



## CRITERION 2

SSR CYCLE IV

## TEACHING-LEARNING AND EVALUATION

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### 2.6. Student Performance and Learning Outcome

2.6.1: Programme Outcomes (POs) and Course Outcomes (COs) for all Programmes offered by the institution are stated and displayed on website



## PROGRAMME OUTCOME (PO)

### Department of English - UG

At the end of the programme, the students will be able to:

|        |   |
|--------|---|
| PO - 1 | Acquire knowledge of various literary works and students of thought   |
| PO - 2 | Explore the avenues of world literature                               |
| PO - 3 | Utilize the skills acquired through the program                       |
| PO - 4 | Think critically and apply theoretical approaches to literary texts   |
| PO - 5 | View and enjoy literary works through nuanced perspectives            |
| PO - 6 | Equip themselves to undertake research projects                       |
| PO - 7 | Appreciate the unique merits of different literary genres             |
| PO - 8 | Acquaint themselves with the key concepts of language and linguistics |



## Department of English -PG

At the end of the programme, the students will be able to:

|        |   |
|--------|---|
| PO - 1 | Comprehend the significance of literary works in their social, cultural, and ideological contexts.                        |
| PO - 2 | Discover the incredible diversity of the English Language and Literature throughout the history of the world.             |
| PO - 3 | Ascertain how writers have reacted to the social developments of their contemporary period and produced a text.           |
| PO - 4 | Express The hermeneutic engagement of creative texts with gender, race, region and identity across various significations |
| PO - 5 | Problematize the Post-colonial Literatures and cultures with a nationalist perspective.                                   |
| PO - 6 | Develop comprehensive reading, writing, and research skills of high order.  |
| PO - 7 | Undertake academic and literary profession.   |
| PO - 8 | Adapt themselves to the changing aspects of academic and creative professionalism.  |



## Department of History

At the end of the programme, the students will be able to:

|        |  |
|--------|--|
| PO - 1 | Apply the acquired knowledge of fundamental concepts in the field of science and to find solutions to various problems   |
| PO - 2 | Inculcate innovative skills and teamwork among students to meet societal expectations Perform analysis to assess, interpret, and create innovative ideas through practical experiments |
| PO - 3 | Facilitate to enter the multidisciplinary path to solve day-to-day scientific problems   |
| PO - 4 | Carry out fieldwork and projects, both independently and in collaboration with others, and to report in a constructive way   |
| PO - 5 | Improve communication ability and knowledge transfer through ICT-aided learning integrated with library resources  |
| PO - 6 | Transfer the knowledge to the other stakeholders through an extensive community development program  |
| PO - 7 | Apply modern technology to solve any given problem   |



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

## Department of Tamil - UG

இளங்கலைத் தமிழ் பயின்று முடித்த மாணவர்கள் பின்வரும் செயல்களைச் செய்யும் ஆற்றல்களைப் பெற்றிருப்பர்.

| S.N O | GRADUATE ATTRIBUTES           | PROGRAMME OUTCOMES   |
|-------|-------------------------------|--|
| 1.    | அறிவாற்றல்                    | தமிழ் மொழி, இலக்கியம், இலக்கணம், மொழியியல், பண்பாடு, வரலாறு சார்ந்த அறிவையும் ஆற்றலையும் மாணவர்களிடையே வளர்த்தல். (PO1)  |
| 2.    | மொழியாற்றல்                   | தான் கூற விரும்பும் கருத்துகளை இனிமையும், நயமும் சேர பிறர் ஏற்றுக்கொள்ளும் வகையில் பிழையில்லாமல் தேர்ந்த பேச்சு / எழுத்துகள்வழிக் கூறும் ஆற்றலை வளர்த்தல். (PO2) |
| 3.    | போட்டித் தேர்வுகள்            | TNPSC, UPSC, TRB, TET போன்ற போட்டித் தேர்வுகளில் கலந்துகொண்டு வெற்றிபெறும் வகையில் தயார்படுத்தல். (PO3)  |
| 4.    | படைப்பாற்றல்                  | படைப்பாற்றல், திறனாய்வுப் பண்புகள் நிறைந்தவர்களாக உருவாகுதல். (PO4)  |
| 5.    | ஆளுமைப் பண்பு                 | பாடத்திட்டம் சார்ந்த பல்வேறு நிகழ்ச்சிகள் & போட்டிகள் வாயிலாக மாணவர்களின் திறன்களையும் ஆளுமைத் திறன்களையும் கண்டறிந்து வளர்த்தல். (PO5)                          |
| 6.    | அறம், பக்தி & சமூகப் பொறுப்பு | பாடத்திட்டத்தில் உள்ள அறம், பக்தி, இயற்கைப் பாதுகாப்பு சார்ந்த உணர்வுகளைத் தங்கள் வாழ்க்கையில் பயன்படுத்தல். (PO6)   |
| 7.    | கற்றல் வேட்கை                 | தமிழின் தனிச்சிறப்பை / அடையாளத்தை / சுவையை / கற்பதன் மூலம் கற்றல் வேட்கை உருவாகி ஆய்வாளர், ஊடகவியலாளர், படைப்பாளர் எனப் பல தளங்களில் இயங்குதல். (PO7)            |
| 8.    | நவீனக் காலத்துக்குத் தயாராதல் | சங்கத் தமிழைக் கற்பதோடு இக்காலத் தமிழையும் இணையத் தமிழையும் தன் வாழ்வில் பயன்படுத்தும் ஆற்றலைப் பெறுதல். (PO8)   |



## Department of Tamil - PG

After successful completion of the degree course, the students will be qualified to

|        |   |
|--------|---|
| PO - 1 | An understanding of how different perspectives of approach, can affect how a work is read.                |
| PO - 2 | Developing advanced skills in the complete understanding, analysis, and interpretation of literary facts. |
| PO - 3 | Recognition of relationship between language and society.   |
| PO - 4 | Awareness about the literary and cultural expressions.  |
| PO - 5 | Exploring genres - Novel with social perspectives.  |



## Department of Commerce - UG

At the end of the programme, the students will be able to:

|        |  |
|--------|--|
| PO - 1 | gain thorough systematic and subject skills within various disciplines of finance, auditing and taxation, accounting, management, communication, and computer. |
| PO - 2 | acquire practical knowledge to take up the task of accounting professionals.   |
| PO - 3 | serve as a launch pad for professional programs like CA, CMA, and ACS.   |
| PO - 4 | demonstrate progressive learning of various financial issues related to individuals and businessmen to setting up their own business start-ups.                |
| PO - 5 | do their higher education and build their career as business professionals.  |



## Department of Commerce - PG

At the end of the programme, the students will be able to:

|        |   |
|--------|---|
| PO - 1 | Apply the knowledge of Science & Arts to make queries and enhance the comprehension potential.  |
| PO - 2 | Insist the significance of conserving a clean environment for perpetuation and sustainable development.   |
| PO - 3 | To identify, formulate, perform research literature surveys, and analyze complex problems.  |
| PO - 4 | To collaborate in order to analyze and find solutions of existing problems of India and the world.  |
| PO - 5 | To establish themselves in hot areas of research and contribute to the developmental needs of India and the world.  |
| PO - 6 | To develop specific skills in planning and conducting advanced experiments recording and analyzing the data and drawing the relevant conclusions from it. |





## Department of Chemistry - UG

On successful completion of the programme students will able to:

|        |   |
|--------|---|
| PO - 1 | Function as responsible individuals with ethical values, accountable to the community.  |
| PO - 2 | Gain detailed knowledge of the major areas of chemistry including a wide range of factual information and experimentally observed phenomena.                  |
| PO - 3 | Apply chemical concepts in new situations and computational software in chemistry efficiently.  |
| PO - 4 | Think critically and analyze chemical problems.   |
| PO - 5 | Work effectively and safely in a laboratory environment.  |
| PO - 6 | Present scientific and technical information resulting from laboratory experimentation by means of oral presentation, scientific poster, or a written report. |
| PO - 7 | Pursue higher education / employable/ entrepreneur.   |



## Department of Chemistry - PG

On successful completion of the programme students will able to:

|        |  |
|--------|--|
| PO - 1 | Understand the basics of science and apply their knowledge in day-to-day life  |
| PO - 2 | Develop skills to carry out experiments in various branches of science.  |
| PO - 3 | Have enough scientific knowledge to go for higher studies and become an entrepreneur   |
| PO - 4 | Identify, formulate, and solve the technological problems of the industry  |
| PO - 5 | Effective written and oral communication skills especially the ability to transmit complex technical information in a clear and concise manner |
| PO - 6 | Understand the issues of environmental contexts and sustainable development.   |



## Department of Computer Science - UG

On successful completion of the programme students will able to:

|        |   |
|--------|---|
| PO - 1 | Be aware of the history of the discipline of latest technology and understand the 7 conceptual underpinnings of the subject                                     |
| PO - 2 | Illustrate the nature of the software development process, including the need to provide appropriate documentation  |
| PO - 3 | Be able to develop program in one or two programming languages.   |
| PO - 4 | Be able to analyze a technique for a specific problem to meet a particular objective.   |
| PO - 5 | Compare the basic theory of computer architectures, including computer hardware and networking  |
| PO - 6 | Construct new information technology applicable to the society, business and the individual, both from a technical and from an ethical and legal point of view. |



## Department of Computer Science - PG

On successful completion of the programme students will able to:

|        |  |
|--------|--|
| PO – 1 | Identify and understand the need for basic mathematical and Computational Concepts and apply them to real world problems.  |
| PO – 2 | Design and develop applications using computers to analyze and solve computer science related problems.  |
| PO – 3 | Design, implement and evaluate a computer-based system, process, component, or programs to meet the stakeholder needs  |
| PO – 4 | Analyze, design and choose efficient algorithms and apply them in appropriate Computational solutions  |
| PO – 5 | Analyze large data sets in the context of real world problems and interpret results using data analytics.  |
| PO – 6 | Understand research methods and apply them to analyze data for decision Making. PO7 Realize the importance of lifelong learning and continuous professional development. |



## Department of Mathematics - UG

On successful completion of the programme students will able to:

|        |   |
|--------|---|
| PO - 1 | Bachelor's degree in mathematics is the Culmination of in - depth knowledge of algebra, calculus, differential equations and several other branches of mathematics. This also leads to study of related areas like computer science and statistics. This program helps the learners in building a social foundation for higher studies in mathematics.              |
| PO - 2 | The skills and knowledge gained has intrinsic beauty, which leads to proficiency in analytical reasoning. This can be utilized in modelling and solving real life problems.   |
| PO - 3 | Students undergoing this programme learn to logically questions assertions, to recognize patterns and to distinguish between essential and irrelevant aspects of problems. They also share ideas and insights while seeking and benefitting from knowledge and insight of others. This helps to learn behave responsibly in a rapidly changing independent society. |
| PO - 4 | Students completing this programme will able to present mathematics clearly and precisely, make vague ideas precise by formulating them in the language of mathematics, describe mathematical ideas from multiple perspectives and explain fundamental concepts of mathematics to non - mathematicians.   |
| PO - 5 | Completion of this programme will also enable the learners to join teaching profession in primary and secondary schools.  |
| PO - 6 | This programme will also help students to enhance their employability for government jobs, jobs in banking, insurance and investment sectors, data analyst jobs and jobs in various other public and private enterprises.   |



## Department of Mathematics - PG

On successful completion of the programme students will able to:

|         |                           |  |
|---------|---------------------------|--|
| PO - 1  | Knowledge                 | Capable of demonstrating comprehensive disciplinary knowledge gained during the course of study  |
| PO - 2  | Research Aptitude         | Capability to ask relevant/appropriate questions for identifying, formulating, and analyzing the research problems. and to draw conclusions from the analysis.                     |
| PO - 3  | Communication             | Ability to communicate effectively on general and scientific topics with the scientific community and with the society at large  |
| PO - 4  | Problem-Solving           | The capability of applying knowledge to solve scientific and other problems  |
| PO - 5  | Individual and Team Work  | Capable of learning and work effectively as an individual, and as a member or leader in diverse teams, in multidisciplinary settings.  |
| PO - 6  | Investigation of Problems | The ability of critical thinking, analytical reasoning, and research-based knowledge including design of experiments, analysis, and interpretation of data to provide conclusions. |
| PO - 7  | Modern Tool usage         | Ability to use and learn techniques, skills and modern tools for scientific practices.   |
| PO - 8  | Science and Society       | Ability to apply reasoning to assess the different issues related to society and the consequent responsibilities relevant to the professional scientific practices                 |
| PO - 9  | Life-Long Learning        | Aptitude to apply knowledge and skills that are necessary for participating in learning activities throughout life   |
| PO - 10 | Project Management        | Ability to demonstrate knowledge and understanding of the scientific principles and apply these to manage projects   |



## Department of Physics

On successful completion of the programme students will able to:

|        |   |
|--------|---|
| PO - 1 | Become successful professionals by demonstrating logical methods and analytical thinking abilities  |
| PO - 2 | Demonstrate skills in the use of computers for control, data acquisition, and data analysis in experimental investigations                      |
| PO - 3 | Express their thoughts and ideas effectively in writing and orally they can be communicable with others using appropriate media                 |
| PO - 4 | Apply the analytic thought to a body of knowledge; analyse and evaluate the proofs, arguments, claims, and beliefs based on empirical evidences |
| PO - 5 | Communicate effectively in inter-disciplinary environment, either independently or in a team, and demonstrate leadership qualities              |
| PO - 6 | Engage in life-long learning and professional development through self-study, continuing education, or professional and doctoral-level studies  |



## Department of Zoology

On successful completion of the programme students will able to:

|        |  |
|--------|--|
| PO - 1 | Apply the acquired knowledge of fundamental concepts in the field of science and to find solutions to various problems   |
| PO - 2 | Inculcate innovative skills and teamwork among students to meet societal expectations Perform analysis to assess, interpret, and create innovative ideas through practical experiments |
| PO - 3 | Facilitate entering the multidisciplinary path to solve day-to-day scientific problems   |
| PO - 4 | Carry out fieldwork and projects, both independently and in collaboration with others, and to report in a constructive way   |
| PO - 5 | Improve communication ability and knowledge transfer through ICT-aided learning integrated with library resources  |
| PO - 6 | Transfer the knowledge to the other stakeholders through an extensive community development programme  |
| PO - 7 | Apply modern technology to solve any given problem   |





## Programme Specific Outcome (PSO)

### Department of English - UG

Upon completion of the B.A. English Literature Programme, students will be able to

|         |  |
|---------|--|
| PSO - 1 | Acquire knowledge of the important historical and political milestones of England, from the early times to the present |
| PSO - 2 | Develop an aptitude for critical analysis of literary works  |
| PSO - 3 | Find scope of employability in fields of teaching, content writing, translating, communication, and media              |
| PSO - 4 | Appreciate and develop the human values espoused in literary works   |
| PSO - 5 | Enhance their job potential by acquiring linguistic competence and effective communication skills                      |
| PSO - 6 | Identify the correlation between literature and psychology   |
| PSO - 7 | Apply learned skills in experimenting, researching, and critically analysing relevant topics of their choice           |
| PSO - 8 | Obtain professional skills in translation  |



## Department of English - PG

Upon completion of the M.A. English Literature Programme, students will be able to

|         |  |
|---------|--|
| PSO - 1 | Locate the historicity and textuality of World Anglophone Literature.  |
| PSO - 2 | Appraise the diversity of humanist discourses delineated in the texts. |
| PSO - 3 | Relate the texts to convey and construct cultural values and ideas.    |
| PSO - 4 | Foster and articulate universalism with social empathy.                |
| PSO - 5 | Respond positively to the significant paradigm shift.                  |
| PSO - 6 | Validate the texts with dominant critical theories, methodologies      |
| PSO - 7 | Contemporary practices in the field.                                   |
| PSO - 8 | Develop proficiency in critical thought and academic writing.          |
| PSO - 9 | Acquire professional skills related to translation and media studies.  |



## Department of History - UG

Upon completion of the B.A. History Programme, students will be able to

|         |  |
|---------|--|
| PSO - 1 | Know the social condition of Tamilnadu & Land systems                                |
| PSO - 2 | Know the Art and Education of Tamil Country  |
| PSO - 3 | History of India Up to 647 AD  |
| PSO - 4 | Know the importance of accommodation   |
| PSO - 5 | Understand the dangers of Environmental threats due to various kinds of pollution    |
| PSO - 6 | Bring about the direct and village participation of the villagers in the development |
| PSO - 7 | Indian Administrative System, Indian Constitution II                                 |
| PSO - 8 | Understand the reaction of the Chinese towards the Europeans                         |
| PSO - 9 | Learn the general course of human history in multiple areas of the world             |



## Department of Tamil - UG

PSO 1: அறிவாற்றல், மொழியாற்றல் மூலம் ஆசிரியராக, வழக்கறிஞராகப் பணியாற்றல்.

PSO 2: போட்டித் தேர்வுகள்வழி அரசுப்பணி / தேர்வுகளில் தேர்ச்சிப் பெறுதல்.

PSO 3: கலைத்துறையில் வெற்றிகரமாகப் பயணித்தல்.

PSO4: பகுப்பாய்வு செய்யும் திறன்மூலம் ஊடகவியலாளராக / ஆய்வாளராகப் பணியாற்றல்.

PSO 5: தனது ஆளுமைப் பண்புகள் மூலம் சுயதொழில் தொடங்குதல்.



## Department of Tamil - PG

|         |   |
|---------|---|
| PSO - 1 | The students will be competent to know the different types of writings.           |
| PSO - 2 | Improve his or her writing and speaking skills.                                   |
| PSO - 3 | The ability to live a life that pleases both oneself and others.                  |
| PSO - 4 | Inspire knowledge about grammar, linguistic history, and contemporary literature. |
| PSO - 5 | Develop research related skills.  |



## Department of Commerce - UG

Upon completion of the B.Com. Programme, students will be able to

|          |   |
|----------|---|
| PSO - 1  | Impart skills for recording various kinds of business transactions  |
| PSO - 2  | Enhance knowledge on recent economic trend  |
| PSO - 3  | Give real-life opportunities to manage business accounts  |
| PSO - 4  | Understand the basic marketing concepts   |
| PSO - 5  | Create skills to develop marketing strategies based on product, price, place and promotion objectives.                              |
| PSO - 6  | Understand the accounting treatment to be followed at the time of insolvency of an individual and while taking a lease of property. |
| PSO - 7  | Know about the importance of human resource   |
| PSO - 8  | Enhance the knowledge of the fundamental and technical concepts of accounting.  |
| PSO - 9  | Acquire skills in reading, writing, comprehension and communication   |
| PSO - 10 | Know the procedures to be followed at the time of admission, retirement and death of a partner in a partnership business            |



## Department of Commerce - PG

Upon completion of the M.Com. Programme, students will be able to

|         |  |
|---------|--|
| PSO - 1 | Learn Modern Methods of Office Automation through computers                          |
| PSO - 2 | Know the Management accounting practices used by Management for effective            |
| PSO - 3 | Create the knowledge of legal perspective and its practices to improve the business. |
| PSO - 4 | Understand the changing environment around the business                              |
| PSO - 5 | Use quantitative models in decision-making   |



## Department of Chemistry - UG

Upon completion of the B.Sc. Chemistry Programme, students will be able to

|         |  |
|---------|--|
| PSO - 1 | Have sound knowledge about the fundamentals and applications of chemical and scientific theories.                        |
| PSO - 2 | Acquire a skill for safer handling of chemicals, apparatus, and instruments.   |
| PSO - 3 | Apply appropriate techniques for the qualitative and quantitative analysis of chemicals in laboratories and industries.  |
| PSO - 4 | Develop analytical skills and problem-solving skills requiring application of chemical principles.                       |
| PSO - 5 | Acquire the ability to synthesize, separate, and characterize compounds using laboratory and instrumentation techniques. |
| PSO - 6 | To provide professional service to industry, research organizations, and institutes.                                     |





## Department of Chemistry - PG

Upon completion of the M.Sc. Chemistry Programme, students will be able to:

|         |   |
|---------|---|
| PSO - 1 | Apply advanced concepts of organic, analytical, physical and inorganic chemistry to solve complex problems to improve human life.   |
| PSO - 2 | Possess skill in spectral, analytical, qualitative and quantitative techniques which will be useful in industry.  |
| PSO - 3 | Gain knowledge in recent and advanced developments in the area of Green Chemistry, Chemistry of Industrial products and formulation, Forensic Chemistry, Industrial Processes, Catalysis, Nanoscience and Nanotechnology, Medicinal Chemistry, Natural Products Chemistry, Bioinorganic Chemistry, Computational Chemistry, Contrasting agents in medical Diagnosis, Sensors etc. |
| PSO - 4 | Design a synthetic route for new compounds and transform innovative ideas into reality.   |
| PSO - 5 | Be competent in problem-solving, critical thinking and analytical reasoning as applied to scientific problems.  |
| PSO - 6 | Acquire an understanding of Plagiarism and Intellectual Property Rights.  |
| PSO - 7 | Use Computational software in chemistry efficiently.  |



## Department of Computer Science- UG

Upon Completion of B.Sc. Computer Science, the student will be able to

|         |   |
|---------|---|
| PSO - 1 | Define Fundamental principles and methods of Computer Science to a wide range of applications.  |
| PSO - 2 | Demonstrate and document solutions to significant computational problems                        |
| PSO - 3 | Apply design, programming skills and develop principles in the construction of software systems |
| PSO - 4 | Decide for continued professional Development.  |
| PSO - 5 | Design new technologies in web development.   |



## Department of Computer Science- PG

On Successful completion of the M.Sc. Computer Science programme, students will be able to:

|         |  |
|---------|--|
| PSO - 1 | Analyze, design and develop solutions to significant computational problems.                     |
| PSO - 2 | Utilize tools and techniques necessary for computing practices.                                  |
| PSO - 3 | Participate in competitive exams such as SET, NET etc. effectively                               |
| PSO - 4 | Design, develop and evaluate novel projects to meet the desired demands of industry and society. |
| PSO - 5 | Demonstrate best practices and standards to develop user interactive applications.               |
| PSO - 6 | Work with computing technologies and pursue career in the areas related to Computer Science.     |
| PSO - 7 | Function effectively as an individual or in teams involving multidisciplinary environments       |



## Department of Mathematics - UG

Upon completion of the B.Sc. Programme in Mathematics, students will be able to

|         |   |
|---------|---|
| PSO - 1 | <b>A Solid Foundation in Knowledge:</b> B.Sc. degree is the culmination of depth knowledge of my core branches of mathematics such as Calculus, Classical Algebra, Analytical Geometry, Differential Equations, Sequence and Series, Abstract Algebra, Real and Complex Analysis, Number Theory, Mechanics, Operation Research, Statistics, Graph Theory, Discrete Mathematics, Trigonometry, Transforms and their application and C++/Python. Thus, this programme helps students in creating a solid foundation for further higher studies and research in mathematics. |
| PSO - 2 | <b>A Competency in Skills:</b> The skills and knowledge gained have intrinsic logic which leads to proficiency in analytical reasoning critical understanding, analysis and synthetic in order to solve theoretical and practical problems. This can orient students towards applications of mathematics in other disciplines and moreover, it can also be applied in modelling and solving the real-life problems.   |
| PSO - 3 | <b>A Problem-Solving Techniques:</b> Students undergoing this programme learn to logically understand the question assertions to classify the patterns and to evaluate the difference between the necessities and unnecessities of the problems which helps to analyze the problem clearly and to take correct decision for solving the problems.   |
| PSO - 4 | <b>Interdisciplinary and Research Skills:</b> Students completing this programme will be able to create and present mathematical concepts clearly and precisely, to describe mathematical ideas from multiple perspectives and to explain fundamental concepts of mathematics to non-mathematics people in a better manner.   |
| PSO - 5 | <b>A Proficiency in Employments:</b> The programme will help students build up with employability for government jobs, jobs in banking, insurance and investments sectors, data analysis jobs and jobs in various other public and private enterprises.   |



## Department of Mathematics - PG

Upon completion of the M.Sc. Programme in Mathematics, students will be able to:

|         |  |
|---------|--|
| PSO - 1 | Have a deep understanding and knowledge in the core areas of Mathematics.  |
| PSO - 2 | Demonstrate understanding and application of concepts/ theories/ principles/methods/ techniques in different areas of pure and applied Mathematics.                            |
| PSO - 3 | Have the capability to read and understand mathematical texts.   |
| PSO - 4 | Demonstrate and communicate mathematical knowledge effectively and unambiguously through oral and/or written expressions.  |
| PSO - 5 | Attain skills in computing /programming /using software tools /formulating models.   |
| PSO - 6 | Attain abilities of critical thinking, logical reasoning, investigating problems, analysis, and problem-solving.   |
| PSO - 7 | Application of mathematical methods/ techniques, disciplinary knowledge so as to develop skills to solve mathematical problems in other disciplines and/ or in the realworld.  |
| PSO - 8 | Development of intellectual capabilities to get into further research in the discipline.   |
| PSO - 9 | Have a strong foundation in basic and applied aspects of Mathematics to venture into jobs in scientific and various industrial sectors and/or teaching careers in Mathematics. |
| PSO- 10 | Development of strong oral and written communication skills promoting the ability to present ideas and also promote teamwork spirit.   |



## Department of Physics

The student graduating with the degree B.Sc. Physics should be able to:

|                |   |
|----------------|---|
| <b>PSO - 1</b> | To create effective entrepreneurs by enhancing their critical thinking, problem-solving, decision-making, and leadership skill                |
| <b>PSO - 2</b> | To produce employable, ethical, and innovative professionals to sustain in the dynamic business world   |
| <b>PSO - 3</b> | To contribute to the development of the society by collaborating with stakeholders for mutual benefit   |
| <b>PSO - 4</b> | Students utilize their laboratory skills to take measurements in the Physics laboratory, analyse the measurements, and draw valid conclusions |



## Department of Zoology

Upon completion of the B.Sc. Zoology Programme, students will be able to

|          |   |
|----------|---|
| PSO - 1  | Understand the structure, functional organization, adaptations, and the economic importance of lower and higher invertebrates.                            |
| PSO - 2  | Understand the sequential change from the cellular grade of organization to the organ grade of organization in the development of Multicultural organisms |
| PSO - 3  | Enable the students to understand the social realities  |
| PSO - 4  | Elucidate the structure and functions of the cell organelles  |
| PSO - 5  | Understand the structure and anatomy of earthworms  |
| PSO - 6  | Know the vermin culture and vermin composing methods for effective waste management   |
| PSO - 7  | Understand the Biotechnological equipment, its working mechanism, and applications.   |
| PSO - 8  | Explore the scope for students in various biotechnological institutes   |
| PSO - 9  | Learn the utility and applications of Biotechnological instruments so as to study its role for human welfare.   |
| PSO - 10 | Know the basic bio-statistical methods for students to do the project   |



## COURSE OUTCOMES

### DEPARTMENT OF HISTORY

#### I B.A. HISTORY

I Semester

#### HISTORY OF INDIA UPTO 647 AD

Sub. Code: CMHI11

|        |  |
|--------|--|
| CO - 1 | Explain the basic concepts and distinguish the different sources for writing the history upto A.D. 647 |
| CO - 2 | Illustrate the social life during the Vedic Period   |
| CO - 3 | Recall the teachings and philosophy of Lord Buddha and Mahavira and an account on Mauryas              |
| CO - 4 | Explain the sources, illustrate the conquest and achievement of various rulers under the Gupta dynasty |
| CO - 5 | Identify the achievements of Harshavardhana  |

#### I B.A. HISTORY

I Semester

#### HISTORY OF TAMILNADU UPTO 1336 AD

Sub. Code: CMHI12

|        |   |
|--------|---|
| CO - 1 | Recall the pre-historic period and explain the political history of Sangam age.                                     |
| CO - 2 | Demonstrate the role of Pallavas in the field of administration and upliftment of art and architecture              |
| CO - 3 | Interpret the political and cultural history of Tamils under the Cholas   |
| CO - 4 | Identify the significance of Marcopolo's accounts and outline the progress of Art & Architecture under the Pandiyas |
| CO - 5 | Explain the impact of Muslim invasion in Tamil country  |





## I B.A. HISTORY

I Semester

### PROFESSIONAL ENGLISH FOR ARTS & SOCIAL SCIENCES-I

Sub. Code: CPSS11

|        |  |
|--------|--|
| CO – 1 | To develop the language skills of students by offering adequate practice in professional contexts.                             |
| CO - 2 | To enhance the lexical, grammatical and socio-linguistic and communicative competence of first year physical sciences students |
| CO - 3 | To focus on developing students' knowledge of domain specific registers and the required language skills.                      |
| CO – 4 | To develop strategic competence that will help in efficient communication  |
| CO – 5 | To sharpen students' critical thinking skills and make students culturally aware of the target situation.                      |

## I B.A. HISTORY

I Semester

### THEORY OF POLITICAL SCIENCE

Sub. Code: CAHI11

|        |   |
|--------|---|
| CO – 1 | To acquire sound knowledge about the political institutions.                            |
| CO - 2 | To acquaint with the theories, approaches, concepts and principles of political theory. |
| CO - 3 | Students able to understand the theories of origin of the state.                        |
| CO – 4 | They will be familiar with state and central governments and their functions.           |
| CO – 5 | Knowledge about the structure and functions of the state government                     |



## I B.A. HISTORY

II Semester

### HISTORY OF INDIA (647AD – 1526 AD)

Sub. Code: CMHI21

|        |  |
|--------|--|
| CO – 1 | Reveal Socio-Economic and cultural changes occurred in the Decanoic kingdom.   |
| CO - 2 | Know the salient features of the Western and Eastern influences  |
| CO - 3 | Highlight the influence of important Battles on Indian history.  |
| CO – 4 | The entire panorama of events right from the Arab conquest of Sindh and its eventful the formation of Mughal empire in India |
| CO – 5 | Mughal empire shaping the cultural, political and economic landshape of the subcontinent.                                    |

