2IHSC508)**

CO 1 To know about the past centuries and Civilizations of the world.

CO 2 To understand the contribution of various civilizations to the world.

CO 3 Compare the Major legacies of clerical civilizations in the earlier period.

CO 4 Understand the impact of Roman Civilization.

CO 5 know how the Chinese civilization promote their culture through the ages.

## **HISTORY OF EUROPE FROM 1453 A.D. TO 1789 A.D. (U2IHSC509)**

CO 1 Analyse the value of Geographical discoveries.

CO 2 Understand the renaissance in Europe.

CO 3 Assess the Enlightened despotism in Europe.

CO 4 Evaluate the condition of Europe in the eve of French Revolution.

CO 5 Analyse the role of French intellectuals to the French revolution.

## **HISTORY OF U.S.A. FROM 1776 A.D. To 1900 A.D. (U2IHSC510)**

CO 1 Understand the causes for the American war of Independence.


CO 2 Assess the great leaders and their achievements to make USA as a strong nation.

CO 3 Evaluate the role of Lincoln in the Civil war .

CO 4 Analyse the rise of USA as a world imperialistic power.

CO 5 Observe the impact of the reconstruction for the social change in



  
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## ***HISTORY OF ENGLAND FROM A.D. 1603 TO A.D.1914 (U2IHSC611)***

- CO 1 Understand the struggle for the powers of parliament in England.
- CO 2 Know the restoration of Monarchy.
- CO 3 To gain a knowledge about revolution and reform movements.
- CO 4 Understand the role of Prime Ministers in England.
- CO 5 Understand the relationship of England with other countries in Europe.


## ***HISTORY OF EUROPE FROM 1789 A.D.To 1945 A.D. (U2IHSC612)***

- CO 1 Realise the importance of French Revolution.
- CO 2 Assess the role of Napoleon I the History of France and Europe.
- CO 3 Understand the problem of Eastern Questions.
- CO 4 Analyse the Unification of Italy and Germany.
- CO 5 Evaluate the Russian revolution and its impact.

## ***CONSTITUTIONAL HISTORY OF INDIA FROM A.D 1773 To A.D.1950 (U2IHSC613)***

- CO 1 Understand the growth of legislature under British.
- CO 2 Know the impact of Government of India Act of 1858.
- CO 3 Observe the features of the Act of 1919.
- CO 4 Understand the significance of the 1935 Act.
- CO 5 Assess the role of Constituent Assembly in the making of Constitution.



  
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## **B.Sc Mathematics**

### ***DIFFERENTIAL AND INTEGRAL CALCULUS (U21MC101)***

- CO 1** Find higher derivatives of given function by using Leibnitz's theorem.
- CO 2** Study the knowledge on curvature with its properties in both Cartesian and polar form.
- CO 3** Evaluate indefinite integrals and reduction formulae.
- CO 4** Classify and solve the change of order of integration.
- CO 5** Use Beta and Gama functions to solve their properties.

### ***PROGRAMMING IN C (U21MC102)***

- CO 1** Describe the concept of structure oriented programming and understand various C-tokens.
- CO 2** Illustrate with examples the idea of conditional statements and looping statements.
- CO 3** Categorize one dimensional, two dimensional arrays.
- CO 4** Differentiate various 'function prototypes' and demonstrate nesting of functions.
- CO 5** Distinguishes the idea of structures and unions, structure and arrays.

### ***ANALYTICAL GEOMETRY 3D AND TRIGONOMETRY (U21MC203)***

- CO 1** Gain through knowledge about angle between two skew lines.
- CO 2** Find equation of Spheres satisfying given conditions.
- CO 3** Gain knowledge in the expansion of trigonometry functions.
- CO 4** Expose various concepts of inverse trigonometry.
- CO 5** Accurately identify and apply properties of logarithmic and exponential functions, Gregory's series.

### ***PROGRAMMING IN C – LAB (U21MC204P)***

- CO 1** Execute simple programs using input/output and conditional statements.
- CO 2** Execute simple programs using looping statements.
- CO 3** Execute simple programs using one-dimensional and two dimensional arrays.
- CO 4** Execute simple programs using strings.



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CO 5 Execute simple programs using structures.

## ***THEORY OF EQUATIONS AND VECTOR CALCULUS (U21MC305)***

- CO 1 Get the knowledge to find the relation between roots and coefficients of equations in Horner's method and Newton's method.
- CO 2 Understand the reciprocal equation and quotient, remainder of equation and removal terms in equation.
- CO 3 Understand the important definitions and basic concepts in vector and scalar function.
- CO 4 Solve the integration of vector using methods of line, surface and volume of integral.
- CO 5 Understand the concept of Gauss divergence theorem, Green's theorem, Stokes's theorem.

## ***MATHEMATICAL STATISTICS (U21MC306)***

- CO 1 Collect, Classify and tabulate a given data and study graphical and diagrammatic representation through, Bar diagram, Pie diagrams, Histograms, Frequency polygon.
- CO 2 Understand measures of central tendency, viz., Mean, Median, Mode and Geometric mean, Harmonic mean. Workout the simple problems in discrete and continuous series.
- CO 3 Calculate Karl Pearson, Rank correlation and lines of regression.
- CO 4 Compute Binomial, Poisson and Normal Distribution.
- CO 5 Relationship among t, chi-square distribution and analyze small sample test.

## ***SEQUENCES AND SERIES (U21MC407)***

- CO 1 An ability to work within an axiomatic framework sequence and limit.
- CO 2 A detailed understanding of how Cauchy's criterion for the convergence of real and complex sequences and series follows from the completeness axiom and the ability to explain the steps in standard mathematical notation.
- CO 3 Knowledge of some simple techniques for testing the convergence of sequences and series and confidence in applying them.
- CO 4 Familiarity with a variety of well-known sequences and series, with a developing intuition about the behavior of new ones.
- CO 5 An understanding of how the elementary functions can be defined by power series, with an ability to deduce some of their easier properties.

## ***MATHEMATICAL STATISTICS PRACTICAL (USING SPSS) (U21MC408P)***

- CO 1 Calculate average, Median, Mode, Standard deviation of the given collection data.



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- CO 2 Find the correlation between the two variables between -1 and +1.
- CO 3 Get conclusion (or) result.
- CO 4 Fitting of Binomial, Poisson and Normal distribution.
- CO 5 Find the Students t-distribution and Chi-square test for Goodness of fit.

## ***ABSTRACT ALGEBRA (U21MC509)***

- CO 1 Classify and apply the Groups, Permutation groups and their properties.
- CO 2 Identify different algebraic structures, isomorphic and Homomorphism structure.
- CO 3 Understands the fundamental concepts of the algebraic structures such as Rings and subrings.
- CO 4 Understand Ideals, quotient rings and Homomorphism of rings.
- CO 5 Learn about various concepts of Unique factorization domain and Polynomial rings.


## ***REAL ANALYSIS (U21MC510)***

- CO 1 Apply mathematical concepts and principles to perform numerical and symbol computations.
- CO 2 Use technology appropriately to investigate and solve mathematical problems.
- CO 3 To recognize mathematics related problems, asses their solvability and solve them with in a specified time frame.
- CO 4 Analysis Riemann integral derivatives and fundamental theorem of calculus.
- CO 5 Understand Taylor's theorem and Binomial theorem concept.

## ***MECHANICS (U21MC511)***

- CO 1 Get the knowledge about forces help the students in daily life.
- CO 2 Understand the concepts of force with moment of a force, Reduction of coplanar forces into a force and couple.
- CO 3 Deep analyzing the laws of Friction.
- CO 4 Understand kinematics such as relative velocity, components of velocity and acceleration. Learn about Newton's Laws of motion.
- CO 5 Find out the various properties of simple harmonic motion, simple pendulum & projectile.



  
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## ***DIFFERENTIAL EQUATIONS (U21MC512)***

- CO 1** Evaluate first order differential equations including separable, homogeneous, exact and linear.
- CO 2** Identify the type of given differential equations and select and apply the appropriate analytical techniques for finding the solution of first order and second higher order differential equations.
- CO 3** Solve non homogeneous equations.
- CO 4** Solve first order differential equations utilizing the standard techniques for separable, exact, linear, homogeneous or Bernoulli cases.
- CO 5** Solve higher order differential equations using reduction of order, undermine coefficients or variation of parameters.


## ***COMPLEX ANALYSIS (U21MC613)***

- CO 1** Understand the significance of differentiability and analytical of complex function leading to the Cauchy-Riemann equations.
- CO 2** Solve analytic function as a mapping on the plane, Mobius or bilinear transformation.
- CO 3** Learn the role on Cauchy theorem and Cauchy's integral formulas in evaluation of closed integrals. Apply Cauchy Inequality, Liouville's theorem, Fundamental theorem of algebra and Morera's theorem.
- CO 4** Learn Taylor's series and Laurent's series expansion of analytic function.
- CO 5** Classify the nature of singularity, poles and Residues and application of Cauchy's Residue theorem.

## ***GRAPH THEORY (U21MC614)***

- CO 1** Define basic notions in graph theory and account for the theory of paths and the degree of connectedness of a graph.
- CO 2** Account the basic properties of trees and fundamental circuits.
- CO 3** After learning the course the students should be able to solve problems involving vertex



  
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connectivity, edge connectivity.

**CO 4** Define the vector spaces of a graph and Galois fields.

**CO 5** Understand the matrix representation of graphs.

## ***LINEAR ALGEBRA (U21MC615)***

**CO 1** Identify the concepts of vector spaces in linear transformations and their properties.


**CO 2** Learn about the rank and nullity of linear transformations.

**CO 3** Understand the basic concepts of orthogonal complement.

**CO 4** Apply the basic concepts of types of matrices.

**CO 5** Learn the role on Cayley Hamilton theorem and solve the problems in eigen values and eigen vectors.



  
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## B.Sc., PHYSICS

### **PROPERTIES OF MATTER AND SOUND- U21PHC101**

- CO1 Study the elastic behavior and working of torsional pendulum.
- CO2 Learning the basic concepts of elasticity, surface tension, viscosity and sound
- CO3 Understand the concepts of properties of matter and to recognize their applications in our day to day life.
- CO4 Learn streamline and turbulent flow of liquids. Acquire knowledge about sound and reverberation.
- CO5 Study the basic properties of sound waves and their propagation in different media.

### **MECHANICS AND RELATIVITY- U21PHC203**

- CO1 Understand and define the laws involved in mechanics
- CO2 Learn the concept of conservation of energy, momentum, angular momentum and apply them to basic problems.
- CO3 Write the expression for the moment of inertia about the given axis of symmetry for different uniform mass distributions.
- CO4 Understand the utility of equation of continuity of flow and their applications.
- CO5 Understand the special theory of relativity and their impact on the mass and energy of moving objects.
- CO6 Understand the concepts of Mechanic to recognize their applications in various real life problems.


### **THERMAL AND STATISTICAL PHYSICS-U21PHC305**

- CO1 Comprehend the basic concepts and laws of thermodynamics.
- CO2 Describe the thermodynamics potentials and their physical interpretations.
- CO3 Understand concepts of entropy and the associated theorems.
- CO4 Differentiate between principles and methods to produce low temperature to liquefy air, helium and hydrogen.
- CO5 Learn the basic aspects of radiation, solar constant and energy.
- CO6 Understand the concepts of classical (Maxwell- Boltzman) and quantum (Bose and Fermi) statistics and their applications.
- CO7 Solving problems based on heat transfer, entropy and thermal radiation.

### **OPTICS-U21PHC407**

- CO1 Understand different types of aberration in lenses and methods of solving them.
- CO2 Correlate the principle of interference in the field of spectroscopy.
- CO3 Acquire knowledge on the principle and construction of optical instruments.
- CO4 Analyze the application of polarization in our day to day life.
- CO5 Get exposure to modern experiments methods in solving physical phenomena.
- CO6 Demonstrate experiments related to optical activity and polarization.
- CO7 Demonstrate the application of diffraction.



  
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## ***ALLIED PHYSICS-U213AAPH1***

- CO1 LEARN THE BSIC CONCEPT OF ELECTRICITY , SOUND, MECHANICS, THERMAL PHYSICS AND OPTICS.
- CO2 Calculate the centre of gravity of objects with different geometry.
- CO3 Describe the production of Ultrasonic waves and applications.
- CO4 Analyze different types of spectra.
- CO5 To understand the importance of fiber optics communication in comparison to conventional communication system.

## ***ALLIED PHYSICS-III –U214AAPH3***

- CO1 Gain knowledge of electric and magnetic field.
- CO2 To be able to sketch an atom and indicate the location of the nucleus, the shell and the electronic orbital.
- CO3 Able to calculate the maximum number of electron that can occupy a specific shell.
- CO4 Demonstrate familiarity with basic electronic components and use them to design simple electronic circuit.
- CO5 The ability to understand analyze and design various combinational sequential circuits.
- CO6 To understand and examine the structure of various number system and its application in digital circuits.


## ***APPLIED PHYSICS-1 –U213APH1***

- CO1 THE use Gauss law and apply it to real orld problems.
- CO2 Explain the basic principles of capacitors.
- CO3 Have in depth knowledge about magnetic potential and different types of magnetic materials.
- CO4 Explain the laws that underlie the properties of electric circuit element and basic principles of Potentiometer, Carey foster’s bridge etc.,
- CO5 Understand the operation of such as series an parallel resonance circuits.

## ***APPLIED PHYSICS-III- U214APH3***

- CO1 Convert between different number system which are used in digital communication and digital devices.
- CO2 Have a thorough knowledge of transistor and FET and its applications in Amplifier, oscillator etc.
- CO3 Analyze different type of digital electronic circuits using logic gates.
- CO4 Ability to use OP-amp as summer, subtractor, differentiator, integrator etc.,
- CO5 Design and explain analog to digital conversion.



  
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## ***ELECTRICITY AND MAGNETISM-U21PHC509***

- CO1 Explain the basic physics of capacitors and resistors.
- CO2 Predicts the behavior of simple and complex DC circuits using the fundamental conservation laws.
- CO3 Explain the basic electric and magnetic interactions due to charged particles and currents.
- CO4 Describe how the electric interactions due to single or collection of charged particles are embodied in the concepts of electric field and the electric potential.
- CO5 Predict the motion of charge particles in electric and magnetic fields
- CO6 Write a project on an application or on a natural phenomenon based on the fundamental law of electricity and magnetism.
- CO7 Understand the necessity of electricity and magnetism in transportation technology.
- CO8 Understand the occurrence of loss in energy due to charged particles.

## ***ATOMIC PHYSICS-U21PHC510***

- CO1 Know about the positive ray analysis.
- CO2 Solve Einstein Photoelectric equation.
- CO3 Understand the Quantum numbers including their physical significance and quantum Mechanical state of hydrogen atom.
- CO4 Know the origin of fine structure in atomic spectra
- CO5 Acquire the knowledge about the x-rays and its characteristics.
- CO6 Understand the periodic table from the view point of the electronic structure.

## ***BASIC ELECTRONICS-U21PHC511***

- CO1 Acquire the knowledge about construction and working of transistors.
- CO2 Understand the ideas and basics of operational Amplifiers.
- CO3 Gain in-depth knowledge of designing switching circuits.
- CO4 Designing of circuits using op-Amps.
- CO5 To analyze analog electronic devices.
- CO6 Explore the avenue of employment in small scale electronic companies.


## ***SPECTROSCOPY AND LASER PHYSICS –U21PH5MBE1:1***

- CO1 Impart knowledge related to the concepts of spectroscopy.
- CO2 Analyze the prerequisites in a molecule towards its rotational and vibrational activity
- CO3 Understand the properties of laser and its applications.
- CO4 To study the structure of new molecules based on Microwave spectroscopy/IR & Raman spectroscopy.

## ***BIOPHYSICS AND BIOMEDICAL INSTRUMENTATION- U21PH5MBE1:2***

- CO1 Illustrate the basic principle and techniques to understand the biological problem.
- CO2 Identify the physical principles responsible for maintaining the basic cellular function



  
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- CO3 Appraise the importance of various biophysical techniques.
- CO4 Practices the techniques of Chromatography and Spectroscopy

## **MATERIALS SCIENCE-U21PH5MBE1:3**

- CO1 Understand the fundamental structure and related properties of individual materials.
- CO2 Get knowledge about the superconducting materials and Nanomaterials.
- CO3 Gain knowledge about the smart and mechanical behavior of materials.

## **WAVE MECHANICS AND NUCLEAR PHYSICS-U21PH613**

- CO1 Understand wave particle duality.
- CO2 Solve the time dependent and independent schrodinger equations
- CO3 Acquire knowledge of the nuclear physics.
- CO4 Understand the concepts of fission and fusion process and the basic properties of the nuclear and fusion reactions.
- CO5 Understand the nuclear structure and radio activity and its applications.
- CO6 Understand the nature of elementary particles and their fundamental interactions.

## **SOLID STATE PHYSICS-U21PH614**

- CO1 Understand the relationships between crystal structure and their defects.
- CO2 Understand and utility of x-ray diffraction measurements in determining crystalline structures.
- CO3 Examine the success and failure of free electron theory, the origin of band gap and Hall effect.
- CO4 Extend their knowledge to understand the nature of super conductivity.
- CO5 Explore new areas of research in modern engineering materials and allied fields of science and technology.
- CO6 Outline the importance of solid state physics in the modern society.


## **INTEGRATED ELECTRONICS –U21PH6MBE2:1**

- CO1 Understand various number systems and design logic circuits
- CO2 Acquire knowledge about fabrication of integrated circuits.
- CO3 Design Combinational and sequential logic circuits independently.
- CO4 Enhance their knowledge in semiconductor memories.
- CO5 Learn the architecture of microprocessor and its applications.

## **ELECTRONIC COMMUNICATION-U21PH6MBE2:2**

- CO1 Apply the knowledge of statistical theory of communication and explain the conventional communication system.



  
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- CO2 Apply the knowledge of signals and system and evaluate the performance of communication system in the presence of noise.
- CO3 Apply the knowledge of electronics and describe the error control codes like block code, cyclic code.
- CO4 Describe and analyze the communication system with spread spectrum modulation.
- CO5 Design as well as conduct experiments, analyze and interpret the result to provide valid conclusions.

## ***OPTO ELECTRONICS AND FIBER OPTIS-U21PH6MBE2:3***

- CO1 Explain the basic concepts of optical transmitting and receiving.
- CO2 Describe different opto-electronic devices.
- CO3 Elucidate different methods of photonics.
- CO4 Describes selection of the appropriate optical fiber sensors for industrial application.
- CO5 Understand the application of fiber optics in communication system.

## ***'C'- LANGUAGE-U21PH6MBE3:1***

- CO1 Understand the basic ideas of C programming.
- CO2 Gain knowledge about library functions and arrays.
- CO3 Understand the function, structure and concept of files.
- CO4 To code mathematical problems in C.
- CO5 To write the source code in C for unknown problems.


## ***C++ PROGRAMMING-U21PH6MBE3:2***

- CO1 Choose appropriate data structures to represent data items in real world problems.
- CO2 Analyze the time and space complexities.
- CO3 Design programs using a variety of data structures such as stacks, queues, hash tables, binary trees, search trees, heaps, graphs, and B-trees.
- CO4 Analyze and implement various kinds of searching and sorting techniques.
- CO5 Developing the programs for unknown problems.

## ***ELECTRICAL APPLIANCES-U214PHSE1***

- CO1 Analysis of single phase AC circuits, and determining the power in these circuits.
- CO2 Have in depth knowledge of the fundamentals of electricity.
- CO3 Identity the type of electrical machine used for that particular application.
- CO4 Awareness of electrical shocks and short circuit and its impact.
- CO5 Acquire knowledge about electronic cooling appliances.
- CO6 Study different meters and instrument for measurement of electronic quantities.



  
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## **PHYSICS MADE EASY-U21PH3NME1:1**

- CO1 To learn the various source of renewable energy.
- CO2 Understand the principle and mechanism of simple machines.
- CO3 Understand the earth and its relation to the solar system and universe.
- CO4 Apply Doppler effect to understand simple problems in our day to life.
- CO5 To Understand the operation of microscope.

## **ENERGY PHYSICS-U21PH3NME1:2**

- CO1 Understand the various types of energy
- CO2 To learn the renewable and nonrenewable sources.
- CO3 Gain knowledge about Biomass energy and conversion process
- CO4 Acquire in depth knowledge of Geothermal energy.

## **SIMPLE APPLIANCES-U21PH4NME2:1**

- CO1 Acquire knowledge on simple introduction to electrical appliances and precautions in handling them.
- CO2 Understand basics of wiring system.
- CO3 Expertise on simple electrical measuring instruments.
- CO4 Creates n awareness on maintaining simple electronic devices and cooling appliances.
- CO5 Develop skill in working with electric motors.
- CO6 Develop skill in earthing and giving insulation in electric circuits.


## **PHOTOGRAPHY-U21PH4NME2:2**

- CO1 Discuss the history of Photography, moving images and photo Journalism
- CO2 Demonstrate a brief understanding of news values, photo journalism and sources.
- CO3 Explain various types of cameras its components and accessories
- CO4 Discuss the legal and ethical aspects of photography and photojournalism.
- CO5 Assess the importance of digital technology in photography

## **MEDICAL PHYSICS-U214PHSE2**

- CO1 Understand static, dynamic and frictional forces in the body.
- CO2 Get knowledge about the pressure in skull, eye and urinary bladder.
- CO3 Acquire in depth knowledge of various therapeutic devices.
- CO4 Understand the nature of ideas of ultrasonic propagation.
- CO5 Gain knowledge about the pacemaker and how it is works and analyze external and internal pacemaker.
- CO6 The information will teach the student about the normal and cancer cells.
- CO7 Describe laser based blood cell counting
- CO8 Perform research on the ultrasonic diathermy and its applications.



  
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## **AUDIO AND VIDEO SYSTEMS-U214PHSE3**

- CO1 Understand the basic concepts of audio and video systems.
- CO2 Understand the characteristics of sound.
- CO3 Acquire in depth knowledge about the microphone and loud speakers.
- CO4 Enable the student to understand the basic operation of for television
- CO5 Understand the operation of TV cameras.
- CO6 Learn trouble shooting in Audio and Video equipments.



  
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## B.A.,TAMIL

### இக்கால இலக்கியம் (U21TLC101)

- CO 1 இலக்கியவளர்ச்சியை அறிந்துகொள்ளுதல்.
- CO 2 காலத்திற்கு ஏற்ற பண்பாடு, சமூக, அரசியல் வளர்ச்சியை அறிந்துகொள்ளுதல்
- CO 3 ஒவ்வொரு காலநிலையிலும் மனிதவளர்ச்சி சார்ந்து இலக்கியத்தின் வளர்ச்சியை தெரிந்துகொள்ளுதல்
- CO 4 படைப்பாளர்களின் படைப்புத் திறனை அறிந்துகொள்ளுதல்.
- CO 5 மனிதவளத்தில் இலக்கியத்தின் தேவையை அறிதல்.

### சிற்பிலக்கியம் (U21TLC102)

- CO 1 ஒரு செயலை செய்யத் தொடங்கும் முன் இறைவனை போற்றிப்பாடுகின்ற பாங்கினை அறிந்துகொள்ள பயன்படுகிறது.
- CO 2 சிற்பிலக்கியங்கள் இயற்கைவளத்தினை உணர்த்துகின்றன.
- CO 3 சிற்பிலக்கியத்தின் எளிமை, இனிமை, கவித்துவம் போன்றவற்றை மாணவர்கள் அறிந்துகொள்ள உதவுகிறது.
- CO 4 சேர, சோழ, பாண்டிய அரசர்கள் பற்றிய வரலாற்றுச் செய்திகளை அறிய முடிகிறது.