## I B.A. HISTORY

II Semester

### HISTORY OF TAMILNADU 1336 – 1800 AD

Sub. Code: CMHI22

|        |  |
|--------|--|
| CO – 1 | The study will create knowledge about features and cultural history of Tamilnadu                       |
| CO - 2 | To make the students to understand about the Muslim invasion, Vijayanagar rule and advent of European. |
| CO - 3 | It will create a knowledge how the Tamil people overcome their obstacles that impede their progress.   |
| CO – 4 | Students will be able to review socio-political structure of Tamilnadu.                                |
| CO – 5 | Awareness about the Various issues present in Tamilnadu  |



## I B.A. HISTORY

II Semester

### PROFESSIONAL ENGLISH FOR ARTS & SOCIAL SCIENCE –II

Sub. Code: CPSS21

|        |  |
|--------|--|
| CO – 1 | Students would be able to form the strong professional vocabulary.   |
| CO - 2 | Its application at different platforms and through numerous modes as Comprehension, reading, writing and speaking will create deep knowledge in English. |
| CO - 3 | Students will be able to write correct and error-free writing by being well-versed in rules of English Grammar.  |
| CO – 4 | It enables the students to improve the communication skill   |
| CO – 5 | Help students with research bent of mind develop their skills in writing reports and research proposals.   |

## I B.A. HISTORY

II Semester

### MODERN CONSTITUTIONS

Sub. Code: CAHI21

|        |   |
|--------|---|
| CO – 1 | Develop understanding of evolution of modern legal system in India.                         |
| CO - 2 | Examine the evolution of Indian administration.   |
| CO - 3 | Inculcate the spirit of the constitution among the students.                                |
| CO – 4 | Introduce student to the nature, structure and functions of Modern Constitutions            |
| CO – 5 | Enable student to know that a Comparative understanding of different constitutional models. |



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

## I B.A. HISTORY

### HISTORY OF TAMIL NADU 1800 AD

II Semester

Sub. Code: CMHI22

|        |  |
|--------|--|
| CO - 1 | The study will create knowledge about features and cultural history of Tamilnadu                       |
| CO - 2 | To make the students to understand about the Muslim invasion, Vijayanagar rule and advent of European. |
| CO - 3 | It will create a knowledge how the Tamil people overcome their obstacles that impede their progress.   |
| CO - 4 | Students will be able to review socio-political structure of Tamilnadu.                                |
| CO - 5 | Awareness about the Various issues present in Tamilnadu  |

## II B.A. HISTORY

### Human Rights

III Semester

Sub. Code: CSHI31

|        |  |
|--------|--|
| CO - 1 | To enable the students, acquire knowledge about theories and Characteristics of Human Rights.  |
| CO - 2 | To enable the students, understand the Indian Societal Problems and Obstacles in enforcing Human Rights.   |
| CO - 3 | To know more about the grievance redressed Mechanism in Guaranteeing human rights  |
| CO - 4 | To study more about Right to Information which protect human rights.   |
| CO - 5 | The Philosophical foundation, historical developments and contemporary issues surrounding the protection and promotion of human rights globally. |



**II B.A. History**

**III Semester**

**Non-Major Elective 1 - Freedom Movement India**

**Sub. Code: CNHI31**

|               |  |
|---------------|--|
| <b>CO - 1</b> | To imbibe the spirit of Nationalism and Patriotism to the students.                  |
| <b>CO - 2</b> | To make the students understand the various trends and currents of freedom struggle. |
| <b>CO - 3</b> | To make the students to realize the sacrifices of our leaders.                       |
| <b>CO - 4</b> | To study about the history of the Indian Independence Movement                       |
| <b>CO - 5</b> | Student gain a nuanced understanding of the complexities of resistance, nationalism. |

**II B.A. HISTORY**

**III Semester**

**Allied III – Constitution of India.**

**Sub. Code: CAHI31**

|               |  |
|---------------|--|
| <b>CO - 1</b> | To study about the genesis of the Constitution of India                                |
| <b>CO - 2</b> | To understand the fundamental rights and duties guaranteed by the Indian Constitution. |
| <b>CO - 3</b> | To realize how a bill become law in India?   |
| <b>CO - 4</b> | To have a wider idea on center state relations   |
| <b>CO - 5</b> | To know about the protocols followed in parliament houses                              |



## II B.A. History

### Non-Major Elective I - Freedom Movement India

## III Semester

### Sub. Code: CNHI31

|        |  |
|--------|--|
| CO - 1 | To imbibe the spirit of Nationalism and Patriotism to the students.                  |
| CO - 2 | To make the students understand the various trends and currents of freedom struggle. |
| CO - 3 | To make the students to realize the sacrifices of our leaders.                       |
| CO - 4 | To study about the history of the Indian Independence Movement                       |
| CO - 5 | Student gain a nuanced understanding of the complexities of resistance, nationalism. |

## II B.A. History

### Core Paper 7- History of India,(1772-1947 A.D.)

## IV Semester

### Sub. Code: CMHI41

|        |   |
|--------|---|
| CO - 1 | To explain the students about the Imperialistic policies of the British Rule.   |
| CO - 2 | To make the students to understand the various social reforms initiated in India.   |
| CO - 3 | To understand the Indian up heaval against the Colonial Raj.  |
| CO - 4 | To estimate the role of Indian leader sinliberating mother India from alienrule.  |
| CO - 5 | Students analyze key events, figures, and idologies shaping indias journey towards self governace fostering critical thinking and historical perspective. |



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

**II B.A. History**  
**Core Paper 8 - History of Europe (476-1453 A.D.)**

**IV Semester**  
**Sub. Code: CMHI42**

|               |   |
|---------------|---|
| <b>CO - 1</b> | To explain the students about the glorious legacy of Roman Empire.          |
| <b>CO - 2</b> | To understand the significance of the basic tenets of various Religions.    |
| <b>CO - 3</b> | To have a clear cut idea on the influence of Renaissance and Enlightenment. |
| <b>CO - 4</b> | To study more on the Society during the Middle Ages.                        |
| <b>CO - 5</b> | Understanding of the shaping of Europe during this pivotal period.          |

**II B.A History – IV Semester**  
**Allied IV – Indian Political Thought**

**Sub. Code: CAHI41**

|               |  |
|---------------|--|
| <b>CO - 1</b> | To make the students understand the value of Indian Political ideology.  |
| <b>CO - 2</b> | To realize the importance of Indian Political thinkers over the period of time.  |
| <b>CO - 3</b> | To have a clear cut idea on Swaraj and Satyagrah in India.   |
| <b>CO - 4</b> | To study more on the Radical Liberalism in India.  |
| <b>CO - 5</b> | Students will explore the rich tapestry of Indian political thought, examining diverse perspectives from ancient texts to modern thinkers. |



## II B.A. History

## IV Semester

Skill Based Core2- Principles and Methods of Archaeology

Sub. Code: CSHI41

|        |  |
|--------|--|
| CO - 1 | To study about the basic ideas of historical antiquity.  |
| CO - 2 | To understand the Colonial Contribution in bringing out the Indian Archaeology.  |
| CO - 3 | To have a wider knowledge on the role of archaeologists in bringing out the cultural significance.   |
| CO - 4 | To shed more light on various archeological sites including Kizhadi.   |
| CO - 5 | Students will learn the fundamental principles of archaeological research, including excavation techniques, artifact analysis and site interpretation. |

## III B.A. History

## V Semester

Elements of Historiography

Sub. Code: AMHI51

|        |  |
|--------|--|
| CO - 1 | To make the students to understand the fact that History is a utility subject.   |
| CO - 2 | To educate the students to have basic knowledge on Historical research methodology.  |
| CO - 3 | To know more about the Pioneers in Historiography.   |
| CO - 4 | To study the contributions of Indian Historiographers in writing objective history.  |
| CO - 5 | Students will analyze historical sources critically, interpret their significance and construct coherent historical narratives |





**III B.A. History**  
**History of Europe (1453 -1789A.D.)**

**V Semester**  
**Sub. Code: AMHI52**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To impart the students about the historical significance of the dawn of Modern Age. |
| <b>CO - 2</b> | To study about the Christian Reformation and Counter Reformation.                   |
| <b>CO - 3</b> | To under the power struggle that affected Europe during the period under review     |
| <b>CO – 4</b> | To understand the emergence of the age of Benevolent Despotism in Europe            |
| <b>CO – 5</b> | To understand the significance of the basic tenets of various religious.            |

**III B.A. History**  
**Panchayat Raj in India**

**V Semester**  
**Sub. Code: AEHI52**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To understand the evolution of Panchayat Raj as an institution in india.              |
| <b>CO - 2</b> | To study the impact of Gandhian views on Panchayat Raj.                               |
| <b>CO - 3</b> | To make aware of the students about the history of Panchayat Rah over the year.       |
| <b>CO – 4</b> | To understand gross root democracy and decision making from the bottom up.            |
| <b>CO – 5</b> | To understanding the structure and functioning of Panchayat Raj institutions in India |



**III B.A. History**  
**History of China (1839 -1966A.D.)**

**V Semester**  
**Sub. Code: AMHI53**

|               |  |
|---------------|--|
| <b>CO – 1</b> | To study in depth the significance the advent of Europe and in China.  |
| <b>CO - 2</b> | To know more about the series of Chinese failures.   |
| <b>CO - 3</b> | To understand the emergence of Chinese Nationalism.  |
| <b>CO – 4</b> | To study the various strategies in the establishment of Peoples Republic of China in the land of Iron Curtain. |
| <b>CO – 5</b> | To enabling a nuanced understanding of chin as past its global significance today.                             |

**III B.A. History**  
**Indian Public Administration**

**V Semester**  
**Sub. Code: CMHI54**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To understand the basic principles of public administration                                       |
| <b>CO - 2</b> | To study more on functions, pavers of chief Executive   |
| <b>CO - 3</b> | To have a wider knowledge on the principles of organization and its structure                     |
| <b>CO – 4</b> | To understand the role of planning commission and Nidhi Ayog in the development of Indian economy |
| <b>CO – 5</b> | To understanding of bureaucratic structures, processes and challenges with in India.              |



## III B.A. History

V Semester

Major Elective 1 – Constitutional History of India, (1773-1947) Sub. Code: AEHI51

|        |  |
|--------|--|
| CO – 1 | To study about a focus on the various constitutional experiments in India.                 |
| CO - 2 | To understand the significance of charter Acts and its implications.                       |
| CO - 3 | To have a clear-cut idea on the content of Indian Councils Acts.                           |
| CO – 4 | To know more about the skeleton of the proposed Indian Constitution.                       |
| CO – 5 | The evolution and impact of the country's constitutional framework tracing its development |

## III B.A. History

V Semester

Major Elective II – Panchayat Raj in India, (1773-1947) Sub. Code: AEHI52

|        |  |
|--------|--|
| CO – 1 | To understand the evolution of Panchayat Raj as an institution in India.         |
| CO - 2 | To study the impact of Gandhian views on Panchayat Raj.                          |
| CO - 3 | To make aware of the students about the history of Panchayat Raj over the years. |
| CO – 4 | To understand grass root democracy and decision making from the bottom – up      |
| CO – 5 | To Knowledge of local governance in India, covering administrative.              |



## III B.A. History

### History of Europe (1789-1945A.D.)

VI Semester

Sub. Code: AMHI61

|        |   |
|--------|---|
| CO - 1 | To make the students learn major issues and current issues during the period under study. |
| CO - 2 | To make the students understand the reaction to Nationalism and Liberalism.               |
| CO - 3 | To understand the impact of World wars on Global Society.                                 |
| CO - 4 | To estimate the role of UNO in maintaining World Peace.                                   |
| CO - 5 | To Understanding of the continent diverse culture's societies and pivotal events.         |

## III B.A. History

### History of Science and Technology Since 17<sup>th</sup> Century

VI Semester

Sub. Code: AMHI62

|        |  |
|--------|--|
| CO - 1 | To understand more about the history of Science and Technology during the period understudy.                                   |
| CO - 2 | To realize the scientific inventions during the 18 <sup>th</sup> C in protecting human beings.                                 |
| CO - 3 | To study about the emergence of new scientific inventions.   |
| CO - 4 | To trace the contributions of Indian Scientists in preserving global peace and development.                                    |
| CO - 5 | Students will demonstrate a comprehensive understanding of fundamental scientific principles and their practical applications. |



**III B.A. History**  
**History of India Since 1947**

**VI Semester**  
**Sub. Code: AMHI63**

|        |  |
|--------|--|
| CO – 1 | To understand the conditions of India on the eve of Independence.  |
| CO - 2 | To study the contributions made by the architects of India.  |
| CO - 3 | To know more about the foreign policy of India which is always working for global peace?   |
| CO – 4 | To understand the emergence of regional sub-national ismene India and its results.   |
| CO – 5 | To students with a comprehensive understanding of post-independence developments, including political ,social economic, and culture. |

**III B.A. History**  
**Women's Studies**

**VI Semester**  
**Sub. Code: AMHI64**

|        |   |
|--------|---|
| CO – 1 | To make the students understand the need for change among the women.                              |
| CO - 2 | To make them understand the need for the empowerment of women and realization of that goal.       |
| CO - 3 | To understand the various reasons for the secondary status given to the Indian women.             |
| CO – 4 | To estimate the contributions made by pioneering Indian women leaders inup lifting the womenfolk. |
| CO – 5 | To students to gain a deeper understanding of gender and dynamics.                                |



## III B.A. History

### Group Project and Viva

VI Semester

Sub. Code: CVBE21

|        |   |
|--------|---|
| CO - 1 | To Study the unique characteristics of a society, culture a situation or an individual  |
| CO - 2 | To investigate the recurring nature of phenomena with a view to generalize and to formulate laws.                                   |
| CO - 3 | To contribute to the existing quantum of human knowledge, to find out the truth by applying the time tested scientific procedures.  |
| CO - 4 | To discuss some type of theories about effective leadership.  |
| CO - 5 | To develop, analyses and critically evaluate alternative option in order to justify and generate solutions in a real world project. |

## III B.A. History

### Major Elective 2 –Epigraphy

VI Semester

Sub. Code: AEHI6A

|        |  |
|--------|--|
| CO - 1 | To understand the historicity of a country with the study of Epigraphy.  |
| CO - 2 | To know more about the evolution of various scripts.   |
| CO - 3 | To estimate the contribution made by both foreign and indigenous epigraphists in writing the History of India. |
| CO - 4 | To understand the significance of inscriptions and Copperplates  |
| CO - 5 | The students with the ability to decipher and analyze ancient inscriptions.                                    |



## PG & RESEARCH DEPARTMENT OF ENGLISH

**B.A. English**

**Semester – I**

**Title of the Course: Communicative English - I**

**Subject Code:A2EN11**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Improve their listening and writing skills.                   |
| <b>CO - 2</b> | Apply and incorporate basic grammar and mechanics in writing. |
| <b>CO - 3</b> | Paraphrase main ideas through reading passages.               |
| <b>CO – 4</b> | Communicate in English with confidence.                       |
| <b>CO – 5</b> | Label and paraphrase main ideas through reading passages.     |

**B.A. English**

**Semester – I/ Core – 1**

**Title of the Course: Indian Writing in English – I**

**Sub. Code: AMEN11**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Understand the major movement and authors in Indian Writing in English through the study of selected literary texts |
| <b>CO - 2</b> | Analysed artistic and rhetorical devices used by the writers  |
| <b>CO - 3</b> | Cultivate a literary sensibility for a proper critical appreciation of literature                                   |
| <b>CO – 4</b> | Make them reflect critically on the human and social concern and value embedded in the texts                        |
| <b>CO – 5</b> | Enhance the overall literary and linguistic competence of students  |



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

**B.A. English**

**Semester – I / Core – 2**

**Title of the Course: British Fiction**

**Subject Code: AMEN12**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Comprehend the ethical values of the society                        |
| <b>CO - 2</b> | Compare and contrast the characters of the novels                   |
| <b>CO - 3</b> | Analyse the plot construction and techniques employed in the novels |
| <b>CO – 4</b> | Interpret the different meanings and messages in the novels         |
| <b>CO – 5</b> | Assess the literary value of each novel                             |

**B.A. English**

**Semester – I/ Major**

**Professional English for Arts and Social Sciences – I**

**Sub Code: APSS11**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Refine written and verbal communication skills.           |
| <b>CO - 2</b> | Speak confidently in any professional environment.        |
| <b>CO - 3</b> | Face interviews with confidence.                          |
| <b>CO – 4</b> | Analyse and comprehend unfamiliar texts.                  |
| <b>CO – 5</b> | Develop strategic competence through efficient listening. |





**B.A. English**

**Semester – I/ Allied- I**

**Title of the Course: Social History of England**

**Subject Code: AAEN11**

|               |  |
|---------------|--|
| <b>CO – 1</b> | Understand the political, religious, economic and intellectual histories of various periods            |
| <b>CO - 2</b> | Explore English life and society over six centuries  |
| <b>CO - 3</b> | Examine the etiquette, morality and customs of English society   |
| <b>CO – 4</b> | Contextualize the varying experiences of English society in relation to societal changes and evolution |
| <b>CO – 5</b> | Coexist in aculturally diverse inter dependent world   |

**B.A. English**

**Semester – I/ Common**

**Title of the Course: Environmental Studies**

**Subject Code: AEVS11**

|               |  |
|---------------|--|
| <b>CO – 1</b> | Understand key concept from economic, political, and social analyses as they pertain to the design and evaluation of environmental policies and institutions |
| <b>CO - 2</b> | Appreciate concepts and methods from ecological and physical sciences and their application in environmental problems solving                                |
| <b>CO - 3</b> | Reflect critically about their roles and identities as citizens, consumers and environmental factors in a complex, interconnected world.                     |
| <b>CO – 4</b> | Use natural resources more efficiently and know more sustainable ways of living  |
| <b>CO – 5</b> | Participate in the improvement and protection of environment and create awareness about environmental issues to the public.                                  |



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

**B.A. English**

**Title of the Course: Communicative English - II**

**Semester – II/ Part - II**

**Subject Code: A2EN31**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Comprehend passages   |
| <b>CO - 2</b> | Demonstrate improved oral fluency.  |
| <b>CO - 3</b> | Use vocabulary through the study of word parts.                             |
| <b>CO – 4</b> | Construct paragraphs and essays through prose writings.                     |
| <b>CO – 5</b> | Develop the skills of interpretation, critical thinking, and clear writing. |

**B.A. English**

**Title of the Course: Indian Writing in English – II**

**Semester – II/ Core -3**

**Subject Code: AMEN21**

|               |  |
|---------------|--|
| <b>CO – 1</b> | Remember the origin and History of the Indian Writing in English and appreciate the literary devices used in the texts                 |
| <b>CO - 2</b> | Examine abroad cross section of regions and cultures in India  |
| <b>CO - 3</b> | Understand the broad view of culture as seen from outside the culture  |
| <b>CO – 4</b> | Make familiar with the contributions made by modern Indian writers writing in English  |
| <b>CO – 5</b> | Critically engage with Indian literary texts written in English in terms of colonialism, post colonialism, regionalism and nationalism |



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

**B.A. English**

**Semester – II/ Core -4**

**Title of the Course: American Literature**

**Subject Code: AMEN22**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Identify the key ideas, events and characteristics of different periods and regions |
| <b>CO - 2</b> | Understand values and themes that impact culture and society                        |
| <b>CO - 3</b> | Analyze and juxtapose the unique literary styles and structures of American authors |
| <b>CO – 4</b> | Improve reading skills leading to literary analyses                                 |
| <b>CO – 5</b> | Write poems and short stories and also enact scenes from the plays prescribed       |

**B.A. English**

**Semester – II**

**Professional English for arts and Social Sciences – II**

**Sub Code: APSS21**

|               |  |
|---------------|--|
| <b>CO – 1</b> | Understand the theoretical and practical components of professional English and soft skills. |
| <b>CO - 2</b> | Use power point presentations.   |
| <b>CO - 3</b> | Make oral presentations.   |
| <b>CO – 4</b> | Write minutes and reports.   |
| <b>CO – 5</b> | Write essays creatively and innovatively.  |



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

**B.A. English**

**Semester – II/ Allied - 2**

**Title of the Course: Literary Forms**

**Subject Code: AMEN21**

|               |  |
|---------------|--|
| <b>CO – 1</b> | Understand the significance of literary forms                            |
| <b>CO - 2</b> | Analyze a variety of texts   |
| <b>CO - 3</b> | Appreciate literary forms and structure in shaping the meaning of a text |
| <b>CO – 4</b> | Enhance intellectual inquiry and creative expression                     |
| <b>CO – 5</b> | Obtain coherent and systematic knowledge of various literary forms       |

**B.A. English**

**Semester – II/ Common**

**Title of the Course: Value Based Education**

**Subject Code: AVBE21**

|               |  |
|---------------|--|
| <b>CO – 1</b> | Understand the importance of value-based living and to gain deeper understanding about the purpose of their life |
| <b>CO - 2</b> | Understand and start applying the essential steps to become good leaders.  |
| <b>CO - 3</b> | Contribute in building a healthy nation and value-based professionals.   |
| <b>CO – 4</b> | Respect for dignity of individual and diversity in society.  |
| <b>CO – 5</b> | Help students to promote qualities such as honesty, integrity and empathy.                                       |



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

**B.A. English**

**Semester – III/ Core 5**

**Title of the Course: History of English Literature – I**

**Subject Code: AMEN31**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Comprehend the growth and development of English literature and language  |
| <b>CO - 2</b> | Develop an extensive in sight in to the various literary movements and also the prominent writers and their works |
| <b>CO - 3</b> | Understand and evaluate the social, cultural and historical influence on the literary works of different periods  |
| <b>CO – 4</b> | Explore the evolution of various literary genres  |
| <b>CO – 5</b> | Read through and interpret key texts  |

**B.A. English**

**Semester – III/ Core 6**

**Title of the Course: British Poetry**

**Subject Code: AMEN32**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Define the various forms, types and schools of poetry                                       |
| <b>CO - 2</b> | Describe the development of various literary movements and their mission                    |
| <b>CO - 3</b> | Apply the traits of the movement to the poems of the period                                 |
| <b>CO – 4</b> | Classify British poetry as reflection of the period and identify the socio-cultural factors |
| <b>CO – 5</b> | Review the literary style of British poetry and explore the diverse themes of the poems     |



**B.A. English**

**Semester – III**

**Title of the Course: English Grammar and Usage**

**Subject Code: AAEN31**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Recall the fundamentals of English Grammar                                      |
| <b>CO - 2</b> | Understand the formal and in formal usages to obtain proficiency                |
| <b>CO - 3</b> | Apply the patterns learnt by students   |
| <b>CO – 4</b> | Analyze sentence structures, Synthes is and usages                              |
| <b>CO – 5</b> | Evaluate the patterns of expressions, basic structures, sentence patterns, etc. |

**B.A. English**

**Semester – III**

**Title of the Course: Phonetics and Spoken English**

**Subject Code: ASEN31**

|               |  |
|---------------|--|
| <b>CO – 1</b> | Discuss in detail the production and articulation of Speech Sounds |
| <b>CO - 2</b> | Understand correct Stress and Intonation pattern                   |
| <b>CO - 3</b> | Construct the vowel and consonant sounds using Phonetic symbols    |
| <b>CO – 4</b> | Enumerate transcription to improve Speech Sounds                   |
| <b>CO – 5</b> | Articulate standard pronunciation of English words                 |



**B.A. English**

**Title of the Course: English and Employability**

**Semester – III**

**Subject Code: ANEN31**

|               |  |
|---------------|--|
| <b>CO – 1</b> | To understand the use of English in different careers                        |
| <b>CO - 2</b> | To develop competence in using English for the career of their choice        |
| <b>CO - 3</b> | To exercise verbal and non verbal communication effectively for their career |
| <b>CO – 4</b> | To use English effectively in the career of their choice                     |
| <b>CO – 5</b> | To enhance skills required for their placement                               |

**B.A. English/ Semester – IV/ Common**

**Title of the Course: Yoga**

**Subject Code: AYO31**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To learn and practice various meditation, yoga methods to transform the ordinary life in to a healthy, harmonious life leading to holistic well being |
| <b>CO - 2</b> | To create an eco-friendly, loving and compassionate world.  |
| <b>CO - 3</b> | Acquire knowledge and skill in yoga for youth empowerment.  |
| <b>CO – 4</b> | Increase their power of concentration   |
| <b>CO – 5</b> | Learn the causes and ways to overcome fear and sadness.   |



**B.A. English/ Semester – IV/ Core 7**

**Subject Code: AMEN41**

**Title of the Course: History of English Literature – II**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Familiarize the important literary figures and literary works of the period             |
| <b>CO - 2</b> | Examine the issues discussed in the text in the socio-historic and cultural context     |
| <b>CO - 3</b> | Understand the chronologically arranged collection of biographical sketches             |
| <b>CO – 4</b> | Analyze the dominant literary and artistic movements of the early and the modern period |
| <b>CO – 5</b> | Exhibit the interplay of the personal and the impersonal in the making of history       |

**B.A. English/ Semester – IV/ Core 8**

**Title of the Course: British Drama**

**Subject Code: AMEN42**

|               |  |
|---------------|--|
| <b>CO – 1</b> | Name the various type sand sub-genres of drama   |
| <b>CO - 2</b> | Explain different dramatic forms and the techniques adopted by each writer of each age |
| <b>CO - 3</b> | Trace out the evolution of British Drama and its impact on audience                    |
| <b>CO – 4</b> | Learn to comment critically upon the characters and their representative nature        |
| <b>CO – 5</b> | Assess the literary style and find out the uniqueness of British Drama                 |





## B.A. English/ Semester – IV/ Allied 4

**Title of the Course: Chicano and Caribbean Literature**

**Subject Code: AAEN41**

|        |  |
|--------|--|
| CO – 1 | Demonstrate familiarity with important authors, works, genres, and themes of Chicano and Caribbean Literature                        |
| CO - 2 | Analyze and interpret themes found in the literature and intellectual movements associated with Chicano and Caribbean Literature     |
| CO - 3 | Relate the literary works to their historical, philosophical, social, political, regional, and/or aesthetic contexts                 |
| CO – 4 | Critically examine and interpret cultural expressions of Chicano and Caribbean literature  |
| CO – 5 | Evaluate the historical experiences of the Chicano and Caribbean people within the legal, political cultural, and social structures. |

## B.A. English/ Semester – IV/ Skill Based Core - 2

**Title of the Course: Eco English**

**Subject Code: ASEN41**

|        |   |
|--------|---|
| CO – 1 | Understand the significance and implications of environmental writing with varied perspectives of both literary and scientific criticism  |
| CO - 2 | Interpret and relate literary texts by using essential terms from Environment studies   |
| CO - 3 | Value the significance of the latest schools of criticism through the new approach used practically.  |
| CO – 4 | Make close reading, critical thinking and analytical writing through which the students will be able to investigate the literary and cultural forms that shape the observation of the readers and the way in which they relate themselves with nature and environment |
| CO – 5 | Develop awareness of how literature can articulate humanity's relationship with the environment   |



## B.A. English/ Semester – IV/ Non Major Elective - 2

Title of the Course: Business English

Subject Code: ANEN41

|        |  |
|--------|--|
| CO – 1 | Develop basic skills to deal with people in business situations                            |
| CO - 2 | Write and read basic business reports, faxes, and memos                                    |
| CO - 3 | Expand vocabulary related to general business situations                                   |
| CO – 4 | express themselves orally in a business setting with colleagues in meetings and informally |
| CO – 5 | Enhance language flexibility.  |

## B.A. English/ Semester – IV/ Common

Title of the Course: Computer for Digital Era

Subject Code: ACDE41

|        |   |
|--------|---|
| CO – 1 | Identify different types of computer systems.                         |
| CO - 2 | Classify various types of software being used.                        |
| CO - 3 | Analyze various social networking platforms and use them efficiently. |
| CO – 4 | Analyze various social networking platforms and use them efficiently. |
| CO – 5 | Distinguish various cyber-attacks and apply preventive measures.      |



**B.A. English/ Semester – V/ Core 9**

**Title of the Course: Non – Fiction**

**Subject Code: AMEN51**

|        |   |
|--------|---|
| CO – 1 | Demonstrate a good reading knowledge of classic and contemporary non fiction. |
| CO - 2 | Define how it differs from straight reporting and fiction.                    |
| CO - 3 | Name the devices writers use in nonfiction.                                   |
| CO – 4 | Recognize literary genres of nonfiction                                       |
| CO – 5 | Write an essay using the techniques of nonfiction                             |

**B.A. English/ Semester – V/ Core 10**

**Title of the Course: Literary Critics and Approaches**

**Subject Code: AMEN52**

|        |   |
|--------|---|
| CO – 1 | Understand the origin and development of the art of literary interpretation   |
| CO - 2 | Comprehend the qualities of canonical literary texts  |
| CO - 3 | Gain an understanding about various modes and methods of literary interpretation  |
| CO – 4 | Trace the inter disciplinary nature of literary critic is meveloped in the twentieth century                                      |
| CO – 5 | Improve their ability to read the literary texts critically and analyze them and write well-structured analysis of literary texts |



## B.A. English/ Semester – V/ Core 11

Title of the Course: World Literature in Translation

Subject Code: AMEN53

|        |  |
|--------|--|
| CO – 1 | Trace the interdisciplinary nature of literary texts evolved in the twentieth century  |
| CO - 2 | Gain an understanding about various modes and methods of literary interpretation   |
| CO - 3 | Understand the origin and development of the art of literary interpretation  |
| CO – 4 | Comprehend the qualities of canonical literary texts   |
| CO – 5 | Improve their ability to read the literary texts critically and analyse them and write well-structured analysis of literary texts. |

## B.A. English/ Semester – V/ Core 12

Title of the Course: Canadian Literature

Subject Code: AMEN54

|        |   |
|--------|---|
| CO – 1 | Improve their ability to read the literary texts critically and analyse them and write well – structured analysis of literary texts |
| CO - 2 | Trace the inter disciplinary nature of literary texts evolved in the twentieth century  |
| CO - 3 | Gain an understanding about various modes and methods of literary interpretation  |
| CO – 4 | Comprehend the qualities of canonical literary texts  |
| CO – 5 | Understand the origin and development of the art of literary interpretation   |



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

## B.A. English/ Semester – V/ Major Elective - 1

Title of the Course: Women's Writing

Subject Code: AMEEN51

|        |   |
|--------|---|
| CO – 1 | Understand the role of women in Literature                      |
| CO - 2 | Recognize the biased social structure of women in the modern er |
| CO - 3 | Interpret women's writings across cultures.                     |
| CO – 4 | Identify the marginalization of women in society.               |
| CO – 5 | Analyse gender perspectives in writings                         |

## B.A. English/ Semester – V/ Major Elective 2

Title of the Course: Creative Writing in English

Subject Code: AAEN53

|        |  |
|--------|--|
| CO – 1 | Read texts closely for nuances of language, content, and form  |
| CO - 2 | Write effectively and produce clear and coherent prose demonstrating effective use of grammar and style  |
| CO - 3 | Practice writing and revision as a craft with attention to voice, style, form, language, technique, and other elements of literary composition |
| CO – 4 | Collaborate and communicate effectively through writing, sharing, and revising creative work   |
| CO – 5 | Demonstrate knowledge of editing and revision techniques, the world of publishing, and other career-related aspects of writing.                |



## B.A. English/ Semester – V/ Skill Based Common

Title of the Course: Personality Development

Subject Code: ACSB51

|        |   |
|--------|---|
| CO – 1 | Individual or in-group class presentations pertaining to the application of concerned theories or issues in human development.                    |
| CO - 2 | To design and complete a research project that can take the form of a developing interview, an observation or assessment through service learning |
| CO - 3 | To research and write about relevant topics   |
| CO – 4 | Understand different personality traits.  |
| CO – 5 | Resourceful and productive in any part of the organisations.  |

## B.A. English/ Semester – VI/ Core 13

Title of the Course: Shakespeare

Subject Code: AMEN61

|        |   |
|--------|---|
| CO – 1 | Understand the plays studied in different critical contexts including historical theoretical and theatrical |
| CO - 2 | Apply various emerging literary theories to the study of Shakespeare  |
| CO - 3 | Appraise the universal values embedded in the plays of Shakespeare  |
| CO – 4 | Recall the nuclei of each play and analyze them with the historical, philosophical and literary factors     |
| CO – 5 | Challenge the existing ideas with their alms of the contemporary literary scenario                          |



## B.A. English/ Semester – VI/ Core 14

Title of the Course: Australasian Literature

Subject Code: AMEN62

|        |  |
|--------|--|
| CO – 1 | Understand the origin and development of the art of literary interpretation  |
| CO - 2 | Improve their ability to read the literary texts critically and analyse them and write well- structured analysis of literary texts |
| CO - 3 | Gain an understanding about various modes and methods of literary interpretation   |
| CO – 4 | Comprehend the qualities of canonical literary texts   |
| CO – 5 | Trace the interdisciplinary nature of literary texts evolved in the twentieth century  |

## B.A. English/ Semester – VI/ Core 15

Title of the Course: Short Stories and One -act Plays

Subject Code: AMEN63

|        |  |
|--------|--|
| CO – 1 | Read, understand and appreciate a range of literary texts  |
| CO - 2 | Think rigorously about selected contemporary texts and the contexts of their production                                |
| CO - 3 | Critically evaluate their own and others' written materials  |
| CO – 4 | Identify the main ideas, details and speakers' attitudes and emotions by listening to different types of spoken texts. |
| CO – 5 | Enact the scenes without hesitation  |



## B.A. English/ Semester – VI/ Core 16

Title of the Course: Regional Literature in Translation

Subject Code: AMEN64

|        |   |
|--------|---|
| CO – 1 | Understand how English gets Indianised in translation.  |
| CO - 2 | Analyse with the major ancient medieval and modern literary movements in India and their influence on literature. |
| CO - 3 | Understand different literary techniques employed by various Indian regional language writers.                    |
| CO – 4 | Compare the features and peculiarities of Indian societies, culture and language.                                 |
| CO – 5 | Engage in the vast possibilities of translating literary texts from their own languages into English.             |

## B.A. English/ Semester – VI/ Major Elective

Title of the Course: Comparative Literature

Subject Code: AEEN63

|        |  |
|--------|--|
| CO – 1 | To analyze and interpret literary texts through close, comparative reading   |
| CO - 2 | Understand possibilities of cross-cultural literary influence and interaction, with attention to geographical, historical, and linguistic differences and connections. |
| CO - 3 | Compare within their cultural and historical contexts, including literary tradition and literary history   |
| CO – 4 | Apply comparative methodologies and literary theory to evaluate literary texts and other cultural products.  |
| CO – 5 | Interpret and criticize literary texts within social, cultural, and historical contexts.   |





M.A. English/ Semester – I/ Core

Title of the Course: British Poetry

Subject Code: ZEHM11

|        |   |
|--------|---|
| CO – 1 | recognize the various characteristics and sub-genres of poetry.               |
| CO - 2 | outline the development of numerous literary movements.                       |
| CO - 3 | classify the poets as representatives of their periods.                       |
| CO – 4 | rationalise British Poetry as an aesthetic record of the societies concerned. |
| CO – 5 | analyse British Poetry with a focus on content and form.                      |

M.A. English/ Semester – I/ Core

Title of the Course: British Drama

Subject Code: ZEHM12

|        |   |
|--------|---|
| CO – 1 | recall the seminal works of various dramatists throughout the ages                                      |
| CO - 2 | trace the influences and social culture of the English societies through their drama of various periods |
| CO - 3 | apply and enact the drama scenes in classroom   |
| CO – 4 | analyse the various dramatic techniques used in the plays   |
| CO – 5 | evaluate the literary elements such as setting, characterization, plot, theme, symbol etc.              |



## M.A. English/ Semester – I/ Core

Title of the Course: Indian English Literature I

Subject Code: ZEHM13

|        |  |
|--------|--|
| CO – 1 | appreciate the diverse aspects of Indian English Literature of the pre-independence era.     |
| CO - 2 | identify the unique features of Indian Writings in English.                                  |
| CO - 3 | develop a perceptivity of the major historical movements and their impact on literature.     |
| CO – 4 | explore the colonial context in which Indian English developed as a language and literature. |
| CO – 5 | assess the contributions of significant writers of the pre- independent era.                 |

## M.A. English/ Semester – I/ Core

Title of the Course: American Literature I

Subject Code: ZEHM14

|        |  |
|--------|--|
| CO – 1 | gain knowledge and understanding of a range of American Writings in their cultural contexts. |
| CO - 2 | develop close reading skills as a means of literary analysis.                                |
| CO - 3 | develop close reading skills as a means of literary analysis.                                |
| CO – 4 | describe the significant historical and cultural developments of colonial America.           |
| CO – 5 | assess the major conventions and tropes of transcendental literature.                        |



## M.A. English/ Semester – I/ Core

Title of the Course: African Literature

Subject Code: ZEHE12

|        |   |
|--------|---|
| CO – 1 | understand the various genres and culture of Africa.  |
| CO - 2 | familiarise themselves with the basic concepts and assumptions conveyed in the texts.   |
| CO - 3 | develop a realization that literature fosters humanistic awareness and attitudes.   |
| CO – 4 | analyse and comprehend Africa’s reality through its narratives, protests against colonization, struggle for independence, African pride and hope for the future |
| CO – 5 | assess Africa through specific forms of literary expression from the continent and the diaspora.  |

## M.A. English/ Semester – I/ Elective

Title of the Course: Literature and Pandemics

Subject Code: ZEHM15

|        |   |
|--------|---|
| CO – 1 | identify and demonstrate the knowledge about Contagions.                                |
| CO - 2 | classify the varied socio-cultural conditions related to pandemics                      |
| CO - 3 | elucidate the significant impact of the pandemics on society.                           |
| CO – 4 | examine the major biological crises like the COVID- 19 pandemic.                        |
| CO – 5 | assess pandemic as a unique narrative device and its role in stimulating a new reading. |



**M.A. English/ Semester – II/ Core**

**Title of the Course: British Non-Fiction**

**Subject Code: ZEHM21**

|        |   |
|--------|---|
| CO – 1 | recall the pragmatic works of British Literature.   |
| CO - 2 | learn and appreciate the cultural realities of the various periods.                         |
| CO - 3 | develop critical insights to analyse various aspects of non-fiction.                        |
| CO – 4 | relate the English literary texts to the historical, the social and the political contexts. |
| CO – 5 | perceive the changing role of English in the new world order.                               |

**M.A. English/ Semester – II/ Core**

**Title of the Course: Indian English Literature II**

**Subject Code: ZEHM22**

|        |  |
|--------|--|
| CO – 1 | comprehend the contribution of significant writers of the post-independent era.                  |
| CO - 2 | identify the unique features of Indian Writings in English.                                      |
| CO - 3 | examine the socio-political and cultural milieu of Indian English Literature after independence. |
| CO – 4 | distinguish the use of myths in Indian Writing in English and its contemporary relevance.        |
| CO – 5 | analyse themes dealt with by modern writers in the post- colonial context.                       |



## M.A. English/ Semester – II/ Core

Title of the Course: American Literature II

Subject Code: ZEHM23

|        |  |
|--------|--|
| CO – 1 | identify the roles played by gender, race, age, class, ethnicity, wealth, poverty, and geography in creating Contemporary American Literature. |
| CO - 2 | comprehend the relationship between Literature and American history and the philosophical and the religious movements.                         |
| CO - 3 | appraise the literary texts to examine the cultural and rhetorical contexts in which they were written.  |
| CO – 4 | analyse the strength and limitation of various literary forms practised in America.  |
| CO – 5 | evaluate the relationship between the African American culture and the American culture as a whole.  |

## M.A. English/ Semester – II/ Core

Title of the Course: Canadian Literature

Subject Code: ZEHM24

|        |   |
|--------|---|
| CO – 1 | define the richness of Canadian Literature through the various genres.  |
| CO - 2 | interpret the cultural and the literary aspects of Canadian Literature.   |
| CO - 3 | gauge the concerns at stake in conceiving the arena of Canadian Literature and its trajectories over time.          |
| CO – 4 | generate thoughtful and critical analyses of the assigned texts.  |
| CO – 5 | formulate sustained and logical arguments that build on textual evidence and manifest themselves in various genres. |



**M.A. English/ Semester – II/ Core**

**Title of the Course: Shakespeare**

**Subject Code: ZEHM25**

|               |  |
|---------------|--|
| <b>CO – 1</b> | recognise the elements of dramatic devices and techniques of Elizabethan Drama.  |
| <b>CO - 2</b> | identify Shakespeare's unique dramatic styles and understand the contexts of setting, plot, characterization, and thematic Contents. |
| <b>CO - 3</b> | infer the different features of Shakespearean tragedies, comedies, and historical plays.   |
| <b>CO – 4</b> | analyse Shakespearean theatre and language.  |
| <b>CO – 5</b> | evaluate the Elizabethan views on cosmic universe and liberal humanism   |

**M.A. English/ Semester – II/ Core**

**Title of the Course: Literary Theory I**

**Subject Code: ZEHM26**

|               |   |
|---------------|---|
| <b>CO – 1</b> | locate the history of literary criticism and evolution of theory.               |
| <b>CO - 2</b> | interpret the context of the significant ideological shift of western thoughts. |
| <b>CO - 3</b> | inculcate the habit of close and intensive reading.                             |
| <b>CO – 4</b> | analyse the central discourses of Enlightenment.                                |
| <b>CO – 5</b> | initiate interpretations of literature empirically.                             |



**M.A. English/ Semester – III/ Core**

**Title of the Course: British Fiction**

**Subject Code: ZEHM31**

|               |   |
|---------------|---|
| <b>CO – 1</b> | appreciate the contextualization and the historical consciousness of the texts. |
| <b>CO - 2</b> | distinguish the different socio-cultural milieu and the narrative techniques.   |
| <b>CO - 3</b> | familiarise the avant-garde writings by the early novelists.                    |
| <b>CO – 4</b> | analyse the concepts of modern and postmodern literature.                       |
| <b>CO – 5</b> | perceive the distinct literary characteristics of the modern narratives.        |

**M.A. English/ Semester – III/ Core**

**Title of the Course: Australian Literature**

**Subject Code: ZEHM32**

|               |  |
|---------------|--|
| <b>CO – 1</b> | trace the key issues in Australian literature.   |
| <b>CO - 2</b> | understand Australia's varied socio-cultural conditions.   |
| <b>CO - 3</b> | appreciate the literary aspects of Australian literature.  |
| <b>CO – 4</b> | explore the theoretical positions and analyse complex problems and issues.                       |
| <b>CO – 5</b> | assess Australia's major literary works and develop literary arguments in a variety of contexts. |



## M.A. English/ Semester – III/ Core

Title of the Course: Research Methodology

Subject Code: ZEHM33

|        |  |
|--------|--|
| CO – 1 | spell the definition and the process of research.                  |
| CO - 2 | identify a research problem and proceed with it.                   |
| CO - 3 | model the literary review based on the critical precepts.          |
| CO – 4 | trace the consciousness of ethical issues in educational research. |
| CO – 5 | compile a research paper/thesis based on the mechanics of writing  |

## M.A. English/ Semester – III/ Core

Title of the Course: Aspect of English Language I

Subject Code: ZEHM34

|        |   |
|--------|---|
| CO – 1 | recall the origins and the development of language.   |
| CO - 2 | understand the basic principles of linguistic theory.   |
| CO - 3 | infer the knowledge of fundamental language structures and functions.   |
| CO – 4 | designate the place and the manner of articulation of phonemes in the English language and categorise speech sounds into various types. |
| CO – 5 | appraise the various linguistic phenomena that have developed and changed in Modern English.  |





**M.A. English/ Semester – III/ Core**

**Title of the Course: Literary Theory II**

**Subject Code: ZEHM35**

|        |   |
|--------|---|
| CO – 1 | relate the text with a specific epistemological and contextual mode of learning.                                    |
| CO - 2 | identify the contemporary and the historical schools of the literary world.   |
| CO - 3 | predict the ways in which literary theory applies to their own lives and cultures.                                  |
| CO – 4 | deconstruct various literary interpretations of the text and find the relationship between the reader and the work. |
| CO – 5 | validate the significance of race, class, and gender from a theoretical perspective.                                |

**M.A. English/ Semester – III/Elective**

**Title of the Course: Green Literature**

**Subject Code: ZEHE31**

|        |  |
|--------|--|
| CO – 1 | tabulate the indomitable part of nature in life.   |
| CO - 2 | exemplify the most relevant critical theories through literary texts.                              |
| CO - 3 | elucidate the role of literature in addressing contemporary issues such as environmental concerns. |
| CO – 4 | examine the social issues from the eco-critical perspective.                                       |
| CO – 5 | prioritise ethical, cross-cultural and historical context of the environmental issues.             |



## M.A. English/ Semester – IV/ Core

Title of the Course: Gender Studies

Subject Code: ZEHM41

|        |   |
|--------|---|
| CO – 1 | To retrieve the ability to conduct an interdisciplinary analysis of gender studies.   |
| CO - 2 | To restate the position of gender on the lives of the individuals.  |
| CO - 3 | To outline a body of knowledge about the social construction of sex and gender.   |
| CO – 4 | To analyse socio-historical and contemporary power dynamics underpinning group relations, social institutions, and systems of representation. |
| CO – 5 | To perceive feminism in its diverse cultural contexts.  |

## M.A. English/ Semester – IV/ Core

Title of the Course: Asia-Pacific Literature

Subject Code: ZEHM42

|        |  |
|--------|--|
| CO – 1 | To recognise distinguishing characteristics of the various Asia- Pacific literature and relate the writings to their historical, cultural, and political contexts.   |
| CO - 2 | To trace the various narrative techniques, folktales, stories, parables, proverbs, and other old-world literary material incorporated into literature of the Asia-Pacific region.  |
| CO - 3 | To extend the knowledge to review the global concerns with regional sensitivity, (re)imagining “modernity” through literary plots about the exchanges between Asia and the Pacific Islands.  |
| CO – 4 | To relate cultural and social values of various societies with linguistic differences and analyse how culturally based assumptions influence perceptions and behaviours in the writings.   |
| CO – 5 | To validate the cultural discourse from the representative literary texts and make critical use of concepts and analytic tools from literary studies to develop, review, analyse and synthesise knowledge about Asia and the Pacific region. |



## M.A. English/ Semester – IV/ Core

Title of the Course: Aspect of English Language II

Subject Code: ZEHM43

|        |  |
|--------|--|
| CO – 1 | To identify various grammatical processes.   |
| CO - 2 | To understand the distinguishing features of written and spoken language in the texts.               |
| CO - 3 | To classify the grammatical structures and their role in linguistic analysis                         |
| CO – 4 | To distinguish the concepts of word meaning and sentence meaning; sense and reference.               |
| CO – 5 | To validate the knowledge and understanding of the English language and its use in various contexts. |

## M.A. English/ Semester – IV/ Elective

Title of the Course: Translation: Theory and Practice

Subject Code: ZEHE42

|        |   |
|--------|---|
| CO – 1 | To recall the various theories of translation and their importance in the contemporary world.                               |
| CO - 2 | To extend the skill to translate and engage in advanced study in the field of translation.                                  |
| CO - 3 | To apply various methods of interpretation related to Translation Studies.  |
| CO – 4 | To assess the multi-cultural approaches and navigate the linguistic problems in translation.                                |
| CO – 5 | To perceive the difficulties in translation at a practical level and evaluate alternative strategies for dealing with them. |



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

M.A. English/ Semester – IV/ Project

Title of the Course: PROJECT

Subject Code: ZEHP41

|        |   |
|--------|---|
| CO – 1 | To tabulate the sources and the documents effectively.                              |
| CO - 2 | To relate several articles to form an original opinion on a topic.                  |
| CO - 3 | To connect several articles and form thesis statements from their critical reading. |
| CO – 4 | To plan and write a more advanced and argumentative paper.                          |
| CO – 5 | To deduct Plagiarism and devise the ways to prevent it.                             |



## PG & RESEARCH DEPARTMENT OF TAMIL

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

முதற்பருவம்

இலக்கணம் - நன்னூல் - எழுத்ததிகாரம்  
(பொதுப்பாயிரம், சிறப்புப்பாயிரம் நீங்கலாக)

**Course outcomes:** At the end of the course, the Student will be able to

- CO1: எழுத்துக்களின் பிறப்பு அதன் நிலைகள் போலி முதலியன பற்றி அறிதல்
- CO2: பதங்களின் வகைகள் மற்றும் வடமொழியாக்கம் குறித்து தெரிந்து கொள்ளுதல்
- CO3: பொதுப்புணர்ச்சி உயிரீற்றுப் புணர்ச்சி மற்றும் ஈற்றுச் சிறப்பு விதிகளை அறிதல்
- CO4: மெய்யீற்றுப்புணர்ச்சி யகர. ரகர முகர ஈற்றுத் திரிபுகள் சிறப்பு விதிகளை அறிதல்
- CO5: உருபுப் புணரியல் பொதுச் சாரியைகள் உருபுப் புணர்ச்சி சிறப்பு விதிகளை அறிதல்

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

முதற்பருவம்

துணைமைப்பாடல்  
நாட்டுப்புறவியல் - I

**Course outcomes:** At the end of the course, the Student will be able to

- CO1: நாட்டுப்புறவியல் விளக்கம் கோட்பாடுகள் ஆகியவற்றை வகைப்பாடுகளுடன் அறிந்து கொள்வர்
- CO2: நாட்டுப்புறப் பாடல் மற்றும் அவற்றின் வகைப்பாடுகளை விளக்கிக் கொள்வர்.
- CO3: கதைப்பாடல்களின் தோற்றமும் வளர்ச்சியும் பற்றி அறிந்து கொள்வர்
- CO4: பழமொழிகள் விடுகதைகள் குறித்த விளக்கமும் வகைகளும் அறிந்து கொள்வர்
- CO5: புராணக் கதைகள் வகைகள் இவை பற்றிய ஆய்வுகள் தொடர்பாக அறிவர்



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

ஆளவகலை - தயவு - பாடதட்டம்

பருவம் - இரண்டு

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

இலக்கணம் - நன்னூல் - சொல்லதிகாரம்

**Course outcomes:** At the end of the course, the Student will be able to

- CO1: சொல்லின் பொது இலக்கணம் மூவகை மொழிகள் மூவிடங்கள் பெயர்ச்சொல் இருதிணைப் பெயர்கள் ஆகுபெயர் பற்றி அறிந்து கொள்வர்.
- CO2: வேற்றுமைகள் அதற்குரிய உருபுகள் வினைமுற்றுக்கள் குறித்து தெரிந்து கொள்வர்
- CO3: வினையெச்சம் வினைகுறிப்பு தொடர்மொழிகள் அவற்றின் விளக்கங்களை அறிந்து கொள்வர்.
- CO4: வழு வழுவமைதி வகைகள் வழுக்குகள் பொருள்கோள் வகைகள் குறித்து அறிந்து கொள்வர்
- CO5: இடைச்சொல்லின் பொதுஇலக்கணம் இடைச்சொற்கள் அதன் வகைகள் உரிச்சொல்லின் பொதுஇலக்கணம் உரிப்பொருள் உரிச்சொற்களின் வகைகள் பற்றி அறிந்து கொள்வர்.

முதலாமாண்டு

இரண்டாம் பருவம்

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

துணைமைப்பாடம்

நாட்டுப்புறவியல் - II

**Course outcomes:** At the end of the course, the Student will be able to

- CO1: நாட்டுப்புறக்கலைகள் கைவினைக் கலைகள் வகைகள் கைவினைத் தயாரிப்புகள் பற்றி அறிந்து கொள்வர்
- CO2: நாட்டுப்புற நம்பிக்கைகளும் கனவுகளும் நம்பிக்கைகளின் வகைகள் மற்றும் ஆய்வுகள் பற்றி அறிந்து கொள்வர்
- CO3: நாட்டுப்புற தெய்வங்கள் வகைப்பாடுகள் மற்றும் திருவிழாக்கள் குறித்து அறிந்து கொள்வர்
- CO4: நாட்டுப்புற விளையாட்டுகள் மற்றும் வகைகளை அறிவர்
- CO5: நாட்டுப்புற மருத்துவம், நம்பிக்கைகள் ,பழமொழிகள் ஆகியவற்றை அறிவர்



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

மூன்றாம் பருவம்

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

முதன்மைப் பாடம்

இலக்கணம் - யாப்பிலக்கணம்

**Course outcomes:** At the end of the course, the Student will be able to

- CO1: எழுத்துக்கள் அசை சீர் தளை ஆகிய இலக்கணங்களை அறிந்து கொள்வர்
- CO2: அடி தொடை மற்றும் தொடை விகற்பங்களை அறிந்து கொள்ளுதல்
- CO3: பாக்களுக்குரிய அடியும் ஓசையும் மற்றும் ஆசிரியப்பாவுக்குரிய வகைகளை அறிந்து கொள்ளுதல்
- CO4: கலிப்பா வஞ்சிப்பா மருட்பா ஆகியவற்றின் இலக்கணம் மற்றும் வகைகளை அறிதல்
- CO5: ஒழிபியல் செய்திகளை தொகுத்து அறிந்து கொள்ளுதல்

மூன்றாம் பருவம்

முதன்மைப் பாடம்

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

சிற்நிலக்கியம்

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: அழகர் கிள்ளைவிடு தூது 160 கண்ணிகளைக் கற்று அறிவர்
- CO2: அற்புதத்திருவந்தாதி மீனாட்சி அம்மை பிள்ளைத்தமிழ் பாடல்களைப் படித்து அறிந்து கொள்வர்
- CO3: பரணி இலக்கியங்களில் கலிங்கத்துப்பரணியில் இந்திரசாலம் இராச பாரம்பரியம் ஆகிய பகுதிகளை அறிந்து கொள்வர்
- CO4 முக்கூடற்பள்ளு குற்றாலக் குறவஞ்சி ஆகியவற்றில் தம் ாடப்பகுதியில் உள்ள பாடங்களைத் தெரிந்து கொள்வர்
- CO5: திருக்கயிலாய ஞான உலா முத்தொள்ளாயிரம் ஆகியவற்றில் பாடப்பகுதியில் உள்ள பாடல்களை அறிவர்



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

மூன்றாம் பருவம்  
துணைமைப் பாடம்

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

தலித்தியமும் பெண்ணியமும்

**Course outcomes** : At the end of the course, the Student will be able to

- CO1: தலித் பெண்ணியவாதம் தலித் பெண்களும் பெண் விடுதலை இயக்கங்களும் பற்றி அறிந்து கொள்வர்
- CO2: தலித் இயக்கங்களில் தலித் பெண்ணியப் பார்வை, தலித் விடுதலையில் தலித் பெண்ணியப் பார்வை பற்றி அறிந்து கொள்வர்
- CO3: தலித் பெண்ணியமும் சுற்றுச் சூழலும் பாமா படைப்புகளில் தலித் பெண்ணியம் பற்றி அறிந்து கொள்வர்
- CO4: பெண்ணியத்தின் தோற்றமும் வளர்ச்சியும் பற்றி அறிந்து கொள்வர்
- CO5: பெண்ணிய வகைகள் மற்றும் பெண்ணியக் கோட்பாட்டாளர்கள் பற்றி அறிந்து கொள்வர்

மூன்றாம் பருவம்

திறன்வளர் பாடம்

ஆக்கத்தமிழ்

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

**Course outcomes** : At the end of the course, the Student will be able to

- CO1: மொழிநடை குறித்த பல்வேறு அறிஞர்களின் கருத்துகளை அறிந்து கொள்வர்
- CO2: வல்லினம் மிகுமிடம் மிகா இடங்கள் சந்தி விசுவதிகள் பற்றி அறிந்து கொள்வர்
- CO3: வாக்கிய அமைப்புகளும் அமைப்பு முறைகளும் குறித்துத் தெரிந்து கொள்வர்
- CO4: மரபுத்தொடர்கள் பழமொழிகள் உவமைகள் நாடகம் எழுதும் பயிற்சி பெறுவர்
- CO5: நிறுத்தற்குறிகள் இடும்முறைகள் எவ்வாறு என்று கற்றுக்கொள்வர்





# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

மூன்றாம் பருவம்

திறன் வளர் பாடம்

நாடகவியல்

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: தமிழ் நாடகத்தின் தோற்றம் மற்றும் தொல்காப்பியர் கூறும் விளக்கம் சங்க இலக்கியங்களில் நாடகம் பற்றிய குறிப்புகளை அறிந்து கொள்வர்.
- CO2: அடியார்க்கு நல்லாரின் சிலப்பதிகார உரை மூலம் அறியலாகும் செய்திகளை விளங்கிக் கொள்வர்.
- CO3: பல்லவர் காலம் தொடங்கி அரேபியர் காலம் வரை நாடகங்களின் வளர்ச்சியை அறிந்து கொள்வர்
- CO4: தெருக்கத்து நாடகங்கள் தொடங்கி பள்ளு குறவஞ்சி நொண்டி போன்ற பல்வேறு நாடகங்களின் படிநிலைகளை அறிவர்
- CO5: தமிழ் நாடகங்களின் அமைப்புகள் வகைகள் நாடக ஆசிரியர்கள் பற்றிய விவரங்களை மாணவர்கள் அறிந்து கொள்வர்

மூன்றாம் பருவம்  
(பிறகுறை மாணவர்களுக்கு)  
துறைசாராய் பாடம்

பேச்சுக் கலை

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: பேச்சாளர் என்பவர் யார்? அவருடைய தகுதிகள் என்னென்ன? பேச்சாளரின் உள்ளமும் உரையும் மற்றும் பேச்சும் எழுத்தும் பற்றி அறிந்து கொள்வர்
- CO2: பேசும் முறை, பேச்சு வகைகள் மற்றும் மேடையில் பேசும்போது பின்பற்ற வேண்டிய நெறிமுறைகள் குறித்து அறிந்து கொள்வர்
- CO3: பேச்சாளரும் அவருக்கு ஏற்படும் பிரச்சனைகளும் மொழிக் கூறுகள் பற்றி அறிந்து கொள்வர்
- CO4: பேச்சு மேலாண்மை என்ற ரீதியில் அறிஞர் அண்ணா கலைஞர் கி.வா.ஜ போன்ற அறிஞர்களின் உரைகள் குறித்து அறிமுகம் ஆவர்
- CO5: நேரு, சுகிசிவம், வலம்புரிஜான் போன்றோரின் உரையாடல்கள் திறன் குறித்து அறிந்து கொள்வர்



## PART IV SEMESTER -III/ NON MAJOR ELECTIVE – I (Optional)

மூன்றாம் பருவம்  
(பிறகுறை மாணவர்களுக்கு)

துறைசாராப் பாடம்

பயன்பாட்டுத் தமிழ்

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: எழுத்து மற்றும் சொல் வகைகளை அறிந்து கொள்வோம்  
CO2: அகப்பொருள், புறப்பொருள், யாப்பு உறுப்புகள் பற்றி அறிந்து கொள்வர்  
CO3: அணி வகைகளைத் தகுந்த உதாரணங்களுடன் அறிந்து கொள்வர்  
CO4: இலக்கணக் குறிப்புகள் வாக்கிய வகைகள் நிறுத்தற்குறிகள் பற்றி அறிந்து கொள்வர்  
CO5: ஒலி உறுப்புகள் ஒலிப்பதற்குப் பயிற்சி கொடுத்தல் மற்றும் வலைத்தளங்களில் தமிழ்மொழியின் பயன்பாட்டுத் திறனை அறிந்து கொள்வர்

நான்காம் பருவம்  
முதன்மைப்பாடம்

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

இலக்கணம் - அணி இலக்கணம்

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: பொருள் அணியியல் செய்யுள் வகை செய்யுள் நெறி பற்றி அறிந்து கொள்வர்  
CO2: தன்மையணி உருவக அணி தீவக அணி பின்வருநிலையணி ஆகியவை பற்றி அறிந்து கொள்வர்  
CO3: முன்னவிலக்கணி வேற்றுமைப் பொருள் வைப்பணி வேற்றுமை அணி மற்றும் அதன் வகைகளைப் புரிந்து கொள்வர்  
CO4: இலேச அணி நிரல்நிறை அணி சிலேடை அணி விளக்கமும் வகைகளும் அறிந்து கொள்வர்  
CO5: விசேட அணி விரோத அணி நிதர்சன அணி வாழ்த்து அணி முதலிய அணிகளும் அவற்றின் வகைகளும் பற்றிப் புரிந்து கொள்வர்



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## SEMESTER IV/ MAJOR CORE VIII

நான்காம் பருவம்  
முதன்மைப் பாடம்

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

நீதி இலக்கியம்

**Course outcomes** : At the end of the course, the Student will be able to

- CO1: திருக்குறள் 10-19 அதிகாரங்கள் குறித்து அறிந்து கொள்வர்  
CO2: அறன் வலியுறுத்தல், நாலடியார், நான்மணிக்கடிகை, திரிகடுகம் பாடல் பொருள் அறிந்து கொள்வர்.  
CO3: இனியவை நாற்பது இன்னா நாற்பது சிறுபஞ்சமூலம் ஆகியவற்றில் பாடப்பகுதியில் உள்ள நீதிக் கருத்துக்களை அறிந்து கொள்வர்.  
CO4: முதுமொழிக்காஞ்சி அறிவு பத்து பழமொழிநானூறு நன்றெறி பாடப்பகுதியில் உள்ள பாடல்களைப் புரிந்து கொள்வர்.  
CO5: நீதிநெறி விளக்கம் உலகநீதி நல்வழி பாடல்களை உணர்ந்து கொள்வர்.