### யாப்பும் அணியும் (U21TLC203)

- CO 1 கி.மு. 2 ஆம் நூற்றாண்டிலிருந்து 21 ஆம் நூற்றாண்டு வரையிலான தமிழ் இலக்கியங்கள் பற்றி அறிதல்.
- CO 2 பழந்தமிழர் மக்களின் வாழ்க்கை முறைகளை சங்க இலக்கியம் மூலம் தெரிந்துகொள்ளுதல்
- CO 3 அரசியல் முறைகளையும், அறத்தின் மேம்பாடு பற்றியும் அறிந்துகொள்ளுதல்.
- CO 4 வழிபாட்டு முக்கியத்துவமும் அதனால் ஏற்படும் நன்மை பற்றியும் சைவ, வைணவ அடியார்களின் பாடல்கள் மூலம் புரிந்துகொள்ளுதல்.
- CO 5 தமிழ் இலக்கியங்களைப் படிப்பதற்கு முன் அதனை முழுமையாகத் தெரிந்துகொள்வதற்கு இந்நூல் முன்னோடியாகப் பயன்படுதல்.


### நன்னூல் எழுத்ததிகாரம் (காண்டிகையுரை) (U21TLC304)

- CO 1 எழுத்துப் பிறப்பு, எழுத்து வகைகள், சொல்லாக்கங்களை அறிதல், பிழையின்றி எழுதுவதற்குப் பழகுதல்.

### பக்தி இலக்கியம் (U21TLC305)

- CO 1 பக்தி உணர்வைப் பெறச் செய்தல்.
- CO 2 சமய ஒருமைப்பாட்டை வளர்த்தல்.
- CO 3 சமயமதநல்லிணக்க உணர்வை பெறச் செய்தல்.
- CO 4 இறைவனின் பெருமைகளை பக்தி இலக்கியங்கள் வழி அறிய செய்தல்
- CO 5 சாதி, சமய, மொழி வேறுபாடின்றி பழகுதல்



  
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## நன்னூல் சொல்லதிகாரம் (காண்டிகையுரை) (U21TLC406)

- CO 1 மக்கள் வாழ்க்கையில் கலைகள் பெறுமிடத்தை அறிந்துபயன்பெறல்.  
CO 2 இசையின் பயனை தெரிந்துகொள்ளல்.  
CO 3 காலந்தோறும் இருந்தகலைத்திறனை அறிந்துகொள்ளல்.  
CO 4 நாடகக்கலையின் சிறப்பை அறிதல்.

## நம்பியகப்பொருள் (U21TLC507)

- CO 1 பழந்தமிழர்களின் அகம் சார்ந்த வாழ்வியல் கூறுகளின் கட்டமைப்புகளை இலக்கண வழி கற்று அறிந்துகொள்ளல்.

## காப்பியங்கள் (U21TLC508)

- CO 1 காப்பியநயம் உணர்த்தல்.  
CO 2 பண்பாடு அறிதல்.  
CO 3 காப்பியங்கள் குறித்த அறிவுத் திறனைப் பயன்படுத்தி போட்டித் தேர்வுகளில் வெற்றிபெறல்.  
CO 4 அக்கால வாழ்வியல் நெறி, சமுதாய வாழ்வு அறிதல்.

## தமிழ்மொழிவரலாறு (U21TLC509)

- CO 1 பண்டைத் தமிழ்மொழியின் வரலாற்றைத் தெளிவாக உணர்த்தல்.  
CO 2 கல்வெட்டுகளின் சிறப்பைப் புரிந்துகொள்ளல்.  
CO 3 அடிப்படை இலக்கணம் பற்றியச் செய்திகளை அறிந்துகொள்ளல்.  
CO 4 காலந்தோறும் தமிழ்மொழியின் வளர்ச்சி நிலையை அறிதல்.  
CO 5 தமிழில் பிறமொழிச் சொற்களின் கலப்பினைத் தெரிந்துகொள்ளல்.


## இலக்கியத் திறனாய்வு (U21TLC510)

- CO 1 இலக்கிய ஆய்வின் அணுகுமுறைகளையும் அவற்றின் பயன்களையும் அறிதல்.  
CO 2 இலக்கியப் படைப்பாக்கத்திற்கு கண்டறிதல்.  
CO 3 இலக்கியப் படைப்பின் இன்றைய போக்கு அறிதல்.

## புறப்பொருள் வெண்பாமாலை (U21TLC611)

- CO 1 போர் முறைகள் - போர் காட்சிகள் தெரிதல்  
CO 2 படைமாண்பு, வீரர்கள், மறவர்கள், போர்த்திறம் உணர்த்தல்  
CO 3 போர்க்களகாட்சி, போரின் அழிவு உணர்த்தல்  
CO 4 தமிழரின் வாழ்வில் புறத்திணை பெறுமிடத்தைத் தெரிந்துகொள்ளுதல்  
CO 5 புறத்திணைக் கூறுகளை அறியச் செய்தல்



  
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## அற இலக்கியம் (U2ITLC612)

- CO 1 வாழ்க்கைக்குவேண்டியஒழுக்கங்களைஅறிந்து பயன் பெறல்.
- CO 2 அறக்கோட்பாடுகளைஉணர்தல்.
- CO 3 பெரியோரின் பண்புஉணர்தல்.
- CO 4 வாழ்வின் பெருமை,பழமை,தெரிதல்.
- CO 5 வருவாய் அறிந்துதிட்டமிடல்.
- CO 6 ஒழுக்கமேம்பாடுகருத்துஉணர்தல்
- CO 7 நட்புஅறிதல்,நட்பின் பெருமைதெரிதல்.

## சங்க இலக்கியம் (U2ITLC613)

- CO 1 இயற்கையோடு இயைந்துவாழ்ந்தபழந்தமிழனின் அகவாழ்வுபுறவாழ்வுதனைஉணர்ச் செய்தல்.
- CO 2 சங்க இலக்கியங்களை இயற்றியஆண்பால்,பெண்பால் புலவர்களின் வரலாறு,அவர்களின் புலமைத்திறன் எடுத்துக்காட்டல் பழங்காலமக்கள் வாழ்ந்த இயற்கை சூழல்,சமுதாயச் சூழல் அவ்வக்காலமக்களின் வாழ்வியல் நெறிகள்,சான்றோர் பொதுமக்களின் பண்புநலன்கள்,பழக்கவழக்கம்,நம்பிக்கை,பண்பாடு ஆடை,அணிகலன்கள்,உணவுமுறைகள் ஆகியவற்றை இன்றையதலைமுறையினருக்குபயிற்றுவிப்பதோடுஅப்பாடல்கள் குறித்தஅறிவுத்திறனைமேம்படுத்திபோட்டித் தேர்வுகளில் வெற்றிபெறச் செய்வது இப்பாடத்தின் பயனாகஅமைகிறது.



  
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## B.Sc. ZOOLOGY

### *INVERTEBRATA-U21ZC101*

- CO1 Acquire knowledge of importance of systematics, taxonomy, general taxonomic rules on animal classification and structural organization of invertebrate animals.
- CO2 Gain knowledge on salient features of phyla such as Protozoa, Porifera, Coelentrata, Platyhelminthes, Annelida, Arthropoda, Mollusca and Echinodermata.
- CO3 Know invertebrates that gave rise to the modern day vertebrates and interpret the gradual emergence of life on earth.
- CO4 Learn the larvae of crustacean and their significance.
- CO5 Understand the role of water vascular system in echinodermata. Appreciate the economic values of each phylum of invertebrate.

### *CHORDATA- U21ZC203*

- CO1 Impart conceptual knowledge of vertebrates and understand the emergence and diversity of chordates. Interpret the gradual emergence of life on earth.
- CO2 Understand different classes of chordates, levels of organization and evolutionary relationship between different subphyla and classes, within and outside the phylum.
- CO3 Acquire knowledge of diversity in animals, making students understand about their distinguishing features and appreciate similarities and differences in life functions among various groups of animals in Phylum Chordata
- CO4 Learn about migratory birds, flight and flightless adaptations of birds and their importance.
- CO5 Comprehend the physiological systems of chordates

### *CELL BIOLOGY- U21ZC305*

- CO1 Understand the basic fundamental principles of cell biology.
- CO2 Understand the structure and functions of various cell organelles and how there is a coordination in the basic unit of life
- CO3 Understand and gain knowledge about the cells and their functions.
- CO4 Acquire knowledge about the types of cell division and their significance.
- CO5 Learn the cell cycle and characters of cancer cell lines.


### *ENVIRONMENTAL BIOLOGY- U21ZC407*

- CO1 Understand the basic theories and principles of ecology.
- CO2 Learn current environmental issues based on ecological impacts.
- CO3 Gain critical understanding of human impacts on environment.
- CO4 Develop positive attitude towards biodiversity and conservation.
- CO5 Understand how animals are adapted to their habit and habitat.

### *VERMITECHNOLOGY- U214ZOSE1*

- CO1 Acquire knowledge of classification and characteristics of earthworms.
- CO2 Learn the biology of earthworm and species selection for vermicompost
- CO3 Understand the importance of traditional and modern vermicomposting.



  
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- CO4 Understand and acquire knowledge of vermiculture.
- CO5 Understand the role on economic importance of vermicompost for agriculture and horticulture, self employment and get finance assistance from funding agencies.

### ***EVOLUTION- U21ZC509***

- CO1 Understand the Origin of Life through several Theories proposed by Biologists
- CO2 Learn the significance fossils through Geological Times
- CO3 Gain knowledge on the types of evolution through the factors influencing speciation, isolating mechanism, mimicry & coloration
- CO4 Learn the impact of mutation through mathematical application
- CO5 Acquire knowledge on the distribution of animals and human evolution.

### ***DEVELOPMENTAL BIOLOGY AND IMMUNOLOGY- U21ZC510***

- CO1 Understand the basic concepts and events in developmental biology.
- CO2 Acquire the information on types of eggs, and gain knowledge how life is forming from a cell and organs are forming from a ball of cells during organogenesis.
- CO3 Some related topics like metamorphosis, regeneration and concept of test tube baby are made to understand.
- CO4 Understand the immune system, immune cell, immunogen, antibodies, antigen – antibody interaction.
- CO5 Acquire knowledge of immune response, types of grafts, autoimmunity and hypersensitivity.


### ***ANIMAL PHYSIOLOGY- U21ZC511***

- CO1 Understand the physiological properties of bio molecules and understanding digestion, absorption and assimilation of food.
- CO2 Learn the mechanism of respiration and blood circulation in man.
- CO3 Detailed understanding of excretion in man and osmoregulation of freshwater, marine and terrestrial animals.
- CO4 Acquires a clear understanding of structure, mechanism of muscles contraction, transmission of nerve impulses and photo and phono-receptors.
- CO5 Gain knowledge on the structure, function of endocrine glands and regulation of reproduction in man.

### ***BIostatISTICS- U21Z5MBE1:1***

- CO1 Acquire the knowledge of biostatistics and sampling.
- CO2 Understand the processing and presentation of data.
- CO3 Learn to measure the central tendency and variance
- CO4 Understand the measures of dispersions, correlation and regression.
- CO5 Understand the hypothesis of testing, ANOVA and basics of SPSS.



  
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## **GENETICS AND MOLECULAR BIOLOGY- U21ZC613**

- CO1 Gain the knowledge of genetics and its interactions, multiple alleles, linkage and crossing over.
- CO2 Acquire knowledge of sex determination, sex-linked, limited, influenced inheritance and extra chromosomal inheritance.
- CO3 Understand and acquire the knowledge of human genetics, inborn error metabolisms, eugenic and eugenics.
- CO4 Understand about the DNA, gene concept, DNA structure, RNA-DNA replication.
- CO5 Understand the transcription, gene expression and its regulation of prokaryotes, Lac operon model.

## **MICROBIOLOGY AND BIOTECHNOLOGY- U21ZC614**

- CO1 Understand the classification, structure of microbes and culture techniques of bacteria.
- CO2 Acquire exhaustive knowledge of recombinant bacteria and medical microbiology, and equip the students to get job opportunity in these fields of biotechnological, microbiological and medical laboratories and companies.
- CO3 Understand and acquire the knowledge of cloning vector, artificial chromosome preparation, gene transfer techniques and equip the students to get job opportunity in these fields of biotechnological companies.
- CO4 Gain knowledge of blotting techniques, antibody productions and learn the stem cell technology.
- CO5 Understand the developments of gene therapy, drug designing and vaccine production.


## **BIOCHEMISTRY- U21Z6MBE2:1**

- CO1 Learn unique properties and biological importance of water, acquires clear understanding about pH, acid-base balance and biological importance of body buffer.
- CO2 Understand the structure, classification and metabolism of carbohydrates.
- CO3 Acquires a clear understanding of structure, classification and metabolism of proteins and amino acids.
- CO4 Learn the structure, classification, and metabolism of lipids and nucleic acids.
- CO5 Understand of mechanism, kinetics, regulation of enzymes and hormones.

## **HUMAN NUTRITION- U21Z6MBE3:1**

- CO1 Understand the nutrition and physiological importance of biochemical properties.
- CO2 Acquire knowledge about role of water, determination of energy values, direct and indirect calorimetry and basal metabolic rate.
- CO3 Gain the knowledge of nutritional value of foods and value of common Indian recipes
- CO4 Learn the effect of cooking process on the nutritive value of foods and its requirements for infants, pregnant and lactating mothers.
- CO5 Understand the faulty food habits, health education and malnutrition.



  
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## **Course Outcomes(PG)**

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## M.Sc CHEMISTRY

### **INORGANIC CHEMISTRY (P21CHC101)**

- CO1 Explain the principles of inorganic polymer synthesis and assess appropriate methods of synthesis
- CO2 Construct a plan for further research in inorganic polymers
- CO3 Illustrate the bonding system of inorganic compounds
- CO4 Understand the key features of Co-ordination chemistry
- CO5 Apply the concepts of Co-ordination chemistry for further research.

### **PHYSICAL CHEMISTRY I (P21CHC102)**

- CO1 Understand the basic concepts of Chemical kinetics and thermodynamics
- CO2 Understand the energy equation and its application.
- CO3 Describe the fundamental concepts such as enthalpy, entropy, fugacity, etc.,
- CO4 Explain the concept of catalytic system in chemical reactions.

### **ORGANIC CHEMISTRY I (P21CHIMBE1:1)**

- CO1 To make the students learn and understand the concept of stereochemistry,
- CO2 conformational analysis and their application in the determination of reaction mechanism.
- CO3 To understand the mechanism of nucleophilic and electrophilic substitution reactions

### **INORGANIC CHEMISTRY II (P21CHC205)**

- CO1 Describe the relationship between structure and chemical bonding and draw conclusions about the physical properties of materials such as macroscopic magnetic, electrical and optical behaviour, describe structure, physical properties of semiconductors and operation principles of semiconductor devices.
- CO2 Describe the basic principles of solid-state NMR, X-rays diffraction and electron microscopy, describe and exercise selected methods of solid state synthesis.
- CO3 Apply the chemistry of lanthanides and actinides for future use in the field of nano technology

### **ORGANIC CHEMISTRY II (P21CHC206)**

- CO1 Understand the nature carbon when tied –up with hetero atom and its reactions
- CO2 Understand the concept of Molecular rearrangements
- CO3 Describe different naming reactions
- CO4 To apply the knowledge of chemical reactions inorganic synthesis.

### **ANALYTICAL CHEMISTRY (P21CH2MBE2:1)**

- CO1 Able to understand the theory, principles and applications of various advanced spectroscopic techniques.
- CO2 Knowledge in data and error analysis
- CO3 Understand chromatography techniques



  
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- CO4 Expertise in knowing about thermo analytical methods.
- CO5 Knowledge in redox system and in polarography techniques

## *INORGANIC CHEMISTRY III(P21CHC309)*

- CO1 Illustrate the concept of co-ordination chemistry
- CO2 Illustrate the substitution in Co-ordination complexes and Inorganic photochemistry.
- CO 3 Explain the application of catalyst in chemical reactions

## *PHYSICAL CHEMISTRY II(P21CHC311)*

- CO1 Understand the behavior of kinetics on chemical reactions.
- CO2 Illustrate of the structure of compounds through group theory
- CO3 Construct the character table.

## *MEDICINAL CHEMISTRY(P21CH3MBE3:1)*

- CO1 First aid, medicinal plants, antibiotics, anesthetics and organic pharmaceutical aids.
- CO2 Availability, uses and side effects of some important drugs.
- CO3 Biological role of some inorganic compounds.
- CO4 Cause, symptoms, treatment and prevention of Deficiency disease diabetics and syndrome disease.
- CO5 Creates the interest to work in pharmaceutical companies.
- CO6 Motivates to research on identification of new drugs.


## *PHYSICAL CHEMISTRY III (P21CHC413)*

- CO 1 Understand the electrochemical kinetics, overpotential, corruptions and fuel cells.
- CO 2 Illustrate about solid –state and its properties.
- CO 3 To Study the principles and applications of spectroscopy. To study statistical thermodynamics.

## *RECENT TRENDS IN CHEMISTRY(P21CH4MBE4:1)*

- CO1 Able to work with computer for their research purpose
- CO2 Able to differentiate bulk and nano materials and apply their ideas in research.
- CO3 Able to choose innovative research for further studies
- CO4 Able to apply the applications of green chemistry to survive with pollution free environment
- CO5 Explain the basic modeling of electrons and atoms



  
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M.Com., COMMERCE

## **FINANCIAL MANAGEMENT- P21COC101**

- CO 1 Apply the basic financial concepts in business.
- CO 2 Identify the optimum funding sources and instruments.
- CO 3 Prepare and analyse the financial proposals and plans
- CO 4 Choose the best method of capital budgeting.
- CO 5 Frame the capital structure of the business

## **COST AND MANAGEMENT ACCOUNTING- P21COC102**

- CO 1 Analyse the financial statements by calculating ratios and construct a balance sheet with the help of available data and ratios.
- CO 2 Apply marginal costing techniques in decision making.
- CO 3 Make efficient use of budgeting technique.
- CO 4 Prepare the process cost of various industries.
- CO 5 Prepare the reconciliation statement between cost and financial accounting.

## **INDIAN FINANCIAL SYSTEM- P21COC103**

- CO 1 Know the financial system and its working in our country.
- CO 2 Explain the functions of regulatory bodies in the financial system.
- CO 3 Outline the working of financial system in India.
- CO 4 Relate capital market and money market.
- CO 5 Show how a depository system works.

## **MANAGEMENT CONCEPTS- P21COC104**

- CO 1 Apply the management functions.
- CO 2 Develop leadership quality.
- CO 3 Identify the best control techniques in business.
- CO 4 Meet the challenges of management.
- CO 5 Organize enterprise with business ethics.

## **MANAGERIAL ECONOMICS- P21CO1MBE1**

- CO 1 Describe demand forecasting of a company
- CO 2 Design competition strategy including costing, pricing, product differentiation and market environment.
- CO 3 Analyse business problem with a systematic theoretical prime work.
- CO 4 Apply the profit policies and management in a business.
- CO 5 Understand the economic growth and development concepts – GDP, GNP.

## **INCOME TAX THEORY LAW AND PRACTICE- P21COC205**

- CO 1 Understand the basic concept of income tax.
- CO 2 Have an idea about set off and carry forward of loss and clubbing of income
- CO 3 Assess the income of individuals



  
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- CO 4 Have an expertise knowledge to file return of income tax
- CO 5 Take jobs to calculate tax liability and filing of returns

## ***QUANTITATIVE TECHNIQUES FOR BUSINESS DECISIONS- P21COC206***

- CO 1 Choose the most economical solution to a problem within all its limitations or constraints.
- CO 2 Describe the behavior of rare events.
- CO 3 Identify optimal choices under conditions of uncertainty.
- CO 4 Find minimum transportation cost and time in business.
- CO 5 Develop a systematic quantitative approach for deciding the best strategy in competitive situations.

## ***STRATEGIC MANAGEMENT- P21COC207***

- CO 1 Describe major theories background work, concepts in the field of strategic management.
- CO 2 Demonstrate a clear understanding of tools and techniques used by an executive in developing and executive strategies.
- CO 3 Find practical solution for diagnosing and solving organizational problems.
- CO 4 Demonstrate capability of making their own decision in business.
- CO 5 Develop their capacity to think and execute strategically.

## ***FINANCIAL SERVICES- P21COC208***

- CO 1 Outline the recent trends in financial services sector.
- CO 2 List out the functions of various financial services.
- CO 3 Summarize and explain the players in financial sector.
- CO 4 Classify factoring, leasing and mutual funds.
- CO 5 Describe the process of securitization of assets.

## ***BUSINESS ENVIRONMENT- P21CO2MBE2***

- CO 1 Know what is business environment and its impact on business.
- CO 2 Apply the concepts in their own business.
- CO 3 Identify and analyse the issues in business situations and provide solutions.
- CO 4 Discuss the impact of economic, socio-cultural and labor environment over business.
- CO 5 Relate State policies, economic legislations and reforms by government in their business activities.

## ***ADVANCED CORPORATE ACCOUNTING- P21COC309***

- CO 1 Prepare final accounts of Banking companies.
- CO 2 Draft final accounts for Insurance Companies
- CO 3 Prepare final accounts as per Form I and Form II of the companies Act.
- CO 4 Apply the methods of human resource accounting and inflation accounting.
- CO 5 Make use of accounting standards while preparing final accounts.



  
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## **INTERNATIONAL FINANCIAL MANAGEMENT- P21COC311**

- CO 1 Learning financial management from an international perspective.
- CO 2 Understand international capital and foreign exchange market and their functions.
- CO 3 Identify risk relating to exchange rate, fluctuation and develop strategy to deal with them.
- CO 4 Learn the functions of foreign capital markets.
- CO 5 Know the sources of external finance and international institutions.

## **RESEARCH METHODOLOGY- P21COC312**

- CO 1 Outline various kinds of research objectives for doing research.
- CO 2 Develop apply the research process
- CO 3 Identify the sources of data collection.
- CO 4 Utilize measurement and scaling techniques as well as quantitative data analysis.
- CO 5 Develop the research methodology

## **HUMAN RESOURCE MANAGEMENT- P21CO3MBE3**

- CO 1 Show about human resource management.
- CO 2 Apply design and evaluate various recruitment and placement policies, develops selection and interviewing process.
- CO 3 Develop ways in which training and development programmes can be provided to the employees.
- CO 4 Demonstrate the performance appraisal and reward system for the organization.
- CO 5 Select the strategy for good industrial relation.


## **SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT- P21COC413**

- CO 1 Analyse the various investments and their risk and return in the security market.
- CO 2 Explain the fundamental factors influencing investment in stock market.
- CO 3 Make use of technical analysis in preparing graph, bar and Charts.
- CO 4 Construct optimal Portfolio Securities
- CO 5 Analyse the performance ranking of different funds.

## **ENTREPRENEURIAL DEVELOPMENT- P21COC414**

- CO 1 Construct different stages related to the entrepreneurial process
- CO 2 Apply different entrepreneurial strategies required in business.
- CO 3 Develop skills needed to run a business successfully
- CO 4 Make use of skills required for initiating entrepreneurial activities
- CO 5 Analyse opportunities and threats entrepreneurship.



  
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## **GOODS AND SERVICES TAX- P21CO4MBE4**

- CO 1 enhance their knowledge about GST its features and importance.
- CO 2 practice financial transactions by applying different GST rates for different types of product.
- CO 3 Identify the persons who are liable to pay GST and also composition scheme of GST.
- CO 4 Have an idea about administration of GST, place of supply, value and time of goods and services.
- CO 5 Apply the provisions regarding registration, filing of returns under this act.



  
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## M.Sc COMPUTER SCIENCE

### **MATHEMATICAL FOUNDATIONS (P21CSC101)**

- CO1 Ability to apply mathematical logic to solve problems.
- CO2 Understand sets, relations, functions, Venn diagrams and discrete structures.
- CO3 Able to use logical notations to define and reason about fundamental mathematical concepts such as binary relations partial ordering.
- CO4 Able to model and solve real world problems using graphs and trees.
- CO5 Understand the different types of matrix in graphs.

### **OBJECT ORIENTED ANALYSIS AND DESIGN & UNIFIED MODELING LANGUAGE (P21CSC102)**

- CO1 Defines the basic concepts of object oriented systems and methodologies
- CO2 Specify, analyze and design the use case driven requirements and explains about various object oriented methodologies.
- CO3 Illustrate modeling principles, structure and relationships.
- CO4 Model the event driven state of object and Explain about processes , threads and chart diagrams.
- CO5 Identify, analyze the subsystems, various components and collaborate them interchangeably.