## SEMESTER IV/ ALLIED PAPER - IV

நான்காம் பருவம்  
துணைமைப்பாடம்

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

அறிவியல் தமிழ்

**Course outcomes** : At the end of the course, the Student will be able to

- CO1: அறிவியல் தமிழ் பொருள் விளக்கம் தமிழரின் மரபுசார் அறிவியல் தொழில்நுட்பம் பற்றி அறிந்து கொள்வர்  
CO2: அறிவியல் தமிழ்க் கல்வி ஆக்கம் குறித்து அறிந்து கொள்வர்  
CO3: அறிவியல் தமிழ்ப்பாடம் மொழி வரலாற்றில் அறிவியல் தமிழின் பங்கு குறித்துக் கற்றுக்கொள்வர்.  
CO 4: கலைச்சொல்லாக்கத்தில் சமுதாய உணர்வு குறித்துத் தெரிந்து கொள்வர்.  
CO5: தமிழில் கலைச்சொல்லாக்கங்கள் பற்றி விரிவாக அறிந்து கொள்வர்.



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## SEMESTER IV/ SKILL BASED CORE II (optional)

நான்காம் பருவம்

திறன்வளர் பாடம் - 2

தமிழர் மருத்துவம்

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: உணவும் மருந்துகளும் இயற்கை மருத்துவ முன்னோடிகளும் பற்றி அறிந்து கொள்வர்
- CO2: பல்வேறு வகையான மருத்துவ முறைகள் உண்ணாநோன்பு மற்றும் அதன் வகைகளும் குறித்து அறிந்து கொள்வர்
- CO3: உடல் உறுப்புகள் பாதிக்கப்படும் விதமும் தவிர்க்க வேண்டிய உணவு முறைகளும் பற்றித் தெரிந்து கொள்வர்
- CO4: கீரைகள், காய்கறிகள், பழங்கள் வகைகளும் அதன் பயன்களும் பற்றி தெரிந்து கொள்வர்.
- CO5: தானியங்கள், மலர்கள், மூலிகைகள் ஆகியவற்றின் பயன்பாடுகள் பற்றி அறிந்து கொள்வர்

## SEMESTER IV/ SKILL BASED CORE II (optional)

நான்காம் பருவம்

திறன்வளர் பாடம் - 2

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

தமிழர் மெய்யியல்

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: மெய்யியல் குறித்த விளக்கம் மற்றும் அதன் வரலாற்றை அறிந்து கொள்வர்
- CO2: மெய்யியல் வகைகளைப் பற்றிப் பகுத்து அறிவர்
- CO3: பொருளியல் விளக்கம் மறுபிறப்புக் கொள்கை, ஊழ்க்கோட்பாடுகள் ஆகியவற்றை அறிந்து கொள்வர்.
- CO4: அழகியல் விளக்கம் கற்பனையும் அதன் வகைகளும் பற்றி அறிவர்
- CO5: அறவியல் அறங்கள் விருந்தோம்பல் வடக்கிருத்தல் சமுதாய அறம் போன்ற பல்வேறு அறங்கள் பற்றி அறிந்து கொள்வர்.



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## SEMESTER IV/ NON MAJOR ELECTIVE-II (optional)

நான்காம் பருவம்

துறைசாராப் பாடம்  
பிறதுறை மாணவர்களுக்கு

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

தகவல் தொடர்பியல்

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: தொடர்பியல் என்றால் என்ன?! அதன் வகைகளும் விளக்கங்களும் பற்றி அறிந்துகொள்வர்.
- CO2: தமிழ் இதழ்களின் வளர்ச்சியும் ஆக்கப்பணிகளும் பற்றி அறிவர்
- CO3: வானொலி தொலைக்காட்சி செயற்கைக்கோள் ஒலிஒளிபரப்புகள் குறித்து அறிந்து கொள்வர்
- CO4: திரைப்பட வரலாறும் வளர்ச்சியும் குறித்து அறிந்து கொள்வர்
- CO5: தகவல் தொடர்பியலில் அறிவியல் தொழில்நுட்பம் பற்றி அறிந்து கொள்வர்.

## SEMESTER IV / NON MAJOR ELECTIVE - II (optional)

நான்காம் பருவம்

துறைசாராப் பாடம்

பிறதுறை மாணவர்களுக்கு

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

நூலகவியல்

**Course outcomes:** At the end of the course, the Student will be able to

- CO1: நூல்கள் தோற்றமும் வளர்ச்சியும் குறித்து அறிந்து கொள்வர்
- CO2: நூலகம் அதன் நிர்வாகம் விற்பனைப் பிரிவு தொழில்நுட்ப பிரிவு இதழ்கள் பிரிவு குறித்த பதிவுகளை அறிந்து கொள்வர்
- CO3: குறியீடு வகைகள் நூலகப் பணிகளின் பல்வேறு பிரிவுகள் பற்றிய தகவல்கள் தெரிந்து கொள்வர்
- CO4: நோக்கீட்டுப் பணியும் வகைகளும் குறித்துப் புரிந்து கொள்வர்
- CO5: நூலக வரவு-செலவு மற்றும் நூலகச் செயல்பாட்டில் மொழிபெயர்ப்புப் பணி குறித்து அறிந்து கொள்வர்.



ஐந்தாம் பருவம் - V Semester  
முதன்மைப் பாடம் - Core IX

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

## இலக்கணம் - அகப்பொருள்

**Course outcomes:** At the end of the course, the Student will be able to

- CO1: அகப்பொருள் கூற்று முறைகளும் விளக்கமும் மற்றும் ஐந்திணைக்குரிய முதல் கரு உரிப் பொருள் குறித்து அறிந்து கொள்வர்.
- CO2: கற்பு வாழ்க்கை பிரிவின் வகைகளை புரிந்து கொள்வர்.
- CO3: களவு வாழ்க்கை இயற்கைப் புணர்ச்சி பகற்குறி இரவுக்குறி தொடங்கி பொருள்வயிற் பிரிவு வரை தெரிந்து கொள்வர்
- CO4: வரைவியல் குறித்த மரபுகளை உணர்ந்து கொள்வர்
- CO5: கற்பியல் வாழ்வில் பிரிவு வகைகள் தொடங்கி வந்துழி மகிழ்வு வரை அறிந்து கொள்வர்

ஐந்தாம் பருவம் - V Semester  
முதன்மைப் பாடம் - Core IX

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

## சங்க இலக்கியம்

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: பெரும்பாணாற்றுப்படை வாயிலாக சங்ககால மக்களின் வாழ்வியலை உணர்ந்து கொள்வர்
- CO2: நற்றிணைப் பாடலில் வழி இயற்கையோடு இயைந்த வாழ்க்கையை அறிந்து கொள்வர்.
- CO3: கலித்தொகை வாயிலாக சங்ககால மக்களின் இயற்கையின் முக்கியத்துவம் குறித்து கற்றுக் கொள்வர்
- CO4: பதிற்றுப்பத்து பாடல்கள் வழி மன்னர்- புலவர் நட்பின் உயர்வைத் தெரிந்து கொள்வர்.
- CO5: பரிபாடல் வழி இயற்கையோடு இயைந்த மக்களின் வழிபாட்டை உணர்ந்து கொள்வர்



ஐந்தாம் பருவம் - V Semester  
முதன்மைப் பாடம் - Core IX

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

## இக்கால இலக்கியங்கள்.

**Course outcomes** : At the end of the course, the Student will be able to

- CO1:** கவிதை இலக்கியம் குறித்து மாணவர்கள் அறிந்து கொள்வர்
- CO2:** உரைநடை இலக்கியம் பற்றி உதாரணங்களுடன் விளக்கம் பெறுவர்
- CO3:** வண்ணதாசன் சிறுகதைகளின் வழி வாழ்வியல் உண்மைகளை அறிந்து கொள்வர்.
- CO4:** “கிடை” நாவலில் கி. ராஜநாராயணனின் கிராமிய எழுத்துக்களை உணர்வர்.
- CO5:** “உண்மை வாரிசு” என்ற நாடகத்தின் வழி திருநங்கைகள் வாழ்வியலை அறிந்து கொள்வர்.

ஐந்தாம் பருவம் - V Semester  
முதன்மைப் பாடம் - Core IX

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

## இலக்கியத் திறனாய்வு

**Course outcomes** : At the end of the course, the Student will be able to

- CO1:** இலக்கியத்தின் இயல்புகள் மற்றும் வகைகளைப் பற்றித் தெரிந்து கொள்வர்
- CO2:** திறனாய்வாளரின் தகுதிகள் மற்றும் ஊழு2: திறனாய்வின் தோற்றமும் வளர்ச்சியும் பற்றி அறிந்து கொள்வர்.
- CO3:** திறனாய்வின் வகைகள் விரிவாக உதாரணங்களுடன் அறிந்து கொள்வர்.
- CO4:** சமூகவியல் முதல் அழகியல் வரையிலான அணுகுமுறைகளை அறிவர்.
- CO5:** கவிதை நாடகம் நாவல் சிறுகதை போன்ற இலக்கிய வகைகளின் அமைப்பைப் புரிந்து கொள்வர்.



ஐந்தாம் பருவம் - V Semester

முதன்மைப் பாடம் - Core XIII

| L | T | P | O |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

## தமிழக வரலாறும் பண்பாடும் - 1

**Course outcomes:** At the end of the course, the Student will be able to

- CO1: வரலாற்றுக்கு முற்பட்ட கால தமிழகத்தை அறிந்துகொள்வர்.
- CO2: வரலாற்று ஆதாரங்களை வரிசைப்படுத்திப் புரிந்து கொள்வர்.
- CO3: சங்கம் இருந்ததற்கான சான்றுகள் அறிந்து கொள்வர்.
- CO4: சங்க இலக்கியத்தின் சிறப்புகளைச் சான்றுகள் மூலம் அறிந்து கொள்வர்.
- CO5: பல்லவர்கால கலைப் பணிகளை கற்றுத் தெரிந்து கொள்வர்.

MSU / 2021-2022 / UG-COLLEGES / PART -III / B.A / TAMIL SEMESTER V /  
MAJOR ELECTIVE - I (OPTIONAL)

ஐந்தாம் பருவம் - V Semester

முதன்மை விருப்பப் பாடம் & Major Elective - I (Optional)

| L | T | P | O |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

## இசைத் தமிழ்

**Course outcomes:** At the end of the course, the Student will be able to

- CO1: இசையின் தொன்மையையும் தோற்றத்தையும் பற்றி அறிமுகம் ஆவர்
- CO2: இசை இலக்கணங்களைத் தெரிந்து கொள்வர்.
- CO3: தாளக் கருவிகள் வாத்திய வகைகளை வகை பிரித்து அறிவர்.
- CO4: இலக்கியங்கள் வாயிலாக இசைச் செய்திகளை அறிந்து கொள்வர்.
- CO5: ஆழ்வார்கள், சேக்கிழார் பாடல்களின் வாயிலாக மாணவர்கள் பண்களின் வகைகளை அறிந்து கொள்வர்.





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MSU / 2021-2022 / UG-COLLEGES / PART -III / B.A / TAMIL SEMESTER V /  
MAJOR ELECTIVE - I (OPTIONAL)

| L | T | P | O |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

ஐந்தாம் பருவம் - V Semester

முதன்மை விருப்பப் பாடம் & Major Elective - I (Optional)

தமிழர் கலைகள்

**Course outcomes:** At the end of the course, the Student will be able to

CO1: கட்டடக் கலை, ஓவியக் கலை, குறித்துக் கற்றுக் கொள்வர்.

CO2: சிற்பக்கலை வார்ப்புக் கலை பற்றி அறிந்து கொள்வர்.

CO3: இசைக்கலை, நடனக்கலை வகைகளை அறிவர்

CO4: நாடகக்கலை மருத்துவர்களை பற்றித் தெரிந்து கொள்வர்.

CO5: சமயக் கலை தத்துவக் கலை மற்றும் இலக்கியக் கலை பற்றிய  
செய்திகளைக் கற்றுத் தேர்வர்

MSU / 2021-2022 / UG-COLLEGES / PART -III / B.A / TAMIL SEMESTER VI / MAJOR CORE – XIV

ஆறாம் பருவம் - VI Semester

முதன்மைப் பாடம் - Core XIV

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

இலக்கணம் - புறப்பொருள்

**Course outcomes :** At the end of the course, the Student will be able to

CO1: வெட்சி,கரந்தைப் போர் முறைகளில் உள்ள பல துறைகளையும்  
எடுத்துக்காட்டுகளுடன் கற்றுக் கொள்வர்.

CO2: படைகளோடு போரிடுதல் வஞ்சி, காஞ்சி ஆகிய துறைகள் சார்ந்த  
துறைகளைக் குறித்து அறிந்து கொள்வர்

CO3: கோட்டையைக் கைப்பற்றும் தாக்குதல் தொடுத்தல் முறைகளை அறிந்து  
கொள்வர்.

CO4: வெற்றியைக் கொண்டாடும் தும்பை, வாகை ஆகியவைகளையும்  
துறைகளையும் வகை பிரித்து அறிந்து கொள்வர்

CO5: பாடப்படும் ஆண் மகனுடைய வீரம் ஈகைச் சிறப்புகளைப் பாடாணிதினை  
மற்றும் ஆற்றுப்படை நூல்களின் செய்திகளையும் மாணவர்கள் அறிந்து  
கொள்வர்.



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ஆறாம் பருவம் &VI Semester

முதன்மைப் பாடம் &Core XV

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

காப்பிய இலக்கியம்

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: சிலப்பதிகாரத்தில் வழக்குரைகாதை வாயிலாக மாணவர்கள் அறியலாகும் செய்திகள் அதிகம்.
- CO2: மணிமேகலையில் மாதவி பிச்சையிட்ட காதைவழி மாணவர்கள் அறநெறிகளை அறிந்து கொள்வர்
- CO3: நாமகள் இலம்பகம் பாடல்கள் மூலம் சீவகசிந்தாமணி காப்பியம் காட்டும் சமுதாயத்தை மாணவர்கள் அறிந்து கொள்வர்.
- CO4: கம்பராமாயணம் கிட்கிந்தா காண்டம் அனுமன் படலப் பாடற் பொருள்களை உணர்ந்து கொள்வர்
- CO5: சீறாப்புராணம், தேம்பாவணி வாயிலாக பாடப்பகுதியில் உள்ள பாடல்களின் பொருளை அறிந்து கொள்வர்.

MSU / 2021-2022 / UG-COLLEGES / PART -III / B.A / TAMIL SEMESTER VI / MAJOR CORE - XVI

ஆறாம் பருவம் &VI Semester

முதன்மைப் பாடம் &Core XVI

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

பக்தி இலக்கியம்

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: திருமங்கையாழ்வாரின் பெரிய திருமொழி பாடல் கருத்துகளைப் பயின்று கொள்வர்.
- CO2: திருஞானசம்பந்தரின் பாடல்கள் வழி வாழ்வியல் அறநெறிகளை உணர்ந்து கொள்வர்.
- CO3: திருவாசகம், சிவபுராணம் ஆகிய பாடல்களின் வழி பக்தி மார்க்கத்தை உணர்வர்.
- CO4: சீறாப்புராணத்தில் நதி கடந்த படலத்தின் மூலம் வாழ்வியல் உண்மைகளை உணர்வர்.
- CO5: இரட்சணிய மனோகரம் பாடல்கள் வழி மன ஒருமைப்பாட்டை மாணவர்கள் கற்றுக் கொள்வர்.



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ஆறாம் பருவம் &VI Semester

முதன்மைப் பாடம் &Core XVII

தமிழக வரலாறும் பண்பாடும் - II

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: பிற்காலச் சோழர் காலத்தை மாணவர்கள் மனதில் பதிய வைப்பர்.
- CO2: பிற்காலப் பாண்டியர் காலத்தை மாணவர்கள் மனதில் பதிய வைத்தல்.
- CO3: நாயக்கர் காலச் சமூகம் சமயம் இலக்கிய வகைகள் குறித்து மாணவர்கள் அறிந்து கொள்வர்
- CO4: தஞ்சை மராட்டியர் காலம் மற்றும் ஆங்கிலேயர், கட்டபொம்மன், மருது சகோதரர்கள் வேலூர் புரட்சி இன்னபிற வரலாற்று உண்மைகள் பற்றித்தெரிந்து கொள்வர்.
- CO5: தமிழகத்தின் தேசிய இயக்கங்கள் தோற்றமும் வளர்ச்சியும் பற்றி அறிந்து கொள்வர்.

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ஆறாம் பருவம் &VI Semester

முதன்மைப் பாடம் &Core XVIII

இலக்கிய வரலாறு

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: சங்க காலப் புலவர்கள், சங்க இலக்கிய நூல்கள் இலக்கிய உத்திகள் ஆகியவை குறித்து அறிந்து கொள்வர்
- CO2: சங்கம் மருவிய காலத்தில் எழுந்த இலக்கிய வகைகளை அறிந்திருப்பர்
- CO3: பல்லவர் கால-- சோழர் கால இலக்கிய வளர்ச்சி குறித்து நுட்பமாக அறிந்து கொள்வர்
- CO4: நாயக்கர் காலச் சிற்றிலக்கியங்கள் சமய இலக்கியங்களின் தோற்றமும் வளர்ச்சியும் இன்ன பிறவும் அறிந்து கொள்வர்
- CO5: நவீன இலக்கியங்களான மரபுக்கவிதை, புதுக்கவிதை, சிறுகதை, புதினம், கட்டுரை, உரைநடை மற்றும் பிற துறைகள் குறித்த இலக்கிய மரபை அறிந்து கொள்வர்



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MAJOR ELECTIVE - II (Optional)

ஆறாம் பருவம் &VI Semester

| L | T | P | C |
|---|---|---|---|
| 4 | 0 | 0 | 4 |

முதன்மை விருப்பப் பாடம் &Major Elective - II (Optional)

## பயண இலக்கியம்

**Course outcomes:** At the end of the course, the Student will be able to

- CO1: பயண இலக்கியத்தின் தோற்றமும் வளர்ச்சி பற்றியும் உள் நாட்டுப் பயண இலக்கியங்கள் குறித்தும் மாணவர்கள் அறிந்து கொள்வர்
- CO2: அமெரிக்காவிலுள்ள தங்க நுழைவாயில் புனைவுகளின் உலகம் காட்சிமனைகள் குறித்து அறிமுகம் ஆவர்.
- CO3: மன்ஹாட்டன் சுதந்திர தேவி சிலை பெருநகர குழுமம் குறித்து நூலாசிரியரின் பயண அனுபவத்தை அறிந்து கொள்வர்
- CO4: நீர் விளையாட்டு, தீபாவளி இரவு, ஆடல் பாடல்கள் குறித்து அமெரிக்க நகரங்களின் நிகழ்ச்சிப் பதிவுகளை அறிந்து கொள்வர்.
- CO5: சூதாட்டமும் கேளிக்கையும் 76 அருவி மற்றும் தலைநகரம் குறித்து நூலாசிரியர் தந்துள்ள பயண அனுபவத்தைப் படித்து அறிந்து கொள்வர்.

ஆறாம் பருவம் &VI Semester

| L | T | P | C |
|---|---|---|---|
| 3 | 2 | 0 | 4 |

முதன்மை விருப்பப் பாடம் &Major Elective - II (Optional)

## தன்வரலாற்றியல்

**Course outcomes :** At the end of the course, the Student will be able to

- CO1: கவிஞர் கண்ணதாசன் எழுதிய "மனவாசம்" என்ற நூலின்கண் அவர் எழுதிய தன் வாழ்நாள் நிகழ்வுகள் முழுவதும் மாணவர்கள் அறிந்து கொள்வர். வேதாளமும் முருங்கை மரமும், முள்ளின் மீது மோகன ராகம் ஆகிய கட்டுரைகளைக் கற்றுத் தெளிவர்
- CO2: ஓவியத்தில் சிலந்திக் கூடு விதியின் பிழை ஆகிய கட்டுரைகளை அறிந்து கொள்வர்
- CO3: கண்மணி தென்றல், நினைத்ததை முடிப்பேன், பின்னோக்கிய நினைவு ஆகிய கட்டுரைகள் மூலம் மலரும் நினைவுகள் கவிஞருக்கு ஏற்பட்டதை அறிந்து கொள்வர்.
- CO4: அவள் விடை பெற்றாள், தேசிய உள்ளம், பறந்து போனாளே ஆகிய அனுபவப் பணுவல்களைக் கவிஞர் கண்ணதாசன் எழுத்துகள் வழி அறிந்து கொள்வர்.
- CO5: ரோஜாவின் ராஜா, சங்கம் ,ஒன்றிய சிந்தை, வாதையுற்ற வடக்கு ஆகிய கட்டுரைகள் மூலமாக நூலாசிரியரின் அனுபவங்களை அறிந்து கொள்வர்.



## MSU/2021-/PG COLLEGE/M.A.TAMIL/SEMESTER – I/CORE 1

### இக்கால இலக்கியம்

#### கவிதை

1. இலக்கிய வகைகளை குறித்த அடிப்படையான செய்திகளை அறிதல்
2. காலந்தோறும் கவிஞர்களின் கருத்துப் புலப்பாட்டினை அறிதல்
3. மக்களின் வாழ்வியல் குறித்த செய்திகளை அறிதல்
4. இலக்கிய உத்திகள் குறித்து அறிய முற்படல்
5. வாசிப்பின் அவசியத்தை உணர்தல்

## MSU/2021-22 PG COLLEGE/M.A.TAMIL/SEMSTER-I/CORE-2

### இலக்கணம் 1 - தொல்காப்பியம் - எழுத்து

#### கற்றல் விளைவுகள் (Course Outcomes)

1. மொழிக்கு அடிப்படையான எழுத்துக்களுக்கான இலக்கணங்களை அறிதல்.
2. தமிழின் தொன்மை இலக்கண நூலான தொல்காப்பியத்தின் எழுத்துக் கோட்பாடுகளை அறிதல்.
3. பிழையின்றி எழுதுவதற்கான அடிப்படைகளை அறிமுகப்படுத்தல்.
4. காலமாற்றத்தில் இலக்கண நூல்களுக்குள் ஏற்பட்ட மாற்றங்கள் குறித்து அறியச் செய்தல்.
5. பயன்பாட்டுச் சொற்களுக்கும் இலக்கண சொற்களுக்குமான வேறுபாடுகளை அறிதல்.



## MSU/2021-/PG COLLEGE/M.A.TAMIL/SEMESTER – I/CORE 3

### புனைகதையும் உரைநடையும்

#### கற்றல் விளைவுகள் (Course Outcomes)

1. புனைகதைகளின் வளர்ச்சி நிலைகளை அறிதல்.
2. ஆரம்ப கால இலக்கியங்களையும் தற்கால இலக்கியங்களையும் அறிமுகப்படுத்துவதன் மூலம் தொடர் வாசிப்பு அனுபவத்தை உருவாக்குதல்.
3. உரைநடை இலக்கியங்கள் இலக்கிய உலகில் கோலோச்சும் தன்மைகளை அறியச் செய்தல்
4. உணர்வுப்பூர்வ இலக்கியங்களும் ஆய்விற்கு உட்படுத்தப்படும் பாங்கினை அறிதல்.
5. இயற்கைக் கூறுகள் இடம்பெறும் யதார்த்த நிலையைச் சுட்டல்.

## MSU/2021-/PG COLLEGE/M.A.TAMIL/SEMESTER – I/CORE 4

### அற இலக்கியம்

#### கற்றல் விளைவுகள் (Course Outcomes)

1. அறத்தின் இன்றியமையாமையை வலியுறுத்தல்.
2. சமூக ஒழுக்கங்களை அறியச் செய்தல்.
3. எளியமுறையில் அறக்கருத்துக்களை விளங்க வைத்தல்
4. அறத்திற்கும் வாழ்வியலுக்குமான தொடர்புகளை உணரச் செய்தல்.
5. சமயங்களின் அறச்சிந்தனைகளை அறிதல்



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நாட்டார் வழக்காற்றியல் அடிப்படைகள்

கற்றல் விளைவுகள் (Course Outcomes)

1. நாட்டார் வழக்காற்றியலின் கலைச்சொற்கள் குறித்து அறிதல்.
2. நாட்டார் வழக்காற்றியல் குறித்த முழுமையான புரிதலை உருவாக்குதல்.
3. நாட்டார் வழக்காற்றியல் இலக்கியங்களை அறிந்து கொள்ளுதல்
4. நாட்டார் வழக்காற்றியலின் வழி கலைகளின் மேன்மையை அறிதல்
5. தெய்வங்கள். வழிபாட்டு முறை, சடங்குமுறைகள் என யாவற்றையும் ஆய்விற்கு உட்படுத்தி நோக்கல்.

MSU/2021-/PG COLLEGE/M.A.TAMIL/SEMESTER – I/சிறப்புத்தாள் - 2

இதழியல்

கற்றல் விளைவுகள் (Course Outcomes)

1. இதழியலின் தோற்றம் வளர்ச்சியை அறிதல்.
2. இதழ்களின் வகைகளையும் படிநிலைகளையும் அறிதல்
3. செய்திகளின் தன்மைகளை ஆராய்தல்.
4. இதழ்களின் முக்கிய அம்சங்களைப் புலப்படுத்துதல்
5. இதழ்கள் மாணவர்களுக்கு ஏற்படுத்திக் கொடுக்கும் வாய்ப்புகள் குறித்து அறிதல்



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**MSU/2021 – 2022/PG – Colleges/M.A. (Tamil)/Semester II/Corè - 5**

**மொழி வரலாறு**

**கற்றல் விளைவுகள் (Course Outcomes)**

1. பேச்சுமொழி, எழுத்து மொழி வேறுபாட்டினை அறிதல்
2. மொழியினங்களின் சிறப்பினை அறிதல்.
3. தமிழ்மொழியின் தொன்மைச் சிறப்பினை அறிதல்
4. தமிழ்மொழியின் வரலாற்றினை அறிதல்
5. தற்காலத் தமிழ் மொழியின் வளர்ச்சியினை திட்டமிடுதல்.

**MSU/2021 – 2022/PG – Colleges/M.A. (Tamil)/Semester II/Core-6**

**இலக்கணம் II – தொல்காப்பியம் - சொல்**

**கற்றல் விளைவுகள் (Course Outcomes)**

1. தமிழ் சொற்றொடர் அமைப்பை அறிதல்
2. தமிழ்ச் சொற்களின் வகைமைகளை அறிந்து கொள்ளுதல்
3. தமிழ் மொழியின் வளர்ச்சியில் சொற்களின் தன்மைகளை அறிதல்.
4. தமிழ் இலக்கண நூல்களில் காணப்படும் சொற்களின் வேறுபாடுகளை அறிய விளைதல்.
5. தமிழ் சொற்களின் வளர்ச்சி நிலைகளை அறிந்து கொள்ளல்.





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### பக்தி இலக்கியம்

#### கற்றல் விளைவுகள் (Course Outcomes)

1. ஆன்மீகத்தில் நாட்டம் ஏற்படுத்தல்
2. மத நல்லிணக்கம் ஏற்படுத்துதல்
3. மன உறுதி அடைதல்
4. ஆன்மீகத்தின் மீது நம்பிக்கைக் கொள்ளுதல்
5. இறைபற்றுடைய, உறுதியான, நிலையான வாழ்க்கை வாழ வழியை அறிதல்

## MSU/2021 – 2022/PG – Colleges/M.A. (Tamil)/Semester II/Core-8

### சிற்றிலக்கியம்

#### கற்றல் விளைவுகள் (Course Outcomes)

1. சிற்றிலக்கியத்தின் தன்மையினை அறிந்து கொள்ளுதல்
2. சிற்றிலக்கியங்களின் வாயிலாக மக்களின் பண்பாடுகளை அறிதல்.
3. சிற்றிலக்கியக் கால சமூகச் சூழலை அறிதல்.
4. சிற்றிலக்கியங்கள் கூறும் பல சமயக் கருத்துக்களை அறிந்து கொள்ளுதல்.
5. சிற்றிலக்கியங்களின் வாயிலாக மனித உளப்பண்புகளை அறிதல்.



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தமிழ் அகராதியியல்

கற்றல் விளைவுகள் (Course Outcomes)

1. அகராதிக் குறித்த அடிப்படை அறிவினை பெறுதல்.
2. தமிழ் அகராதிகளின் வகைகளை அறிதல்
3. புதிய தமிழ்ச் சொற்களை கண்டறிதல்
4. சொற்களின் வேறுபாட்டினையும் பொருளினையும் அறிதல்.
5. வட்டாரம் சார்ந்த தமிழ்ச் சொல்லகராதியை உருவாக்குதல்.

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இணையத்தமிழ்

கற்றல் விளைவுகள் (Course Outcomes)

1. தமிழ் இணைய வலைத்தளங்களை உருவாக்குதல்
2. கணினியில் தமிழ்த் தட்டச்சு செய்தல்
3. தமிழ் இணையத்தளங்களை இனங்கண்டு கொள்ளுதல்
4. இணையவழிப் படைப்புத்திறனை வெளிப்படுத்துதல்.
5. இணையவழி கோப்புகளைக் கையாளும் முறையைக் கற்றுக் கொள்ளுதல்



## MSU/2021-2022/PG- Colleges/ M.A.Tamil / Semester-III/ Ppr.no.13/Core- 9

### காப்பிய இலக்கியம்

#### கற்றல் விளைவுகள் (Course Outcomes)

1. காப்பிய இலக்கணம், தமிழ்க்காப்பியங்களின் தோற்றமும், வளர்ச்சியும், காப்பிய வடிவமைப்பில் மாற்றங்கள் ஆகியவற்றை அறிதல்.
2. சிலப்பதிகாரம், மணிமேகலை, சீவகசிந்தாமணி ஆகிய காப்பிய நுணுக்கங்களை அறிதல்.
3. சூளாமணி, உதயனகுமார காவியம், நாககுமார காவியம் ஆகிய காப்பிய நயங்களைக் கற்றறிதல்.
4. பெரியபுராணம், கந்தபுராணம், கம்பராமாயணம், தேம்பாவணி, சீராப்புராணம் ஆகிய சமயக்காப்பியங்களின் திறத்தை அறிதல்.
5. கண்ணகி புரட்சிக் காப்பியப் புதுமைகளையும், பூங்கொடி காப்பியம் உணர்த்தும் தமிழ்மொழியின் சிறப்புகளையும் அறிதல்

### இலக்கணம் III - தொல்காப்பியம் - பொருள் - I (1-5 இயல்கள்)

#### கற்றல் விளைவுகள் (Course Outcomes)

1. தொல்காப்பியத்தில் அகத்திணையியல். களவியல் இலக்கணத்தைக் கற்றறிதல்.
2. தொல்காப்பியத்தில் கற்பியல் மரபுகளையும், பொருளியல் திறத்தையும் அறிதல்.
3. தொல்காப்பியம்- புறத்திணையியலில் போர் நெறிகளைக் கற்றல்
4. தொல்காப்பியத்தோடு நம்பியகப்பொருளை, ஒப்பிடுதலின்வழி, தமிழரின் வாழ்வியலில் ஏற்பட்டுள்ள மாற்றங்களையும், வளர்ச்சி நிலைகளையும் அறிதல்.
5. தொல்காப்பியம்-புறத்திணையியலோடு, புறப்பொருள் வெண்பாமாலையை, ஒப்பிடுதலின்வழி, தமிழரின் வீரவரலாற்றையும், மாற்றங்களையும், வளர்ச்சி நிலைகளையும் கண்டறிதல்.



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**MSU/2021-2022/PG- Colleges/ M.A.Tamil / Semester-III/ Ppr.no.15/Core- 11**  
**உரையாசிரியர்களும், உரை மரபும்**

**கற்றல் விளைவுகள் (Course Outcomes)**

1. உரையாசிரியர்கள் பற்றியும், உரையின் தோற்றமும், வளர்ச்சியும் பற்றியும் அறிதல்
2. இலக்கண உரையாசிரியர்களும், உரை மரபும் பற்றிக் கற்றறிதல்
3. இலக்கிய உரையாசிரியர்களும், உரை மரபும் பற்றி அறிதல்.
4. சமயநூல் உரையாசிரியர்களும், உரைமரபும் பற்றிக் கற்றறிதல்

**MSU/2021-2022/PG- Colleges/ M.A.Tamil / Semester-III/ Ppr.no.16/Core- 12**

**ஆராய்ச்சி நெறிமுறைகள்**

**கற்றல் விளைவுகள் (Course Outcomes)**

1. ஆய்வு செய்யும் முறையையும் ஆய்வுநெறித் திட்டத்தையும் அறிதல்.
2. கருதுகோளை உருவாக்கி, உற்றுநோக்கல், வினாநிரல் பட்டியல், பேட்டி ஆகியவற்றைக் கண்டறிதல்.
3. தமிழியல் ஆராய்ச்சியின் தோற்றம், வளர்ச்சி, நூலகப்பயன்பாடு பற்றி அறிதல்.
4. ஆய்வறிக்கை எழுதும் முறையைக் கற்றறிதல்.
5. ஆய்வேட்டின் வடிவமைப்பைக் கண்டறிதல்



# A.P.C. MAHALAXMI COLLEGE FOR WOMEN

Thoothukudi- 628 002, Tamil Nadu.

MSU/2021-2022/PG- Colleges/ M.A.Tamil / Semester-III/ Ppr.no.17/சிறப்புத்தாள்- 5

தமிழிலக்கிய மானிடவியல்

கற்றல் விளைவுகள் (Course Outcomes)

1. மானிடவியலின் தேவையை அறிந்து, அதன் பரிணாமங்களை உணர்தல்.
2. மனித வாழ்விற்கும், பண்பாட்டிற்குமான தொடர்பின் முக்கியத்துவத்தை அறிதல்.
3. இலக்கிய இனவரைவியல், படிமலர்ச்சிக் கோட்பாட்டைக் கண்டறிதல்.
4. தொல்காப்பியமும், இனவரைவியல் கவிதையிலும் பற்றி அறிதல்.
5. சங்கஇலக்கியம்- உணவு உற்பத்தியும் பரிமாற்ற உறவுகளும் பற்றி உணர்தல்

MSU/2021-2022/PG- Colleges/ M.A.Tamil / Semester-III/ Ppr.no.18/- சிறப்புத்தாள் -6

ஒப்பிலக்கியமும் மொழிபெயர்ப்பும்

கற்றல் விளைவுகள் (Course Outcomes)

1. ஒப்பிலக்கியத்தின் தேவையை அறிதல்.
2. பிரஞ்சுக் கோட்பாடு, அமெரிக்கக் கோட்பாட்டைக் கற்றறிதல்.
3. ஒப்பிலக்கியத்தில் புதிய பரிமாணம் பற்றி அறிதல்.
4. மொழிபெயர்ப்பின் இயல்பும், மரபும், மொழிபெயர்ப்பாளரின் தகுதிகள், கடமைகள் பற்றிக் கண்டறிதல்.
5. மொழிபெயர்ப்புக் கோட்பாடுகள், மொழிபெயர்ப்பு உத்திகள், மொழிபெயர்ப்புச் சிக்கல்கள் ஆகியவற்றை அறிதல்.



MSU/2021-2022/PG-Colleges/M.A.(Tamil)/ Semester – IV/ Ppr. No.19/ Core- 13

## பண்டை இலக்கியம்

கற்றல் விளைவுகள் (Course Outcomes)

1. தமிழரின் அகப்புறக் கோட்பாடுகளை அறிவதன் மூலம் பழந்தமிழர் மாண்பை அறிதல்.
2. பழந்தமிழரின் நெய்தல், குறிஞ்சி, பாலைத் திணை ஒழுக்கங்களையும் வாழ்வியலையும், நிலப்பரப்பின் தன்மைகளையும் அறிதல்.
3. மருதநிலம், முல்லைநில மக்களின் வாழ்வியல் கூறுகளை அறிதல்.
4. தொன்மையான முருக வழிபாடு, சேர மன்னர்களின் வரலாற்றுச் செய்திகள், பாண்டியர் பரம்பரையின் பெருமை உணர்தல்.
5. சங்க இலக்கியங்களான எட்டுத்தொகை, பத்துப்பாட்டில் இரண்டு நூல்களை முழுமையாக கற்று, சங்கப் பனுவலின் செம்மாந்த பண்பினை, நூல் அமைப்பினை அறிதல்.

MSU/2021-2022/PG-Colleges/M.A.(Tamil)/ Semester – IV/ Ppr. No.20/ Core- 14

## இலக்கணம் - IV - தொல்காப்பியம் - பொருள் - II (6-9 இயல்கள்)

கற்றல் விளைவுகள் (Course Outcomes)

1. மனித உணர்வுகளின் வெளிப்பாடாக அமையும் மெய்ப்பாட்டியலையும் உவமைகள் குறித்த கருத்துக்களையும் அறிந்து கொள்கின்றனர்.
2. பழந்தமிழரின் செய்யுள் இயற்றும் முறைமையினையும் மரபியல் வழி சுற்றுச்சூழலையும் அறிந்து கொள்கின்றனர்.
3. தொல்காப்பியர் காலத்தில் இருந்து பிற்கால யாப்பு விதிகள் காலந்தோறும் அடைந்து வரும் மாற்றங்களை அறிகின்றனர்.
4. தமிழ்ச் செய்யுள் மரபின் நூல் மரபுகளின் தனித்தன்மைகளை அறிகின்றனர்.



## இலக்கியத் திறனாய்வியல்

### கற்றல் விளைவுகள் (Course Outcomes)

1. இலக்கியத்தின் அடிப்படைத்தன்மை, பயன்கள், பாகுபாடுகளை அறிந்து வாழ்க்கைக்கும் இலக்கியத்திற்குமான உறவை அறிதல்.
2. எந்தவொரு இலக்கியத்தின் கொள்கை கோட்பாடுகளை அறிந்து, இலக்கிய வகை, வரலாற்றை உணர்ந்து வெளிப்படுத்தவும் முடியும்.
3. மதிப்புரை, திறனாய்வு மற்றும் ஆராய்ச்சியின் நுட்பங்களை அறியமுடியும். திறனாய்வின் வரலாறு பயன்களை, தகுதிகளையும் அறிந்து நல்ல திறனாய்வாளராக உருவாக அடித்தளமிடுகிறது.
4. இலக்கியத்திறனாய்வின் விளக்கத்தினையும் வகைகளை அறிந்து இலக்கியங்களில் பயன்படுத்த இயலும்.
5. கற்ற பாடப்பகுதியை, செயல்முறை பயிற்சியாக செய்வதன் மூலம் பிற்கால ஆய்வுக்கு உரமூட்டுகிறது.

## தமிழ் நாடக கலை

### கற்றல் விளைவுகள் (Course Outcomes)

1. தமிழ் நாடக மரபை வரலாற்று அடிப்படையில் அறிகின்றனர். நாடகம் மூலம் சமுதாயக் கருத்தை மக்களுக்கு தெரியப்படுத்துதல்.
2. 20ஆம் நூற்றாண்டு நாடக வளர்ச்சியினையும் போக்கினையும் மதிப்பீடு செய்து அறிந்து கொள்கின்றனர்.
3. கூத்துப்பிரதியின் வாசிப்பு அனுபவத்தையும் காலப்போக்கில் சீர்திருத்த நாடகத்தின் தேவைகளையும் உணர்ந்து கொள்கின்றனர்.
4. பெண்ணிய, தலித்திய கருத்தாகத் தேவைகளை நாடகப்பிரதிகள் மூலம் உணர்ந்து கொள்கின்றனர்.
5. கல்வி நிறுவனம் சார்ந்த படிப்பதற்கும் நடிப்பதற்கும் ஏற்ற நாடகங்களை அறிந்து கொள்ள மொழிபெயர்ப்பு நாடகம் பயன்படுகிறது.



## நான்காம் பருவம்

### ஆய்வேடு (Project Work)

#### கற்றல் விளைவுகள் (Course Outcomes)

1. ஆய்வேடு இலக்கிய, பண்பாட்டு, மானுடவியல், நாட்டார் வழக்காற்றியல் போன்ற களங்களைத் தேர்வு செய்து ஆய்வு செய்யத் தூண்டுகிறது.
2. ஆய்வுத் தலைப்பிற்கு ஏற்ற நூல்களைத் தேர்வு செய்து ஆய்வு நோக்கத்தை உணர்த்துகிறது.
3. கற்றறிந்த நூல்களை ஆய்வுக்கு ஏற்ப பொருத்தமுற பயன்படுத்த வழிகோல்கிறது.
4. சமூக வரலாற்றையும் பண்பாட்டு விழிப்புணர்வையும் அடைய உதவுகிறது.
5. ஆய்வு மெய்மைகள் தற்சார்பற்றதாகவும் சமூகத்திற்கு பயன்படுவதாகவும், பின் ஆய்வுகளுக்குத் தூண்டுவதாகவும் அமைதல் வேண்டும்.





## PG & RESEARCH DEPARTMENT OF COMMERCE

### B.COM FINANCIAL ACCOUNTING –I

Semester – I  
CMCO11

|        |  |
|--------|--|
| CO – 1 | To understand book keeping and accounting concepts, conventions and accounting information.  |
| CO - 2 | To prepare financial statements in accordance with generally accepted accounting principles. |
| CO - 3 | To understand about the preparation of Bank Reconciliation Statement.                        |
| CO – 4 | To estimate the Bill of Exchange and its accounting treatment.                               |
| CO – 5 | To demonstrate the understanding of the various methods of depreciation.                     |

### B.COM BUSINESS ORGANISATION AND MANAGEMENT

Semester – I  
CMCO12

|        |   |
|--------|---|
| CO – 1 | To know the various forms of business organisation and its functions  |
| CO - 2 | To acquire knowledge about manufacturing and service sector in India  |
| CO - 3 | To understand the latest developments and technological innovations in the organisation of business                     |
| CO – 4 | To develop knowledge about evolution of management thoughts and to better understanding of planning and decision making |
| CO – 5 | To give an idea about organisation structure and different types of organisation  |



**B.COM**

**Semester – I**

**BUSINESS ECONOMICS**

**CACO11**

|               |  |
|---------------|--|
| <b>CO – 1</b> | To understand business economics and importance of business economics for managerial decision making |
| <b>CO - 2</b> | To determine the position of firms using demand and supply conditions                                |
| <b>CO - 3</b> | To analyse cost effective production techniques  |
| <b>CO – 4</b> | To use the demand estimation to forecast demand trends and change                                    |
| <b>CO – 5</b> | To analyse market situations to establish market equilibrium   |

**I B. COM**

**II SEMESTER**

**FINANCIAL ACCOUNTING – II**

**CMCO21**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To know the similarities between consignment and joint venture  |
| <b>CO - 2</b> | To prepare various accounts namely accounts of non-trading concern and professionals, royalties                         |
| <b>CO - 3</b> | To understand the facts related to consignment and joint venture with normal and abnormal losses                        |
| <b>CO – 4</b> | To know about the preparation of balance sheet and income and expenditure account                                       |
| <b>CO – 5</b> | To identify the nature of expenses as capital and revenue for correct presentation in the final accounts of any company |



**I B.COM**

**PRINCIPLES OF INSURANCE**

**II SEMESTER**

**CMCO22**

|               |  |
|---------------|--|
| <b>CO - 1</b> | To understand the nature, importance and classification of markets               |
| <b>CO - 2</b> | To understand the functions of marketing and marketing mix                       |
| <b>CO - 3</b> | To evaluate the life cycle of products   |
| <b>CO - 4</b> | To understand about the product line and product life cycle through modification |
| <b>CO - 5</b> | To know the various channels of distribution                                     |

**I B. COM**

**MARKETING**

**II SEMESTER**

**CACO21**

|               |  |
|---------------|--|
| <b>CO - 1</b> | To know the overall aspects of Life Insurance and General Insurance  |
| <b>CO - 2</b> | To understand the classification of Life Insurance   |
| <b>CO - 3</b> | To understand the concept of Fire Insurance  |
| <b>CO - 4</b> | understand the concept and progress of Marine Insurance in India   |
| <b>CO - 5</b> | To ascertain the principles of Personal Accident Insurance, Motor Insurance, Burglary Insurance, Agricultural Insurance and Health Insurance |



**II B. COM.**

**ADVANCED FINANCIAL ACCOUNTING**

**III SEMESTER**

**CMCO31**

|               |   |
|---------------|---|
| <b>CO - 1</b> | To understand the accounting system of branch and departmental accounts                 |
| <b>CO - 2</b> | To know the preliminaries before admitting a person as a partner                        |
| <b>CO - 3</b> | To understand the various kinds of goodwill treatment followed in partnership accounts  |
| <b>CO - 4</b> | To understand the dissolution of partnership and partnership firms                      |
| <b>CO - 5</b> | To understand the insolvency of a partner or all partners and the Garner Vs Murray rule |

**B. COM**

**BANKING THEORY LAW AND PRACTICE**

**III SEMESTER**

**CMCO32**

|               |  |
|---------------|--|
| <b>CO - 1</b> | To understand the basic concept used in banking                            |
| <b>CO - 2</b> | To know the various kinds of banking and their functions                   |
| <b>CO - 3</b> | To know the banking product or services                                    |
| <b>CO - 4</b> | To know the development of technology in banking company                   |
| <b>CO - 5</b> | To know the Reserve Bank of India and their importance in banking industry |



**B. COM**

**COMPUTER APPLICATIONS IN BUSINESS**

**III SEMESTER**

**CACOP1**

|               |   |
|---------------|---|
| <b>CO - 1</b> | To understand the basic concepts and terminologies used       |
| <b>CO - 2</b> | To familiarize in MS Word                                     |
| <b>CO - 3</b> | To familiarize in MS PowerPoint                               |
| <b>CO - 4</b> | To prepare a document in excel program                        |
| <b>CO - 5</b> | To know the internet protocols, to compose and view email etc |

**B. COM**

**INTRODUCTION TO ACCOUNTANCY**

**II SEMESTER**

**CNCO31**

|               |  |
|---------------|--|
| <b>CO - 1</b> | To know the basic accounting concepts and accounting rules |
| <b>CO - 2</b> | To prepare the journal and know the subsidiary books       |
| <b>CO - 3</b> | To prepare the ledger accounts and balancing               |
| <b>CO - 4</b> | To prepare the trial balance                               |
| <b>CO - 5</b> | To prepare the final accounts                              |



**B. COM  
BUSINESS COMMUNICATION**

**III SEMESTER  
CSCO31**

|               |  |
|---------------|--|
| <b>CO - 1</b> | To know the barriers of communication and essentials of a good business communication                  |
| <b>CO - 2</b> | To know the various kinds of business correspondence and to include the important points to be covered |
| <b>CO - 3</b> | To know the banking, insurance and agency correspondence   |
| <b>CO - 4</b> | To know different secretarial correspondence   |
| <b>CO - 5</b> | To know how to prepare an effective resume and technical developments in the field of communication    |

**II B. COM  
QUANTITATIVE TECHNIQUES**

**IV SEMESTER  
CMCO41**

|               |  |
|---------------|--|
| <b>CO - 1</b> | To analyse the practical applications of Analytical Geometry in business field                   |
| <b>CO - 2</b> | To know about matrix algebra, scalar multiplication and also to find out the inverse of a matrix |
| <b>CO - 3</b> | To know the measures of central tendency and to apply to measure averages                        |
| <b>CO - 4</b> | To apply the tools on measures of dispersion that are useful for estimating variations           |
| <b>CO - 5</b> | To apply the various methods for calculating correlation coefficient                             |



**II B. COM**

**LOGISTIC MANAGEMENT**

**IV SEMESTER**

**CMCO42**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To introduce basic concepts in logistics with special emphasis on maritime shipping |
| <b>CO - 2</b> | To understand multimodal transport concept and inventory services                   |
| <b>CO - 3</b> | To understand the concept of life cycle support and measurement system              |
| <b>CO – 4</b> | To know about electronic data interchange standards                                 |
| <b>CO – 5</b> | To familiarise with multimodal transport and warehouse resources and strategies     |

**II B. COM**

**APPLICATION OF TALLY IN ACCOUNTING**

**IV SEMESTER**

**CACOP2**

|               |  |
|---------------|--|
| <b>CO – 1</b> | To develop the computerised knowledge in accounting                    |
| <b>CO - 2</b> | To impart the basic principles and concepts of computerized accounting |
| <b>CO - 3</b> | To gain knowledge on the use and application of tally                  |
| <b>CO – 4</b> | To learn about the concept of vouchers                                 |
| <b>CO – 5</b> | To create company in tally   |



## II B. COM

### ENTREPRENEURSHIP DEVELOPMENT

## IV SEMESTER

### CSCO41

|        |   |
|--------|---|
| CO - 1 | To understand the significance of entrepreneurial skills        |
| CO - 2 | To know about the developing ideas and techniques of business   |
| CO - 3 | To understand about the procedures of start up                  |
| CO - 4 | To identify the institutional support provided to entrepreneurs |
| CO - 5 | To analyse the application of various accounting statements     |

## III B.Com.

### CORPORATE ACCOUNTING I

## V Semester

### AMC051

|        |  |
|--------|--|
| CO - 1 | To Gain knowledge about the basic concepts of company accounts as per the provision of the Companies Act, 2013 |
| CO - 2 | To Prepare final account of companies and value goodwill and shares with ease                                  |
| CO - 3 | To Get a clear picture about amalgamation, absorption and reconstruction of companies                          |
| CO - 4 | To Gain knowledge on issue of debentures and its methods   |
| CO - 5 | To Get a clear idea about shares, buy back of shares and redemption of shares                                  |





III B.Com.

V Semester

**COST ACCOUNTING**

**AMCO52**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To Get adequate knowledge of costing and its types                                    |
| <b>CO - 2</b> | To Prepare cost sheet and different types of budgets easily                           |
| <b>CO - 3</b> | To Ascertain normal and abnormal losses in each process, break-even point practically |
| <b>CO – 4</b> | To Understand the causes for variation between standards and actual                   |
| <b>CO – 5</b> | To Gain knowledge on different types of overheads                                     |

III B.Com.

V Semester

**BUSINESS LAW**

**MCO53**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To Understand the basic concepts of agreements, contracts as per Indian Contract Act 1872 and Sale of Goods Act |
| <b>CO - 2</b> | To Gain in-depth knowledge about performance of contract, contract of agency and bailment                       |
| <b>CO - 3</b> | To Understand the procedure for entering into the various types of contracts                                    |
| <b>CO – 4</b> | To Gain knowledge on offer, acceptance and consideration  |
| <b>CO – 5</b> | To Gain knowledge on contract of sale   |



III B.Com.

V Semester

**RESEARCH METHODOLOGY**

**AMCO54**

|        |   |
|--------|---|
| CO – 1 | To Acquire deep insights about research and its methodology |
| CO - 2 | To Conduct research in a systematic manner                  |
| CO - 3 | To Prepare research report without any flaws                |
| CO – 4 | To Identify the mechanics of research report writing        |
| CO – 5 | To Analyse the different types of sampling design           |

III B.Com.

V Semester

**INCOME TAX LAW & PRACTICE I**

**AECO51**

|        |  |
|--------|--|
| CO – 1 | To Gain knowledge about the basic concepts of Income Tax                                 |
| CO - 2 | To Ascertain taxable income from salary, house property, and business income practically |
| CO - 3 | To Identify the Income from other sources  |
| CO – 4 | To Understanding the provisions for filling and returns of Income                        |
| CO – 5 | To Gain knowledge on residential status and tax exemptions                               |



**III B.Com.**

**V Semester**

**PERSONALITY DEVELOPMENT**

**ACSB51**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To Acquire traits to become positive personality  |
| <b>CO - 2</b> | To Learn how to programme sub-conscious mind  |
| <b>CO - 3</b> | To Individual or in-group class presentations pertaining to the applications of concepts, theories or issues in human development |
| <b>CO – 4</b> | To Develop and maintain a Reflection  |
| <b>CO – 5</b> | To Attendance, classroom participation, small group interactions  |

**III B.Com.**

**VI Semester**

**CORPORATE ACCOUNTING II**

**AMCO61**

|               |  |
|---------------|--|
| <b>CO – 1</b> | To Prepare the accounts banking companies and electricity companies easily |
| <b>CO - 2</b> | To Draw up liquidator's final statement of accounts                        |
| <b>CO - 3</b> | To Gain knowledge about human resource accounting                          |
| <b>CO – 4</b> | To Gain knowledge about Holding Companies                                  |
| <b>CO – 5</b> | To Gain knowledge about Insurance company accounts                         |



III B.Com.

VI Semester

MANAGEMENT ACCOUNTING

AMCO62

|        |   |
|--------|---|
| CO – 1 | To Gain deep knowledge about the principles, functions and tools of management accounting                             |
| CO - 2 | To Prepare fund flow and cash flow statements and help the students analyse and interpret financial data using ratios |
| CO - 3 | To Take decisions by adopting the concepts capital budgeting  |
| CO – 4 | To Got knowledge about the calculation of various Ratios  |
| CO – 5 | To Gained knowledge about Financial Statement analysis  |

III B.Com.

VI Semester

INDUSTRIAL LAW

AMCO63

|        |  |
|--------|--|
| CO – 1 | To Understand in detail various Acts like Factories Act, Workmen's Compensation Act, Industrial Disputes Act, Trade Union Act, and ESI Act |
| CO - 2 | To Gain adequate knowledge of the rights and benefits available for employees in India   |
| CO - 3 | To Understand Social and Industrial aspects of psychology of work  |
| CO – 4 | To Understand historical aspects of labour movement in India   |
| CO – 5 | To gain practical understanding about functioning of various labour institutions   |



III B.Com.

VI Semester

AUDITING

AMCO64

|        |  |
|--------|--|
| CO - 1 | To Know the concepts and importance of auditing  |
| CO - 2 | To Gain knowledge of the procedures followed by auditors while auditing                  |
| CO - 3 | To Know the verification process and vouching methods of various transactions            |
| CO - 4 | To Understand the valuation methods of various kinds of assets and liabilities           |
| CO - 5 | To learn the qualifications, appointment, removal, Rights and duties of company auditors |

III B.Com.

VI Semester

INCOME TAX LAW & PRACTICE II

AECO61

|        |  |
|--------|--|
| CO - 1 | To Acquire deep insights on assessment procedures and types of assessments |
| CO - 2 | To Ascertain capital gains and income from other sources                   |
| CO - 3 | To Compute tax liability of individuals by following deductions U/S 80     |
| CO - 4 | To Familiar with the computation of capital gain                           |
| CO - 5 | To Aware about the income tax authorities and their powers and duties      |



**III B.Com.**

**VI Semester**

**MAJOR PROJECT**

**AMCO6P**

|               |   |
|---------------|---|
| <b>CO - 1</b> | To Gain better understanding of research methodology through practical experience |
| <b>CO - 2</b> | To Develop analytical and problem-solving skills                                  |
| <b>CO - 3</b> | To Prepare project report in a structured manner                                  |
| <b>CO - 4</b> | To Gained knowledge on statistical tools  |
| <b>CO - 5</b> | To Aware about the Methodologies  |

**I M.Com.**

**I Semester**

**ACCOUNTING FOR MANAGEMENT**

**ZKCM11**

|               |   |
|---------------|---|
| <b>CO - 1</b> | To Have a good understanding of the applicability of financial statements for decision making |
| <b>CO - 2</b> | To Gain knowledge of preparation, analysis and interpretation of financial statements         |
| <b>CO - 3</b> | To Describe the usage of management accounting tools  |
| <b>CO - 4</b> | To Prepare cash flow and funds flow statements  |
| <b>CO - 5</b> | To Gain mastery over the preparation of variance analysis                                     |



I M.Com.

**STATISTICS**

I Semester

**ZKCM12**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Gain knowledge about probability distribution and its application to business |
| <b>CO - 2</b> | To Get an understanding about hypothesis and its testing                      |
| <b>CO - 3</b> | To Gain knowledge of non-parametric tests                                     |
| <b>CO – 4</b> | To Learn about statistical decision theory                                    |
| <b>CO – 5</b> | To Gain an understanding of statistical quality control                       |

I M.Com.

**Management Concepts and Organisational Behaviour**

I Semester

**ZKCM13**

|               |  |
|---------------|--|
| <b>CO – 1</b> | To Gain knowledge about the concepts of Management                       |
| <b>CO - 2</b> | To Get an understanding about the behavioural change based on Motivation |
| <b>CO - 3</b> | To Gain knowledge of the Group Dynamics and conflict management          |
| <b>CO – 4</b> | To Learn about tactics to gain power                                     |
| <b>CO – 5</b> | To Gain an understanding of Organisational change and development        |



**I M.Com.**

**INSURANCE AND RISK MANAGEMENT**

**I Semester**

**ZKCM14**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To Gain competence on Insurance at an advanced level                        |
| <b>CO - 2</b> | To Describe the basic Insurance, rules, policy, Risk in the workplace, etc  |
| <b>CO - 3</b> | To Gain knowledge on the principles of life insurance and types of policies |
| <b>CO – 4</b> | To Understand the nature and types of non-life insurance policies           |
| <b>CO – 5</b> | To Familiarize on the various aspects of risk management                    |

**I M.Com.**

**INTERNATIONAL BUSINESS**

**I Semester**

**ZKCM15**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To Gain knowledge on the basics of international business                       |
| <b>CO - 2</b> | To Get an acquaintance on the international trading environment                 |
| <b>CO - 3</b> | To Understand the multinational enterprises                                     |
| <b>CO – 4</b> | To Get the description of various aspects of international financial management |
| <b>CO – 5</b> | To Gain an understanding on the recent developments in international business   |





I M.Com.