### **PYTHON PROGRAMMING (P21CSC103)**

- CO1 Explain the basic concepts of python variables, standard data types and operations.
- CO2 To understand the control statements and the usage list and tuples.
- CO3 Describe the concepts of function, built in function, mapping functions in a dictionary.
- CO4 Understand the concept of various Error handling & Exceptions
- CO5 Implement object oriented concepts.

### **PARALLEL PROCESSING (P21CSIMBE1:1)**

- CO1 Elaborate advanced concept of Parallel Processing
- CO2 Describe the Parallel Programming platforms, principles and design algorithms
- CO3 Demonstrate the basic communication operations and algorithms
- CO4 Explain the organization of basic computer its design and the design of control unit
- CO5 Demonstrate the working of central processing Unit and RISC and CISC architecture.
- CO6 Describe the operations and language of the register transfer, micro operations and input output organization
- CO7 Understand the organization of memory and memory management hardware.

### **DISTRIBUTED OPERATING SYSTEM(P21CSC205)**

- CO1 To provide hardware and software issues in modern distributed systems.
- CO2 To get knowledge in distributed architecture, naming synchronization, consistency and replication, fault tolerance security and distributed file systems



  
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- CO3 To get knowledge about deadlock, mutual exclusion, event ordering.
- CO4 To know about shared memory techniques.
- CO5 Discuss about how cryptography helps to achieve common security goals (data secrecy, message integrity, non-repudiation).

## **ADVANCED JAVA PROGRAMMING (P21CSC206)**

- CO1 To learn the internet programming student should be able to using Java Applets.
- CO2 To know how to apply event handling on AWT and swing components.
- CO3 To learn access DB through Java programs using Java Data Base (JDBC).
- CO4 Create dynamic web pages using Servlets & JSP.
- CO5 To make a reusable Software component using Java Bean.
- CO6 To learn fundamental image concepts image consumer, image filter, cell animation, additional imaging, classes
- CO7 To describe regular expression and other packages API & RM

## **COMPILER DESIGN (P21CSC207)**

- CO1 To describe the design of a compiler including its phases and components
- CO2 To make the lexical analysis of program.
- CO3 To demonstrate the flow of control using directed a cyclic graph.
- CO4 To introduce different translation language.
- CO5 To understand the importance of code optimization.
- CO6 To know about compiler generation tools and techniques
- CO7 To describe the role of compiler in ensuring the security, privacy and integrity of data

## **NETWORK SECURITY- P21CS2MBE2:1**

- CO1 Describe network security services and mechanisms.
- CO2 To understand the fundamental of cryptography to provide confidentiality, integrity and authenticity, Symmetrical and Asymmetrical cryptography.
- CO3 To understand the various key distribution and management schemes.
- CO4 Able to know about Data integrity, Authentications, Digital Signature and Various security applications IPsec, Firewall, Web Security, Email Security and malicious software etc
- CO5 To design security applications in the field of IT.

## **ADVANCED COMPUTER ARCHITECTURE (P21CSC309)**

- CO1 Understand the concepts of parallel processing and its applications.
- CO2 Implement the Hardware for arithmetic operations.
- CO3 Analyze the performance of different scalar components.
- CO4 Develop the pipelining concept for a given set of instructions.

## **DATA MINING (P21CSC310)**

- CO 1 Discuss the types of data to be mined and present a general classification of data mining tasks.



  
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- CO 2 Discuss the techniques for pre-processing data before mining concepts such as the cleaning integrations, redirection, transformations & data discretization.
- CO 3 Provide solid introduction to data ware housing, OLAP, and data generalization, then provide the methods for mining frequent patterns, associations & correlation.
- CO 4 Provide solid introduction to data ware housing, OLAP, and data generalization, then provide the methods for mining frequent patterns, associations & correlation.
- CO 5 This unit describes the partitioning, hierarchical, density based methods, and grid based Methods and evaluation of clustering.
- CO6 It describes several major approaches to the detection of anomalies, such as outlier detection, statistical approaches. Proximity based, clustering based and classifications based methods.

## **DATA ANALYTICS (P21CSC311)**

- CO1 To understand the basic concepts of big data.
- CO2 Understand Sqoop architecture and uses table to load real-time data and RDBMS table / Query on the HDFS able to write scripts for exporting data from HDFS onto RDMS table.
- CO3 Understand the key issues in Big Data management and its associated application in intelligent business and scientific computing.
- CO4 Acquire fundamental enabling techniques and scalable algorithms like Hadoop Map Reduce, in Big Data Analytics.
- CO5 Achieve adequate perspective of Big Data analytics in various application like recommend or systems, social media application.

## **SOFTWARE QUALITY ASSURANCE AND TESTING (P21CS3MBE3:1)**

- CO1 Learn the principles of testing and software development life cycle methods.
- CO2 Discuss the various levels of techniques, such as white box testing, Integration, System and white box testing.
- CO3 It provide testing fundamentals and specialized testing, such as performance, Regression, object oriented systems, usability & Accessibility testing.
- CO4 Describe fundamental concepts in Software testing for test plan, Test management, Execution and reporting.
- CO5 Apply the different approaches of software test automation, Test metrics and measurement

## **OPEN SOURCE TECHNOLOGIES (P21CSC413)**

- CO1 To learn how to install & configure Linux OS and some of the basic Linux administration commands.
- CO2 To know how to configure and secure apache.
- CO3 To learn about basis MYSQL commands and some of the administrative details.
- CO4 To know how to configure PHP and its basics.



  
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## *DEEP LEARNING (P21CS4MBE4:1)*

- CO1 To identify the deep learning algorithms which are more appropriate for various types Of learning tasks in various domains.
- CO2 To appreciate the use of Deep Learning Applications.
- CO3 To understand and implement Deep Learning Architecture.
- CO4 To understand the role of Deep Learning in Machine Learning Applications.



  
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## M.A. ECONOMICS

### *MICRO ECONOMIC ANALYSIS-I (P21ECC101)*

- CO 1 Evaluate modern utility analysis
- CO 2 Appreciated recent theories of demand
- CO 3 Asses the deferent types of production function
- CO 4 Understand the price and determination in different market structures
- CO 5 Analyses the objectives of firm thought select models .

### *MACRO ECONOMIC ANALYSIS – I (P21ECC102)*

- CO 1 Understand Concepts of national Income and Methods & difficulties in the measurement of National Income.
- CO 2 Appreciate different theories of Employment.
- CO 3 Analyses the theories of consumption Function.
- CO 4 Understand the concepts of multiplier to acceleration and types of MEC.
- CO 5 Critically evaluate General Equilibrium Analysis.

### *AGRICULTURAL ECONOMICS (P21ECC103)*

- CO 1 To understand the significance of agriculture in economic development
- CO 2 Appreciate the role of land reforms measures in the development of agriculture in India
- CO 3 Evaluate institutional and non- institutional financial sources in agricultural Labour
- CO 4 Assess the significance of regulated market in agricultural marketing
- CO 5 Understand the issues of agricultural labour.

### *ECONOMIC STATISTICS -P21ECC104*

- CO 1 Understand the concepts and Theorems of probability
- CO 2 Apply the theoretical distribution in economic analysis.
- CO 3 Interpret the results of different tests of significance.
- CO 4 Appriciate the significance and uses of Index numbers and time series analysis in economics
- CO 5 Understand the sources and uses of agricultural and industrial statistics.

### *URBAN ECONOMICS - P21ECIMBEI*

- CO 1 Understand the Concept of urbanization and different theories of urbanization .
- CO 2 Understand the Concept of Migration , different types of Migration and Migration theories .
- CO 3 Analyse the problems of urbanization.
- CO 4 Asses the Urbanization trend and growth in India.
- CO 5 Evaluate the National Urban policies and programmes in India.



  
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## **MICRO ECONOMIC ANALYSIS II -P21ECC205**

- CO 1 Understand the theories of distribution in fixing factor prices.
- CO 2 Appreciate the general equilibrium modal.
- CO 3 Demonstrate economic and general welfare judgment.
- CO 4 understand the individual consumers behaviour towards risks.
- CO 5 Evaluate the risk reduction measures.

## **MACRO ECONOMIC ANALYSIS II- P21ECC206**

- CO 1 Appreciate the post Keynesian theories of Demand for money.
- CO 2 Understand the supply of money and evaluate the role of Central Bank in control of money supply.
- CO 3 Analyse the role of Non- Banking Financial Intermediaries.
- CO 4 Understand types, causes and effects of Inflation.
- CO 5 Demonstrate significance of Macro Economic policies.

## **FISCAL ECONOMICS -P21ECC207**

- CO 1 understand the theories of public revenue and public Expenditure.
- CO 2 Assess the in Tax and Non-tax Revenues (ii) Plan and non-plan expenditure in India.
- CO 3 gain the knowledge of public debt trends in India.
- CO 4 Evaluate the state and union budgets of India.
- CO 5 understand the fiscal policy in India.

## **MANAGERIAL ECONOMICS (P21ECC208)**

- CO 1 Enable the students to take business decisions
- CO 2 understand the concept, importance and application of different Forecasting techniques.
- CO 3 Appreciate various pricing decisions and understand the problem of pricing.
- CO 4 Evaluate the projects on the basis of investment decisions .
- CO 5 Analyse the implications of liberalizations and deregulations for managers.

## **WOMEN AND INDIAN ECONOMY -P21ECC209**

- CO 1 Understand the nature and scope of women's studies.
- CO 2 Assess the contexts of women in India.
- CO 3 Assess the health status of women in India.
- CO 4 Evaluate state and central government initiatives in promoting women's entrepreneurship in India.
- CO 5 Appreciate various policies and programmes for women's empowerment in India.

## **INTERNATIONAL ECONOMICS -P21ECC309**

- CO 1 Understand the principle of comparative advantage and its formal expression and interpretation within different theoretical models.
- CO 2 Apply general equilibrium models in analyzing the economic instruments such as



  
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tariffs, quotas, export subsidies, free trade areas, customs unions and common markets.

- CO 3 Familiar with, knowledge about balance of payment deficit and measures to correct disequilibrium.
- CO 4 Familiar with the major recent developments in the world trading system, and be able to critically analysis key issues raised both by the current round of WTO negotiations and by the spread of regional trading arrangements.
- CO 5 Understand the trade relations of various countries, import-export procedures  
An currency exchange rate procedures.

## **INDUSTRIAL ECONOMICS -P2IECC310**

- CO 1 Understand the process and pattern of industrialization.
- CO 2 Assess the theories of industrial location.
- CO 3 Know the sources of industrial finance.
- CO 4 Evaluate the issues of industrial labour and land market reforms.
- CO 5 Develop the skills in formulating and evaluating the projects.

## **MARKETING MANAGEMENT -P2IECC311**

- CO 1 Understand the behaviour of consumers in marketing.
- CO 2 Know the management issues and challenges involved in marketing.
- CO 3 Understand how products are priced , promoted and physically distributed.
- CO 4 Appreciate importance of advertiment.
- CO 5 Know about the consumer protection act.

## **RESEARCH METHODOLOGY ( P2IECC312)**

- CO 1 Understand significance, methods of research and how formulate research problem.
- CO 2 Learn how to collect data from primary and secondary sources.
- CO 3 Prepare research design for their research work.
- CO 4 Familiarize in farming and testing of hypotheses.
- CO 5 Understand how to write research report.

## **HUMAN RESOURCE MANAGEMENT -P2IEC3MBE3**

- CO 1 understand the importance of human resource management (HRM)
- CO 2 knowledge the different sources , solution process , techniques of requirement and placement with training procedure
- CO 3 understand the performance and managerial appraisal.
- CO 4 gain knowledge of methods of job evaluation
- CO 5 understand motivation theories.

## **ECONOMIC GROWTH AND DEVELOPMENT (P2IECC413)**

- CO 1 Understand measures of economic growth.
- CO 2 Explain the relationship between technology and development.
- CO 3 Assess the development theories .
- CO 4 Evaluate the models of economic growth.



  
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CO 5 Construct human development index.

## **DEMOGRAPHY (P21ECC414)**

- CO 1 understand the nature and scope of demography.
- CO 2 gain the knowledge of the determinants of population growth.
- CO 3 Relays the methods of measuring internal and external migration.
- CO 4 Understand the growth of urbanization in India.
- CO 5 Understand the population policy in India.

## **ENVIRONMENTAL ECONOMICS -P21EC4MBE4**

- CO 1 Understand the nature and scope of Environmental economics.
- CO 2 Assess the theories of Environmental Economics.
- CO 3 Assess the Environment from the economic Perspective.
- CO 4 Explain the measurement of pollution.
- CO 5 Appreciate the policy measures to Environment.



  
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## M.A., English

### *Modern Literature I (1400-1660) (P21ELC101)*

- CO1 Understand how the socio-cultural and religious backgrounds against which Chaucer's writings were directed.
- CO2 Evaluate the ornamental style of Spenser and understand the bridal hymn tradition of the age.
- CO3 Know the features of metaphysical poetry with special reference to the poems of John Donne, Andrew Marvell, George Herbert and Henry Vaughan.
- CO4 Get to know Bacon's aphoristic style and develop an attitude to compare it with the great Tamil literary work Thirukural and appreciate the brevity with which great ideas were presented..
- CO5 Demonstrate their ability to identify and differentiate the modern literary devices from the classical literary devices.

### *Modern Literature II (1660-1798) (P21ELC102)*

- CO1 Familiar on how literature portrays different ways of living and being.
- CO2 Interpret literary texts in English by nurturing and utilizing their ability to understand drama in a skilled, Knowledgeable and ethnical manner.
- CO3 Students come to know of the changing trends in English poetry from Milton to Pre-Romantics.
- CO4 They get familiarized with the epic tradition of British poetry.
- CO5 They get to know the salient features of prose allegory, anti-sentimental comedy and Restoration comedy of the period through the varied prose works of the Age of Pope.
- CO6 Students are introduced to the emergence of the English novel during the Age of Transition.


### *Indian English Literature (P21ELC103)*

- CO1 Understand how well the Indian culture is reflected in literature.
- CO2 Identify the unique features of Indian Writing in English.
- CO3 Interpret the works of great Indian writers in English
- CO4 Appreciate the language used in Indian context.
- CO5 Demonstrate knowledge of major texts written in English as well as their social, cultural, theoretical and historical contexts.

### *Literary Criticism – I (P21ELC104)*

- CO1 Analyze the evolution literary theories from Greek to Modern age.
- CO2 Examine how theory and criticism has shaped the discipline we study.
- CO3 Emphasis is on the continuity of key ideas in the history of criticism.
- CO4 Write formal and informal responses to literary and critical theory that demonstrate



  
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engagement, reflective thought, effective inquiry, perception of patterns in language features, and responsible generalization.

CO5 Recognize and critique the argument underlying critical writings.

## *Modern Literature - III (1798 – 1832) (P21ELC205)*

CO1 Expertise themselves effectively in a variety of genres.

CO2 Compare and contrast the two Augustan school and Romantic School of poetry.

CO3 Contribute to innovative thinking both within and outside of the sphere of Modern Literature.

CO4 Appreciate the characteristics of the novels of nineteenth century.

CO5 Identify the rise of novel as a dominant genre in this era.

## *Modern Literature – IV (1832 - 1945) (P21ELC206)*

CO1 Familiar with representative literary and cultural texts within a significant number of historical, geographical and cultural contexts.

CO2 Apply critical and theoretical approaches to the reading and analysis of literary and cultural text in multiple genres.

CO3 Appreciate and analyze the various genres from Victorian Age to Age of Hardy.

CO4 Understand unfamiliar articles on current research, theories, and analyses theories.

CO5 Analyse any literary works from the political, historical and sociological perspectives.

## *Asian Literatures in English (P21ELC207)*

CO1 Identify and analyse a variety of representative Asian literary masterpieces of various genres.

CO2 Define social and historical contexts out of which Major Asian Literatures in English emerged and trace the development of it over time and across cultures.

CO3 Compare and contrast the writing styles and generic forms of different literary periods against different Asian cultures.

CO4 Identify the major themes of representative Asian poetic, fictional and dramatic works.

CO5 Trace the influence of Western literature upon Asian literature.

## *Literary Criticism – II (P21ELC208)*

CO1 Analyze the evolution literary theories from Greek to Modern age.

CO2 Examine how theory and criticism has shaped the discipline we study.

CO3 Emphasis is on the continuity of key ideas in the history of criticism.


CO4 Write formal and informal responses to literary and critical theory that demonstrate engagement, reflective thought, effective inquiry, perception of patterns in language features, and responsible generalization.

CO5 Recognize and critique the argument underlying critical writings.

## *English Language Teaching (P21ELC309)*

CO1 Understand, interpret and evaluate different texts that they may encounter in their daily



  
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and professional life.

- CO2 Use the knowledge to comprehend and analyze the concepts and processes related to language teaching.
- CO3 Arrange multimedia environments in and out of class which enhance interaction with teacher and among students for learning purposes.
- CO4 Use/develop tools and methods of measurement and assessment used in the teaching process evaluating them in terms of usefulness, validity and reliability.
- CO5 Gain practical skills in classroom teaching at different levels.

### *Research Methodology (P21ELC310)*

- CO1 Develop understanding on various kinds of research, objectives of doing research, research process' research designs and sampling.
- CO2 Have basic awareness of data analysis and hypothesis testing procedures.
- CO3 Understand research problem formulation. Analyze research related information. follow research ethics.
- CO4 Identify, explain, compare and prepare the key elements of a proposal or report.
- CO5 Distinguish a purpose statement, a research question or hypothesis, and a research objective.

### *Literary Theory I (P21ELC311)*

- CO1 Demonstrate familiarity with the history of literary theory in the West, including prominent theorists and critics, important schools and movements, and the historical and cultural contexts important to those theories.
- CO2 Demonstrate an understanding of key concepts in literary theory.
- CO3 Explain to others the meaning, significance, and value of specific literary theoretical works.
- CO4 Use literary theoretical concepts to develop your own interpretations of literary texts.
- CO5 Analyze specific literary theories in order to distinguish them from other theories and to identify the structure and logic of their argument.

### *New Literatures in English (P21ELC312)*

- CO1 Demonstrate knowledge of the history or culture of the English language.
- CO2 Appreciate English as a world language and English as a language of cultural imperialism.
- CO3 Recognize the diversity in literature.
- CO4 Understand the variety of social issues in the world especially in the Second World countries.
- CO5 Read and interpret the texts comparatively on literary and cultural traditions.

### *Modern European Literature In English Translation (P21ELC413)*

- CO1 Demonstrate critical thinking skills in understanding the breadth of European Literature.
- CO2 Recognize the development of the literary genres of the Europe.



  
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- CO3 Trace the development of forms and ideas over time.
- CO4 Appreciate contributions and cultural insights of Europe to our modern times.
- CO5 Learn the cultural diversities found and highlighted in each of the literary masterpieces throughout Europe.

### *Literary Theory II (P21ELC414)*

- CO1 Demonstrate familiarity with the history of literary theory in the West, including prominent theorists and critics, important schools and movements, and the historical and cultural contexts important to those theories.
- CO2 Demonstrate an understanding of key concepts in literary theory.
- CO3 Explain to others the meaning, significance, and value of specific literary theoretical works.
- CO4 Use literary theoretical concepts to develop your own interpretations of literary texts.
- CO5 Analyze specific literary theories in order to distinguish them from other theories and to identify the structure and logic of their arguments.



  
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## M.Sc., Geography

### **APPLIED GEOMORPHOLOGY - P21GC101**

- CO1 The student will demonstrate knowledge of the historical development of geomorphology and fundamental concepts of modern geomorphology.
- CO2 The course will provide an understanding of the conceptual and dynamic aspects of landform development. They will also gain knowledge of the Geomorphic Processes.
- CO3 The students will know about the causes and consequences of Natural and Man Made Disasters.
- CO4 They able to analyze how variations in Climate, Tectonics and Environment affect the development of landforms.
- CO5 They learn the relevance of applied aspects of Geomorphology in various fields.

### **CLIMATOLOGY AND OCEANOGRAPHY- P21GC102**

- CO1 Understand the basic principles of climatology and complexity of meteorological processes.
- CO2 Analyze atmospheric and oceanic circulation systems as well as their interconnections and driving forces.
- CO3 Describe the principals involved in the generation of waves and tides and evaluate their effects on coastal processes and marine ecosystems

### **ADVANCED CARTOGRAPHY- P21GC103**

- CO1 Students learn about the different types of maps and mapping techniques.
- CO2 Students learn to construct of the map in proper way.
- CO3 Students should be known about the differentiate the qualitative and quantitative data.
- CO4 After completion of this course they know about the reproduction processes and its modern techniques.

### **ENVIRONMENTAL GEOGRAPHY- P21G1MBE1**

- CO1 Student would able to understand the forms and functions of ecosystem.
- CO2 Students will be well – versed with the analyzing different environmental programmes and policies

### **POPULATION AND SETTLEMENT GEOGRAPHY- P21GC205**

- CO1 This paper would bring an understanding of population and settlement geography along with the relevance of demographic data.
- CO2 Students will have a proper understanding of the implications of population composition in different regions of the world.
- CO3 Students can able to identify and describe the structure and organization of urban and rural settlements in different regions.
- CO4 They can evaluate the function of a city and explain how its services affect its influence The surrounding rural areas.



  
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## **AGRICULTURAL GEOGRAPHY- P21GC206**

- CO1 Understand the determinants of agriculture and agricultural productivity.
- CO2 Appraise various agricultural land use models.
- CO3 Familiarize with the agricultural types in the world.

## **GEOGRAPHICAL THOUGHT - P21GC207**

- CO1 Student would able to get an insight into the historical evolution of the subject of geography. It will help them creating philosophical foundation of the subject.
- CO2 The contemporary modern views incorporated will inculcate critical thinking to the students.

## **GEOGRAPHY OF INDIA- P21G2MBE2**

- CO1 After completion of course, the students will have a proper understanding of the physical, cultural, economic and demographic aspects of India which will help them to pursue it for competitive exams.

## **SOCIAL AND CULTURAL GEOGRAPHY- P21GC309**

- CO1 Evaluate the social issues such as racism, cast conflict, social distance etc.
- CO2 Identify the issues / problems confronting various social and cultural groups in the world as well as in India

## **RESEARCH METHODOLOGY IN GEOGRAPHY- P21GC310**

- CO1 Student would able to identify the concepts and procedures of sampling, data collection, analysis and reporting.
- CO2 They can formulate research design and conduct a systematic research.
- CO3 At end of the course students will have a keen interest in research.


## **URBAN GEOGRAPHY- P21GC311**

- CO1 Students will gain knowledge of basic characteristics of urban environments, the common social and physical structures, trends and issues.
- CO2 Students will explore the spatial relationships in urban areas and impact of urbanization.
- CO3 Students can identify the structural features of cities to make analysis and compare them the present and plan for the future.

## **REMOTE SENSING, GIS AND GNSS- P21G3MBE3**

- CO1 Understand the basic concept of electromagnetic radiation and sensing of earth surface features.
- CO2 Understand GIS data models and geospatial analysis tools.
- CO3 Apply knowledge of remote sensing, GIS and GNSS/GPS in various problems of earth surface.



  
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## **REGIONAL PLANNING- P21GC413**

- CO1 At the end of the course, student would able to understand the need of regional planning at different levels.
- CO2 The course would develop a keen interest in appraising the socio and economic development strategies in India.
- CO3 The students will also get comprehensive knowledge on government programs aimed at regional development.

## **TRANSPORT GEOGRAPHY- P21G4MBE4**

- CO1 Identify the need and significance of different modes of transport
- CO2 Explain the structure of network, methods of flow and role of transport in regional development.



  
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## M.A., History

### *History Of Ancient India Upto 6th Century (P21hsc101)*

- CO1 To know the Sources and its divisions, literature and foreign accounts, this depicts the society of ancient India.
- CO2 To understand the evolution of man and his life progress in various stone ages, making and use of weapons, and formation of permanent settlements.
- CO3 To interpret the origin and developments of civilizations, culture and trade contacts with meagre facilities.
- CO4 To know the changes of culture and customs, practices and methods in their livelihood, development process in occupations, arts and crafts.
- CO5 To analyze the factors lead to formation of Vedic society and its contributions for making perfect society.

### *History Of Ancient India 600 B.C To 647 A.D (P21hsc102)*

- CO1 To analyze the factors lead to formation of petty kingdoms and their administrative systems and its significance for economic developments.
- CO2 To know the emergence of new religions and their impacts in minds of people And society.
- CO3 To interpret the factors for bestow some many reforms by emperors and the irroyal edict which pave great source to derive perfect ancient society.
- CO4 To understand about friendly alliance of North and South Kingdoms through trade and religious contacts.
- CO5 To know the developments of art and architecture, emergence of educational institutions and patronage of royal peoples.

### *Tamil Civilization And Culture Upto 1336 A.D (P21hsc103)*

- CO1 Understand the Geographical features of Tamilnadu in Early Days.
- CO2 Know the Socio – Economics, Political and Cultural condition of Tamil Nadu in Sangam period.
- CO3 Acquire Knowledge about the origin of the Pallavas and their contribution to Art and Architecture.
- CO4 Evaluate the establishment imperial Chola Empire.
- CO5 Assess the role of Pandyas and Vijayanagar rule in Tamilnadu History.

### *Tamil Civilization And Culture From 1336 A.D To 1947 A.D (P21hsc104)*

- CO1 Analyse the role of Nayaks in the Tamilnadu History.
- CO2 Observe the Maratha rule in Tamilnadu.
- CO3 Understand the Administrative Capability Sethupathi of Ramnad.
- CO4 Assess the European Settlement and its impact in the History of Tamilnadu.
- CO5 Limelight the importance of Poligars in the freedom Movement of Tamilnadu.



  
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## *History of medieval india upto a.d.1526 (p21hsc205)*

- CO1 To evaluate the important features of the five different dynasties and to analyze the importance of the Sultanate under each dynasty.
- CO2 To examine about the development of Political Institutions and relationship amongst rulers and to understand the strategies of military control and resource mobilization.
- CO3 To acquire knowledge about administration, economic and social condition, literary development under Delhi Sultanate.
- CO4 To know the Islamic Architecture patronized by Delhi Sultanate and understand the new techniques used in art architecture, painting and music which emerged with the inter mingling of new languages.
- CO5 To illustrate how Traveller's accounts, court chronicles and historical buildings are used to write History.

## *History Of India From 1526 A.D To 1707 A.D (P21hsc206)*

- CO1 To know the origin and foundation of Mughal empire in India.
- CO2 To explain about the qualities that made Babur and Akbar the great successful emperors.
- CO3 To discuss about the economic, social and religious conditions during various Mughal rulers in this period .
- CO4 To examine about the development of administrations and to understand the strategies of military control and resource mobilization.
- CO5 To understand the new techniques used in art architecture, painting and music.

## *Contemporary Tamilnadu Since 1947a.D.( P21hsc207)*

- CO1 Have a knowledge on the Revenue Administration of British in Tamilnadu.
- CO2 Evaluate the introduction of Western education and its impact.
- CO3 Assess the Value of Socio - religious reform movements in Tamilnadu for the social changes.
- CO4 Analyse the role of leaders of Various parties.
- CO5 Assess the development of Tamilnadu under various party's Rule.

## *History Of China And Japan (A.D.1900 – 1990) (P21hsc208)*

- CO1 To analyze the physical features and the development of earliest Chinese Civilization.
- CO2 To explore the Political Contributions of Various Dynasties.
- CO3 To discuss about the economic, religious and social structures of China and Japan.
- CO4 To describe about the Contributions of China and Japan to the World.
- CO5 To provide a sound basis, both in terms of factual knowledge and methodology approach towards the study of History of China and Japan.

## *International Relations Since 1919 A.D (P21hsc309)*

- CO1 To know the Historical and diplomatic importance of relationship among various



  
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countries.

- CO2 To understand about a particular land, characteristic of human being and interactions with other countries.
- CO3 To examine various political, social and economic relations and impacts of global development.
- CO4 To interpret in the fields of economics, management, politics, diplomacy, law, history, Philosophy which enables students to contribute innovatively at international environment.
- CO5 To know the present global issues, economic and social significance of the contemporary world politics.

### *Research Methodology In History (P21hsc310)*

- CO1 Understand the value of research in History.
- CO2 Assess the importance of sources and data for writing a thesis.
- CO3 Know the proper way of Criticism.
- CO4 Observe the importance of the methods of interpretation.
- CO5 Analyse how to write a thesis.

### *History Of India From 1707 A.D To 1947 A.D. (P21hsc311)*

- CO1 Understand the value of research in History.
- CO2 Assess the importance of sources and data for writing a thesis.
- CO3 Know the proper way of Criticism.
- CO4 Observe the importance of the methods of interpretation.
- CO5 Analyse how to write a thesis.

### *Temple Art And Architecture Of Tamilnadu (P21hsc312)*

- CO1 Understand the cave Architectural styles of Tamilnadu.
- CO2 Know the development of Architectural form Early period.
- CO3 Observe how they used as Source for writing History.
- CO4 Assess the iconographical revolution done by the cholas.
- CO5 To gain knowledge to do the research work in Architecture.

### *Historiography (P21hsc413)*

- CO1 To familiarize the students with approaches to historical studies in the nineteenth and twentieth centuries.
- CO2 To highlight the major trends in the development of historical writing with a focus on Prominent Historians.
- CO3 To examine the emergence of History as a professional discipline in the Nineteenth century.
- CO4 To know the recent trends in new social history and post modern challenges to history as an intellectual discipline.
- CO5 To provide a comprehensive understanding of the Indian History and Historians and to know about the proper manner of writing thesis with perfect solution.



  
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## *Contemporary India Since 1947 A.D– 2000 A.D (P21hsc414)*

- CO1 To know and analyze the development of India after independence.
- CO2 To understand various components, system of the nation and the form they had taken in past.
- CO3 To examine the fundamental changes of India after colonial rule in response to change in contemporary Indian society and polity.
- CO4 To illustrate about the implementation and impacts of five years plans for the growth of India.
- CO5 To examine the role of various political leaders contributed for the development of contemporary India.



  
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### M.Sc MATHEMATICS

#### **LINEAR ALGEBRA- P21MC101**

- CO1 Discuss in detail the basic concept of linear system of equations, Vector spaces, Bases and Dimension
- CO2 Learn linear Transformations and double dual structure.
- CO3 Understand the algebra of polynomials and various properties of determinant.
- CO4 Evaluate Characteristic values and Direct-sum decompositions.
- CO5 Capture the idea of cyclic decompositions and the rational form.

#### **REAL ANALYSIS- P21MC102**

- CO1 Gain knowledge of basic topology, metric spaces.
- CO2 Analyze continuity, derivability of given real valued function.
- CO3 Realize the key idea convergence of sequences and the quantitative inequality estimates. Here numerous examples would have demonstrated the role of inequalities.
- CO4 Learn the crucial concept of limit of function and continuity and compactness, connectedness.
- CO5 Study thoroughly the Derivative of a Real Functions and discuss the ideas derivatives of higher order.

#### **GRAPH THEORY- P21MC103**


- CO1 Know some important classes of graph theoretic problem.
- CO2 Be able to formulate and prove connectivity, Euler Tours, Hamilton cycles.
- CO3 Good knowledge on graph theory of matching's, colorings and coverings.
- CO4 Workout in detail the independent sets and cliques of a given graph with help of Ramsey's theorem and Brook's theorem.
- CO5 Comprehend and work on me concept of planarity and discuss the dual of a plane graph.

#### **ORDINARY DIFFERENTIAL EQUATIONS- P21MC104**

- CO1 Find the general solution of the first order linear homogenous equations and solving various Second order Ordinary Differential Equations.
- CO2 Get introduced to the Hyper geometric functions which arise in connection with Solution of the Second Order Ordinary Differential Equations with regular singular points.
- CO3 Understand the importance of studying well- posed problems namely existence, Uniqueness and continuous dependence of the first order Differential Equation Through Picard's theorem and strum Liouviles problem.
- CO4 Solve the problem arise in mathematical physics using properties of special functions.
- CO5 Discuss the Critical points and stability for linear systems.

#### **PROBABILITY THEORY- P21MIMBE1**



  
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- CO1 Develop problem – solving techniques needed to accurately calculate probabilities.
- CO2 Understand probability axioms and find conditional probabilities for lot of cases to calculate probabilities for various examples.
- CO3 Evaluate the Mathematical Expectation .
- CO4 Determine the distribution function using characteristic function.
- CO5 Gain mastery in the important probability distributions, viz., Binomial, Poisson and normal.

## **ALGEBRA- P21MC205**

- CO1 Analyze structure and properties of relation, conjugacy classes, counting principle and direct products.
- CO2 Understand the concepts of the integers serve as a motivation for the algebraic concepts for Rings.
- CO3 Identify the various algebraic structures and understand the concept of structures for finitely generated modules.
- CO4 Learn the fundamental concept in field theory of field extensions and would see the idea of generating new fields.
- CO5 Have a clear cut idea in the notion of Galois groups and solvability of radicals. Also will be able to prove the impossibility of certain geometric constructions.

## **REAL ANALYSIS II- P21MC206**

- CO1 Analyze integrals of given real valued function through limits and gain the knowledge of Riemann integration of real valued functions.
- CO2 Solve the problems of convergence and divergence of sequences and series.
- CO3 Explain the applications and the usefulness of these special functions.
- CO4 Understand purpose and functions of the Inverse Function and Implicit Function.
- CO5 Evaluate the special functions of using in the Integration of Differential Forms.


## **COMPLEX ANALYSIS- P21MC207**

- CO1 Determine whether a given function is differentiable and if so find its derivative.
- CO2 Analyze line integrals and Fundamental Theorems in Complex Integration.
- CO3 Determine Singularities, Zeros and Poles.
- CO4 Evaluation of Definite Integrals and Residues.
- CO5 Construct basic properties of Harmonic functions and Poisson's formula.

## **THEORY OF NUMBERS- P21MC208**

- CO1 Understand and work numerous problems on concepts of divisibility and primes.
- CO2 Gain expertise in Euler's, Fermat's and Wilson theorems and work on applications illustrating them.
- CO3 Solve congruence's as application of Chinese remainder theorem.
- CO4 Discuss quadratic residue and Jacobi symbol and work on sum of two square problems.
- CO5 Attained mastery in the Elementary partition theorem, Graphical representation and searching for partition identities.



  
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## PURE GEOMETRY- P21MC208

- CO1 Understand and generalize the concept of Harmonic Ranges and Pencils.
- CO2 The concept of a Harmonic Ranges and Pencils in outside mathematics.
- CO3 Determine the concept of properties of circles in geometrical concepts.
- CO4 Identify and characterize the properties of circles in mathematical structure.
- CO5 The concept of coaxial circles in outside oriented mathematics.

## STOCHASTIC PROCESSES- P21M2MBE2

- CO1 Understand the deviations involving conditional probability distributions and conditional expectations.
- CO2 Classify the classes of states in Markov chain and characterize the class.
- CO3 To solve the derivation of the differential equations for time continuous Markov processes with discrete state space.
- CO4 Understand the renewal process with results.
- CO5 Using the queuing theory models of time series in Statistics.

## PARTIAL DIFFERENTIAL EQUATIONS- P21MC309

- CO1 Classify first order partial differential equation and their solutions.
- CO2 Solve first order equations and non linear partial differential equation using various methods.
- CO3 Identify and solve the three main classes of second order equations, elliptic, Parabolic and hyperbolic.
- CO4 Solve the Dirichlet Problem for the upper half plane.
- CO5 Solve the Laplace equation and green's function.


## MEASURE THEORY AND INTEGRATION- P21MC310

- CO1 Discuss the Measure on the Real Line. They will be able to capture the need for the modern integration theory.
- CO2 Analyze the Riemann and Lebesgue Integrals.
- CO3 Observe that the idea of Inequalities and the  $L_p$  Spaces.
- CO4 Discuss about the importance of Convergence in Measure and Singed Measures.
- CO5 Apply the Product Measure in Fubini's theorem and Radon Nikodyn theorem.

## TOPOLOGY- P21MC311

- CO1 Understand of topological spaces and having a grasp on basic.
- CO2 Identify and characterize convergence of sequences, which are closed and explore the Continuity of functions in various topological spaces.
- CO3 Determine the connectedness and path connectedness of the product of an arbitrary family of spaces.
- CO4 Understand and generalize the generalization of the concept of compactness on Topological Spaces.
- CO5 The concept of a Topological space which generalizes the spaces arising in Real and



  
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Functional Analysis

**ALGEBRAIC TOPOLOGY- P21MC311**

- CO1 Review the basic topological concepts connecting geometry.
- CO2 Understand quotient topology and how the identification works.
- CO3 Learn thoroughly covering homotopy theorem.
- CO4 Understand simplicial complexes and its barycentric subdivisions.
- CO5 Use simplicial approximations to find the fundamental group of simplicial complexes.

**CLASSICAL DYNAMICS- P21MC312**

- CO1 Understand the basic mechanical concepts related to discrete and continuous mechanical system.
- CO2 Determine the nature of equations of motion for holonomic and non-holonomic system.
- CO3 Use the important definitions and introductory concept like virtual work and impact of motion.
- CO4 Classify the motion of a mechanical system using Lagrange –Hamilton formalism.
- CO5 Understand the concept of Hamilton –Jacobi theory.

**INTEGRAL EQUATIONS, CALCULUS OF VARIATIONS AND FOURIER TRANSFORMS- P21MC312**

- CO1 Apply the Natural Boundary and Transition conditions and use appropriate modern technology to explore calculus concepts of variation and its properties.
- CO2 Describe and Understand Fourier Transforms and Finite Fourier Sine and Cosine Transforms.
- CO3 Learn some important results for Bessel function and categorize Hankel Transform of differential operators.
- CO4 Classify Fredholm, Volterra and Singular type integral equations
- CO5 Understand the integral equations using First- Second- Third Fredholm theorem, Alternative theorem and method of successive approximations.

**FUZZY MATHEMATICS- P21M3MBE3**

- CO1 Gain the main subject of fuzzy sets learn crisp and fuzzy set theory decide the difference between crisp set and fuzzy set theory, make calculation on fuzzy set theory.
- CO2 Discuss the operations of fuzzy compliments, fuzzy unions and combinations.
- CO3 Use the fuzzy set theory on the statistical method which is analyzed statistical data by using fuzzy logic methods.
- CO4 Understand the concepts of fuzzy relations and fuzzy binary relations and fuzzy ordering relation.
- CO5 Apply the concept of fuzzy relation equations and solution methods of fuzzy relation equations.

**FUNCTIONAL ANALYSIS- P20MC413**





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- CO1 Understand functional analytic language required to study problems of practical interest and prove that norms on a finite dimensional space are equivalent.
- CO2 Comprehend the important of four pillars of functional analysis namely Hahn Banach theorem, Open mapping theorem, closed graph theorem, Uniform Bounded theorem.
- CO3 Gain mastery in basic Hilbert space theory, projection theorem.
- CO4 Analyze the Finite – Dimensional Spectral Theory
- CO5 Get a working knowledge on algebra of bounded linear operator.

### ***DIFFERENTIAL GEOMETRY- P21MC414***

- CO1 Understand the basic Classical concepts of Space Curves.
- CO2 Sketch and workout the graph of Contact between curves and surfaces, Fundamental Existence Theorem in space curve.
- CO3 Apply Intrinsic properties using Helicoids and Families of curves.
- CO4 Using Geodesic curves in Normal Property and Existence Theorems.
- CO5 Describe surfaces as a solution sets of differential equations, geodesic on surface and Complete the Gaussian curvature of various surfaces.

### ***FLUID DYNAMICS- P21MC414***

- CO1 Understand the basic mechanical concepts related to real fluids and ideal fluids.
- CO2 Determine the nature of two dimensional and three dimensional flows.
- CO3 Use the important definitions and introductory concept the Milne - Thomson circle theorem.
- CO4 Classify the motion of a mechanical system using the Navier – Stokes equations of motion of a Viscous Fluid.
- CO5 Understand the concept of the Prandtl's Boundary Layer.

### ***AUTOMATA THEORY- P21M4MBE4***

- CO1 Construct the mathematical proof for computation and algorithms.
- CO2 Understand Mathematical foundations of computation including automata theory; the theory of formal languages and grammars
- CO3 Analyze the regular languages and expressions.
- CO4 Simplifying the techniques of the context free grammars and have an exposure in normal forms.
- CO5 Analyze and design finite automata, pushdown automata, Turing machines.



  
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**M.Sc PHYSICS**

***CLASSICAL DYNAMICS AND RELATIVITY-P21PHC101***

- CO1 Acquire fundamental knowledge of classical dynamics.
- CO2 Use D'Alemberts principle to derive the language equations of motion.
- CO3 Understand theory of small oscillations in normal modes and their frequencies.
- CO4 Understand the Lagrangian and Hamiltonian methods.
- CO5 Understand the basic ideas of solutions.
- CO6 Gain the knowledge of relativity and its consequences.

***MATHEMATICAL PHYSICS-P21PHC102***

- CO1 Acquire knowledge of vector calculus for application to problems in electromagnetic theory, Fluid dynamics etc.
- CO2 Basics of Tensor and its applications.
- CO3 Understand the use of complex variables for solving definite integrals.
- CO4 Expertise of special functions and their application in Initial value problems and Boundary problems.
- CO5 Knowledge of group theory and its application to spectroscopy and Nuclear Physics.
- CO6 Acquisition of relevant mathematics skills to predict the dynamics of physical system.

***NUMERICAL METHODS-P21PHC103***

- CO1 Solving curve fitting for straight line, arabola and logarithmic curves.
- CO2 Expertise in numerical solving skills.
- CO3 Understand physical problems using interpolation methods.
- CO4 Understand numerical differentiation and integration.
- CO5 Correlate numerical solution with analytical solution.
- CO6 Acquire knowledge to solve any quantum mechanical/dynamical systems.

***ANALOG ELECTRONICS, MICROPROCESSORS AND MICROCONTROLLER-P21PHIMBE1***

- CO1 Understand the basic ideas of operational amplifier and its applications.
- CO2 Acquire knowledge of microprocessor 8085,8086 and microcontroller 8051.
- CO3 Gain knowledge about interfacing devices.
- CO4 Learn and write the assembly language programs.
- CO5 Apply the circuit theory to design sequential logic circuits
- CO6 Construction of AL AS a midway to build a digital computer.

***STATISTICAL MECHANICS-P21PHC205***

- CO1 Understand the laws of thermodynamics and give an account of the relevant quantities used to describe the macroscopic system, thermodynamics potentials etc.
- CO2 Describe the Reciprocity theorem, Thermodynamic Equilibrium and Nernst Heat theorem.



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- CO3 Give an account of kinetic theory of gases.
- CO4 Give a flavor of MB Statistics, Boltzmann transport equation and mean free path.
- CO5 Introduce the Concept of ensembles and phase space.
- CO6 Describe Maxwell Boltzmann distribution and its applications.
- CO7 Illustrate the role of Partition function and their applications.
- CO8 Describe the importance and consequences of Quantum statistics for microscopic particle.
- CO9 Explain Bose Einstein Condensation and Debye's Theory of specific heat of solids.
- CO10 Understand other applications of quantum statistics.

## **QUANTUM MECHANICS-P21PHC206**

- CO1 Understand the fundamental concepts of quantum mechanics.
- CO2 Understand the importance Schrodinger equation and their simple applications.
- CO3 Understand approximation methods like time independent degenerate, non-degenerate perturbation theories variation methods etc.
- CO4 Study scattering theory and calculate scattering amplitude and cross sections.
- CO5 Understand the basic ideas of Clebsch-Gordan coefficients.
- CO6 Understand the basic of relativistic quantum mechanics and its wide ramifications.


## **PROGRAMMING IN C++-P21PHC207**

- CO1 Understand the difference between the top-down and bottom up approach.
- CO2 Describe the object oriented programming approach in connection with C++.
- CO3 Apply the concepts of object oriented programming and procedural programming.
- CO4 Illustrate the process of data file manipulations using C++.
- CO5 Apply virtual and pure virtual function and complex programming situations.
- CO6 To apply object oriented (or) non-object oriented techniques to solve bigger computing problems.
- CO7 Understand dynamic memory management techniques using pointers, constructors, etc.
- CO8 Describe the concepts of function overloading, virtual functions and polymorphism.
- CO9 Classify inheritances.
- CO10 To code mathematical problems in C++.
- CO11 Develop the expertise to write source codes in C++

## **EXPERIMENTAL TECHNIQUES AND INSTRUMENTATION-P21PH2MBE2:1**

- CO1 Identify the various transducers involved in measurement and select types of transducer for particular measurements.
- CO2 Understand the role of digital instruments for different applications.
- CO3 Usefulness of materials characterization and analysis.
- CO4 Understand the role of biomedical instrumentation for specific applications and the operation of medical imaging instruments.
- CO5 Knowledge of the different types of recorders and understand the principle behind printers.
- CO6 Awareness of different types of errors while making measurements and means of



  
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avoiding them.

***ATOMIC AND MOLECULAR SPECTROSCOPY-P21PHC309***

- CO1 Understand the concepts of atomic spectra and other features of alkali spectra.
- CO2 Apply the knowledge of Quantum chemistry of molecules in computational research.
- CO3 Analyze FTIR spectra and apply the instrumentation techniques in recording infrared (IR) spectrum.
- CO4 Comprehend the basics and importance of Raman spectroscopy and also able to extend the concepts of electronic spectroscopy to UV-visible analysis.
- CO5 Identify the appropriate spectral technique as an analytical tool to investigate the characteristics of materials.

***ELECTROMAGNETIC THEORY-P21PHC310***

- CO1 Understand the basics of electronics.
- CO2 Understand the basics of magnetostatics.
- CO3 Understand the ramifications of time varying electric and magnetic fields.
- CO4 Importance of Maxwell's equations and its consequence in optics Electromagnetic theory and other relative areas.
- CO5 Solving boundary value problems by solving poisson's and laplace's equations.
- CO6 Electromagnetic wave propagation through different media.
- CO7 Understand how electromagnetic energy is transferred from source to observation
- CO8 Examine the phenomena of wave propagation in different media and its interfaces.
- CO9 Analyze the nature of electromagnetic wave propagation in guided medium.
- CO10 Understand the concepts of antenna and to arrange and reapture electromagnetic signals.

***NUCLEAR AND PARTICLE PHYSICS-P21PHC311***

- CO1 Understand the fundamentals of nuclear properties and deuterons.
- CO2 Illustrate the radioactive process and their corresponding decay.
- CO3 Realize the importance of nuclear energy resources through various nuclear reactions.
- CO4 Apply the knowledge of elementary particles in the field of research on particle accelerators.
- CO5 Acquire a thorough knowledge on fission and fusion reactions of production of energy as well as weapons.
- CO6 Demonstrate the basic principles and applications of nuclear physics in the field of atomic research.

***COMMUNICATION ELECTRONICS-P21PH3MBE3:1***

- CO1 Explain the operation of VHF, UHF and microwave antenna.
- CO2 Understand the principle of microwave propagation and its applications.
- CO3 Demonstrate the working principle, design and applications color television.
- CO4 To understand the basics of satellite communications
- CO5 Understand the concepts of fiber fabrications.



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- CO6 Understand the role of transmitter and receiver in satellite communication networks.
- CO7 Study of basics of cellular communications.
- CO8 Understand the role of Erbium doped fibers structure and its properties
- CO9 Understand the different modes (CDMA, WDM) of the mobile communication.