**ADVANCED FINANCIAL MANAGEMENT**

II Semester

**ZKCM21**

|        |  |
|--------|--|
| CO - 1 | To Gain an understanding of the theoretical framework of financial management in business corporations |
| CO - 2 | To Understand various sources of financing and financial planning                                      |
| CO - 3 | To Describe management of assets of the company  |
| CO - 4 | To Understand leverages  |
| CO - 5 | To Gain an understanding of the capital structure and dividend theories                                |

I M.Com.

**QUANTITATIVE TECHNIQUES**

II Semester

**ZKCM22**

|        |  |
|--------|--|
| CO - 1 | To Gain knowledge about formulation of transportation problem          |
| CO - 2 | To Get an outstanding about assignment problems                        |
| CO - 3 | To Know about project management and queuing models                    |
| CO - 4 | To Gain an understanding about the replacement analysis and simulation |
| CO - 5 | To understand the project Management and queuing models                |



**I M.Com.  
CORPORATE LEGAL FRAMEWORK**

**II Semester  
ZKCM23**

|               |  |
|---------------|--|
| <b>CO – 1</b> | To Gain knowledge about payment of wages, bonus, industrial disputes and sale of goods act |
| <b>CO - 2</b> | To Know about provisions of companies act 2013   |
| <b>CO - 3</b> | To Understanding about Foreign Exchange Management Regulation Act 1999                     |
| <b>CO – 4</b> | To Gain knowledge of Environmental Regulation Act  |
| <b>CO – 5</b> | To Gain the knowledge of Legal perspective and its practice to improve the business        |

**I M.Com.  
ENTERPRISE RESOURCE PLANNING (ERP)**

**II Semester  
ZKCM24**

|               |  |
|---------------|--|
| <b>CO – 1</b> | To Know the evaluation of ERP, systems, technology and the background of ERP |
| <b>CO - 2</b> | To Appreciate the various aspects of business processes                      |
| <b>CO - 3</b> | To Gain knowledge about BPR  |
| <b>CO – 4</b> | To Get an understanding about the ERP system implementation                  |
| <b>CO – 5</b> | To Know about SCM and CRM  |



I M.Com.

**CORPORATE SOCIAL RESPONSIBILITY**

II Semester

**ZKCM25**

|        |  |
|--------|--|
| CO – 1 | To Have gained all essential and fundamental knowledge on the principles and practices of CSR in India           |
| CO - 2 | To Acquire the skill of implementing the same in their own enterprises as and when they bring up their start-ups |
| CO - 3 | To Appreciate governance of CSR activities   |
| CO – 4 | To Have knowledge of monitoring CSR activities   |
| CO – 5 | To Know about CSR standards and audit  |

I M.Com.

**CUSTOMER RELATIONSHIP MANAGEMENT**

II Semester

**ZKCE23**

|        |  |
|--------|--|
| CO – 1 | Gain skill-based knowledge of Customer Relationship Management                         |
| CO - 2 | To Understand the concepts and principles of CRM                                       |
| CO - 3 | To Gain knowledge on the need and importance of maintaining good customer relationship |
| CO – 4 | To Gain knowledge of strategic customer acquisition and retention techniques in CRM    |
| CO – 5 | To Describe the conceptual aspects of service quality                                  |



**II M.Com.**

**ADVANCED CORPORATE ACCOUNTING**

**III Semester**

**ZKCM31**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To On the successful completion of this course the student will be able to gain knowledge and understand the concepts and practices of company accounts |
| <b>CO - 2</b> | To The students shall have a comprehensive understanding on the advanced issues in accounting   |
| <b>CO - 3</b> | To The students shall acquire a thorough knowledge in banking accounts. It helps them even to appear for competitive bank examinations                  |
| <b>CO – 4</b> | To The students shall get an exposure on the accounts of electricity companies  |
| <b>CO – 5</b> | To understand the techniques of restructuring and liquidating corporate entities  |

**II M.Com.**

**TAXATION AND TAX PLANNING**

**III Semester**

**ZKCM32**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To Thorough with the concepts of Taxation           |
| <b>CO - 2</b> | To Prepare accounts under different heads of income |
| <b>CO - 3</b> | To Prepare taxable statements                       |
| <b>CO – 4</b> | To File Income Tax returns                          |
| <b>CO – 5</b> | To Gain knowledge of tax deductions                 |



II M.Com.

**COMPUTERIZED ACCOUNTING WITH TALLY**

III Semester

**ZKCL31**

|        |  |
|--------|--|
| CO - 1 | To Prepare the accounts with accounting software   |
| CO - 2 | To Prepare the vouchers and insert into the system |
| CO - 3 | To File GST returns and prepare GST reports        |
| CO - 4 | To Prepare the financial reports                   |
| CO - 5 | To Gain knowledge of interest calculation          |

II M.Com.

**HUMAN RESOURCE MANAGEMENT**

III Semester

**ZKCM33**

|        |   |
|--------|---|
| CO - 1 | To Know the basics present trend in Human Resource Management       |
| CO - 2 | To Help furnish the various job-related aspects                     |
| CO - 3 | To Know various aspects of Human development related issues         |
| CO - 4 | To Evaluate the quality aspects of human resources                  |
| CO - 5 | To Gain an understanding about the safety aspects of Human Resource |



**II M.Com.**

**BUSINESS RESEARCH METHODS**

**III Semester**

**ZKCM34**

|               |   |
|---------------|---|
| <b>CO – 1</b> | To Understand the Concepts Relating to Business Research, Types and Process         |
| <b>CO - 2</b> | To Identify the Research Problem and Draw the Design                                |
| <b>CO - 3</b> | To Prepare Questionnaire and Interview Schedule and Formulate & Test the Hypothesis |
| <b>CO – 4</b> | To Adopt Appropriate Statistical Tools for the Inferences                           |
| <b>CO – 5</b> | To Write a Research Report  |

**II M.Com.**

**CONSUMER RIGHTS AND EDUCATION**

**III Semester**

**ZKCE31**

|               |  |
|---------------|--|
| <b>CO – 1</b> | To Understand the various terms related to Consumers                             |
| <b>CO - 2</b> | To Know the Consumers rights and duties and how to enforce their rights          |
| <b>CO - 3</b> | To Gain knowledge of the provisions and procedures under Consumer Protection Act |
| <b>CO – 4</b> | To Familiar with Consumer related Legislations and Organisations                 |
| <b>CO – 5</b> | To Know the methods of creating awareness and education                          |



II M.Com.

**APPLIED COSTING**

IV Semester

**ZKCM41**

|        |  |
|--------|--|
| CO – 1 | To Gain familiarity with the various cost concepts, and elements of cost               |
| CO - 2 | To Prepare cost sheets   |
| CO - 3 | To Apply different methods and techniques of cost control                              |
| CO – 4 | To Gain knowledge of different methods of payment of wages and incentives              |
| CO – 5 | Get acquaintance with the application of Marginal costing for Business decision making |

II M.Com.

**INDIRECT TAXATION**

IV Semester

**ZKCM42**

|        |  |
|--------|--|
| CO – 1 | To Students will get an understanding on indirect taxation system in India |
| CO - 2 | To Students will get working knowledge on GST                              |
| CO - 3 | To Students will be able to compute GST                                    |
| CO – 4 | To Students will prepare and submit returns for GST                        |
| CO – 5 | To Students will gain knowledge about customs procedure                    |



II M.Com.

E-COMMERCE

IV Semester

ZKCM43

|        |  |
|--------|--|
| CO – 1 | To Students shall understand the fundamental principles of e-business and e-commerce |
| CO - 2 | To understand the impact of information and communication technologies on business   |
| CO - 3 | To understand the tools and services used by virtual e-commerce sites                |
| CO – 4 | To make the students to learn about the online marketing                             |
| CO – 5 | To get the knowledge about the current e-business                                    |

II M.Com.

FINANCIAL MARKETS AND INSTITUTIONS

IV Semester

ZKCM44

|        |  |
|--------|--|
| CO – 1 | Understand the basic concepts of financial markets   |
| CO - 2 | To Gain knowledge on the working of commercial paper market, including bill market             |
| CO - 3 | To Describe the evolution of capital market  |
| CO – 4 | To Understand the functioning of various financial institutions such as NABARD, EXIM bank, etc |
| CO – 5 | To Know the working of various credit rating agencies such as CRISIL, etc                      |





## PG & RESEARCH DEPARTMENT OF CHEMISTRY

I B.Sc. Chemistry/ Semester I

Inorganic Chemistry- I

Sub Code: CMCH11

|        |   |
|--------|---|
| CO - 1 | Recall the structure of an atom and explain the theories and concepts that go with it                                       |
| CO - 2 | Identify and classify the elements, as well as knowing the periodic properties  |
| CO - 3 | Discuss the theories of chemical bonding and how they are used to explain the structure and properties of various molecules |
| CO - 4 | Compare the general characters of sand block elements   |
| CO - 5 | Classify the types of volumetric analysis and choose suitable indicators for various titrations                             |

I B.Sc. Chemistry/ Semester I

Professional English for Physical Sciences -I

Sub Code: CPPS11

|        |  |
|--------|--|
| CO - 1 | Recognise their own ability to improve their own competence in using the language  |
| CO - 2 | Use language for speaking with confidence in an intelligible and acceptable manner   |
| CO - 3 | Understand the importance of reading for life and read independently unfamiliar texts with comprehension                         |
| CO - 4 | Understand the importance of writing in academic life and write simple sentences without committing error of spelling or grammar |
| CO - 5 | Develop strategic competence that will help in efficient communication   |



## I B.Sc. Chemistry/ Semester I

### Inorganic Quantitative (Volumetric) Analysis -I

Sub Code: CMCHP1

|        |   |
|--------|---|
| CO – 1 | Develop the practical skill in quantitative analysis                                      |
| CO - 2 | Analyze the principle of different titrations   |
| CO - 3 | Determine the amount of acid and alkali in the given solution                             |
| CO – 4 | Apply the principles of permanganometric titration  |
| CO – 5 | Estimate amount of oxalate and ferrous ammonium sulphate using permanganometric titration |

## I B.Sc. Chemistry/ Semester II

### Professional English for Physical Sciences - II

Sub Code: CPPS21

|        |  |
|--------|--|
| CO – 1 | Recall basic concepts of organic chemistry and Nomenclature of organic compounds                                       |
| CO - 2 | Analyze different types of organic reactions and apply their mechanisms to various reaction                            |
| CO - 3 | Discuss the structure and relative reactivities of various carbonyl compounds  |
| CO – 4 | Outline the preparation and discuss the properties and uses of organometallic and Sulphur containing organic compounds |
| CO – 5 | Explain the theories and conformational isomers of acyclic/cyclic compounds  |



## I B.Sc. Chemistry/ Semester II

### Organic Chemistry – I

Sub Code: CMCH21

|        |  |
|--------|--|
| CO – 1 | Attend interview with boldness and confidence  |
| CO - 2 | Adapt easily in to the workplace context, having become communicatively competent                          |
| CO - 3 | Apply to the Research & Development organizations/sections in companies and offices with winning Proposals |
| CO – 4 | Enhance the creativity of the students   |
| CO – 5 | Think of innovative ways to solve issues in the work place   |

## I B.Sc. Chemistry/ Semester II

### Inorganic Quantitative (Volumetric) Analysis-II

Sub Code: CMCHP2

|        |   |
|--------|---|
| CO – 1 | Outline the principles of Iodometric, dichrometric and complexometric titrations  |
| CO - 2 | Estimate Iodometrically the amount of $\text{Cu}^{2+}$ and Dichromate ion   |
| CO - 3 | Estimate Dichrometrically the amount of ferrous ion and Dichromate ion  |
| CO – 4 | Determine the concentrations of metal ions ( $\text{Zn}^{2+}$ , $\text{Pb}^{2+}$ , $\text{Mg}^{+}$ and $\text{Cu}^{2+}$ ) using complexometric titrations |
| CO – 5 | Determine the Total Hardness of water using complexometric titrations   |



## II B.Sc. Chemistry/ Semester III

### Physical Chemistry-I

Sub Code: CMCH31

|        |  |
|--------|--|
| CO – 1 | Compare the behaviour of ideal and real gases  |
| CO - 2 | Develop knowledge on the concept to vapour pressure and distinguish ideal solutions from non-ideal solutions |
| CO - 3 | Analyze the structure of crystals and explain the imperfections in crystal systems                           |
| CO – 4 | Explain the activity of isotopes and discuss the applications of radioisotopes                               |
| CO – 5 | Discuss the kinetics of photochemical reactions and illustrate the photophysical process                     |

## II B.Sc. Chemistry/ Semester III

### Skill Based – I / Food Chemistry

Subt Code: CSCH32

|        |  |
|--------|--|
| CO – 1 | Analyse the needs of foods to human and other living things                          |
| CO - 2 | List out important Nutrients, Vitamins and Minerals to the human                     |
| CO - 3 | Discuss on food additives and preservative methods                                   |
| CO – 4 | Explain the food adulterations and analyse adulterants available in the common foods |
| CO – 5 | Illustrate the various food regulation laws and standards                            |



## II B.Sc. Chemistry / Semester III

### Organic Preparation & Inorganic Qualitative Analysis

Sub Code: CMCHP3

|        |   |
|--------|---|
| CO - 1 | List out the compound stobe prepared and discuss the procedure for preparations                         |
| CO - 2 | Observe the physical state, odour, colour and solubility of the given organic compound                  |
| CO - 3 | Exhibit a solid derivative with respect to the identified functional group                              |
| CO - 4 | Discuss the principle of qualitative analysis and apply the principle for the analysis of given salt    |
| CO - 5 | Analyse systematically the given salt mixture and determine the acidic and basic radicals present in it |

## Allied Chemistry – I / Semester III

Sub Code: CACH11

|        |  |
|--------|--|
| CO - 1 | Apply theories of chemical bonding predict the geometry of molecules and their stability |
| CO - 2 | Analyze the types of reagents and intermediates involved in different organic reactions  |
| CO - 3 | Discuss kinetic theory of gases, solid and liquid state                                  |
| CO - 4 | Outline the preparation, properties and applications of cement, glass and explosives     |
| CO - 5 | Discuss the methods of preparation and importance of drugs for long life                 |



## Allied Chemistry Practical – I / Semester III

### Inorganic Quantitative Analysis-I

Sub Code: CACHP1

|        |  |
|--------|--|
| CO – 1 | Develop the practical skill in quantitative analysis   |
| CO - 2 | Analyze the principle of different titrations  |
| CO - 3 | Apply the principles of volumetric analysis to determine the concentration of acids/bases/ions |
| CO – 4 | Determine volumetrically the amount of acids and bases in the given solution                   |
| CO – 5 | Estimate the amount of inorganic compounds using permanganometric titrations                   |

## Non-major Elective / Semester III

### Water Management

Sub Code: CNCH31

|        |   |
|--------|---|
| CO – 1 | Classify the water pollution and analyse the water pollutants                       |
| CO - 2 | List out different water quality parameters and discuss its importance              |
| CO - 3 | Elaborate water purification processes and show the advantages of different methods |
| CO – 4 | Apply various methods to treat waste water and analyze the treated water            |
| CO – 5 | Develop the water storage methods   |



## II B.Sc. Chemistry / Semester IV

### Inorganic Chemistry-II

Sub Code: CMCH41

|        |  |
|--------|--|
| CO - 1 | Explain the basic concepts of acids and bases and analyze the general characteristics of non-aqueous solvents                                    |
| CO - 2 | Compare the general characteristics of d and f block elements and select the suitable transition and inner transition elements for specific uses |
| CO - 3 | Elaborate the Principle and Procedure of metal extraction and identify most useful compounds of metals   |
| CO - 4 | Discuss the various compounds of halogens and noble gases  |
| CO - 5 | Summarize the methods to analyze data in the experiments   |

## II B.Sc. Chemistry / Semester IV

### Skilled Based -II / Industrial Chemistry

Sub Code: CSCH42

|        |   |
|--------|---|
| CO - 1 | Explain suitable water purification techniques  |
| CO - 2 | Summarize the fuels of petroleum and bio fuels  |
| CO - 3 | Discuss the electrical insulating material and list out the commercial batteries and its uses |
| CO - 4 | Explain the corrosion and its prevention  |
| CO - 5 | Identify the chemicals used in day-to-day life  |



## II B.Sc. Chemistry / Semester IV

### Inorganic Qualitative Analysis

Sub Code: CMCHP4

|        |   |
|--------|---|
| CO - 1 | Define acidic and basic radicals and list out the anions and cations to be analyzed |
| CO - 2 | Discuss the principle of qualitative analysis                                       |
| CO - 3 | Apply the principle for the analysis of given salt mixture                          |
| CO - 4 | Analyse systematically the given salt mixture                                       |
| CO - 5 | Determine the acidic and basic radicals present in it                               |

## Allied Chemistry – II / Semester IV

Sub Code: CACH21

|        |   |
|--------|---|
| CO - 1 | Analyse the chemical and biological applications of coordination compounds  |
| CO - 2 | Explain the electronic effects and apply these to organic compounds         |
| CO - 3 | Define electromotive force and Analyse its uses                             |
| CO - 4 | Discuss structure and biological functions of carbohydrates and amino acids |
| CO - 5 | Analyse common diseases and important tablets used to cure the diseases     |





## Inorganic Qualitative Analysis -II / Semester IV

Sub Code: CACHP2

|        |  |
|--------|--|
| CO - 1 | Develop the practical skill on qualitative analysis                                  |
| CO - 2 | Analyse the given inorganic simple salt using preliminary and other specific radical |
| CO - 3 | Report the confirmatory tests for interfering acid radicals                          |
| CO - 4 | Illustrate the interfering radicals and to carry our systematic analysis             |
| CO - 5 | Identify the cations given in the simple salt  |

## Non-major Elective / Semester IV

### Chemistry in Every Day Life

Sub Code: CNCH41

|        |   |
|--------|---|
| CO - 1 | Outline the daily used Cosmetics  |
| CO - 2 | List out the soaps and detergents and classify the soaps                |
| CO - 3 | Explain about the nutrients from food materials                         |
| CO - 4 | Discuss the fertilizers and pesticides necessary for the grow of plants |
| CO - 5 | Distinguish fibres, yarns & Fabrics and Identify the dyes used indyeing |



## III B.Sc. Chemistry / Semester V

### Inorganic Chemistry-II

Subject Code: AMCH51

|        |  |
|--------|--|
| CO - 1 | Discuss the various compounds of noble gases   |
| CO - 2 | Compare the general characteristics of d and f block elements and select the suitable transition and inner transition elements |
| CO - 3 | Elaborate the Principle and Procedure of metal extraction and identify most useful compounds of metals                         |
| CO - 4 | Learn the basic analytical methods   |
| CO - 5 | Learn the basic analytical methods   |

## III B.Sc. Chemistry / Semester V

### Physical Chemistry-II

Sub Code: AMCH52

|        |  |
|--------|--|
| CO - 1 | Understand the concepts of thermodynamics  |
| CO - 2 | Identify the importance of I, II & III laws of thermodynamics  |
| CO - 3 | Construct the phase diagram for different heterogeneous system in equilibrium  |
| CO - 4 | Find the applications of solubility product principle and explain different types of conductometric titrations in the laboratory to find the end point |
| CO - 5 | Understand the electromotive force   |



## III B.Sc. Chemistry- Semester V

### Organic Chemistry-III

Sub Code: AMCH53

|        |   |
|--------|---|
| CO – 1 | Interpret the elements of symmetry and apply Cahn In gold Prelog's rule   |
| CO - 2 | Discuss the geometrical configuration (Cis/Trans and/or E or Z) and know the conformational analysis                            |
| CO - 3 | Identify the aromatic organic compounds Using Huckel's rule and study the electrophilic and nucleophilic substitution reactions |
| CO – 4 | List out the important heterocyclic compounds and analyse its aromatic characters   |
| CO – 5 | Demonstrate various theories of colour and constituents and discuss the structure of naphthalene and anthracene                 |

## III B.Sc. Chemistry / Semester V

### Elective- Polymer Chemistry

Sub Code: AECH51

|        |  |
|--------|--|
| CO – 1 | know the concept of polymerization and types of polymers                     |
| CO - 2 | understand the characteristics of polymers                                   |
| CO - 3 | Acquire knowledge about the polymerization techniques and polymer processing |
| CO – 4 | know the chemistry of individual polymers                                    |
| CO – 5 | have an idea about the recent advances in polymer sciences                   |



## III B.Sc. Chemistry / V Semester

### Gravimetric Estimation and inorganic preparation

Sub Code: AMCHP6

|        |   |
|--------|---|
| CO – 1 | Discuss the principle of gravimetric estimation                         |
| CO - 2 | Explain the procedure for the estimation of ions                        |
| CO - 3 | Estimate the amount of medallion available in the given solution and    |
| CO – 4 | Compare the accuracy of the results with other methods                  |
| CO – 5 | Illustrate the procedure for the preparation of various metal complexes |

## III B.Sc. Chemistry- Semester VI

### Inorganic Chemistry – III

Sub Code: AMCH61

|        |   |
|--------|---|
| CO – 1 | Understand the nature of metal and ligands                  |
| CO - 2 | Study the theories in coordination chemistry                |
| CO - 3 | Know the reaction mechanism of metal complexes              |
| CO – 4 | Explain the chemistry of metal carbonyls                    |
| CO – 5 | Interpret the basic principles of photo inorganic chemistry |



## III B.Sc. Chemistry / Semester VI

### Physical Chemistry-III

Sub Code: AMCH62

|        |  |
|--------|--|
| CO – 1 | Learn about basic concepts in spectroscopy                             |
| CO - 2 | Explain the principles and applications of NMR,ESR &Raman Spectroscopy |
| CO - 3 | Classify the molecules in to various groups based on group theory      |
| CO – 4 | Understand the concept of kinetics of reaction                         |
| CO – 5 | Learn about surface phenomena and solution characteristics             |

## III B.Sc. Chemistry / Semester VI

### Organic Chemistry-IV

Sub Code: AMCH63

|        |  |
|--------|--|
| CO – 1 | Analyse the structure and reactions of Carbohydrates   |
| CO - 2 | Understand the reaction mechanism and effect of substituents of phenols and aromatic acid                                      |
| CO - 3 | Discuss various types of rearrangements  |
| CO – 4 | Elaborate the structure of alkaloids and terpenoids  |
| CO – 5 | Apply Woodward Fieser rule to conjugated dienes & $\alpha$ , $\beta$ unsaturated ketones and IR &NMR spectroscopy to compounds |



## III B.Sc. Chemistry / Semester VI

### Elective- Nano chemistry

Sub Code: AECH62

|        |  |
|--------|--|
| CO - 1 | Give an insight into the basics of nano chemistry                                      |
| CO - 2 | Understand the difference between bulk material and nanomaterial                       |
| CO - 3 | Learn the synthesis, application and fabrication of nanostructure                      |
| CO - 4 | Study the importance of nano catalyst, nanocomposites and fibers                       |
| CO - 5 | Make the students familiar with the characterization and applications of nanomaterials |

## III B.Sc. Chemistry / VI Semesters

### Physical Chemistry Experiments

Sub Code: AMCHP7

|        |   |
|--------|---|
| CO - 1 | Explain the principles of physical chemistry experiments                    |
| CO - 2 | Determine the molecular weight and Critical Solution Temperature            |
| CO - 3 | Estimate the amount of substance by conductometric titrations               |
| CO - 4 | Estimate the amount of substance by potentiometric titrations               |
| CO - 5 | Compare the strengths of acids by studying the kinetics of ester hydrolysis |



## III B.Sc. Chemistry / VI Semesters

### Project

Sub Code: AMCH6P

|        |   |
|--------|---|
| CO - 1 | Identify research problem, carry out literature survey and use of different experimental/spectroscopic techniques |
| CO - 2 | Develop interdisciplinary solutions to a variety of chemical problems   |
| CO - 3 | Communicate research findings efficiently in written(report)and verbal(viva-voce) forms                           |
| CO - 4 | Use terminology appropriate to the field of study correctly and contextually                                      |
| CO - 5 | Motivate themselves and acquire basic knowledge for carrying out research work                                    |

## I M.Sc. Chemistry / Semester - I

### Aromaticity and Organic Reaction Mechanism

Sub Code: ZCHM 11

|        |  |
|--------|--|
| CO - 1 | Analyze and predict the aromaticity of compounds and the nomenclature of bicyclic and tricyclic systems    |
| CO - 2 | Develop skills for identifying the kinetics of reactions   |
| CO - 3 | Demonstrate the generation, stability, and reactivity of carbenes, nitrenes and free radicals              |
| CO - 4 | Explain and analyze the mechanism of substitution, elimination and addition reactions in aliphatic systems |
| CO - 5 | Infer the major types of nucleophilic substitution reaction son aromatics with their specific reactivity   |



## I M.Sc. Chemistry / Semester - I

### Fundamentals of Inorganic Chemistry, Nuclear Chemistry and Inorganic Polymers

Sub Code: ZCHM12

|        |   |
|--------|---|
| CO - 1 | Recall the basic concepts of atomic structure, periodic table, periodic properties and chemical bonding of elements |
| CO - 2 | Explain poly acids, cage compounds and Inorganic polymers   |
| CO - 3 | Apply the concept of hybridization to identify the structure of molecules by VBT, MOT and VSEPR theory              |
| CO - 4 | Distinguish hard and soft acids and bases and explain their relative strengths                                      |
| CO - 5 | Explain various nuclear reactions and the analytical applications of radioisotopes                                  |

## I M.Sc. Chemistry / Semester - I

### Quantum Mechanics and Spectroscopy – I

Sub Code: ZCHM13

|        |  |
|--------|--|
| CO - 1 | Explain the mathematical and physical aspects of quantum mechanics which illustrates the relationship between mathematics and fundamental of quantum mechanics |
| CO - 2 | Solve quantum mechanical problems  |
| CO - 3 | Analyze the quantum mechanical aspects in various areas of applications in chemistry   |
| CO - 4 | Explain the basic idea of quantization of energy and spectroscopy and apply to the rotational spectra of diatomic molecules                                    |
| CO - 5 | Explain the basic principles of vibrational spectra of diatomic molecules including both IR and Raman spectra  |





## I M.Sc. Chemistry / Semester - I

### Organic Chemistry Practical - I

Sub Code: ZCHL11

|        |  |
|--------|--|
| CO - 1 | Acquire knowledge of paints and pigments and investigate its drying mechanism    |
| CO - 2 | Apply and formulate the role of cosmetics in industries                          |
| CO - 3 | Identify the fibre for paper making and evaluate its properties                  |
| CO - 4 | Apply processing operations of milk and milk products in day-to-day life         |
| CO - 5 | Explain types of textile fibres and analyze its characters by various Treatments |

## I M.Sc. Chemistry / Semester - I

### Elective- Chemistry of Industrial Products and Formulation Sub Code: ZCHE12

|        |  |
|--------|--|
| CO - 1 | Explain the basic separation procedures of organic mixtures    |
| CO - 2 | Select the separation methods to separate the organic mixtures |
| CO - 3 | Classify the functional groups using systematic procedure      |
| CO - 4 | Determine the physical properties of organic compounds         |
| CO - 5 | Develop skills to isolate natural products from plants         |



**I M.Sc. Chemistry / Semester - I**

**Inorganic Chemistry Practical - I**

**Sub Code: ZCHL12**

|        |  |
|--------|--|
| CO - 1 | Recall the procedure for the identification of more familiar medallions  |
| CO - 2 | Study the procedure for the identification of less familiar cations  |
| CO - 3 | Explain the principles and techniques and have skills of qualitative analyst is of familiar and less familiar cations in a mixture |
| CO - 4 | Classify the groups using systematic procedure   |
| CO - 5 | Analyze a metal ion in the presence of another medallion   |

**I M.Sc. Chemistry / Semester - I**

**Physical Chemistry Practical-I**

**Sub Code: ZCHL13**

|        |  |
|--------|--|
| CO - 1 | Explain the principles of conductometric titrations  |
| CO - 2 | Estimate the strength of solutions by acid-base and precipitation titration                |
| CO - 3 | Explain the basic principles of thermometry method   |
| CO - 4 | Determine the heat of solution as well as the amount of solute present in the solution     |
| CO - 5 | Determine the solubility product of sparingly soluble salts using conductometric technique |



## I M.Sc. Chemistry / Semester - II

### Stereochemistry, Organic Reagents and Photochemistry

Sub. Code: ZCHM21

|        |  |
|--------|--|
| CO - 1 | Recognize three dimensional structures of anyorganic molecule with orientation of atomsor groups   |
| CO - 2 | Analyze the conformation and their activity of a cyclic and six-membered cyclic compounds  |
| CO - 3 | Develop the skill to choose the appropriate reagents for organic reactions   |
| CO - 4 | Illustrate the fundamental concepts of photochemistry and its application in organic reactions   |
| CO - 5 | Explain the core concepts of Pericy clicreactions and its mechanisms inorganic substrates and to predict whether the chemical reaction is thermal or photochemical |

## I M.Sc. Chemistry / Semester - II

### Coordination Compounds and Solid-State Chemistry

Sub Code: ZCHM22

|        |  |
|--------|--|
| CO - 1 | Recall the basic terms in coordination chemistry, Applications and limitations of CFT                                |
| CO - 2 | Explain the stability and reactions of various coordination complexes  |
| CO - 3 | Compare the magnetic properties of Octahedral, Tetrahedral and Square planar coordination complexes                  |
| CO - 4 | Classify the types of defects in solids and apply this knowledge to identify the type of defect present in compounds |
| CO - 5 | Distinguish metals, semiconductors and insulators and explain the properties and applications of semiconductors      |