### **CONDENSED MATTER PHYSICS-P21PHC413**

- CO1 Able to correlate the x-ray diffraction pattern for a given crystal structure based on the corresponding reciprocal lattice and understand the types of crystalline imperfections.
- CO2 To enhance the ability of students to understand electron and band theories.
- CO3 Able to explain how the predicted electronic properties of solids differ in the classical free electron theory, Quantum free electron theory and the nearly free electron theory.
- CO4 To explain various magnetic phenomena and describe the different types of magnetic ordering based on the exchange interaction.
- CO5 Acquisition of knowledge concerning the electrical behavior of dielectric materials (polar and non-polar)
- CO6 Explain the structural dependence of electrical optical and mechanical properties of modern engineering materials

### **CRYSTAL GROWTH, THIN FILM AND NANO SCIENCE-P21PH4MBE4:1**

- CO1 Understand the concept related to crystal growth, Epitaxy and the necessary concepts in thermodynamics and kinetics.
- CO2 Explain the connection between growth parameters and the quality and properties of the grown materials.
- CO3 Awareness of recent trends in crystal growth, super lattices and heterostructures.
- CO4 Knowledge of the preparation techniques of thin films using physical and chemical deposition method.
- CO5 To impart the basic knowledge on nanoscience and nanotechnology and understand the exotic properties of nano structured materials.
- CO6 Study the various techniques available for the processing of nano structured materials.
- CO7 Acquire in-depth knowledge of at least one specialization area within field of nano science and nanoscale.
- CO8 Gain fundamental knowledge to undertake research.



  
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## M.A., Tamil

### இக்கால இலக்கியம் (P2ITAC101)

- CO1 இக்கால இலக்கியங்களில் புதியபடைப்புகளின் சிறப்பு,நாகரிகம்,பண்பாடு, இலக்கியநயம்,எழுத்துநடை,எழுத்தாளனின் ஆளுமைகளைஅறிந்துமாணவர்கள் பயன்பெறுதல்.

### பக்தி இலக்கியம் (P2ITAC102)

- CO1 சமயக் கருத்துக்களைஅறிந்துபக்திஉணர்வைப் பெறுதல்.  
CO2 சமயஒருமைப்பாட்டுச் சிந்தனையைப் பெறுதல்.  
CO3 தமிழ் மொழியின் சிறப்பினைப் பக்தி இலக்கியம் வாயிலாகஅறியச்செய்தல்  
CO4 பக்தி இலக்கியம் தோன்றியகாலகட்டத்தினைஅறியச் செய்தல்.  
CO5 பக்தி இலக்கியங்கள் மூலம் வாழ்ந்தபுலவர்கள்,ஆண்டஅரசர்கள்,ஆதரித்தவள்ளல்களைப் பற்றியும் அறியச் செய்தல்.

### தொல்காப்பியம் எழுத்ததிகாரம் இளம்பூரணர் உரை (P2ITAC103)

- CO1 மாணவர்கள் எழுத்திலக்கணத்தைப் பிழையின்றிப் புரிந்துகொண்டபயனடைதல்.  
CO2 மொழியின் சிறப்பினையும் மொழியின் வளத்தையும் இலக்கண வளத்தையும் அறிதல்.  
CO3 அறிவியல் முறையில் எழுத்துக்களின் பிறப்புணர்தல்.  
CO4 பிறமொழிகலப்பின் வரைமுறைஉணர்தல்.  
CO5 மொழியின் பழமையைஅறிந்துகொள்ளுதல்.  
CO6 அக்காலவழக்குச் சொற்களைத் தெரிந்துகொள்ளுதல்

### மொழியியல் (P2ITAC104)

- CO1 மொழிஎன்பதன் வரையறையைஅறிதல்.  
CO2 மொழியைஅறிவியல் அடிப்படையில் அறிந்துகொள்ளுதல்.  
CO3 மொழியின் வடிவம்,பொருள், சூழல் .  
CO4 பேச்சுமற்றும் உரையாடல் ஒலிகளைஆய்ந்துஅறிதல்.  
CO5 சூழல்வழிமொழிக்கானபொருளைஉருவாக்கும் மொழியியல்.  
CO6 நடைமுறையைஉணர்தல்.

### சிறநிலக்கியம் (P2ITAC205)

- CO1 சிறநிலக்கியவகைமற்றும் வளர்ச்சியைஅறிதல்.  
CO2 புதியசிறநிலக்கியங்களைபடைக்கபயிற்சிபெறுதல்.  
CO3 சிறநிலக்கியங்கள் புலப்படுத்தும் சமுதாயச் சூழலைஅறிந்துகொள்ளுதல்.  
CO4 கற்பனைஆற்றலைசிறநிலக்கியங்களைப் படிப்பதன் வாயிலாகபெறுதல்.  
CO5 அளவிலேசிறியதாயிருந்தாலும் பெரும் சுவையைத் தருவனவாய்ச் சிறநிலக்கியங்கள் அமைதலைஅறிதல்.

### காப்பியங்கள் (P2ITAC206)

- CO1 காப்பிய இலக்கியவகைமையின் இலக்கண இலக்கிய நயங்களை மாணவர்களுக்கு புலப்படுத்த செய்தல்.



  
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- CO2 சமணம்,பௌத்தம்,சைவம்,வைணவம், இஸ்லாம், கிறித்துவம் ஆகிய அறுவகை சமய காப்பியங்கள் உணர்த்தும் வாழ்வியல் நெறிகள், ஆன்மீகநெறிகள், அறக்கருத்துக்கள் ஆகியவற்றை மாணவர்களுக்கு உணர்த்தல்.
- CO3 காப்பியங்கள் எழுந்தகாலத்துவாழ்ந்தபல்வேறுமக்களின் நாகரிகம்,பண்பாடு. குறித்தசெய்திகளைமாணவர்களுக்குகற்பிப்பத்தோடு,காப்பிய லக்கியகற்றல் திறனைமேம்படுத்திபோட்டித் தேர்வுகளில் காப்பியம் குறித்த வினாக்களுக்கு விடையளிக்க பயிற்சி கொடுத்தல்.

## தொல்காப்பியம் - சொல்லதிகாரம் (சேனாவரையர் உரை) (P21TAC207)

- CO1 மாணவர்கள் சொல்லிலக்கணத்தைப் புரிந்துகொண்டபயனடைதல்.
- CO2 சொற்களைஉருவாக்குதலைஅறிதல்.
- CO3 சொற்கள் உருபுகளைஏற்கும் பொழுதுமயங்குதலைஅறிதல்.
- CO4 தன்மைமுன்னிலைப் படர்க்கை இட மாண்புகளைஅறிதல்.
- CO5 வினைஉருபுஏற்கின்றபொழுதுமாற்றங்களைத் தெரிந்துகொள்ளுதல்.
- CO6 தொடர் இணைப்புச் சொற்களைத் தெரிந்துகொள்ளுதல்.

## ஒப்பிலக்கியம் (P21TAC208)

- CO1 ஒப்புமை,வேறுபாடு,செல்வாக்குதாக்கம் போன்றவற்றைஎடுத்துக்காட்டுதல்.
- CO2 பிறமொழி வளம் உணர்தல்.
- CO3 உலகளாவியநோக்கில் இலக்கியஒப்பீட்டினைஎடுத்துரைத்தல்.
- CO4 ஆய்வாளர்களின் ஒப்பிலக்கியத் தொண்டினைஅறிதல்.
- CO5 இலக்கியஒருமைப்பாட்டையும் அவற்றின் பயனையும் அறிதல்.

## அற இலக்கியம் (P21TAC309)

- CO1 வாழ்க்கையில் பின்பற்றவேண்டியஉயர்ந்தநெறிகளைதெரிந்துகொள்ளுதல்.
- CO2 ஒழுக்கத்தையும் நல்லசெயல்பாட்டையும் வளர்த்தல்.
- CO3 சமூகத்தின் ஒழுங்கற்றதன்மைகளைநேர்படுத்தும் சிந்தனையைத் தூண்டுதல்.
- CO4 சமுதாயசீர்கேடுகளைக் களைதல்.
- CO5 மனிதன் மனிதனாகவாழ்வதற்கு அற இலக்கியம் உணர்த்தும் பாங்கினைஅறிதல்.

## சங்க இலக்கியம் (P21TAC310)

- CO1 ஆய்வுமேற்படிப்பைமேற்கொள்வதற்கும் படைப்பாளர்களை உருவாக்குவதற்கும் இப்பாடத்திட்டம் பயன்படுகிறது.
- CO2 பண்டைய இலக்கியங்களின் வாழ்வியல் விழுமியங்களைஅறியபயன்படுகிறது.
- CO3 தமிழ்மொழியின் தொன்மையையும் இலக்கியவளத்தையும் அறியச் செய்தல்.
- CO4 பண்டையகாலமக்களின் திருமணமுறை,திருவிழாக்கள் போன்றவற்றைஅறிதல்.

## தொல்காப்பியம் பொருளதிகாரம் (முதல் ஐந்து இயல்கள்) (P21TAC311)

- CO1 திணைக் கோட்பாடுகளைஅறிதல்.
- CO2 பழந்தமிழ் மக்களின் இல்லறநிகழ்வுகளை இலக்கணஅடிப்படையில் அறிந்துகொள்ளல்.
- CO3 வாழ்வியல் ஒழுக்கங்களைஆராய்தல். போர் நெறிகளைஉணர்ந்துகொள்ளுதல்.
- CO4 பொருளின் பயன்பாட்டினைஅறிந்துகொள்ளல்.



  
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## ஆராய்ச்சிநெறிமுறைகள் (P21TAC312)

- CO1 தரமானஆய்வேட்டைஉருவாக்குதல்.
- CO2 ஆய்வுச்சிக்கலை இனம் கண்டுதீர்வுகாணுதல்.
- CO3 எதிர்காலஆய்வுகள் குறித்தசிந்தனைத் திறனைஅதிகரித்தல்.

## தொல்காப்பியம் பொருளதிகாரம் (பின் நான்கு இயல்கள்) (P21TAC413)

- CO1 படைப்பிலக்கியமரபுகளைஅறிதல்.
- CO2 இலக்கியங்களில் இடம்பெறும் உவமைகளைஅறிந்துகொள்ளல்.
- CO3 செய்யுள் நடையில் இலக்கியங்களைப் படைக்கமுயற்சிசெய்தல்.
- CO4 நாடக இலக்கியங்களைஉணர்ந்துகொள்ளல்.
- CO5 ஆற்றிவுஉயிரினங்களைஅறிவியல் நோக்கில் அறிந்துகொள்ளல்.

## மொழிபெயர்ப்பியல் (P21TAC414)

- CO1 பிறமொழி நூல்கள் வழி பண்பாடு,அறிவியல் கருத்துக்கள் உணர்தல்.
- CO2 பயிற்சித் தேர்வில் வெற்றிபெறல்.
- CO3 ஒப்பிலக்கியநோக்கு பயன்,பயிற்சிபெறல்.
- CO4 மொழிபெயர்ப்புதிறன் பெறல்,கலைச்சொல் அறிதல்.



  
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## M.Sc ZOOLOGY

### **FUNCTIONAL MORPHOLOGY AND PHYLOGENY OF INVERTEBRATES AND CHORDATES- P21ZC101**

- CO1 Understand the significance of symmetry and coelom in animal organization and General characteristics of invertebrates and chordates
- CO2 Understand the relation between structure and functions of organs of invertebrates and chordates
- CO3 Acquire knowledge on phylogenic importance of invertebrate fossils and larval forms in Echinodermata
- CO4 Know invertebrates that gave rise to the modern day vertebrates and interpret the gradual emergence of chordates.

### **CELL AND MOLECULAR BIOLOGY- P21ZC102**

- CO1 Acquire knowledge about the structure and functions of cells.
- CO2 Understand the activity of the organism at cellular level.
- CO3 Acquire gene expression concepts in prokaryotes and eukaryotes.
- CO4 Know the role of cell cycle in cell division.
- CO5 Explain the molecular events in central dogma of life translation and transcription.

### **GENETICS- P21ZC103**

- CO1 Understand the Theories of classical genetics, sex linked inheritance and genomic imprinting
- CO2 Able to describe the genetic variations through linkage and crossing over, recombination
- CO3 Obtain the knowledge about sex determination, Extra nuclear inheritance and microbial genetics.
- CO4 Gain knowledge on mutations chromosomal aberration and DNA repair mechanism
- CO5 Understand the genetic defects and inborn error in metabolism, Genetic counseling and effect of inbreeding

### **FISHERIES AND AQUACULTURE- P21Z1MBE1**

- CO1 Gain knowledge of current perspectives on the fisheries and aquaculture.
- CO2 Know the biology of important cultivable fishes and gain Knowledge of fish disease management.
- CO3 Understanding of fish farm management and artificial breeding techniques
- CO4 Know about the water quality management
- CO5 Learning the fish harvest technology and marketing ethics.

### **BIOCHEMISTRY- P21ZC205**

- CO1 Understand the various chemical Constituents of living organisms.
- CO2 Acquire knowledge on the micro and macro biomolecules.



  
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- CO3 Understand that energy flow in cells through the breakdown of carbohydrate.
- CO4 Know the significance of protein and amino acid metabolism and their role in human health.
- CO5 Understand the mechanism of enzyme action.

## ***ANIMAL PHYSIOLOGY- P21ZC206***

- CO1 Understand the functioning of digestive system and the importance of vitamins and minerals in human pathology
- CO2 Gain the knowledge on functioning of circulatory system, components of blood, significance in cardiac diseases. Improve the knowledge on gaseous exchange through respiration process.
- CO3 Acquire knowledge on the functioning of excretory system in relation to different habitats and homeostasis mechanism in crustaceans and fishes.
- CO4 Understand the physiological functions of muscle, nervous system and Endocrine glands and reproductive cycle
- CO5 Obtain the knowledge on human health related issues.

## ***IMMUNOLOGY- P21ZC207***

- CO1 Understand the types and functions of immune system.
- CO2 Induct basic concepts of antigenicity and immunogenicity.
- CO3 Understand the molecular basis of humoral (Cytokines and complement) and cellular process.
- CO4 Understand the principles of hypersensitivity and develop theoretical knowledge On tissue and organ transplantation.
- CO5 Integrate knowledge of immune prophylaxis (Vaccine), Auto immunity And tumour immunology.

## ***ENTOMOLOGY- P21Z2MBE2***

- CO1 Understand the taxonomy of insects
- CO2 Gain the knowledge on different types mouth parts in insects, their physiology and reproductive cycles that enable them to select appropriate pest control strategies.
- CO3 Acquire knowledge on medical entomology
- CO4 Obtain information on agricultural pest management

## ***DEVELOPMENTAL BIOLOGY AND EVOLUTION- P21ZC309***

- CO1 Understand the biological process involved in the development.
- CO2 Describe the intricate process of fertilization.
- CO3 Explain organogenesis
- CO4 Understand the origin of life.
- CO5 Understand various theories of evolution.

## ***BIOTECHNOLOGY AND BIOINFORMATICS- P21ZC310***

- CO1 Master the theoretical knowledge of various field in biotechnology.



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- CO2 Acquire and perform various experiment related aspects of biotechnology.
- CO3 Understand and acquire the knowledge of cloning vector, gene transfer techniques and equip the students to get job opportunity in these field of biotechnology based companies.
- CO4 Understand and acquire the knowledge of data base, types, and drug discovery with bioinformatics tools and equip the students to get job opportunity in these field
- CO5 Understand and carry out the bioinformatics applications in the field of medicine And environmental fields.

### **MICROBIOLOGY- P21ZC311**

- CO1 Understand the classification and structure of microorganisms.
- CO2 Obtain the knowledge of nutritional requirements for growth of microbes.
- CO3 Understand the fermentation, food spoilage and preservation techniques.
- CO4 Enrich the knowledge of microbial mechanism involved in environment.
- CO5 Attain the knowledge of infectious diseases caused by microbes.

### **BIostatistics AND RESEARCH METHODOLOGY- P21Z3MBE3**

- CO1 Acquire in depth knowledge on Statistical methods and presentation of data in research.
- CO2 Acquire a clear understanding about correlation and regression analysis.
- CO3 Know about the framing of research hypothesis.
- CO4 Understanding of online collection of data and preparation of article in peer reviewed journals for publication.
- CO5 Inculcate the modern techniques and tools applied in research field.


### **ECOLOGY AND ETHOLOGY- P21ZC413**

- CO1 Understand the role of components on ecosystem.
- CO2 Acquire knowledge of population ecology, community ecology and animal association.
- CO3 Collect information on the impact of environmental pollution and global warming.
- CO4 Understand different animal behaviors through field trips and laboratory study.
- CO5 Assess the animal communication at various situations.

### **BIODIVERSITY AND CONSERVATION- P21Z4MBE4**

- CO1 Familiarize with various types of bio diversity and their values.
- CO2 Understand the loss of biodiversity and its degradation.
- CO3 Recognize the importance of conservation of biodiversity.
- CO4 Impart knowledge on therole of government agencies and NGO's to protect the environment.
- CO5 Obtain the information about the biotechnological implications in the management of bio diversity.



  
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**Curriculum Relevance to  
Local, Regional, National  
and Global Needs**

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## Department of Botany

Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
U21BO3NME1:1	Bio fertilizers and Bio pesticides.	Local	Cultural method of <i>Azospirillum</i> , <i>Azotobacter</i> , <i>Azolla</i> and <i>Anabaena</i> , carrier materials and Advantages of biopesticides and commercialization.
U21BO4NME2:2	Seed pathology	Local	History of Seed Pathology-Importance in agriculture -losses caused by seed borne diseases. Seed health testing for fungi, bacteria and viruses: Principles and methods.
U21BO5MBE1:3	Biological Control	Local	Definition - Factors involved in Biological control - The host, The pathogen or parasite, physical environment, The antagonists- Applications.
U21BO6MBE2:2	Preservation of Fruits and Vegetables	Local	Principles of preservation, Methods of preservation - refrigeration, freezing, canning, drying and dehydration, chemical preservatives.
18BO4NMEC2/ U21BO4NME2:1	Horticulture	Local	Horticulture - scope and importance. Horticultural crops - climate, soil, water and nutritional needs. Plant propagation methods – cutting, layering, grafting and budding. Plant growth regulators in horticulture.
18BOC203/ U21BOC203	Microbiology & Plant Pathology and Plant Protection	Local/ National/ Regional	Bacteria and Viruses – Discovery, General characteristics and cell structure and Importance, equipments and techniques used in plant protection.
18BOC612/ U21BOC614	Plant Ecology and Conservation.	Local	Plant environment and Pollution and its control Air pollution, Radiation pollution, Noise pollution, Thermal Pollution-Soil pollution: Industrial, agrochemicals
18BO6EC4/ U21BO6MBE2:1	Plant breeding, Landscaping and	National	Horticulture - scope and importance. Horticultural crops - climate, soil,



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Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
	Horticulture		water and nutritional needs. Plant propagation methods – cutting, layering, grafting, and budding. Plant growth regulators in horticulture.
18BOC304/ U21BOC305	Bryophytes, Pteridophytes, Gymnosperms and Paleobotany	National	Bryophytes, Pteridophytes, and Gymnosperms Morphology, structure, Reproduction, life-history, fossils and methods of fossilization
U21BO6MBE2:3	Biotechnology	Regional/ Global	Biological nitrogen fixation-mechanism, use of Azotobacter, Anabaena and Rhizobium as bio fertilizer organisms and Fermentation: Types.
18BOC203/U21B OC203	Microbiology & Plant Pathology and Plant Protection	Regional	Bacteria and Viruses – Discovery, General characteristics and cell structure and Importance, equipments and techniques used in plant protection.
18BOC509/ U21BOC511	Morphology, Taxonomy of Angiosperm and Economic Botany	Global	Binomial nomenclature – ICBN rules – taxonomic types.
SBBH/ U21BO5MBE1:1	Bio- recourse and Human Welfare	Global	Useful products from microorganisms – Single cell proteins from fungi (yeast), algae (Spirulina), antioxidants from Dunaliellasalina, Vitamins, enzymes, organic acids, antibiotics and Traditional and economically important wood plant species of India that are significant globally
U21BO5MBE1:2	Applied Microbiology	Global	Importance and relevance of herbal drugs in Indian Systems of Medicine with global significance. Pharmacognosy – aim, scope and branches.
U21BO6MBE3:3	Plant Tissue Culture	Global	Cell, tissue, and organ culture; Explants and organs for culture - cell suspension



  
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Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
			cultures - batch, continuous, chemostat culture.
18BOC507/ U21BOC509	Cell and Molecular Biology.	Global	Microbial genetics – PCR, Basic mechanism of signal transduction – principles of cell communication - Programmed Cell Death (PCD).
18BOC508/ U21BOC510	Genetics, Biostatistics and Evolution	Global	Definition and scope, Sampling techniques and Evolutionary concepts, theories.
18BOC612/ U21BOC614	Plant Ecology and Conservation.	Global	Plant environment and Pollution and its control over Air pollution, Radiation pollution, Noise pollution, Thermal Pollution-Soil pollution: Industrial Pollution, agrochemicals Pollution.
U21BO6MBE3:1	Plant Biotechnology and Bioinformatics.	Global	Biotechnology: definition and scope. Tissue culture and Bioinformatics: History, scope and applications. Types of biological databases.
U21BO6MBE3:2	Environmental Biotechnology	Global	The environment - soil, water and air. Pollution and its causes (Outline only) Nonconventional energy sources; biogas production.



  
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## Department of Chemistry

Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
U21CHC102P/ 18CHC405P2	VOLUMETRIC ANALYSIS PRACTICALS	Global	To gain the knowledge & skills on volumetric analysis.
U21CHC204P/ 18CHC20P1	INORGANIC QUALITATIVE ANALYSIS	Global	Developing skills in identifying the giving inorganic mixture by confirmatory tests.
U21CH3NME1:2/ 18CH3NMEC1:1	CHEMISTRY OF CONSUMER PRODUCTS	National	Students understand the usage and hazards of chemicals in daily life
U21CH3NME1:1/ 18CH3NMEC1	AGRICULTURAL CHEMISTRY	Regional	Students understand the usage and hazards of fertilizers and pesticides
U21CH4NME2:1/ 18CH4NMEC2	INDUSTRIAL CHEMISTRY	National	This course deals the Industrial products – sugar, paper, pigments, paints, varnishes, glass, ceramic, lime, fertilizers, adhesives, lubricants, explosives and oils
18CH4NMEC2 :1/ U21CH4NME2:2	BASIC CLINICAL CHEMISTRY	Global/ National	Students understand about drugs, antibiotics, anesthetics, analgesics and its uses.
U214CHSE1	HYDRO CHEMISTRY	Global	To study about water pollution and its types along with the water quality parameters and various techniques for waste treatment to maintain the environmental sustainability.
U21CH5MBE1:1/ 18CHC5EC3	ANALYTICAL CHEMISTRY (E-IA)	Regional	To study the principles and applications of chromatography, colorimetry methods
U21CH5MBE1:2/ 18CHC5EC3:1	WATER TREATMENT AND ANALYSIS (E-IB)	Global	To study about water pollution and its types along with the water quality parameters and various techniques for waste treatment to maintain the environmental sustainability.
U21CH5MBE1:3/ 18CHC5EC3:2	ORGANIC SYNTHESIS	Regional	To develop the skills on synthesis of organic compounds.



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U215CHSE2	DOMESTIC CHEMISTRY	Local	The students are skilled to prepare domestic products.
U215CHSE3	IMPACT OF MEDICINAL PLANTS ON SOCIETY	Regional	To learn about medicinal plants and its extraction method.
U21CH6MBE2:2/ 18CH6EC4:1	FOOD CHEMISTRY	Global	The students are aware of food flavours, additives, food adulterants and its detection in various food items.
U21CH6MBE2:3/ 18CH6EC4:2	ROLE OF CHEMISTRY IN LIFE - (E -II C)	Global	The students are aware of importance of domestic products used in their daily life
U21CH6MBE3:1 / 18CH6EC5	PHARMACEUTICAL CHEMISTRY	Global	Correlate the structure-mechanism and drug action of antibiotics.
U21CH6MBE3:2/ 18CH6EC5:1	BIO-CHEMISTRY	Global	Elucidate the role of enzymes and hormones in major metabolic path ways.
P21CH1MBE1:1 / P18CHC1EC1	ORGANIC CHEMISTRY -I	Global	To make the students aware of Stereo-chemistry, isomerism, and pictorial representation in 3D and some reaction mechanisms.
P21CH3MBE3:3/ P18CHC1EC1	SOLID-STATE CHEMISTRY	Global	It gives knowledge about magnetism and crystallography
P21CHC102/ P18CHC101	PHYSICAL CHEMISTRY -I	Global	To understand the principles on Thermodynamics
P18CHC309	INORGANIC CHEMISTRY-III	Global	To deduce the structure of coordination compounds using Electronic, IR and Raman spectral data.
P18CHC310	ORGANIC SPECTROSCOPY	Global	To interpret the structure of organic compounds using UV, I& NMR and Mass spectral data.
P21CH1MBE1:2/ P18CHC3EC3:2	CHEMISTRY OF NANO SCIENCE (I B)	Global	To mould the young minds by futuristic trends in chemistry of nanomaterials, its synthesis, characterization techniques and applications towards the bio sustainability.



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P21CH1MBE1:3/ P18CH2EC2 :1	SUPRA MOLECULAR CHEMISTRY (I C)	Global	To study about the fundamentals, reactivity and catalysis of supra molecular chemistry.
P21CH2MBE2:2/ P18CHC1EC1:2	GREEN CHEMISTRY (II B)	Global	To understand the different techniques on green chemistry.
P21CH2MBE2:3/ P18CHC3EC3:1	BIO ORGANIC CHEMISTRY (II C)	Global	To understand the role of metals, metal complexes in biological system.
P21CH2ED	FOOD & NUTRITION	Regional	The students are aware of food flavours, additives, food adulterants and its detection in various food items.
P21CH3MBE3:1/ P18CHC3EC3	MEDICINAL CHEMISTRY	Global	The students are aware of drugs, drug metabolism, development and design of new drugs, structure activity relationship. It also explains the mode of action of antibacterial and anticancer drugs
P21CH4MBE4:1/ P18CHCEC4	RECENT TRENDS IN CHEMISTRY (IV A)	Global	Gain basic knowledge in various advanced research fields
P21CH4MBE4:2 / P18CHCEC4:2	EXPERIMENTAL METHODS IN CHEMISTRY (IV-B)	Global	The students are aware of the various concepts of Electro-analytical techniques and separation techniques.
P21CH4MBE4:3	POLYMER CHEMISTRY (IV C)	Global	Students aware of various synthesis methods of polymerisation and its applications.
P21CH1SE1 / P18CH2EC2:2	TEXTILE CHEMISTRY	National	Gain basic knowledge in manufacturing processes of cotton & synthetic fibres.
P21CH2SE2P	TEXTILE CHEMISTRY PRACTICAL	National	Gain basic knowledge in manufacturing processes of cotton & synthetic fibres.
P21CHC311/ P18CHC311	PHYSICAL CHEMISTRY-II	Global	To understand the principles on electrochemistry & group theory
P21CHC312P /P18CHC312P5	PHYSICAL CHEMISTRY PRACTICALS-I	Global	To acquire the skills on determination of different physical parameters



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Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
P21CHC414P / P18CHC414P6	PHYSICAL CHEMISTRY PRACTICALS-II	Global	To analyze the physical parameters of the given salt by conductometric and potentiometric methods.
P21CHPW415/	PROJECT	Regional	To propose new, sustainable and innovative solutions for real time applications.



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## Department of Commerce

COURSE CODE	TITLE OF THE COURSE	Need Global/National/Regional	Description about the need addressed
18CO6EC4/U21CO6MBE 2:2	International Trade	Global	Provides knowledge about trade among nations.
18COC101/U21COC101	Financial Accounting	National	Adopts the rules and regulations to measure financial performance in India following the Indian Accounting standards.
18COC304/U21COC203	Business Accounting	National	Preparing accounts following the procedures issued by Accounting Standards Board of India.
18COC304/U21COC304	Partnership Accounting	National	Accounting for partnership concerns as prescribed by the Indian Partnership Act, 1932.
18COC102/U21COC305	Banking Theory Law and Practice	National	Provides knowledge of Indian Banking System.
18CO3A4/U21CO3A4	Business Law	National	Provides knowledge about the Indian Contract Act, 1872 and Indian Partnership Act, 1932.
U21CO3NME1:2	Banking Practices	National	Provides basic information regarding banking activities in India.
18COC406/U21COC406	Cost Accounting	National	Students learn the procedure of accounting in Manufacturing companies according to the regulations of Institute of Cost Accountants of India.
18CO4A5/U21CO4A5	Company Law	National	Provides knowledge of the Indian Companies Act, 1956.
18COC507/U21COC508	Corporate Accounting	National	Learning accounting procedure for companies registered under Indian companies Act, 1956.
18COC509/U21COC509	Auditing	National	Ensuring that the books of accounts of the companies are in compliance with the Indian Companies Act and learn about the Institute of Chartered Accountants of India.
U21COSE2	Forms used in business	National	Learn to fill up forms like bank challans, application for PAN, IT related forms which are commonly used in India.
U21CO5SE3/	Goods and Service Tax	National	Provides knowledge about the Indian Goods and Services Tax Act. 2016.
18COC612/ U21COC612/	Income Tax Theory Law and Practice	National	Learning the provisions of Income Tax Act of India.



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Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
18CO6EC5/ U21CO6MBE3:1/	Financial Services	National	Knowledge of major financial services in India.
U21CO4NME2:1	Entrepreneurial Development	Regional	Enhancing the entrepreneurial knowledge and skills and providing knowledge about various schemes available in district and state level.
U214COSE1	Soft skill for career development-practical	Regional	To help them attend interview and get a job in the regional level.
U213SS1	Mathematic aptitude for Recruitment Board of Examination	Regional	Job opportunity in regional level by writing TNPSC and other competitive exams.
U214SS2	Social study for competitive examination	Regional	Job opportunity in regional level by writing TNPSC and other competitive exams.
P18COC309/P21COC311	International Financial Management	Global	Familiarises with foreign exchange activities.
P18COC414/P21COC413	Security Analysis and Portfolio Management	Global	Gaining knowledge about share trading in stock exchanges globally.
P18CO3EC3T/P21CO4M BE4:2	E-Commerce	Global	Promotion of online trading of goods and services all over the world.
P18CO2EC2/ P21CO4MBE4:1	Goods and Service Tax	National	Provides knowledge about the Indian Goods and Services Tax Act. 2016.
P18COC208/ P21COC205	Income Tax Theory Law and Practice	National	Learning the provisions of Income Tax Act of India.
P18COC311/ P21COC208	Financial Services	National	Knowledge of major financial services in India.
P18COC103/ P21COC102	Cost and Management Accounting	National	Learning tools and techniques of Cost and Management Accounting adopted in India.
P18COC101/ P21COC103	Indian Financial system	National	Knowledge of the major financial system followed in India.



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Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
P212SS1	General Studies for Research fellowships and Lectureships	National	Preparation for lectureship and research fellowship examinations.
P18COC312/ P21COC309	Advanced Corporate Accounting	National	Adopting accounting procedure and preparation of financial statements according to Indian Accounting Standards.
P21CO3SS2	Commerce for Competitive Examination	National	Preparing students to get through National Eligibility Test and the competitive exams at the National Level.
P18COC413/ P21COC414	Entrepreneurial Development	National	To learn the procedure to start business in India and providing information relating to financial and other support provided in India for business.
P21CO2ED	Women Entrepreneurial Development	Regional	Enhancing the entrepreneurial knowledge and skills and providing knowledge about various schemes available for women entrepreneur at the district and state level.



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## Department of Computer Science

Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
P17CSC103	Advanced Java Programming	<b>Global</b>	To provide design to develop web-based, network- centric enterprise applications.
P17CSC207	Compiler Design	<b>Global</b>	To design High level language Code Compilation and error detection, Program translation and computer architecture design and optimization.
P17CSC208	Programming in C# and .NET Framework	<b>Global</b>	To develop Form-based applications, Web-based applications and Web services.
P17CSCEC1:3	Bio Informatics	<b>Global</b>	The Computational, Statistical and computer programming techniques are used for computer simulation analysis of biological queries.
P21CSC103	Python Programming	<b>Global</b>	Focuses on python machine learning and AI, Web Development, IOT and Application development.
P21CS1MBE1:1	Parallel Processing	<b>Global</b>	Parallel Processing can solve more complex problems effectively. Efficient in handling simultaneous data processing operations.
P21CS2MBE2:1	Network Security	<b>Global</b>	To protect organizations and individuals from cyber-attacks. To prevent unauthorized access to a network.
P21CS2MBE2:2	Software Project Management	<b>Global</b>	Software Management Framework for tracing and managing projects
P21CS2MBE2:3	Soft Computing	<b>Global</b>	Addresses Soft Computing Techniques such as neural networks, fuzzy systems and genetic algorithm.
P21CS3MBE3:3	Artificial Intelligence	<b>Global</b>	Language translation, image recognition, e-Commerce and other domains are the main applications of Artificial intelligence.



  
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Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
P21CS4MBE4:1	Deep Learning	Global	Deep learning algorithms facilitate facial recognition, speech recognition and image classifications.
P21CS4MBE4:2	Internet of Things	Global	To provide the communication technologies in IoT, IoT protocols and web of things.
P21CS1MBE1:2	Grid Computing	Global	To Provide technology for coordinating large resource sharing and problem solving among different institutions / companies.
P21CS1MBE1:3	Cloud Computing	Global	Cloud computing operates on web-based email clients, allowing users to access all the resources and files of the system.
P21CSC310	Data Mining	Global	Principles of data retrieval from large databases through data mining Techniques.
P21CSC311	Data Analytics	Global	Data analytics can shape business process, improve decision making, and faster business growth.
17CSC101	Programming in C	Global	A High-level Programming language employing C Program that constructs OS, GUI and Embedded system.
17CSC203	Object Oriented Programming with C++	Global	To Provide Banking Applications, Database Management Software, Web browser and Cloud Storage System.
U21CSC305	Fundamentals of Data Structures and algorithms	Global	Apply data structure to algorithmically design efficient programs that will cope with the complexity of actual applications.
U21CSC407	Programming in Java	Global	To impart the programming skills in JAVA.



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U21CSC509	Operating Systems	<b>Global</b>	It provides valuable services to user programs and controls all the computer resources.
U21CSC510	Computer Architecture & Fundamentals of Microprocessor	<b>Global</b>	It gives the background of internal communication of computers. It gives better idea on how to write assembly language program.
U21CSC511	Data and Computer Communications	<b>Global</b>	To enable seamless exchange of data between any two points in the world. The transmission of the digital data between two or more computers and computer networks or telecommunication network.
U21CS5MBE1:2	Multimedia Systems	<b>Global</b>	To create the multimedia applications
U21CS5MBE1:3	Digital Image Processing	<b>Global</b>	To provide complete knowledge on Digital Image Processing methods such as Spatial Domain, Frequency Domain, Edge Detection, Compression, Segmentation and Morphological operations
U215CSSE2	Fundamentals of Photoshop - Practical	<b>Global</b>	To provide basic ideas with reference to working with images and colors in Photoshop.
U21CSC613	Data Base System Concepts	<b>Global</b>	Acquire Knowledge of Database Models, Applications of Database Models and Emerging Trends.
U21CSC614	PHP Scripting Language	<b>Global</b>	Understand the fundamental knowledge of developing web applications with PHP
U21CS6MBE2:1	Software Engineering	<b>Global</b>	Design, development, testing and maintenance of software applications.



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Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
U21CS6MBE3:1	Internet of Things	<b>Global</b>	IOT is most abundant in manufacturing, transportation and utility organizations that use sensors and other IOT devices.
U21CS6MBE3:2	Cyber Security	<b>Global</b>	To acquire knowledge about the Cyber Security, Security Polices and Cyber Management issues.
P17CSC101	Mathematical Foundations	<b>National</b>	Applications of graph theory, computer representations of graph, concepts of set theory and Boolean algebra.
P17CSC206	Microprocessors and Microcontrollers	<b>National</b>	Microprocessor and Microcontrollers are optimized to perform a dedicated low power application and ideal for embedded systems.
P17CSC413	Open-Source Technologies	<b>National</b>	To Improve the software and even come up with their own innovations.
P21CSC102	Object Oriented Analysis and Design & Unified Modeling Language	<b>National</b>	To provide the concept of Object-Oriented Methodology for developing a software application.
P21CSC205	Distributed Operating System	<b>National</b>	Introduce concepts in the design of the Unix Operating System and Design Principles.
P21CSC309	Advanced Computer Architecture	<b>National</b>	Interpret the performance of a processor based on matrices such as execution time, cycles per instruction, instruction count, etc.,
P21CS3MBE3:1	Software Quality Assurance and Testing	<b>National</b>	To provide the knowledge in analyzing the program flow and identify bugs over it in a systematic approach.
P21CS3MBE3:2	Pervasive Computing	<b>National</b>	Pervasive computing are sensors, Actuators, Embedded Applications and User interface are made to appear anytime and anywhere.



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Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
U21CS6MBE2:2	System Analysis and Design	<b>National</b>	Enabling comprehension of complicated structures: Identify potential problems that can affect the performance of the system.
U21CS6MBE2:3	Software Project Management	<b>National</b>	Introduces basic concepts of Software Project Management and various phases in Software Management Framework.
U21CS5MBE1:1	Computer Graphics	<b>National</b>	To visualize complex concepts in a more intuitive and engaging manner.
P21CS1SE1	Document Preparation System – Latex	<b>Local</b>	Type setting of complex mathematical formulas, tables using latex.
P21CS2SE2P	Practical - Document Preparation System – Latex Lab	<b>Local</b>	To Design the Basic commands in Latex
SBHC	Hardware Concepts	<b>Local</b>	To provide the technology, services and working of various devices with its architecture.
U21CS3NME1:1	Fundamentals of Photoshop Lab	<b>Local</b>	Design and edit image using Photoshop
U21CS3NME1:2	Office Automation Lab	<b>Local</b>	To provide basic working concepts of MS Word, Excel and Power point



  
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## Department of Economics

Course Code	Title of Course	Need-Local/National/Regional/Global	Description about the need addressed
18ECC305	INTERNATIONAL ECONOMICS	GLOBAL	To gain insight into the issues of trade and finance at the global level.
18EC C406	LABOUR ECONOMICS	GLOBAL	The labour is engine of growth and the prime factor for production. Labour will activate all factors of production.
U21ECC102	INDIAN ECONOMIC DEVELOPMENT	NATIONAL	To familiarize students with basic features of the Indian economy and its process of development
18ECC507/18ECC611	MACRO ECONOMICS	NATIONAL	The study of macro economics is very important for evaluating the overall performance of the economy in terms of national income.
18EC3NMEC2	AGRICULTURAL ECONOMICS	NATIONAL	Agriculture is prime occupation of India and 70% of the population depends on agriculture sector. Agricultural economics plays a role in the economic development.
U21EC6MBE2:3	REGIONAL ECONOMICS	REGIONAL	The regional problems that are spatially analysable so that theoretical or policy implications can be the desired with respect to regions whose geographical scope ranges from local to global areas.
ECCA02/U21EC3NME1:2	TAMILNADU ECONOMY	REGIONAL	Tamil Nadu has the second largest state economy in India, it's also the most industrialized state in the country. The states can tax that revenue and gain the capacity and resources needed to provide the public goods and services.
P18ECC309	INTERNATIONAL ECONOMICS	GLOBAL	To gain insight into the issues of trade and finance at the global level.
P21ECC103	AGRICULTURAL ECONOMICS	NATIONAL	Agriculture is prime occupation of India and 70% of the population depends on agriculture sector. Agricultural economics plays a role in the economic development.
P21EC1MBE2:1	WOMEN AND INDIAN ECONOMY	NATIONAL	The women entrepreneurs play a crucial role in the Indian Economy and have a significant effect on it by generating employment, accelerating development and fostering prosperity.
P21EC2ED	INDIAN ECONOMIC PROBLEMS	NATIONAL	Since 1991, the Indian economy has pursued free market liberalization, greater openness in trade and increase investment in infrastructure.
P18ECC413	ECONOMIC GROWTH AND	NATIONAL	The economic growth has traditional been attributed to the accumulation of human and physical capital and the



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	DEVELOPMENT		increases in productivity and creation of new goods arising from technological innovation.
P18EC4EC4	ENVIRONMENTAL ECONOMICS	NATIONAL	It promotes sustainable development, economic valuation of natural resources and strategies for stability by addressing issues like externalities and other environmental concerns.



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## Department of English

COURSE CODE	COURSE TITLE	Need-Local/National/Regional/Global	Description about the need addressed
18ELC101	Prose	Global	To improve the skills of reading and writing in English and to understand the western literary pieces to reflect on various societal contexts and values internationally.
18ELC102	Short Stories and Essays	Global	Enabling to discuss the content of the English stories and structure in depth and developing students' performance skills in narration
18EL1A1	Social History of England	Global	To enhance the knowledge on the background history and developments of England, understanding the connections between local, regional, national and international history; between cultural, economic, military, political, religious and social history; and between short- and long-term timescales.
18ELC203	Poetry-I	Global	To analyze the various elements of English poetry, such as diction, tone, form, genre, imagery, figures of speech, symbolism, theme, etc. To enable the students to understand the thought and imagination elevated in the English classic poems.
18EL2A2	History of English Literature I	Global	To enable the students with the western knowledge of socio-cultural background, literary and intellectual background and also the development of British drama and theatre
18EL2A3	Literary Forms	Global	To enable students to write with proficiency in one or more creative literary form (poetry, fiction, creative non-fiction) by denoting the examples from the English literary works.
18ELC304	Poetry-II	Global	To analyze the various elements of English poetry, such as diction, tone, form, genre, imagery, figures of speech, symbolism, theme, etc. To enable the students to understand the thought and imagination elevated in the English classic poems.
18ELC305	Fiction	Global	To educate students in both the artistry and utility of the English language through the study of literature and other contemporary forms of culture.
18EL3A4	History of English Literature II	Global	To provide the students with the knowledge of political, economic, social and intellectual



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Government College for Women (Autonomous)  
KUMBAKONAM.

# GOVERNMENT COLLEGE FOR WOMEN (AUTONOMOUS)

KUMBAKONAM – 612 001

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COURSE CODE	COURSE TITLE	Need-Local/National/Regional/Global	Description about the need addressed
			background of England so as to enable them to study the works as representative of the period
18EL3NMEC1	Personality Development- Short Stories in English	National	To build self-confidence, enhance self-esteem and improve overall personality of the students to face challenges in life with confidence.
18ELC406	Drama	Global	To make the students learn the dramatic elements of a plot for their effectiveness and cohesiveness
18EL4A5	Introduction to Language and Linguistics	Global	To develop the understanding of the origin of language, development of vocabulary and meaning in the minds of students. To comprehend the basic grammatical and semantic categories of the global language.
18EL4A6	Comparative Literature	Global	To interpret a literary text or other cultural artifact in a non-native target language and to develop advanced skills in order to compare texts from variety of different traditions, genres, periods and areas. This helps the students to compare texts around the world.
18EL4NMEC2	Personality Development- Personalities and Perceptions	National	The programme aims at grooming the students through sensitizing them about proper behavior, socially and professionally, in formal and informal circumstances.
SBEEC	Skill based Elective I English for Everyday Communication	National	To familiarize the students with major Indian writers in English and get their knowledge updated on contemporary Indian literature in English (Till the first decade of 21st century).
SBEW	Skill based Elective II English for Workplace Communication	National	To enable the learner to communicate effectively and appropriately in real life situation
SBEP	Skill based Elective III English Phonetics	National	To gain confidence speaking English in work situations and enhance their writing proficiency in business communication tasks such as emails, memo, agendas
18ELC507	Shakespeare	Global	To identify, explicate, and respond to key themes and elements in Old English Shakespearean drama and to understand the versatility of the author.



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18ELC508	Principles of Literary Criticism	Global	To make the students to be familiar with basic theories, knowledge areas and analytical tools of the field through a number of contemporary and historical schools of literary world.
18ELC509	American Literature	Global	This helps the students to identify relationships between moments in American history, colonialism, and culture and their representation in works of American literature.
18EL5EC3	Translation Theory and Practice	Global	Demonstrate an appropriate understanding of the significance of languages and translation in the study of any text and helps them to translate text from English to Tamil and vice versa.
18ELC612	Common Wealth Literature	Global	To promote understanding on global issues, international co-operation and the work of Commonwealth organizations
18ELC613	English Language Teaching	Global	To understand different approaches and methods of teaching English as second Language. This helps the students to teach English anywhere in the world.
18EL6EC4	Journalism	Global	To develop the learner into competent and efficient Media & Entertainment Industry ready professionals.
18ELC611	Indian Writing in English	National	To create awareness among the students of the rich and diverse Indian culture of India.
18EL6EC5	English for Competitive Examinations	National	To install confidence in learners and improve their language skills to face the challenges of a competitive examination
U21ELC101	Age of Chaucer and Spenser	Global	To make the students comprehend the development of trends in British drama and poetry. To help the students view British literature in its socio-cultural and political contexts.
U21ELC102	Age of Milton and Pope	Global	To understand different features of Neoclassicism and its influence on English society also the students will acquire knowledge about the three basic genres of literature namely poetry, prose and drama along with its subdivisions and their emergence in various ages.
U21EL1A1	Literary Forms	Global	To enable students to write with proficiency in one or more creative literary form (poetry, fiction, creative non-fiction)



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COURSE CODE	COURSE TITLE	Need-Local/National/Regional/Global	Description about the need addressed
U211VE	Value Education	Local	Inculcation of good manners and of responsible and cooperative citizenship
U21ELC203	Eighteenth Century Romantic Literature	Global	To understand gradual changes from reason to emotion in British Literature.
U21EL2A2	History of English Literature I	Global	To enable the students with the knowledge of socio-cultural background, literary and intellectual background and also the development of British drama and theatre
U21EL2A3	Social History of England	Global	To gain historical perspective by placing their growing knowledge into different contexts, understanding the connections between local, regional, national and international history; between cultural, economic, military, political, religious and social history; and between short- and long-term timescales.
U212ES	Environmental Studies	Local	Imparting basic knowledge about the environment and its allied problems. This helps the students to be aware of the environmental conditions in their living area.
U21ELC304	Shakespeare	Global	To identify, explicate, and respond to key themes and elements in Shakespearean drama, as presented in both written and spoken form.
U21ELC305	Age of Tennyson	Global	To explain the key concepts of the Romantic revival and the impact of French Revolution on Romantic critical tradition
U21EL3A4	History of English Literature II	Global	To provide the students with the knowledge of political, economic, social and intellectual background so as to enable them to study the works as representative of the period
U21ELC406	British Literature: The 20th Century	Global	To familiarize the students with the modern literature of Britain in the early decades of 20 <sup>th</sup> century
U21EL3NME1:1	Spoken English for You	National	To enable them to have a coherent organization of information at sentence and discourse levels
U21EL3NME1:2	Personality Development- Short Stories in English	National	The programme aims at grooming the participants through sensitizing them about proper behavior, socially and professionally, in formal and informal circumstances.
U21EL4A5	English Phonetics	Global	To help the students develop the ability to identify and produce English key sounds as well as its basic rhythm, stress and intonation patterns in context



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U21EL4A6	Women's Writing in English	Global	To create awareness of the importance of working toward a critical consciousness that allows for the dialectical process of rethinking and redefining notions and assumptions through reading and writing.
U214ELSE1	English for Business Communication	Global	To enhance employability of the students by developing their linguistic competence and communicative English.
U21EL4NME2:1	Written English for You	National	To improve the students skills as critical readers and thinkers, enabling students to identify an author's thesis and supporting points and to respond to the writing of both professionals and peers.
U21EL4NME2:2	Personality Development- Personalities and Perceptions	National	The programme aims at grooming the participants through sensitizing them about proper behavior, socially and professionally, in formal and informal circumstances.
U21ELC507	Literary Theory	Global	To make the students would read and understand unfamiliar articles on current research, theories and analyses theories and discipline- specific skills to teach, edit and other professional areas.
U21ELC508	Diasporic Literature	Global	To enable the students to examine the work of some authors of the Indian diaspora in America and Canada to uncover the change in historical, political, socio-economic and cultural context of migration from the Indian sub-continent.
U21ELC510	American Literature	Global	To understand the historical background of American literature and the American dream.
U21EL5MBE1:1	<b>Comparative Literature</b>	Global	To interpret a literary text or other cultural artifact in a non-native target language and to develop advanced skills in order to compare texts from variety of different traditions, genres, periods and areas
U21EL5MBE1:2	Green Studies	Global	To create awareness among the students through literature about environmental crisis through this the students will understand the global issues.
U215ELSE2	English for Technical Writing	Global	To help the students to recognize and incorporate basic grammar, mechanics, and sentence variety in writing , To enable them to answer with explanation for Interviews four basic skills in English Listening, Speaking, Reading and Writing.