## I M.Sc. Chemistry / Semester - II

### Electrochemistry and Spectroscopy - II

Sub Code: ZCHM23

|        |  |
|--------|--|
| CO - 1 | Explain the concept of electrochemistry and basic ideas of electro chemical processes  |
| CO - 2 | Analyze the applications of electro chemistry such as batteries and fuel cells   |
| CO - 3 | Illustrate the electro analytical techniques such as Polarography, Differential pulse polarography, Stripping voltammetry. Cyclic voltammetry, etc |
| CO - 4 | Explain the basic principles of nuclear magnetic resonance (NMR) and Electron paramagnetic resonance(EPR) spectroscopy techniques                  |
| CO - 5 | Illustrate the principles of nuclear quadrupole resonance and Mössbauer spectroscopy techniques and Mass spectrometry                              |

## I M.Sc. Chemistry / Semester – II

### Elective- Nanoscience and Nanotechnology

Sub Code: ZCHE21

|        |   |
|--------|---|
| CO - 1 | Explain the concept of electro chemistry and basic ideas of electro chemical processes        |
| CO - 2 | Trace the different methods of synthesis of nano materials                                    |
| CO - 3 | Acquire knowledge about polymer-based nano composites and applications of bio-nano composites |
| CO - 4 | Evaluate the synthesis and potential applications of carbon nano tubes and graphene           |
| CO - 5 | Apply nano technology in bio-medical field  |



I M.Sc. Chemistry / Semester - II

Organic Chemistry Practical-II

Sub Code: ZCHL21

|        |   |
|--------|---|
| CO - 1 | Develop the skills to estimate organic compounds                                      |
| CO - 2 | Estimate the amount of organic compound using quantitative organic estimation methods |
| CO - 3 | Illustrate various organic reactions and their utility in inorganic preparations      |
| CO - 4 | Acquire the skills to isolate useful compounds from natural sources                   |
| CO - 5 | Determine the physical properties of organic compounds                                |

I M.Sc. Chemistry / Semester - II

Inorganic Chemistry Practical-II

Subject Code: ZCHL22

|        |   |
|--------|---|
| CO - 1 | Describe the principles, techniques and skills related to quantitative determination of ions in a mixture by complexometric titration |
| CO - 2 | Estimate one metal ion in presence of another metal ion by complexometric method  |
| CO - 3 | Estimate the amounts of components present in Solder alloy  |
| CO - 4 | Prepare and analyze the Inorganic complexes and estimate them by volumetric methods   |
| CO - 5 | Describe the basic principle of calorimetry and apply it for the estimation of ions present in solution                               |



**I M.Sc. Chemistry / Semester - II**  
**Physical Chemistry Practical-II**

**Sub Code: ZCHL23**

|        |   |
|--------|---|
| CO – 1 | Explain the basic principles of conduct metric titrations   |
| CO - 2 | Determine the Dissociation constant of weak acids   |
| CO - 3 | Illustrate the principles of distribution law   |
| CO – 4 | Estimate the distribution of solute in two immiscible solvents                                      |
| CO – 5 | Outline the basic principles of thermometry and determine the solution enthalpy of solute insolvent |

**II M.Sc. Chemistry / Semester - III**  
**Organic Spectroscopy and Rearrangements**

**Subt Code: ZCHM31**

|        |  |
|--------|--|
| CO – 1 | Describe the basic principles of UV, IR, ORD and CD, and the applications of UV-Visible spectroscopy, IR spectroscopy, ORD |
| CO - 2 | Interpret the <sup>1</sup> HNMR and <sup>13</sup> CNMR spectral data to elucidate the structure of organic compounds       |
| CO - 3 | Explain the fragmentation pattern in Mass spectrometry and use them in structural elucidation                              |
| CO – 4 | Interpret the 2DNMR spectrum and solve structure related Problems  |
| CO – 5 | Illustrate the types and mechanisms of the prescribed rearrangement reactions and their applications in Organic synthesis  |



## II M.Sc. Chemistry / Semester - III

### Spectral Methods-I, Organo Metallic and Analytical Methods

Sub Code: ZCHM32

|        |  |
|--------|--|
| CO - 1 | Describe the principles and applications of electronic and photo electronic spectroscopic techniques in coordination compounds and determine absolute configuration of chelate complexes by applying ORD and CD. |
| CO - 2 | Recall the EAN rule and explain the 18 & 16 electron rules to determine the stability of complexes   |
| CO - 3 | Classify terminal and bridging carbonyl groups in metal carbonyls using IR spectra   |
| CO - 4 | Categorize the different types of organometallic catalysts and explain their applications  |
| CO - 5 | Describe the principles and applications of thermo analytical techniques and determine the stability of complexes  |

## II M.Sc. Chemistry / Semester - III

### Group Theory and Chemical Thermodynamics

Sub Code: ZCHM33

|        |   |
|--------|---|
| CO - 1 | Explain the basic concepts of group theory and construct character tables for various point groups                          |
| CO - 2 | Analyze the symmetry of molecules and apply the group theory into spectroscopy and hybridizations                           |
| CO - 3 | Illustrate the relationship between group theory and quantum mechanics  |
| CO - 4 | Summarize the concepts of statistical thermodynamics and the inter linking between the quantum mechanics and thermodynamics |
| CO - 5 | Explain their reversible thermodynamic processes and apply to biological and non-linear systems                             |



## II M.Sc. Chemistry / Semester - III

### Scientific - Research Methodology

Sub Code: ZCHM34

|        |  |
|--------|--|
| CO - 1 | Describe the principles and applications of electronic and photo electronic spectroscopic techniques in coordination compounds. Select research problem and various funding agencies |
| CO - 2 | Write the research report and make effective presentations   |
| CO - 3 | Apply software for identifying plagiarism  |
| CO - 4 | Describe the forms of IPR and its significance   |
| CO - 5 | Describe the surface probe microscopic techniques to analyze the sample surfaces   |

## II M.Sc. Chemistry / Semester - III

### Organic Chemistry Practical-III

Sub Code: ZCHL31

|        |  |
|--------|--|
| CO - 1 | Estimate the amount of organic compounds using quantitative organic estimation methods |
| CO - 2 | Develop the skills to handle corrosive and toxic chemicals inorganic preparations      |
| CO - 3 | Categorize organic reactions and their mechanisms relevant to organic preparations     |
| CO - 4 | Carryout micro scale organic preparations  |
| CO - 5 | Determine the physical properties of organic compounds                                 |





## II M.Sc. Chemistry / Semester - III

### Inorganic Chemistry Practical-III

Sub Code: ZCHL32

|        |   |
|--------|---|
| CO - 1 | Identify the methodology to separate and estimate mixture of metal ions quantitatively                      |
| CO - 2 | Describe the concept of volumetric and Gravimetric analysis   |
| CO - 3 | Explain the principles for volumetric and gravimetric methods of estimation of cations present in a mixture |
| CO - 4 | Separate and estimate mixture of metal ions quantitatively  |
| CO - 5 | Analyze and estimate the contents of Ores and Alloys  |

## II M.Sc. Chemistry / Semester - III

### Physical Chemistry Practical-III

Sub Code: ZCHL33

|        |  |
|--------|--|
| CO - 1 | Explain the principles of potentiometric titrations and apply for various reactions such as neutralization, redox and precipitation reactions                            |
| CO - 2 | Determine the Dissociation constant of weak acids and pH of buffer   |
| CO - 3 | Determine the solubility product of sparingly soluble salts potentiometrically   |
| CO - 4 | Describe the principles of chemical kinetics and study the kinetics of a system  |
| CO - 5 | Illustrate the principles of adsorption process and carry out experiments to find out whether a particular adsorption process is Freundlich Langmuir Adsorption isotherm |



## II M.Sc. Chemistry / Semester - IV

### Synthetic Strategies in Organic Chemistry

Sub Code: ZCHM41

|        |   |
|--------|---|
| CO – 1 | Illustrate the prescribed organic name reactions with their mechanisms and apply in organic synthesis                         |
| CO - 2 | Design organic synthetic step employing disconnection approach in the synthesis of drugs, natural products etc                |
| CO - 3 | Identify suitable reagent for important organic reactions and building appropriate bonds                                      |
| CO – 4 | Explain the structural elucidation of cholesterol and various synthetic approaches of steroids in Natural Products synthesis. |
| CO – 5 | Infer the structural elucidation and the synthesis of vitamins and terpenoids   |

## II M.Sc. Chemistry / Semester - IV

### Bioinorganic, Spectral Methods-II and Photochemistry

Sub Code: ZCHM42

|        |   |
|--------|---|
| CO – 1 | Describe the role of metalloporphyrin's and metalloenzymes in various biological processes                    |
| CO - 2 | Apply metal complexes as drugs and probes of nucleic acids  |
| CO - 3 | Explain the applications of Mossbauer, NMR and EPR Spectroscopy in inorganic compounds and interpret the data |
| CO – 4 | Explain the photo physical and photo chemical properties of metal Complexes                                   |
| CO – 5 | Develop photo chemical conversion, storage of solar energy and green photo catalyst                           |



## II M.Sc. Chemistry / Semester - IV

### Chemical Kinetics, Photochemistry and Surface Chemistry Sub Code: PCHM43

|        |  |
|--------|--|
| CO - 1 | Explain kinetic theory of gases and phase rule and its applications                                |
| CO - 2 | Describe the concepts of chemical kinetics and make use of it in understand in reaction mechanisms |
| CO - 3 | Illustrate various photochemical processes and experimental techniques in photochemistry           |
| CO - 4 | Explain the basic ideas of radiation chemistry and its applications                                |
| CO - 5 | Describe the concepts of Adsorption processes and catalysis  |

## II M.Sc. Chemistry / Semester - IV

### Selected Topics in Chemistry Sub Code: ZCHM44

|        |  |
|--------|--|
| CO - 1 | Describe the importance and applications of Computational Chemistry methods      |
| CO - 2 | Be competent in separation and purification techniques                           |
| CO - 3 | Explain the corrosion monitoring methods and application of corrosion inhibitors |
| CO - 4 | Develop various types of sensors   |
| CO - 5 | Choose contrasting agents in medical diagnosis                                   |



## II M.Sc. Chemistry / Semester - IV

### Computational Software in Chemistry

Sub Code: ZCHL41

|        |   |
|--------|---|
| CO - 1 | Use chemical software for drawing chemical structures, reaction schemes and generation of their names   |
| CO - 2 | Perform molecular docking in structural molecular biology and computer assisted drug design which enhance their employ ability in academia and industry |
| CO - 3 | Calculate the single point energy, energy gap, dipole moment, resonance energy, equilibrium constant, electrophilicity index, dimerisation energy etc   |
| CO - 4 | Interpret spectral data (UV, IR, NMR spectrum)  |
| CO - 5 | Investigate intermolecular interactions and packing in crystalline materials using Hirshfeld surface analysis   |

## II M.Sc. Chemistry / Semester - IV

### Project

Sub Code: ZCHP41

|        |   |
|--------|---|
| CO - 1 | Identify research problem, carry out literature survey and use of different experimental/spectroscopic techniques |
| CO - 2 | Develop interdisciplinary solutions to a variety of chemical problems   |
| CO - 3 | Communicate research findings efficiently in written (report) and verbal (viva-voce) forms                        |
| CO - 4 | Use terminology appropriate to the field of study correctly and contextually                                      |
| CO - 5 | Motivate themselves and acquire basic knowledge for carrying out research work                                    |



## PG & RESEARCH DEPARTMENT OF MATHEMATICS

**B.Sc. Mathematics / Semester – I / Core – 1**

**Calculus & Classical Algebra**

**Sub. Code: CMMA11**

|        |  |
|--------|--|
| CO – 1 | Apply the mathematical knowledge to analyze the properties of a curve such as curvature, radius of curvature, Involute and Evolute |
| CO - 2 | Classify double and triple integrals   |
| CO - 3 | Identify Beta and gamma function and to apply the rules of beta and gamma function in evaluating double and triple integrals       |
| CO – 4 | Construct different types of equations and to find the roots of the equations by Newton's Theorem                                  |
| CO – 5 | Solve the different types of reciprocal equations and to find the number of real roots using Descartes rule of signs               |

**B.Sc. / Semester – I & III / Allied I**

**Statistics I**

**Sub. Code: CAST11/SAST11**

|        |   |
|--------|---|
| CO – 1 | Find and relate the concepts of moments, skewness and kurtosis and to demonstrate the method of least squares and to classify parabolic, exponential and logarithmic curves         |
| CO - 2 | Interpret correlation and regression and to illustrate Karl's Pearson's coefficient of correlation and also the lines of regression and coefficient of regression                   |
| CO - 3 | Develop the statistical techniques used in the theory of attributes and to analyze consistency of data and criteria independence and to interpret Yule's coefficient of association |
| CO – 4 | Explain distribution function and its properties, able to find mathematical expectation and to find the cumulants using generating function   |
| CO – 5 | Distinguish discrete and continuous probability distributions and to construct binomial, Poisson distribution   |



**B.Sc. / Semester – I&III / Allied I**

**Algebra & Differential Equations**

**Sub. Code: CAMA11/SAMA11**

|               |  |
|---------------|--|
| <b>CO – 1</b> | Construct different types of equations and to compare and to find the relationships between roots and coefficients   |
| <b>CO - 2</b> | Identify the transformation of equations and to find approximate solutions to equations by making use of Newton's Method and Korner's Method   |
| <b>CO - 3</b> | Identify types of matrices and to find the characteristic equation of matrix. Eigen values and eigen vectors can be determined by applying Cayley Hamilton Theorem                         |
| <b>CO – 4</b> | Distinguish the differential equations of first order and higher degrees and to identify the equations which are all solvable for p, x, y and the equations in the standard form $Pp+Qq=R$ |
| <b>CO – 5</b> | Identify and distinguish Laplace transformation and inverse Laplace transformation   |

**B.Sc. Mathematics / Semester – II / Core - 2**

**Differential Equations & Analytical geometry of 3D**

**Sub. Code: CMMA21**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Solve the differential equations which are all solvable for x, y, p and Clairaut's form. Also, to illustrate the method of solving the differential equations of the form $f_1(D)x + g_1(D)y = h_1(t)$ , $f_2(D)x + g_2(D)y = h_2(t)$                                       |
| <b>CO - 2</b> | Identify and solve the second order linear differential equation with constant coefficients and to interpret the line are equations of second order with variable coefficients  |
| <b>CO - 3</b> | Analyze the 3D-co-ordinate systems and how to find the direction cosines and direction ratios. Also to find the angle between planes, the length of the perpendicular and angle of bisection  |
| <b>CO – 4</b> | Find and classify the equation of lines in different forms and calculate the image of the point, image of a line and to distinguish lines and planes. The angle between the line and plane can be determined. coplanar lines can be shown and the shortest distance between |
| <b>CO – 5</b> | The equations of spheres and circles of intersection can be interpreted and to illustrate and analyze the tangency of sphere  |



## B.Sc. / Semester – I&III / Allied II

### Statistics II

Sub.Code: CAST31/SAST31

|        |  |
|--------|--|
| CO - 1 | To list out the characteristics of index numbers and to find Laspeyer's and Paache's, Fisher and Bowley's Edge worth's index numbers. The method to classify and analyse the unit test, commodity reversal test, time reversal test and circular tests can be shown    |
| CO - 2 | Construct testing of hypothesis and to distinguish null hypothesis and alternative hypothesis. Type I and Type II errors can be classified. The level of significance and test of significance for large samples can be explained                                      |
| CO - 3 | Construct testing of hypothesis and to distinguish null hypothesis and alternative hypothesis. Type I and Type II errors can be classified. The level of significance and test of significance for large samples can be explained                                      |
| CO - 4 | Construct testing of hypothesis and to distinguish null hypothesis and alternative hypothesis. Type I and Type II errors can be classified. The level of significance and test of significance for large samples can be explained                                      |
| CO - 5 | Identify the distributions such as t-distributions and F-distribution. By making use of t-test the single mean and difference of means can be found out. Variance ratio test based on Chi-Square distribution by making use of this the goodness of fit can be decided |

## B.Sc. / Semester – II&IV / Allied II

### Vector Calculus & Fourier Series

Sub. Code: AAMA21/SAMA21

|        |  |
|--------|--|
| CO - 1 | Analyze what is meant by vector differentiation and how to apply vector differentiation and its properties                         |
| CO - 2 | Evaluate the double and triple integrals   |
| CO - 3 | Analyze and apply vector integration. By making use of Vector integration line, surface and volume integrals can be interpreted    |
| CO - 4 | Analyze and apply Green's, Stokes and divergence theorems  |
| CO - 5 | Determine the functions whether the functions are odd or even. By making use of these concepts half range series can be found out. |



## B.Sc. Mathematics / Semester – III / Core 5

### Sequence and Series

Sub.Code: AMMA31

|        |  |
|--------|--|
| CO – 1 | Analyse the real number system and also to classify rational and irrational numbers. To find the upper bounds, least upper bound and maximum element and to elaborate triangle inequality and Cauchy-Schwartz Inequality                   |
| CO - 2 | Categorize the sequences as bounded sequences, monotonic sequences, convergent sequences and divergent sequences. Also to find the algebra of limits   |
| CO - 3 | Demonstrate the behaviour of monotonic sequences and to apply Cauchy's first limit theorem, Make use of Cauchy's Second limit theorem and Cesaro's Theorem. Construct subsequence and to explain Cauchy's general principle of convergence |
| CO – 4 | Interpret the series and to apply $n^{\text{th}}$ term test, Comparison test, Kummer's test, D'Alembert's ratio test, Raabe's test, Gauss test and root test to compile the nature of the series   |
| CO – 5 | Analyse the alternating series. Apply the test for convergence for series of arbitrary terms. Also to identify the power series and to determine the radius of convergence   |

## B.Sc. Mathematics / Semester – III/ Skill Based core

### Vector Calculus

Sub. Code: ASSM3A

|        |  |
|--------|--|
| CO – 1 | Classify the vector point function and scalar point function. Determine the derivative of a vector and derivative of product of scalar and vector function |
| CO - 2 | Find divergence, curl. Make use of the Laplacian operator  |
| CO - 3 | Interpret the integration of point function and to illustrate line integral. To solve surface integral   |
| CO – 4 | Analyze and solve the volume integral. Also to illustrate and make use of Gauss Divergence Theorem to solve problems                                       |
| CO – 5 | To solve problems based on Green's theorem and Stoke's Theorem   |





## Semester – III / Non-Major Elective

### Fundamentals of Statistics I

Sub.Code: ANMA3B

|        |  |
|--------|--|
| CO – 1 | Analyse the classification of data's. Also to construct bar diagram and Pie chart  |
| CO - 2 | Illustrate measure of central tendency and to find mean, median and mode   |
| CO - 3 | Explain the measure of dispersion. Also to find standard deviation, variance, quartile deviation and to obtain the relationship between them |
| CO – 4 | Interpret correlation and to solve rank correlation problems   |
| CO – 5 | To find solution for regression equations  |

## B.Sc. Mathematics / Semester – IV/ Core 6

### Abstract Algebra

Sub.Code: AMMA41

|        |  |
|--------|--|
| CO – 1 | Explain the definitions of groups and its examples. Also to determine the order of an element. Illustrate about Sub groups                           |
| CO - 2 | Interpret cyclic groups and to find the generator of cyclic subgroups. Illustrate and apply Lagrange's Theorem, Euler's Theorem and Fermat's Theorem |
| CO - 3 | Elaborate about Normal Sub groups and group homomorphism. Illustrate Isomorphism, Automorphism. Also to apply Cayley's theorem wherever required.    |
| CO – 4 | Compare and classify Rings and its types. Illustrate about Integral domain and Fields. To summarize about maximal and minimal ideals                 |
| CO – 5 | Utilize the concept of homomorphism and isomorphism on rings . Also to find kernel of homomorphism and to make use of fundamental theorem            |



## B.Sc. Mathematics / Semester – IV/ Allied II

### Statistics II

Sub.Code: AAST21

|        |  |
|--------|--|
| CO – 1 | To list out the characteristics of index numbers and to find Laspeyer's and Paache's, Fisher and Bowley's Edgeworth's index numbers. The method to classify and analyse the unit test, commodity reversal test, commodity reversal test, time reversal test and circular tests can be shown. |
| CO - 2 | Construct testing of hypothesis and to distinguish null hypothesis and alternative hypothesis. Type I and Type II errors can be classified. The level of significance and test of significance for large samples can be explained.   |
| CO - 3 | Identify the distributions such as t-distributions and F-distribution. By making use of t-test the single mean and difference of means can be found out. Variance ration test based on chi-Square distribution by making use of this the goodness of fit can be decided.                     |
| CO – 4 | To find analysis of variance. One way and two way classified data can be explained and to randomize block design. Latin squares can be analysed and constructed.   |
| CO – 5 | To explain statistical quality control and its advantages. Process control can be illustrated by making use of this control chart, range chart, P-chart can be designed.   |

## Semester – IV / Non-Major Elective

### Fundamental of Statistics II

Sub.Code: ANMA4B

|        |  |
|--------|--|
| CO – 1 | Explain the theory of Attributes   |
| CO - 2 | Illustrate about index numbers and to determine the weighted index numbers |
| CO - 3 | Analyse and predict consumer price index numbers                           |
| CO – 4 | Evaluate Time series   |
| CO – 5 | Apply curve fitting for straight line, parabola and exponential curve      |



**B.Sc. Mathematics / Semester – IV / Skill Based Core**  
**Trigonometry, Laplace transform and Fourier series**

**Sub.Code: ASMA4A**

|               |  |
|---------------|--|
| <b>CO – 1</b> | Summarize about Trigonometry and to illustrate about the expansion of $\sin^n x$ , $\cos^n x$ , $\sin^n x$ , $\cos^n x$  |
| <b>CO - 2</b> | Obtain the relationship between hyperbolic functions and circular function. Explain about inverse hyperbolic functions. To find summation of the series using $C+iS$ method. |
| <b>CO - 3</b> | Illustrate a Laplace transform   |
| <b>CO – 4</b> | Solve differential equations with constant coefficients by making use of Laplace Transforms  |
| <b>CO – 5</b> | Solve problems based on Fourier series. Identify the odd and even functions and to deduce half range series.   |

**B.Sc. Mathematics / Semester – V/ Core - 7**

**Linear Algebra**

**Sub.Code: SMMA51**

|               |   |
|---------------|---|
| <b>CO – 1</b> | Explain the definitions and general properties of vector spaces. Also to explain subspace. They know where to apply fundamental theorem of homomorphism               |
| <b>CO - 2</b> | Determine the span of a set and to check whether the given set is Linearly dependent or not. Also to find basis and dimensions  |
| <b>CO - 3</b> | Illustrate and apply Rank Nullity theorem. Explain the definitions and examples of inner product space. Apply Gram Schmidt Orthogonalization process                  |
| <b>CO – 4</b> | Construct matrices and also to summarize the elementary transformations. Determine the Inverse of matrix and rank of a matrix. To make use of Cayley Hamilton Theorem |
| <b>CO – 5</b> | Determine Eigen Values and Eigen Vectors. Identify bilinear forms and quadratic forms. Also To deduce Diagonal form from Quadratic form                               |



## B.Sc. Mathematics / Semester – V/ Core - 8

### Real Analysis II

Sub.Code: SMMA52

|        |   |
|--------|---|
| CO – 1 | Explain about Metric spaces and to construct an open ball. Also to interpret interior   |
| CO - 2 | . Interpret about closed set and to find closure. To determine limit points. Analyze about complete metric space. Discuss about Cantor's intersection theorem and Baire's Category theorem        |
| CO - 3 | Summarize continuity. Illustrate about uniform continuity   |
| CO – 4 | Explain about connectedness and to deduce the connected subsets of $\mathbb{R}$ . To obtain the relationship between connectedness and Continuity   |
| CO – 5 | Illustrate about compactness and to find the connected subsets of $\mathbb{R}$ . Illustrate and make use of Heine Borel Theorem .To determine the relationship between compactness and continuity |

## B.Sc. Mathematics / Semester – V/ Core 9

### Statics

Sub.Code: SMMA53

|        |  |
|--------|--|
| CO – 1 | Explain the forces acting at a point and to apply the parallelogram law of forces, Triangle law of forces and Lami's theorem   |
| CO - 2 | Interpret parallel forces and moments. Analyse the resultant of two parallel forces and their resultant of two unlike unequal parallel forces. To apply Varignon's theorem       |
| CO - 3 | Summarize equilibrium of three forces acting on a rigid body and to illustrate three coplanar forces theorem and to make use of the above theorem to solve problems              |
| CO – 4 | Explain about laws of friction. Also to determine the angle of friction and Illustrate about the equilibrium of a particle and to make use of the concepts to solve the problems |
| CO – 5 | Interpret the equilibrium of strings. To deduce the equation of catenary and its geometrical properties  |



## B.Sc. Mathematics / Semester – V/ Core 10

### Integral Transforms and Z Transforms

Sub.Code: SMMA54

|        |   |
|--------|---|
| CO – 1 | Apply Fourier transforms and to explain the properties        |
| CO - 2 | Solve problems on infinite Fourier cosine and Sine Transforms |
| CO - 3 | Identify and solve Finite Fourier transforms                  |
| CO – 4 | Illustrate Z transforms and its properties                    |
| CO – 5 | Utilize inverse Z transforms to solve difference equations    |

## B.Sc. Mathematics / Semester – V/ Major Elective - I

### Combinatorial Mathematics

Sub.Code: SMMA5C

|        |  |
|--------|--|
| CO – 1 | Explain Selections and to find binomial coefficients. Classify ordered selections and unordered selections |
| CO - 2 | Solve pairing problems   |
| CO - 3 | Explain recurrence and classify the types of relations using generating functions                          |
| CO – 4 | Illustrate the inclusion and exclusion principles  |
| CO – 5 | Construct and solve block designs and square block designs   |



## B.Sc. Mathematics / Semester – V/ Major Elective - II

### Operations Research - I

Sub. Code: SMMA5D

|        |  |
|--------|--|
| CO – 1 | Solve Linear Programming Problem by making use of Graphical method, Simplex method   |
| CO - 2 | Interpret the concept of duality. Classify primal and dual problems. Utilizing the concept of duality, solve problems on dual simplex method                                       |
| CO - 3 | Solve Transportation problems by making use of North–west cornerrule, Matrix-Minima method, Vogel’s Approximation rule. Evaluate Degeneracy and unbalanced transportation problems |
| CO – 4 | Determine the solution for Assignment problems   |
| CO – 5 | Solve sequencing problems  |

## B.Sc. Mathematics / Semester – VI/ Core 11

### Complex Analysis

Sub. Code: SMMA61

|        |   |
|--------|---|
| CO – 1 | Explain analytic functions and determine the functions of a complex variables and to utilize Cauchy Riemann equations |
| CO - 2 | Elaborate Bilinear Transformations and classify the elementary transformations. Also to find fixed points             |
| CO - 3 | Illustrate complex integrations and to make use of Cauchy’s Integral Formula  |
| CO – 4 | Explain Series Expansions and to determine Taylor’ Series, Laurent’s Series. Determine zeros of an analytic function  |
| CO – 5 | Determine residues and to make use of Cauchy’s Residue Theorem. Also to evaluate definite integrals                   |



## B.Sc. Mathematics / Semester – VI/ Core 12

### Number Theory

Sub. Code: SMMA62

|        |   |
|--------|---|
| CO – 1 | Explain Peano's theorem and to utilize mathematical induction. Also to make use of binomial theorem               |
| CO - 2 | Illustrate Division Algorithm. Determine GCD. To deduce the Diophantine equation $x+by=c$                         |
| CO - 3 | Interpret the fundamental theorem of arithmetic. Explain The Sieve of Eratosthenes and to use Goldbach Conjecture |
| CO – 4 | Summarize the basic properties of congruences and to apply Chinese Remainder Theorem                              |
| CO – 5 | Elaborate Fermat's Theorem, Wilson's Theorem and to apply Kratochik Factorization Method                          |

## B.Sc. Mathematics / Semester – VI/ Core 13

### Graph Theory

Sub.Code: SMMA63

|        |   |
|--------|---|
| CO – 1 | Construct graph and to explain its definition. Determine degrees. Also to perform operations on graph                   |
| CO - 2 | Classify degree sequence and graphic sequence. Illustrate connectedness, compactness and connectivity                   |
| CO - 3 | Construct Eulerian Graphs and Hamiltonian graphs. Elaborate the characterizations of trees and to find centre of a tree |
| CO – 4 | Interpret Planar graphs and to determine chromatic numbers and chromatic index  |
| CO – 5 | Explain Chromatic Polynomials and the properties of digraphs  |



## B.Sc. Mathematics / Semester – VI/ Core 14

### Dynamics

Sub. Code: SMMA64

|        |   |
|--------|---|
| CO – 1 | Illustrate projectiles and to find the equation of path, range and maximum height and time of flight  |
| CO - 2 | Elaborate about the collision of elastic bodies. Interpret law of impact and classify direct and oblique impact   |
| CO - 3 | Determine simple harmonic motion in a straightline. Summarize the composition of SHM of the same period in the same line and along two perpendicular directions |
| CO – 4 | Interpret motion under the action of central forces. Derive velocity and acceleration in polar coordinates  |
| CO – 5 | Obtain the differential equation of central orbit. Also to deduce the pedal equation of central orbit   |