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U215ELSE3	English for Enrichment	Global	Develop the students an awareness of the importance of English language as a means of international communication.
U21ELC509	Indian Writing in English	National	To familiarize the students with major Indian writers in English and get their knowledge updated on contemporary Indian literature in English (Till the first decade of 21st century).
U21EL5MBE1:3	English for Competitive Examinations	National	To instill confidence in learners and improve their language skills to face the challenges of a competitive examination
U21EL6MBE2:2	Mass Communication and Journalism	National	To develop the learner into competent and efficient Media & Entertainment Industry ready professionals.
U21ELC611	English Critical Tradition	Global	To help the students understand how Western criticism built on the pillars of Classical criticism.
U21ELC612	Popular Literature	Global	To educate students in both the artistry and utility of the English language through the study of literature and other contemporary forms of culture.
U21ELC613	New Literatures	Global	To make the students focus on texts written by authors who live in a country that was colonised, and who write in English.
U21EL6MBE2:1	English Language Teaching	Global	To introduce various theoretical perspectives that underlies the teaching of ESL/EFL for nurturing and developing hands on experience in the field of ELT
U21EL6MBE2:3	Fiction	Global	To educate students in both the artistry and utility of the English language through the study of literature and other contemporary forms of culture.
U21EL6MBE3:1	Translation Theory and Practice	Global	To expose students to the various facets of literature and thereby to enhance them in comprehending the efficiency of English Language.
U21EL6MBE3:2	Single Author Study- T.S.Eliot	Global	To familiarize students with the history and theory of translation To introduce students to the techniques involved in translation
U21EL6MBE3:3	Drama	Global	Through practical and theoretical study, learners develop an understanding and enjoyment of



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			drama, developing group and individual skills and studying ways to communicate ideas and feelings to an audience.
GS	Gender Studies	Local	Identify the ways gender, power, privilege, and oppression play out across a range of cultures and human experiences
P18ELC102	Modern Literature – I (1400 – 1660)	Global	To help students acquire knowledge of the England's political, social and intellectual background of the age through the works of various writers during this age.
P18ELC104	Indian Writing in English	National	To create awareness among the students of the rich and diverse Indian culture of India
P18EL3EC3	Ethics	National	To make the students aware of their responsibilities as human beings in order to protect environment and themselves.
P18ELC103	Modern Literature – II (1660 – 1798)	Global	To make students understand the origin of the prose works in English language during the Restoration period and varied prose works of the Age of Pope and its influence in the romantic period.
P18EL1EC1	Grammar, Rhetoric and Writing	Global	To expose students improve to extend the communication strategies in English
P18ELC205	Modern Literature – III (1798 – 1832)	Global	To make students appreciate the characteristics of the novels of Scott and Jane Austen
P18ELC206	Modern Literature – IV (1832 – 1945)	Global	To help students learn the revolutionary elements through Aesthetic Movement and anti- Victorian Movement in poetry, drama and novel during the Age of Hardy
P18ELC207	Shakespeare	Global	To expose students to the social and psychological aspects in some plays of Shakespeare. This will make the students understand Shakespeare's global reach, and the reactions his plays have received in different countries and centuries.
P18ELC208	Literary Criticism	Global	Literary theory examines a cross section of literature from a specific era, geographic location, or from writers of specific backgrounds or identities to draw conclusions about the similarities and differences in similar kinds of



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			literary works.
P18EL2EC2	Green Studies	Global	To create awareness among the students through literature about environmental crisis. To develop care and concern for the global environment.
P18ELC309	Theory of Comparative Literature and Classics in Translation	Global	To help students to learn the scope, methodology and application of the theories in comparative literature with reference to texts around the world.
P18ELC310	Literary Theory	Global	To enable learners to understand a wide range of theoretical perspectives to enhance their appreciation of literary texts in foreign languages.
P18ELC311	Research Methodology	Global	To make students know the format of research and mechanics of writing. This will help the students to write research papers and publish in international journals.
P18ELC312	New Literatures in English	Global	To enable students to analyse the contributions of literature from different countries and to help students recognize the linguistic and social diversity in literature.
P18ELC413	Translation: Theory and Practice	Global	To introduce learners to the techniques involved in translation of literary and non-literary texts.
P18ELC414	Single-Author Study – T.S.Eliot	Global	To expose learners to the aspects of modernist culture with reference to T.S.Eliot
P18EL4EC4	English Literature for UGC Examinations	National	To help students prepare for Eligibility tests like SET & NET/ JRF and Pre- Ph.D Registration Test and other University Entrance Exams in English Literature.
P21ELC101	Modern Literature – I (1400 – 1660)	Global	To help students acquire knowledge of the political, social and intellectual background of the age through the works of various writers during this age.
P21ELC102	Modern Literature – II (1660 – 1798)	Global	To make students understand the origin of the prose works during the Restoration period and varied prose works of the Age of Pope
P21ELC104	Literary Criticism- I	Global	To introduce students to a variety of critical approaches to perceive the paradigm shift through the critical texts from Plato to T.S. Eliot



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P21EL1MBE1:1	History of English Language	Global	To make students have a knowledge of the origins of English and its place in respect to other languages of the world
P21EL1MBE1:3	Classics in Translation: Eastern and Western	Global	The younger generation must be given an awareness of the socio-cultural flux in the world which in turn shall enhance their perception of the sustainable ethos
P21EL1MBE1:2	Indian Classical Literature	National	To make the students appreciate the two great Indian epics and its impact on Indian psyche.
P21EL1SE1	Journalism-Theory	National	To develop the learner into competent and efficient Media & Entertainment Industry ready professionals.
P21ELC205	Modern Literature – III (1798 –1832)	Global	To make students appreciate the characteristics of the novels of Scott and Jane Austen
P21ELC206	Modern Literature – IV (1832 – 1945)	Global	To help students learn the revolutionary elements through Aesthetic Movement and anti- Victorian Movement in poetry, drama and novel during the Age of Hardy
P21ELC207	Asian Literatures in English	Global	To make the students define social and historical contexts out of which Major Asian Literatures in English emerged and trace the development of it over time and across cultures.
P21ELC208	Literary Criticism - II	Global	To provide a conceptual framework of various critical theories through different ages that compliment and contradict one another as in Greek, Latin and English languages.
P21EL2MBE2:1	Language and Linguistics	Global	Students have a fundamental understanding of the basic nature, branches and history of linguistic inquiry
P21EL2MBE2:2	Postcolonial Literatures	Global	To make the students focus on texts written by authors who live in a country that was colonised, and who write in English. To make the students know how race, class, gender, history, and identity are presented and problematised in the literary texts,
P21EL2MBE2:3	Ethics	National	To make the students aware of their responsibilities as human beings in order to protect environment and themselves.
P21EL2ED	Technical Writing for Products and Services	National	To develop the learner into competent and efficient Media & Entertainment Industry ready professionals.



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P21EL2SE2P	Journalism - Practical	National	To introduce various theoretical perspectives that underlies the teaching of ESL/EFL for nurturing and developing hands on experience in the field of ELT
P21ELC309	English Language Teaching		To update domain knowledge and learn various formatting techniques depending on different reports and to learn new tools and technologies used to write a technical document.
P21ELC310	Research Methodology	Global	To make students know the format of research and mechanics of writing
P21ELC311	Literary Theory -I	Global	To make the students would read and understand unfamiliar articles on current research, theories and analyses theories and discipline- specific skills to teach, edit and other professional areas.
P21ELC312	New Literatures in English	Global	To introduce students to the emergent body of literature being produced by writers (and film-makers) from South Africa, sub-Saharan Africa. To appreciate English as a world language and English as a language of cultural imperialism.
P21EL3MBE3:1	<b>Shakespearean Studies</b>	Global	To identify, explicate, and respond to key themes and elements in Shakespearean drama, as presented in both written and spoken form
P21EL3MBE3:2	Partition Literature	Global	To provide an understanding of the partition of British India in 1947 from the perspectives of literature
P21EL3MBE3:3	Theory of Comparative Literature and Classics in Translation	Global	To help students to learn the scope, methodology and application of the theories in comparative literature and to introduce students to the thematology and genre studies
P21ELC413	Modern European Literature in English Translation	Global	To inculcate the cultural diversities found and highlighted in each of the literary masterpieces throughout Europe.
P21ELC414	Literary Theory -II	Global	To make the students to be familiar with basic theories, knowledge areas and analytical tools of the field through a number of contemporary and historical schools of literary world.
P21EL4MBE4:1	Women's Writing in English	Global	It aims to expose students to a substantial body of knowledge about the social construction of



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			gender in various cultural contexts from a variety of disciplinary perspectives.
P21EL4MBE4:2	Reading for Pleasure( Novels of Jane Austen)	Global	To help students to appreciate the characteristics of domestic novels in relation with feminine literary world. To explore the major themes of her writing situating her work in the context of the romantic period.
P21EL4MBE4:3	Autobiography	Global	To help the students learn about the process of writing; brainstorm ideas, write draft, revise, edit, finalize draft, and share work. To make the students write effectively and with detail about their personal history (family, friends, and neighborhood), growth, and goals over time.



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## Department of Geography

Course Code	Title of the Course	Need Local/ National/Regional/Global	Description about the need addressed
U21GC101	Earth System Science	Global	Students learn about location of entire countries and to find the universal time.
U212ES	Environmental Studies	National	Students can understand the environment and all the factors, which influence life on earth.
U212AG2P	Allied Practical I – Tourism Data Analysis	Regional	Gives hands-on training to preparation of itinerary and brochures along with travel documents and formalities.
U21GC203	Climatology	Global	To identified the different climatic regions depends on their weather phenomena in the world.
U21GC305	Geomorphology	Global	Visualize and understand the diversified landscapes on earth's surface.
U21G3NME1:1	Disaster Studies	Global	To knowledge about the environment, climate change, challenges and to create awareness about environment protection in Disaster Studies.
U21G3NME1:2	Geography of India (with Special Reference to Tamil Nadu)	National & Regional	Analyse and understand the regional variations in their regions.
U21GC408P	Practical IV - Map Projection	Global	To analyse transferring the graticule of latitude and longitude on a plane surface. To meet the requirements of global needs.
U214GSE1	Basics of Computer Applications	National	Enable the students to learn the applications of such tools in various fields of computer applications.
U21G4NME2:2	Agricultural Geography	Global	To examine and evaluate the role of agricultural regions in the world.
U21GC509	Oceanography	Global	To identified the various submarine features in the major oceans.
U21GC511	Geography of Resources	Global	Students can interest focused on utilization, evaluation, conservation and management of resources in relation to environment in entire world.
U21G5MBE1:2	Geography of Sri Lanka	Global	Understanding the physical, cultural and socio economic life of island.
U18GCE09/ U21GC614	Geography of India	National	To learn about the location, physical, cultural, agriculture and resources in our country.
U21G6MBE2:1	Geography of Tamil Nadu	Regional	To identify about location, physical, cultural, agriculture and resources in Tamil Nadu.
P18GC101/ P21GC101	Applied Geomorphology	Global	It's is the science of land forms that helps us understand their origin, evolution, and distribution across the other physical landscape on the Earth's surface.



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Course Code	Title of the Course	Need Local/ National/Regional/Global	Description about the need addressed
P18GC102/ P21GC102	Climatology and Oceanography	Global	Climatology, it helps determine future climate expectations of the World. Oceanography, it regulates Earth's climate, plays a critical role in the horological cycle, sustains a large portion of Earth's biodiversity and mineral resources.
P18GC104P1	Practical - Terrain and Climatic Data Analysis	National	They can know and identify about the elevation of terrain using climatic data.
P21GC207	Geographical Thought	Global	Students will develop a solid understanding of the concepts of "space," "place" and "region" and their importance in explaining world affairs.
P18G2MBE2:1/ P21G2MBE2:1	Geography of India	National	The students can easily understand their country compare with other countries.
P18GC312P	Practical – Interpretation of topographical maps , Aerial photos and satellite images	National	To identifying the factors that explain the causal relationship among several features in various maps.
P21GC413	Regional Planning	National	Various aspects of development and regional disparity, in order to formulate measures of balanced developments.
P21G4MBE4:1	Transport Geography	National	It investigates the movement and connections between people, goods and information on the Earth's surface.
P18GC413	Social and Cultural Geography	Regional	Students understand the social and cultural disparities in the various regions.
P21G4MBE4:3	Climate Changes and its Impacts	Global	People can identified the extent of future climate change depends on what we do how to reduce greenhouse gas emissions.



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## Department of History

Course code	Title of the Course	Need-Local/National/Regional/Global	Description about the Need Addressed
18HSC101/ U21HSC101	History of India upto 1206 A.D	National	To provide information on socio, political, economic and cultural History of India
18HSC102/ U21HSC203	History of Tamil Nadu upto 1565 A.D	Regional	To disseminate information regarding Tamil society under various dynasties
18HS1A1/ U21HS1A1	Modern Governments Theory and Practice –I / Modern Governments Theory and Practice	Global	To provide the general information regarding Constitution
18HSC203/ U21HSC202	History of India upto 1206 A.D to 1526 A.D	National	To provide information regarding the History of Delhi Sultanate
18HS2A2/ U21HS1A2	Modern Governments Theory and Practice II / Modern Governments -I	Global	To disseminate information regarding the Constitution of England, USA and Switzerland
18HS2A3/ U21HS2A3	Modern Governments Theory and Practice – III/Modern Governments-II	Global	To provide information about the Constitution of India, China and Japan
18HSC304/ U21HSC304	History of India from 1526 A.D to A.D 1757	National	To disseminate information regarding the Mughal dynasty and the European Trade companies
18HSC305/ U21HSC305	History of Tamilnadu from A.D 1565 to A.D 2000	Regional	To provide information about Tamil Nadu History in modern era
18HS3A4/ U21HS3A4	Public Administration – I	Global	To provide general principles of the Administration
18HS3NMEC1/ U21HS3NME 1:1	Introduction to Indian Constitution	National	To disseminate information regarding Indian Constitution
U21HS3NME 1:2	Women Development in Tamil Nadu (AD 1900-2000)	Regional	To provide basic ideas and programmes for Women development in Tamil Nadu
18HSC406/ U21HSC406	History of British Administration from A.D 1757 to A.D 1947	National	To provide information about the administrative reforms of the British in India
18HS4A5/	Public Administration – II	Global	To provide information on the



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U21HS4A5			basic principles of Management
18HS4A6/U21HS5MBE 1:2	Tourism and Travel Management	Global	To provide information on Tourist Sites of India and Tamil Nadu and role of travel agencies
18HS3NMEC1/U21HS4NME 2:1	Social Reformers of Modern India	National	To provide information about the role of Social reformers for the Social upliftment
U21HS4NME 2:2	History of Freedom Movement in Tamil Nadu	Regional	To disseminate information regarding the Contribution of the Tamil Nadu leaders to the Freedom struggle
SBCT	Coastal Tourism in Tamil Nadu	Regional	To provide details about the coastal tourist areas and its beauty
U214HSSE1	Tourist Guide – Theory	Global	To provide information about the role of Guide in the tourism industry.
18HSC507/U21HSC507	The Indian National Movement	National	To disseminate information about the contribution of the National leaders
18HSC508/U21HSC508	History of World Civilizations – Ancient Period (Excluding India)	Global	To provide information regarding various Civilizations in the World
18HSC509/U21HSC509	History of Europe from A.D 1453 to A.D 1789	Global	To provide information about Sea discoveries and glorious Monarchies.
18HSC510/U21HSC510	History of USA from A.D 1776 to A.D 1900	Global	To provide information regarding American War of Independence and its post Political developments.
18HS5EC3/U21HS5MBE 3:1	Human Rights	Global	Provide outline of theories of Human Rights and its importance.
18HS5EC3/U21HS4A6	Panchayat Raj with Special Reference to Tamil Nadu	Regional	Information about the importance of the local institutions in Tamil Nadu
18HS5EC3/U21HS5MBE 1:3	A Simple Study of Thanjavur	Local	To provide information about Thanjavur from ancient to modern times
U215HSSE2	Front Office Management –	National	To give information about the



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Course code	Title of the Course	Need-Local/National/Regional/Global	Description about the Need Addressed
	Theory		importance of the Front office works.
18SBEG	Epigraphy	National	To provide various information regarding inscriptions
18SBIN	Introduction to Numismatics	National	To give various information regarding the Coins and its importance.
U215HSSE3	Epigraphy and Numismatics	National	To provide various information regarding inscriptions and Coins
18HSC611/ U21HSC611	History of England From A.D.1603 to A.D 1914	Global	Provide information about the Monarchical democracy and its developments in England
18HSC612/ U21HSC612	History of Europe from A.D 1789 to A.D 1945	Global	To disseminate information regarding the political scenario of Europe
18HSC613/ U21HSC613	Constitutional History of India from A.D 1773 to A.D 1950	National	Information about the constitutional developments
18HS6EC4/ U21HS6MBE 2:1	Journalism	Global	To provide information about the News and importance
18HS6EC4/ U21HS6MBE 2:2	History and Civil Service Examinations	National	To provide General information regarding Civil Services
18HS6EC4/ U21HS6MBE 2:3	Museology	National	To provide information on Musuem and its importance
18HS6EC5/U21 HS5MBE1:1	Archaeology/Introduction to Archaeology	National	To disseminate information regarding Archaeological Excavations and its methods
18HS6EC5/ U21HS5MBE 3:2	Indian Geography	National	Give an overview of the Geography of India
18HS6EC5/ U21HS5MBE 3:3	Women's Studies	Global	To disseminate information regarding discrimination of Women and their Problems
P18HSC101	Socio Economic History of India upto 1526 A.D	National	Provide information about Society and Economy of India from Ancient times



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P18HSC102	Socio Economic History of India upto 1526 A.D to A.D 1947	National	Provide the information about Mughal and British India
P18HSC103	Socio – Economic and Cultural History of Tamil Nadu from Sangam to 1800 A.D	Regional	To disseminate information regarding the glory of Tamil Nadu History from Sangam to Nayaks
P18HSC104	Intellectual History of India	National	Provide information about the contributions of the notable Intellectuals .
P18HS1EC1	Archaeology	Global	To disseminate information regarding Archaeological Excavations and its methods
P18HSC205/ P21HSC414	Contemporary History of India from A.D 1947 to A.D 2002/ Contemporary History of India from A.D 1947 to 2000 A.D	National	Provide information about India in the contemporary political scenario
P18HSC206	Socio Economic and Cultural History of Tamil Nadu from A.D 1800 to A.D 2000.	Regional	Understand the Tamil Nadu History in modern era
P18HSC207/ P21HS2MBE 2:3	India and her Neighbors	Global	Understand the relationship of India with Neighboring Countries
P18HSC208	History of South East Asia A.D 1900 A.D to 2000	Global	Provide information about the Political Changes and its impact of the South East Asian Countries.
P18HS2EC2	History of Indian Art	National	To disseminate information regarding the Evolution of Art in India since Ancient Period
P18HSC309/ P21HSC309	International Relations since 1919 AD	Global	To give information about the different ideologies of Various Countries
P18HSC310/ P21HSC310	Research Methodology in History	Global	To provide information about the general ideas on research in History
P18HSC311	Development of science and Technology in Independent India	National	To give information regarding the role of Science and Technology in various fields



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Course code	Title of the Course	Need-Local/National/Regional/Global	Description about the Need Addressed
P18HSC312/ P21HSC312	Temple Art and Architecture of Tamil Nadu	Regional	Know the developmental features and legacies of Art and Architecture in Tamil Nadu under various dynasties
P18HS3EC3/ P21HS1MBE 1:1	Archives Keeping	Global	Provide the meaning and the importance of Archives keeping
P18HSC413	History of Far East from A.D.1911 to A.D.1970	Global	To give information about the History of China and Japan
P18HSC414/ P21HSC413	Historiography	Global	To disseminate information regarding Historians and their ideologies
P18HS4EC4	General Studies for Competitive Examinations	Global	Provide general information for competitive examinations.
P21HSC101	History of Ancient India upto 6th Century A.D	National	Provide information about pre and proto history
P21HSC102	History of Ancient India 600 B.C To 647 A.D	National	To disseminate information regarding Ancient dynasties
P21HSC103	Tamil Civilization And Culture upto 1336 A.D	Regional	To provide information about cultural contribution of civilizedtamil society from sangam to 1336
P21HSC104	Tamil Civilization And Culture From 1336 A.D To 1947 A.D	Regional	To give information regarding theTamil Culture and Society
P21HS1MBE 1:2	Environmental History	Global	Provide general information on Environmental issues
P21HS1MBE 1:3	Intellectual History of Tamil Nadu	Regional	Point out thecontribution of the intellectuals to the Tamil society
P21HS1SE1	Writing Skills in English	Global	To give basic information about English for research writing
P21HSC205	History of Medieval India upto A.D. 1526	National	To provide information regarding the political history of Delhi Sultanate.
P21HSC206	History of India 1526 A.D To 1707 A.D	National	To give information about Mughal dynasty rulers and their contributions
P21HSC207	Contemporary Tamilnadu Since 1947 A.D	Regional	To disseminateinformation regarding Tamil Nadu in the Contemporary era.



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Course code	Title of the Course	Need-Local/National/Regional/Global	Description about the Need Addressed
P21HSC208	History of China And Japan (A.D.1900 – 1990)	Global	To give information about the History of China and Japan
P21HS2MBE 2:1	Principles and Methods of Archaeology	Global	To give information about the basic principles of Archaeology
P21HS2MBE 2:2	History of Ideas	Global	Provide information about various ideologies of Historians
P21HS2ED	History for Competitive Examinations	Global	Contents provide information to attend the Competitive Examinations.
P21HS3MBE 3:1	History of Freedom Movement in India From 1885 A.D to 1947 A.D	National	To provide information about Indian National congress and Freedom Movement of India
P21HSC311	History of India From 1707 A.D to 1947 A.D	National	To give information about the British rule and the their administration in the Indian soil
P21HS3MBE 3:2	Tourism And Cultural Heritage of India	National	Provide information about the tourists places and its cultural importance
P21HS3MBE 3:3	History of Science and Technology	Global	Provide information regarding the development of Science and technology through the ages
P21HS3SS2	Short History For UGC NET/ SET Examination	Globa	To provide information regarding concepts and ideas in History for NET/SET examinations
P21HS4MBE 4:1	Indian Polity	National	To give information about the branches of Government and its functions
P21HS4MBE 4:2	Modern Political Thought	Global	Provide information about the political thoughts of the World Intellectuals
P21HS4MBE 4:3	Civil Services in India History And Scope	National	To give information regarding the importance of Civil services in India



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## Department of Mathematics

Course Code	Title of Course	Need – Local/ National/ Regional/ Global	Description about the need addressed
17MC203/ U21MC305	Theory of Equations and Vector Calculus	Global	The idea of structural similarity.
17MC405/ U21MC306	Mathematical Statistics	Global	Understand the idea of data analysis.
U21MC102	Programming in C	Global	Structured programming.
U21MC204P	Programming in C – Lab	Global	Laboratory experience of web and structured programming.
U212AM3:CS	Discrete Mathematics	Global	Helps students to get basic ideas in mathematical logic.
U21MC512	Differential Equations	Global	Method of separation of variable is a higher level of solving method and it has applications in heat and wave equations.
U21M6MBE2:3	Number Theory	Global	Helps to students to get a proper foundation to mathematical logic. and basic number theory.
17MC507/ U21MC509	Abstract Algebra	Global	The idea of structural similarity.
17MC508/ U21MC510	Real Analysis	Global	To develop ideas of Basic Topology, Continuity, Differentiability, Riemann Integral.
U21MC615	Linear Algebra	Global	To study vector space and matrix theory.
17M5EC3/ U21M5MPE1:1	Operations Research	Local and National	To study vector space and matrix theory.
17M6EC5/ 21M6MBE3:2	Discrete Mathematics	Global	Helps students to get basic ideas in mathematical logic.
17MC611 / U21MC613	Complex Analysis	Global	To investigate function of complex numbers.



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Course Code	Title of Course	Need – Local/ National/ Regional/ Global	Description about the need addressed
17MC612 / U21MC614	Graph Theory	Global	To study application of Graph Theory in real life.
17M6EC4 / U21M6MBE2:1	Numerical Analysis	Global	Wildly using in Research and Engineering fields.
P21MC102	Real Analysis – I	Global	To develop ideas of basic topology, continuity, differentiability, Riemann integral.
P17MC205/P21MC 205	Algebra	Global	Address various algebraic structures.
P17MC102/P21MC 206	Real analysis – II	Global	To construct ideas of Measure Theory.
P21M2MBE2:2	Coding Theory	Global	To develop cyber security systems.
P21M2MBE2:3	Algebraic Number Theory	Global	To understand the idea of four square theorem and Kummer's theorem.
P17MC413 / P21MC413	Functional analysis	Global	To study the spaces of functions and the formulation of properties of transformations of functions.
P17MC208/P21MC 309	Partial Differential Equations	Global	Method of separation of variable is a higher level of solving method and it has applications in heat and wave equations.
P17MC309/P21MC 310	Measure Theory and Integration	Global	To study generalization of integration.
P17MC310/P21MC 311	Topology	Global	To study surfaces.
P17MC312/P21MC 414	Differential Geometry	Global	To study problems in Geometry using Calculus.
P17MC206/ P21MC207	Complex analysis	Global	Understanding of power series expansion.
P17MC207/P21MC 208	Theory of Numbers	Global	To investigate Prime numbers and primarily tests.



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Course Code	Title of Course	Need – Local/ National/ Regional/ Global	Description about the need addressed
P17MC103/P21MC104	Ordinary Differential Equations	Global	To solve differential equation and to find maxima and minima of functional.
P17MC101/ P21MC101	Linear Algebra	Global	To understand geometric concepts such as planes in higher dimensions and perform mathematical operations.
P17MC104/P21MC103	Graph Theory	Global	Application of graph theory in computer science.
P21M1MBE1:2	Applied Cryptography	Global	To develop cyber security systems.
P21M4MBE4:2	Optimization Techniques	Global	To solve problems in Operations research.
P21M1SE1P	Introduction to Latex (for scientific documentation)	Global	Exposure to technical writing.



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## Department of Physics

Course Code	Title of Course	Need - Local/National Regional/ Global	Description about the need addressed
U21PHC101	Properties of Matter & Sound	Global	To understand the basic principle of different forms of matter its applications
U21PHC203	Mechanics & Relativity	Global	To understand the concepts of static and dynamic nature of physical systems and its ramifications.
U21PHC305	Thermal and Statistical Physics	Global	To acquire knowledge in heat transfer, entropy, production of low temperature, thermal radiation and statistical thermodynamics.
U21PHC407	Optics	Global	To study the behavior of light and its propagation in different media.
U21PHC509	Electricity And Magnetism	Global	To understand the general concepts of Electrostatics & magnetostatics and apply them in solving problems.
U21PHC510	Atomic Physics	Global	To study various atomic models in an attempt to study the fundamental properties of nature.
U21PHC511	Basic Electronics	Global	To study how the field of electronics has evolved and its applications.
U21PH5MBE1:1	Spectroscopy And Laser Physics	Global	To study rotational, vibrational, electronic and Raman spectra of molecules and to understand the basic principles of laser and its applications.
U21PHC613	Wave Mechanics & Nuclear Physics	Global	To understand the basic concepts of quantum mechanics and the structure of nucleus and its fundamental properties.
U21PHC614	Solid State Physics	Global	To study the basics of X-ray crystallography to determine the crystal structure, Understand the concepts of superconductivity and its applications.



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Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need Addressed
U21PH6MBE3:1	Computer Programming- C Language	Global	Write down the source codes in C for solving mathematical problems.
U214PHSE2	Medical Physics	Global	To understand the concept of medical instrumentations and its diagnostics.
U21PH3NME1:1	Physics made easy	Regional	To impart the students a simple understanding of the basic concepts of physics.
U21PH4NME2:1	Simple Appliances	Regional	To provide basic ideas for inspection of electrical devices useful in day to day life.
U214PHSE1	Electrical Appliances	Regional	To learn fundamentals of electricity, explain the characteristics and hazards associated with power arcs and precautions that should be taken to avoid injury in work places.
U214PHSE3	Audio and Video Systems	Regional	To understand the nature of heat loses from a human body and pressure in skull, eye and urinary bladder.
U213APH1	Allied Physics I	Local	To understand the basic function of matter, sound, gravity of fibre optics
U213AAPH1	Applied Physics I	Local	To impart basic knowledge of electricity and magnetism as a prelude to the design of computers.
U214APH3	Allied Physics III	Local	To implement the concepts of electricity and magnetism in the laboratories.
U214AAPH3	Applied Physics III	Local	To understand the basics of digital electronics as a prelude to building a personal computer.
P21PHC103	Numerical Methods	Global	To give a flavour of how one can solve mathematically tractable problems numerically.
P21PH1MBE1:1	Analog Electronics, Microprocessor and Microcontroller	Global	Acquire knowledge of instruction sets and addressing modes of microprocessor 8085 and 8086.



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Course Code	Title of Course	Need-Local/ National/ Regional/ Global	Description about the need addressed
P21PH1MBE1:2	Advanced Microprocessor and its applications.	Global	The focus is on the architecture of advanced microprocessor and its real time applications.
P21PH1MBE1:3	Digital electronics and Basic of microprocessor	Global	To introduce the basics of digital electronics and its evolution as microprocessor and microcontrollers.
P21PHC205	Statistical Mechanics	Global	To give an insight into the basics of classical and quantum statistics.
P21PHC206	Quantum Mechanics	Global	To understand the fundamental concepts of quantum mechanics and its ramification in other branches of Physics.
P21PHC207	Programming in C++	Global	To learn the principles of object-oriented programming (OOP) and write codes for real time issues
P21PH2MBE2:1	Experimental Techniques & Instrumentation	Global	To expose the students towards different perspectives of instrumentation and how it can be handled for measurements
P21PH2MBE2:3	Advanced measurements and Instrumentation	Global	Course on Instrumentation and control intends to impart knowledge of measurement, data acquisition and control for experiments.
P21PH2ED	Reactor Physics	Global	To give a glimpse of nuclear reaction and nuclear power generation
P21PHC309	Atomic and Molecular Spectroscopy	Global	To educate students about the basic aspects of Infrared, Raman and Electronic spectroscopy.



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P21PH311	Nuclear and Particle Physics	Global	To give an exposure to the basic concepts of nuclear physics with a culmination of quarks
P21PH3MBE3:1	Communication Electronics	Global	To study the microwave propagations and its applications.
P21PHC413	Condensed Matter Physics	Global	Acquire knowledge of the behaviour of electrons in solids based on classical and quantum theories.
P21PH4MBE4:1	Crystal Growth, Thin film and Nano Science	Global	To give an exposure to the growth of crystals, thin film deposition and synthesis of nano particles.
P21PHC101	Classical Dynamics And Relativity	Global	To introduce different formulations of classical dynamics with linear and nonlinear forces.
P21PHC102	Mathematical Physics	Global	To develop expertise in mathematical techniques in an attempt to solve real time problems.
P21PH1SE1	Document Preparation System – Latex (Theory)	Global	To prepare a Latex document for preparing scientific articles and project reports.



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## Department of Tamil

Course Code	Title of Course	Need-Local/National/Regional/Global	Description about the need addressed
17TLC101 / U21TLC101	இக்கால இலக்கியம்	National	சிறுகதை,கவிதைவாயிலாகவிழிப்புணர்வுபெறச் செய்தல்
17TL1A1 / U21TL1A1	இதழியல்	National	அச்சுக்கலைவரலாறு. தகவல் தொடர்பியல் பண்பு
17TLC102/ U21TLC102	சிற்றிலக்கியம்	Regional	இயற்கைச் சூழல்,பக்திஉணர்வுபெறச் செய்தல்
17TLC203/ U21TLC203	யாப்பும் அணியும்	Regional	தமிழ் இலக்கணம், இசைஅணிமரபுஉணர்தல்
17TL2A2/ U21TL2A2	தமிழ் இலக்கியவரலாறு	Regional	தமிழ் மக்களின் வாழ்க்கைநடைமுறைஉணர்தல்
17TL2A3	இணையமும்,தமிழும்	Global	உலகளாவியபொதுஅறிவுபெறல்
17TLC304/ U21TLC304	நன்னூல் - எழுத்து	Regional	தமிழ் மொழி இலக்கணஅறிவுபெறுதல்
17TLC305/ U21TLC305	பக்தி இலக்கியம்	Regional	மனத்தூய்மை,மதஒற்றுமைபெறுதல்
17TL3A4/ U21TL4A6	நாட்டுப்புறவியல்	Global / Regional	நாட்டுப்புறக் கலைநடனம் பயிற்சிபெறல்
17TL3NMEC3:1/ U21TL3NME1:2	சிந்தனையியல்	Regional	காந்தி. அம்பேத்காரின் சமூகசிந்தனைகள் மூலம் சமமதிப்புசமூகம் உருவாக்கல்
17TL3NMEC3:2/ U21TL4NME2:1	பன்முகத்தமிழ்	Regional	காலந்தோறும் உள்ள இலக்கியவகைகளைஅறிதல்
17TLC406/ U21TLC406	நன்னூல் - சொல்லதிகாரம்	Regional	இலக்கணஅறிவைப் பெறுதல்
17TL4A5/ U21TL4A5	கவின்கலைகள்	Local	நாடகம், இசைப் பற்றியபலகலைகளின் அறிவூட்டல்
17TL4A6/ U21TL3A4	தமிழகவரலாறும் பண்பாடும்	Regional	தமிழ் மக்களின் பழமைபண்பாடுஉணர்தல்
17TL4NMEC4:1 U21TL3NME1:1	தமிழ்ப்பண்பாடு	National& Regional	தமிழரின் பண்பாடுகலாச்சாரம் உணரல்
17TL4NMEC4:2	தற்கால இலக்கியத்திறன்	Regional	சமூகசீர்திருத்தச் சிந்தனைகள் அறிதல்



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17TLC507 / U21TLC507	நம்பியகப்பொருள்	Regional	மக்களின் உள்ளார்ந்தமனநிகழ்வைஎடுத்துக்காட்டல்
17TLC508/ U21TLC508	காப்பியங்கள்	Regional	இதிகாசமாண்புஉணர்தல்
17TLC509	தமிழ்மொழிவரலாறு	National	திராவிடப் பண்பாடு,பேச்சுமொழி,தமிழ் இலக்கியமாற்றம்,தமிழ் உச்சரிப்புமுறைஉணர்தல்
17TLC510/ U21TLC510/	இலக்கியத் திறனாய்வும், இயக்கங்களும்	National	திறனாய்வு,திறனாய்வுமுறை,படைப்பாக்கத்திறன் அறியச்செய்தல்
17TL5MBE3:1 /U21TL5MBE1:1	சுற்றுலாவியல்	Global	பலஊர்களின் முக்கியத்துவம்,சிறப்புஉணர்தல் தொடர்பாக
17TL5MBE3:2	அறக்கருத்தியல்	Regional	அடிப்படைத் தேவையானஉணவு - புதுமை வாழ்வுபெறுதல் தொடர்பாகசிந்தனைகள்
17TLC611/ U21TLC611	புறப்பொருள் வெண்பாமாலை	Regional	பழங்காலபோர்முறைகள் அறிதல்
17TLC612/ U21TLC612	அறஇலக்கியம்	Regional	நல்வாழ்வு,நல்நெறிகளைக் கற்பித்தல்
17TLC613/ U21TLC613	சங்க இலக்கியம்	Regional	பழங்காலவாழ்வியல் நிகழ்வுகளை இலக்கியங்கள் வாயிலாகஉணர்ச் செய்தல்
17TL6MBE4:1/ U21TL6MBE3:1	சித்தர் இலக்கியம்	Regional	நிலையற்றவாழ்வு - பொருள் கூறி,முக்திபெறவழிகாட்டல்
17TL6MBE4:2	தற்காலமலையாள இலக்கியம்	Regional	வேற்றுமொழி - சிந்தனை - கற்றல் தூண்டல்
17TL6MBE5:1/ U21TL6MBE2:1	திரைக்கலையியல்	National	திரைத்துறையில் வேலைவாய்ப்புபெறகலைத்திறன் பெறவலியுறுத்தல்
17TL6MBE5:2	மனிதஉரிமைகள்	National	அடிப்படைமனிதஉரிமைச்சட்டம் கடமைஅறிதல்
UVE	யோகா	Global	உடல்,மனநலன் காத்தல் அறிவுறுத்தல்
UGCES	சுற்றுச்சூழல் கல்வி	Global	சுற்றுச்சூழல் குறித்தவிழிப்புணர்வைபெறுதல்
SBPT	பயன்முறைத்தமிழ்	Regional	தமிழில் பிழையின்றிஎழுதற்கானறிந்துதற் குறியீடுகளைஅறிதல்
SBPTT/ U215TLSE2	பணித்தேர்வுத்தமிழ்	National	வேலைவாய்ப்புபெறயிற்சிபெறும் பயிற்சிமாணவர்களுக்கானபயிற்சிவினாக்கள்
SBPK/ U215TLSE3	பேச்சுக்கலையியல்	National	தேர்ந்தபேச்சாளர்களைஉருவாக்கல்
GS / U216GS	பாலினக் கல்வி	National	சமூகமதிப்பு - பாலினவேறுபாடுகளைதல் -



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			பரந்த உள்ளம் - மாற்றம்
U211VE	விழுமியக் கல்வி	National	சிந்தனைத் தூண்டல் - சமூககட்டமைப்பு,மதிப்புஉணர்வு
U21TL2A3	கணினித்தமிழ்	Global	இமெயில்,வலைப்பூ உருவாக்கம்,மின்நூலகம் செய்திகள் அறிதல்
U214TLSE1	நாடகவியல்	National	நாடகத்திறன் - நடிப்பு - படைப்புஉருவாக்கம்
U21TL6MBE2:2	கோயில் மேலாண்மை	Local	கோயில் நிர்வாகம் - தஞ்சைக் கோயில் - மடங்கள் - ஆகமங்கள் அறியச்செய்தல்
U21TL6MBE3:2	இலக்கணவரலாறு	Regional	இலக்கணம் - மாற்றம் - வாழ்வுஅறியச் செய்தல்
P18TAC101	நவீன இலக்கியம்,	National	பலபடைப்பாளர்களின் திறன்,உட்போக்குஉணர்வு செய்தல்
P18TAC102 / P21TAC102	பக்தி இலக்கியம்	Regional	மனத்தாய்மை,மதஒற்றுமைபெறுதல்
P18TAC103/ P21TAC103	தொல்காப்பியம்,எழுத்ததி காரம் (இளம்பூரணர் உரை)	Regional	செவ்வியல் கால இலக்கணஅறிவுஉணர்வு செய்தல்
P18TAC104/ P21TAC104	மொழியியல்	National	மொழியின் உச்சரிப்பு. உருபன்,அகராதி வளம் பற்றியஅறிவுபெறச்செய்தல்
P18TA1MBE1:1/ P21TA1MBE1:1	பண்பாட்டுமான்டவியல்	National	காலந்தோறும் மக்களின் பண்பாட்டுமாற்றத்தைஅறியச்செய்தல்
P18TA1MBE1:2	தற்காலஉரைநடை இலக்கியம்	Global	தற்காலஉரைத்திறன் அறிதல்
P18TAC205/ P21TAC205	சிறநிலக்கியம்	Regional	இயற்கைச் சூழல்,பக்திஉணர்வுபெறச் செய்தல்
P18TAC206/ P21TAC206	காப்பியங்கள்	Regional	இதிகதாசமாண்புஉணர்வு
P18TAC207/ P21TAC207	தொல்காப்பியம்,சொல்லதி காரம்,சேனாவரையர் உரை	Regional	செவ்வியல் கால இலக்கணஅறிவைப் பெறுதல்
P18TAC208	ஓப்பிலக்கியம்	Global	உலகளாவிய இலக்கியங்களோடுதமிழ் இலக்கணத்தைஒப்பிடுதல்
P18TA2MBE2:2	பழந்தமிழ் இலக்கியம் (புறம்)	Regional	பழங்காலபோர் முறை - அரசுஆட்சித்திறன் உணர்வு
P18TAC309/ P21TAC309	அறஇலக்கியம்	National	ஒழுக்கம்,வாழ்வியல் மாண்புஅறியவைத்தல்



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Course Code	Title of Course	Need-Local/National/Regional/Global	Description about the need addressed
P18TAC310/ P21TAC310	சங்க இலக்கியம்	Regional	பழங்காலவாழ்வியல் நிகழ்வுகளை இலக்கியங்கள் வாயிலாக உணரச் செய்தல்
P18TAC311/ P21TAC311	தொல்காப்பியம், பொருளதி காரம் (முதல் ஐந்து இயல்கள்)	Regional	பழந்தமிழ் மக்களின் அகவாழ்வுக்குரிய இலக்கண அறிவைப் பெறுதல்
P18TAC312 / P21TAC312	ஆராய்ச்சி நெறிமுறைகள்	Global	ஆய்வு - கூறுகள் - பொதுமை நெறி உணரச் செய்தல்
P18TAC13/ P21TAC413	தொல்காப்பியம், பொருளதி காரம் (பின் நான்கு இயல்கள்)	Regional	செய்யுள் முறைமைகளை உணர்த்தல் உயிரிகளைப் பற்றிய சிந்தனைகளை வலியுறுத்தல்
P18TAC14	மொழிபெயர்ப்பியல்	Global	மொழிபெயர்ப்பு முறைகள் - உலக மொழிபெயர்ப்புகள் - அறிமுகம் செய்தல்
P18TA3MBE3:2	உரையாசிரியர்கள்	Local	உரைகள் வாயிலாக பல்வேறு காலவாழ்வியல் அறிதல்
P18TAMBE4:1/ P21TA3MBE3:1	சோழநாட்டியல்	Local	சோழகால இலக்கியம், நிர்வாகம் உணரவைத்தல்
P18TAMBE4:2	வடமொழி இலக்கியவரலாறு	Regional	வடமொழி இலக்கியத்தின் சிறப்புக் கூறுகளை அறிதல்
P21TA1SE1	நிகழ்த்துக்கலை	Global	தமிழ் இலக்கியம், வரலாறு, கலைகள், வட்டாரப் பண்பாடு உணரவைத்தல்
P21TA1MBE1:2	இந்திய இலக்கியப் பொதுக்கூறுகள்	National	செவ்வியல் கால இலக்கியங்களில் வாழ்வியல் கூறுகள் அறிதல்
P21TA2ED	மதிப்புக்கல்வி	Global	வாழ்வின் நிலையாமை உணரச் செய்து நிலைத்த வாழ்வு பெறச் தூண்டுதல்
P21TA2SE2	படைப்பாக்கத்திறன்	National	புதிய நடைமுறையில் படைப்பாக்கத்திறனை உருவாக்கவைத்தல்
P21TA2MBE2:1	ஊடகவியல்	Global / National	தகவல் தொடர்புச் சாதனங்கள் மூலம் நடப்பியல் அறிவு பெறச் செய்தல்
P21TA2MBE2:2	பழந்தமிழ் இலக்கியம் - அகம்	Regional	ஆண், பெண் மன - உளவாழ்வு - குடும்பவாழ்வு - மதிப்பு உணர்த்தல்
P21TA3MBE3:2	இலக்கியக்கொள்கைகள்	National	இலக்கியங்களின் கட்டமைப்பு பொருள் குறித்த கொள்கைகளை அறிதல்
P21TA4MBE4:1	பெண்ணியம்	Global	பெண்ணிய கட்டமைப்பு, மேற்கிந்திய பெண்ணியம்



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			காள்கைகள் அறிதல்
P21TA4MBE4:2	இந்தியமெய்பொருளியல்	National	இந்தியத்தத்துவம் - நெறிமுறைகள் ஞானம் பற்றியசெய்திகள் அறிதல்
P21TA4MBE4:1	பெண்ணியம்	Global	பெண்ணியகட்டமைப்பு,மேற்கிந்தியபெண்ணியகாள்கைகள் அறிதல்



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## Department of zoology

Course Code	Title of Course	Need - Local/National Regional/Global	Description about the need addressed
U21Z6MBE3:3	Economic Entomology	Global	Provides knowledge about the economic importance of insects and their control strategies in pest management.
U21Z3NME1:1	Vermiculture	Local	Thanjavur district is the granary of India. Hence by production of nutrient-rich compost, soil fertility can be improved thus leading to sustainable agriculture. Also, it can be easily adopted by local communities to manage waste and support the local ecosystem.
U21Z4NME2:1	Apiculture	Local	Since bees play a crucial role in pollination, which directly increases crop production, biodiversity, and the yields of fruits and vegetables, learning apiculture enhances the quality of life of local people by means of increased income generation.
U214ZOSE1	Vermitechnology	Local	Gives practical experience and an eco-friendly approach to waste management and enhances organic agriculture.
U21Z5MBE1:2	Agricultural Pest management	Local	Gives knowledge for pest management and protection of crops
U215ZOSE2	Aquarium Fish Keeping	Local	Fish culture being a routine practice in local people for income generation is added with ornamental fish culture.
U21Z6MBE2:3	Value addition of Fish products and processing	Local	Provides more information about the profitable utilization information about value fish catches available in the local market. Women self-help groups are the potential users of the value-added fish product technologies.
P18ZC102	Cell & Molecular	Global	Provides knowledge for making new



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	Biology		discoveries and has a strong emphasis on laboratory skills and experiences giving knowledge about how cell physiology can be explored for defence against cancer and other diseases.
P18ZC311	Microbiology	Global	Provides knowledge to innovate new methods to combat diseases and production of novel antibiotics microbes and their utilization for developing novel antibiotics. Understanding microbiology helps us to combat infectious diseases, develop antibiotics, improve food safety, and address environmental issues.
P21Z2MBE2:2	Computer application in biology	Global	Provides contribution to experimental and theoretical aspects of scientific research and gives required support of interdisciplinary efforts in research fields. By accelerating research and enabling precision medicine computer application in biology have a profound impact on global health care, agriculture and environmental conservation efforts.
P21ZC310	Biotechnology and Bioinformatics	Global	Imparts knowledge and idea about the latest technology which can be applied in many fields of agriculture, medicine, and biological research globally, etc. Bioinformatics is the need of the era internationally in designing drugs.
P21Z4MBE4:1	Biodiversity and Conservation	Global	Imparts knowledge for conserving wildlife and biodiversity across the world.
P18Z1EC1	Aquaculture	Global	Gives knowledge about the production of locally available fish and marine fish from nearby hatcheries.



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P21Z1MBE1:1	Fisheries and Aquaculture	Global	Local impact knowledge on fish culture techniques for fresh water and ecosystem
P21Z2MBE2:1	Entomology	Global	Being a land of agrarian people, knowledge of pest control and management has a significant role.
P21Z2MBE2:3	Fish processing technology	Global	Imparts skills in fish processing, preservation, and packaging technologies at household scale or small-scale level for managing the fish stock that is available in the market in excess.
P21Z2SE2	Taxonomy of Fishes	Local	Provides knowledge about the study of classification, principles, procedures, and rules of classifying fishes, and it reveals various interesting evolution phenomena. Being a land surrounded by aquatic ecosystem like ponds, rivers and ocean, the ability to identify the taxonomic position of a fish is very important.



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