## B.Sc. Mathematics / Semester – VI/ Core 15

### Numerical Methods

Sub. Code: SMMA65

|        |   |
|--------|---|
| CO – 1 | Obtain solution for numerical algebraic and Transcendental equations by making use of various methods   |
| CO - 2 | Find finite difference for first and higher order differences. To classify forward and backward differences   |
| CO - 3 | To apply interpolation formula in Newton's Forward and backward, Gauss Forward and backward formula   |
| CO – 4 | Make use of numerical differentiation and integration in Newton's forward & backward differences for differentiation. Also to utilize Trapezoidal rule and Simpson's 1/3 and 3/8 rule                       |
| CO – 5 | Solve Difference equations and to determine the order and degree of difference equation. Solve linear difference equation and find complementary function and to deduce particular Integral of the function |





## B.Sc. Mathematics / Semester – VI/ Major Elective - III

### Fuzzy Mathematics

Sub. Code: SMMA6B

|        |   |
|--------|---|
| CO – 1 | Explain Crisp sets and fuzzy sets and illustrate the characteristics and significance of Paradigm Shift   |
| CO - 2 | Elaborate the Additional properties of $\alpha$ cuts and the extension principle for fuzzy sets   |
| CO - 3 | Perform fuzzy set operations. Also to determine fuzzy complements, fuzzy intersections and fuzzy unions   |
| CO – 4 | Determine fuzzy numbers and Linguistic variables. Apply arithmetic operations on intervals and on fuzzy numbers. Construct lattice of fuzzy numbers |
| CO – 5 | Analyze and classify fuzzy decision making, individual decision making, Multiperson decision making problems  |

## B.Sc. Mathematics / Semester – VI/ Major Elective - IV

### Operations Research – II

Sub. Code: SMMA6D

|        |   |
|--------|---|
| CO – 1 | Interpret the games and strategies. Solve two persons zero sum games. Make use of mixed strategies and dominance property   |
| CO - 2 | Analyze the replacement of items that deteriorate with time. Illustrate replace montage of a machine taking money value into consideration and elaborate there placement of items that completely fail suddenly and Staffing problems |
| CO - 3 | Explain the queueing models and to classify into (M/M/1:FCFS),(M/M/1: $\infty$ /FCFS), (M/M/S:/FCFS)  |
| CO – 4 | Compose network scheduling using PERT/CPM. Explain the rules of network construction. Make use of PERT calculation  |
| CO – 5 | Analyse and solve inventory control problems  |



## M.Sc. Mathematics/Semester-I/CourseNo.1/Core-1

### Title of the Course: ALGEBRA-I

|        |  |
|--------|--|
| CO – 1 | Demonstrate competence with the basic ideas of algebra including the concepts of counting principle and Homeomorphisms |
| CO - 2 | Understand the concept of Cayley's theorem and about Solvable group  |
| CO - 3 | Able to demonstrate about the permutations and Accounting principle  |
| CO – 4 | Appreciate the significance of Sylow's theorem and Galois theory   |
| CO – 5 | Acquire the knowledge of direct products, finitely generatedabelian groups   |

## M.Sc. Mathematics/Semester-I/Core-2

### Title of the Course : ANALYSIS-I

|        |   |
|--------|---|
| CO – 1 | Understand the need of metric spaces, compact sets and connected sets.  |
| CO - 2 | Able to recognize the convergence of sequence of functions.   |
| CO - 3 | Analyze the root test, ratio test, power series, absolute convergence and algebra of series.  |
| CO – 4 | Interpret knowledge about the concept of limits and continuity of functions.  |
| CO – 5 | Able to know another equally important marinade as namely differentiation and make use of the study of velocity and acceleration of continuous paths. |



## M.Sc. Mathematics/Semester-I/Core-3

### Title of the Course: ANALYTIC NUMBER THEORY

|        |  |
|--------|--|
| CO – 1 | Study the basic concepts of elementary number theory   |
| CO - 2 | Explain several arithmetical functions and construct their relationships                                       |
| CO - 3 | Apply algebraic structure in arithmetical functions  |
| CO – 4 | Demonstrate various identities satisfied by arithmetical functions   |
| CO – 5 | Determine the application $\sigma_{\mu}(n)$ & $\Lambda(n)$ and several equivalent form of prime number theorem |

## M.Sc. (Mathematics)/Semester-I/Core-4

### Title of the Course: OPERATIONS RESEARCH

|        |  |
|--------|--|
| CO – 1 | Be able to build and solve Transportation and Assignment problems using appropriate method                                       |
| CO - 2 | Learn the constructions of network and optimal scheduling using CPM and PERT   |
| CO - 3 | Ability to construct linear integer programming models and solve linear integer programming models using branch and bound method |
| CO – 4 | Understand the need of inventory management.   |
| CO – 5 | To understand basic characteristic features of a queuing system and acquire skills in analyzing queuing models                   |



## M.Sc. Mathematics /Semester-I/Core-5

### Title of the Course : ORDINARY DIFFERENTIAL EQUATIONS

|        |   |
|--------|---|
| CO - 1 | Develop ways of finding explicit solutions of second order linear equations and understand the nature and properties.   |
| CO - 2 | Recall an algebraic function and create attention to the general homogeneous second order linear equation.  |
| CO - 3 | Confront the theoretical side of the problem, adapt to the technical task of defining the Legendre polynomial and build their special properties.                               |
| CO - 4 | Make use of many important applications of Legendre polynomials to mathematical physics. Define the more important Bessel functions and prove some of their simpler properties. |
| CO - 5 | Specialize the linear system  |

## M.Sc. Mathematics/SEMESTER-II/Core-6

### Title of the Course : ALGEBRA-II

|        |   |
|--------|---|
| CO - 1 | Demonstrate competence with the basic ideas of algebra including the concepts of ideals and quotient Rings. |
| CO - 2 | Understand the concept of the Particular Euclidean ring.  |
| CO - 3 | Able to demonstrate about the Polynomial rings over Commutative rings.                                      |
| CO - 4 | Appreciate the significance Radicals  |
| CO - 5 | Acquired the knowledge of direct sum of rings   |



## M.Sc. Mathematics/SEMESTER-II/Core-7

Title of the Course : ANALYSIS-II

|        |  |
|--------|--|
| CO - 1 | Construct the integration of real valued functions on intervals.   |
| CO - 2 | Explain the integration of vector valued functions and make use of geometric interest with application.                              |
| CO - 3 | Explain a new mode of convergence, point wise convergence with integration, equicontinuous function and point wise bounded sequence. |
| CO - 4 | Developing properties of polynomials and deriving properties of function represented by power series.                                |
| CO - 5 | Explain the algebraic completeness of the complex field, its generalization and its conclusion.                                      |

## M.Sc. (Mathematics)/SEMESTER-II/Core-8

Title of the Course : ADVANCED CALCULUS

|        |  |
|--------|--|
| CO - 1 | Understand the difference between a multiple integral and an iterated integrals and move from one to the other             |
| CO - 2 | Organise with functions whose range of values will be point sin $m$ space, for some specific choice of $m$ such as 2 or 3. |
| CO - 3 | Use linear and affine transformation as local approximations to a general transformation.                                  |
| CO - 4 | Deviate from the older traditional approach and adopt one which is of greater significance of applications in analysis.    |
| CO - 5 | Show how to translate between the language and notation of the system of differential forms and that of vector analysis.   |



## M.Sc. Mathematics/SEMESTER-II / Core-9

Title of the Course : DIFFERENTIAL GEOMETRY

|        |   |
|--------|---|
| CO - 1 | Interpret the geometric character of curves in Space ( $\mathbf{R}^3$ )   |
| CO - 2 | Explain then <sup>th</sup> order of a curve and a surface, Develop the plane of curvature at a point of the surface |
| CO - 3 | Build the concept of a surface and fundamental forms  |
| CO - 4 | Explain the intrinsic and non intrinsic properties of a surface   |
| CO - 5 | Analyse the properties of a surface relative to the Euclidean space in which it is embedded                         |

## M.Sc. (Mathematics)/SEMESTER-II/Core-10

Title of the Course : RESEARCH METHODOLOGY AND STATISTICS

|        |   |
|--------|---|
| CO - 1 | Discuss the information of the sections in a dissertation or thesis   |
| CO - 2 | Discuss the distributions of two random variables, conditional Distributions and expectations, independent random variables and its generalizations |
| CO - 3 | Build the Gamma and Chi-Square Distributions and Normal Distributions   |
| CO - 4 | Classify the distributions of Functions of Random Variables and define three additional distributions of statistical inference                      |
| CO - 5 | Build an alternative procedure around the concept of the moment generating-function of a distribution and establish the central limit theorem       |



**M.Sc. (Mathematics)/SEMESTER-II/ Elective-1.2**

**Title of the Course : PARTIAL DIFFERENTIAL EQUATIONS**

|               |  |
|---------------|--|
| <b>CO - 1</b> | Find the fundamental difference between an differential equations in two variables and those in a higher number of variables.  |
| <b>CO - 2</b> | Find the general solution of a linear partial differential equation and indicate how such a general solution may be used to determine the integral surface which passes through a given curve. |
| <b>CO - 3</b> | Able to solve then on linear partial differential equation.  |
| <b>CO - 4</b> | Able to solve linear partial differential equation soft he second order.   |
| <b>CO - 5</b> | Able to extend the characteristic curves of a second-order linear differential equation in two independent variables to the case where there are n independent variables.                      |

**M.Sc. Mathematics/SEMESTER-III/Core-11**

**Title of the Course : ADVANCED ALGEBRA-I**

|               |   |
|---------------|---|
| <b>CO - 1</b> | Construct the process to develop the fundamental notations of linear dependence, basis and dimensions.                |
| <b>CO - 2</b> | Develop the concepts about linear transformation and matrix theory  |
| <b>CO - 3</b> | Discover the existence of linear transformation in similarities   |
| <b>CO - 4</b> | Identify the theorems about linear transformations, canonical form of matrices and fundamental properties of matrices |
| <b>CO - 5</b> | Classify the behavior of Hermitian, Unitary and Normal transformations.   |



## M.Sc.Mathematics/SEMESTER-III/Core-12

### Title of the Course : GRAPH THEORY

|        |   |
|--------|---|
| CO – 1 | Demonstrate the concept of different structures and types about graphs and explain its applications           |
| CO - 2 | Determine the properties of trees and applications in network and study the concepts of connections in graphs |
| CO - 3 | Acquire the knowledge about Euler Tours, Hamilton Cycles and matchings in Graphs                              |
| CO – 4 | Analyze the concept to edge coloring, independent sets and cliques in Graphs                                  |
| CO – 5 | Explain the concept of vertex colorings   |

## M.Sc. Mathematics/SEMESTER-III/ Core-13

### Title of the Course : MEASURE AND INTEGRATION

|        |   |
|--------|---|
| CO – 1 | Establish the basics for Lebesgue measurable functions and the Lebesgue integral. characterize on inner approximation by closed sets and on outer approximation by open sets. |
| CO - 2 | Establish results regarding the approximation of measurable functions by simple functions and by continuous functions.  |
| CO - 3 | Exhibit a uniform bounded sequence of Riemann integrable functions on a closed, bounded interval can converge point wise to a function that is not Riemann integrable.        |
| CO – 4 | Provide a characterization of the class of functions on closed, bounded intervals that may be expressed as the difference of increasing functions.                            |
| CO – 5 | Abstract the most important properties of Lebesgue measure on the real line in the absence of any Topology.   |





## M.Sc. Mathematics/SEMESTER-III/Core-14

Title of the Course : TOPOLOGY-I

|        |  |
|--------|--|
| CO - 1 | Demonstrate an understanding of the concepts of topological spaces, construct topologies on a set. Understand the natural generalization of open and closed sets, limit points for the real line and Euclidean space on to the Topological Spaces. |
| CO - 2 | Extend the concept of continuity and various properties of continuous functions; and define a topology on the Cartesian products of topological spaces.  |
| CO - 3 | Define the metric topology using a metric on the set, give examples for metric topology and prove the properties of any metric topology.   |
| CO - 4 | Acquire knowledge of the concepts of separation, connectedness, covering and open covering of a topological space and compactness for a topological space.   |
| CO - 5 | Appreciate the importance of a weaker form of compactness called Limit point compactness, local compactness and one-point compactification and identify spaces where Limit point compactness coincides with compactness.                           |

## M.Sc. Mathematics/SEMESTER-III/ Elective-2.1

Title of the Course : ALGEBRAIC NUMBER THEORY

|        |  |
|--------|--|
| CO - 1 | Demonstrate competence with the basic ideas of Diophantine and other linear equations. |
| CO - 2 | Solve some special equations of the type $x^4+y^4=z^2$                                 |
| CO - 3 | Able to demonstrate about infinite continued functions                                 |
| CO - 4 | Appreciate the significance of approximating irrational numbers                        |
| CO - 5 | Acquired the knowledge of Unique factorizations  |



## M.Sc. Mathematics/SEMESTER-III/Elective-2.2

### Title of the Course: CALCULUS OF VARIATIONS AND INTEGRAL EQUATIONS

|        |   |
|--------|---|
| CO – 1 | Demonstrate competence with the basicide as Maxima and Minima                                 |
| CO - 2 | Explain about Constraints and Lagrange's Multipliers Hamilton's principles-Lagrange equations |
| CO - 3 | Demonstrate Relation between differential and integral equations                              |
| CO – 4 | Appreciate the significance of Fredholm equations with separable kernels                      |
| CO – 5 | Acquired the knowledge of Iterative methods for solving equations of second kind              |

## M.Sc. Mathematics /Semester-III/Elective-2.3

### Title of the Course: PYTHON PROGRAMMING – PRACTICALS

|        |   |
|--------|---|
| CO – 1 | Write programs using advanced concepts of Python.                               |
| CO - 2 | Write, Test and Debug Python Programs.  |
| CO - 3 | Implement Conditionals and Loops for Python Programs.                           |
| CO – 4 | Use functions and represent Compound data using Lists, Tuples and Dictionaries. |
| CO – 5 | Read, write and manipulate data from & to files in Python.                      |



## M.Sc. Mathematics/SEMESTER-IV/Core-15

### Title of the Course: ADVANCED ALGEBRA-II

|        |  |
|--------|--|
| CO – 1 | Build the knowledge with the relation of one field to another  |
| CO - 2 | Develop the construction of an extension field $K$ of $F$ in which the polynomial $f(x) \in F[x]$ have all its roots and study the nature of roots of $f(x)$     |
| CO - 3 | Study the relationship between the roots of a polynomial with its Galois Group and examine it  |
| CO – 4 | Determine the nature of fields having only a finite number of elements   |
| CO – 5 | Understand the classification of all division rings $R$ in their centre and satisfy the condition. Also study the Left Division Algorithm and Lagrange's Theorem |

## M.Sc. (Mathematics)/SEMESTER-IV/Core-16

### Title of the Course: COMPLEX ANALYSIS

|        |  |
|--------|--|
| CO – 1 | Extend Calculus to Complex domain.   |
| CO - 2 | Develop the fundamentals of pointset Topology and Metric Space.  |
| CO - 3 | Distinguish between definite and indefinite integrals.<br>familiar with the theory of definite integrals of real continuous functions. |
| CO – 4 | Able to study the local properties of an analytic function in great detail.  |
| CO – 5 | Classify the isolated singularities of analytic functions.   |



## M.Sc. Mathematics/SEMESTER-IV /Core-17

### Title of the Course: FUNCTIONAL ANALYSIS

|        |   |
|--------|---|
| CO - 1 | Make use of the uniform boundedness theorem in the conjugate of an operator on a Banach Space.  |
| CO - 2 | Able to determine the natural imbedding of $N$ in $N^{**}$  |
| CO - 3 | Examine the properties of them arising from the operator on a normed linear space to its conjugate. understand the importance of operators such as self adjoint and normal operators. |
| CO - 4 | Able to focus on fixed but arbitrary Hilbert space.   |
| CO - 5 | Analogy between the set of all operator on Hilbert space and the set of all complex numbers.  |

## M.Sc. Mathematics/SEMESTER-IV/Core-18

### Title of the Course : TOPOLOGY-II

|        |  |
|--------|--|
| CO - 1 | Demonstrate understanding of the concepts of countable, First countable space, Second countable space, Lindelof space, Separable space and Regular space.                                    |
| CO - 2 | Appreciate the concepts of normal space and derive normality from other spaces, and understand the Urysohn Lemma and completely regular definition.  |
| CO - 3 | Prove the Urysohn metrization theorem, Imbedding theorem, Tietze extension theorem and explain the relation between Tietze extension theorem and Urysohn Lemma.                              |
| CO - 4 | Prove elementary properties of locally finite collection and metrizable spaces, with understanding of Maximality with respect to the finite intersection property and the Tychonoff theorem. |
| CO - 5 | Explain Baire spaces, complete metric space, compact Hausdorff spaces and the relation between these spaces. Apply theoretical concepts in topology to understand some applications.         |



## M.Sc. Mathematics/SEMESTER-IV/Core-19

Title of the Course : PROJECT

|        |   |
|--------|---|
| CO - 1 | Differentiate primary and secondary data and questionnaire          |
| CO - 2 | Explain a bout research methodology                                 |
| CO - 3 | Read articles and write anew article.                               |
| CO - 4 | Know about the bibliography   |
| CO - 5 | Know how to write dissertations and present a paper in conferences. |

## I B.Sc PHYSICS / I SEMESTER

CORE – PROPERTIES OF MATTER & MECHANICS

SUB. CODE: CMPH11

|        |  |
|--------|--|
| CO - 1 | To define Stress, Strain, Poisson's ratio, Hooke's law, Torsion pendulum and determine the elastic constant by Searle's Method.  |
| CO - 2 | To derive the Expression for the Bending Moment, Cantilever depression, Uniform and Non-Uniform Bending.   |
| CO - 3 | To analyse the different Molecular Forces that causes tension on the surface of liquid and determine the surface tension by Capillary rise method and Quincke's Method |
| CO - 4 | To understand the Analogy between translational and Rotational Motion, Angular Momentum, Angular Impulse, Moment of Inertia and Radius of gyration                     |
| CO - 5 | To understand the law of floatation and determine the Meta Centric height of a ship and apply the principle of Bernoulli's Theorem in Pitot's tube and Venturimeter    |



## CORE – PROFESSIONAL ENGLISH FOR PHYSICAL SCIENCES-I

SUB. CODE: CPPS11

|        |   |
|--------|---|
| CO – 1 | To recognize their own ability to improve their own competence in using the Language  |
| CO - 2 | To use language for speaking with confidence in an intelligible and acceptable manner |
| CO - 3 | To understand the importance of reading for life                                      |
| CO – 4 | To understand the importance of writing in academic life                              |
| CO – 5 | To write simple sentence without committing error of spelling or grammar              |

## COMMON SUBJECT – ENVIRONMENTAL STUDIES SUB. CODE: CEVS11

|        |   |
|--------|---|
| CO – 1 | To understand key concept from economic, political, and social analyses as they pertain to the design and evaluation of environmental policies and institutions   |
| CO - 2 | To appreciate concepts and methods from ecological and physical sciences and their application in environmental problems solving  |
| CO - 3 | To reflect critically about their roles and identities as citizens, consumers and environmental factors in a complex, interconnected world  |
| CO – 4 | To acquire awareness about immediate surroundings through lived experience on various themes related to daily life  |
| CO – 5 | To develop critical thinking for shaping strategies like scientific, social, economic and legal activities for environmental protection and conservation of biodiversity, social equity and sustainable development |



## DEPARTMENT OF PHYSICS

### I B.Sc. PHYSICS / II SEMESTER

#### CORE – OPTICS AND ACOUSTICS

SUB. CODE: CMPH21

|        |  |
|--------|--|
| CO – 1 | To understand the concepts of spherical aberration, chromatic aberration in lenses, refraction, deviation, and dispersive power of a prism                       |
| CO - 2 | To apply the phenomenon of interference on optical experiments like air wedge, Newton's rings, and Michelson's interferometer                                    |
| CO - 3 | To understand the theory of diffraction by a single slit, diffraction by a circular aperture, theory of grating and theory of different types of polarized light |
| CO – 4 | To understand the properties, applications, production and detection of ultrasonic waves   |
| CO – 5 | To derive Sabine's formula and apply it to design the acoustically good auditorium and architectures   |

### CORE – PROFESSIONAL ENGLISH FOR PHYSICAL SCIENCES-II

SUB. CODE: CPPS21

|        |   |
|--------|---|
| CO – 1 | To attend interviews with boldness and confidence   |
| CO - 2 | To adapt easily into the workspace context, having become communicatively competent                           |
| CO - 3 | To apply to the Research & Development Organisations/ Sectors in companies and offices with winning proposals |
| CO – 4 | To understand the importance of reading for life  |
| CO – 5 | To recognise their own ability to improve their own competence in using the language                          |



## COMMON SUBJECT – VALUE BASED EDUCATION SUB. CODE: CVBE21

|        |   |
|--------|---|
| CO – 1 | To understand the importance of value-based living and to gain deeper understanding about the purpose of their life |
| CO - 2 | To understand and start applying the essential steps to become good leaders   |
| CO - 3 | To contribute in building a healthy nation and value-based professionals  |
| CO – 4 | To emerge as responsible citizens with clear conviction to practice values and ethics in life                       |
| CO – 5 | To become value-based professionals   |

## II B.Sc PHYSICS / III SEMESTER

### CORE – ELECTRICITY & ELECTROMAGNETISM

SUB. CODE: CMPH31

|        |   |
|--------|---|
| CO – 1 | To understand basic concept of electricity and to distinguish between work done due to adiabatic and isothermal changes                                   |
| CO - 2 | To understand Concept of the Magnetism process  |
| CO - 3 | To use simple laboratory demonstrations and computer simulations to explain the basic properties of electric and magnetic fields, and electrical circuits |
| CO – 4 | To recognize the need to engage in lifelong learning through continuing education and research  |
| CO – 5 | To understand electric and magnetic fields in matter  |





## SKILL BASED SUBJECT – MAINTENANCE OF ELECTRICAL APPLIANCES

SUB CODE: CSPH31

|        |  |
|--------|--|
| CO – 1 | To understand the operations and safe handling of commonly used domestic appliances  |
| CO - 2 | To understand the basic ideas about the components used in electrical appliances   |
| CO - 3 | To understand the basic ideas about transformers and their types and working principles  |
| CO – 4 | To describe the concept of household circuits and their wiring systems in detail   |
| CO – 5 | Managing the appliances with safety precautions using switches and fuses. To understand the basic ideas behind inverters, motors, and generators |

## II B.Sc PHYSICS / IV SEMESTER

CORE – HEAT & THERMODYNAMICS

SUB. CODE: CMPH41

|        |   |
|--------|---|
| CO – 1 | To understand basic concept of thermodynamics and to distinguish between work done due to Adiabatic and isothermal changes.                                       |
| CO - 2 | To understand Concept of thermodynamic process  |
| CO - 3 | To state laws of thermodynamics and concept of internal energy  |
| CO – 4 | To understand Carnot's ideal heats engine, Carnot cycle and its efficiency, Carnot's theorem, Otto and Diesel engines with their efficiencies                     |
| CO – 5 | To state first and second latent heat equations & to understand Concept of entropy, Change of entropy in Reversible process and Irreversible process, T-S diagram |



## SKILL BASED SUBJECT – MAINTENANCE OF ELECTRONIC APPLIANCES

SUB CODE: CSPH41

|        |   |
|--------|---|
| CO – 1 | To understand the basic ideas about the components we use in electronic appliances and to recognize resistors, capacitors, and connection systems |
| CO - 2 | Understand the fundamentals of measuring instruments and to understand oscilloscopes and their various types                                      |
| CO - 3 | To understand the principles of operation of modern technology communication devices  |
| CO – 4 | To understand the classification of active and passive transducers and their types  |
| CO – 5 | To understand the principles of operation of modern technology communication devices  |

## III B.Sc PHYSICS / V SEMESTER

CORE – BASIC ELECTRONICS

SUB. CODE: AMPH51

|        |   |
|--------|---|
| CO – 1 | Understand the various characteristics pertaining to diodes and its applications        |
| CO - 2 | Understand the transistor amplifiers, oscillators and wave shaping circuits             |
| CO - 3 | Understand the functions of operational amplifiers                                      |
| CO – 4 | Recall the basic concepts of semiconductor devices                                      |
| CO – 5 | Study different biasing techniques to operate transistor, FET, MOSFET in different mode |



## CORE – SPECTROSCOPY

SUB. CODE: AMPH52

|        |   |
|--------|---|
| CO – 1 | Explain different types of motion & Classify molecules according to rotational modes  |
| CO - 2 | Discriminate the effect of isotopic substitution  |
| CO - 3 | Discuss the 3 IR regions. Justify the interaction of rotations & vibrations on molecules  |
| CO – 4 | Analysed the IR techniques & explain its importance in research   |
| CO – 5 | Study of Vibrating diatomic molecule, energy levels of a diatomic molecule, simple harmonic and anharmonic oscillator, Scattering of light and Raman Spectrum. rotational and vibrational Raman Spectra |

## CORE – ATOMIC AND NUCLEAR PHYSICS

SUB. CODE: AMPH53

|        |   |
|--------|---|
| CO – 1 | To understand the basic concepts of most of the commercially available lasers                     |
| CO - 2 | To account for theoretical models' terminology and working methods used in atomic physics         |
| CO - 3 | To distinguish between Types of nuclear models: Single particle shell model and Liquid drop model |
| CO – 4 | To understand nuclear reactions and conservation laws   |
| CO – 5 | To understand nuclear fission based on liquid drop model and nuclear fusion                       |



## CORE ELECTIVE – COMMUNICATION ELECTRONICS

SUB. CODE: AEPH52

|        |  |
|--------|--|
| CO – 1 | To analyse amplitude modulation and AM envelope. To explain AM frequency bandwidth and phasor representation of AM with carrier. To determine the coefficient of modulation or percentage modulation or modulation index |
| CO - 2 | To explain about tuned radio frequency receiver or straight receiver. To elaborate double frequency conversion AM receiver   |
| CO - 3 | To illustrate the ratio detector and to elaborate the important features of FM super heterodyne receiver and FM noise suppression. Also to summarize about threshold extension by FMFB technique                         |
| CO – 4 | To comparison of digital modulations can be done.to compare and classify correlative coding and Duo binary encoding  |
| CO – 5 | To elaborate about BFSK and to summarize about Binary phase shifting Key. The importance of Quadrature PSK and Differential PSK  |

## SKILL BASED SUBJECT (COMMON)

PERSONALITY DEVELOPMENT

SUB. CODE: ACSB51

|        |   |
|--------|---|
| CO – 1 | Individual or in-group class presentations pertaining to the application of concerned theories or issues in human development                     |
| CO - 2 | To design and complete a research project that can take the form of a developing interview, an observation or assessment through service learning |
| CO - 3 | To research and write about relevant topics   |
| CO – 4 | Learn to balance confidence with humility and overcome problems associated with Personality   |
| CO – 5 | The student will be able to understand, analyse develop and exhibit accurate sense of self  |



## III B.Sc PHYSICS / VI SEMESTER

### CORE – QUANTUM MECHANICS

SUB. CODE: AMPH61

|        |   |
|--------|---|
| CO – 1 | To understand the quantum concepts of black body radiation, Planck's theory and photoelectric effect                                |
| CO - 2 | To acquire the knowledge of De Broglie's hypothesis and concepts of phase and group velocities                                      |
| CO - 3 | To understand the Heisenberg's uncertainty principle and its proof between energy and time.   |
| CO – 4 | To understand the concepts of wave function, eigen function, eigen value, operators and postulates of quantum mechanics             |
| CO – 5 | To acquire knowledge of application of quantum mechanics to simple harmonic oscillator and transmission across a potential barrier. |

### CORE – DIGITAL ELECTRONICS

SUB. CODE: AMPH62

|        |   |
|--------|---|
| CO – 1 | To Define binary number. Differentiate the various codes in Binary system |
| CO - 2 | To construct the circuit for the basic logic gates                        |
| CO - 3 | To analyse the circuit of as table and monostable multivibrator           |
| CO – 4 | To explain the function of a multiplexer and De- multiplexer              |
| CO – 5 | To draw the circuit for frequency divider                                 |



## CORE – SOLID STATE PHYSICS

SUB. CODE: AMPH63

|        |   |
|--------|---|
| CO – 1 | To understand basic concept of crystal Structure to distinguish between work done in different research area  |
| CO - 2 | To understand concept of the Magnetism process through internet and books   |
| CO - 3 | Students will be able to use simple laboratory demonstrations and computer simulations to explain the basic properties of electric and magnetic fields, and electrical circuits |
| CO – 4 | Recognize the need to engage in lifelong learning through continuing education and research   |
| CO – 5 | To understand dielectric and magnetic fields in matter  |

## CORE ELECTIVE – ENERGY PHYSICS

SUB. CODE: AEPH61

|        |   |
|--------|---|
| CO – 1 | To understand the importance of conventional and non-conventional energy resources                                      |
| CO - 2 | To understand the applications, merits, and demerits of conventional and non-conventional energy resources              |
| CO - 3 | To understand solar energy appliances with their merits and demerits  |
| CO – 4 | To understand the basic ideas of biomass energy and recognise their merits and demerits.                                |
| CO – 5 | To understand the fundamental concepts of oceans and chemical energy resources, as well as their benefits and drawbacks |



## DEPARTMENT OF ZOOLOGY

### CORE COURSE: 1. 1 – ANIMAL DIVERSITY I INVERTEBRATA

Subject Code: AMZO11

|        |  |
|--------|--|
| CO – 1 | Relate the diversity and basic taxonomy of non- chordates  |
| CO - 2 | Interpret the biological status of the animals at basic level in their habitat                               |
| CO - 3 | Analyse and examine the adaptations of the parasites and their impact on human health and welfare            |
| CO – 4 | Compare the diversity of arthropods and appraise their economic importance                                   |
| CO – 5 | Critically appraise the distribution and food value of molluscs and phylogenetic significance of echinoderms |

### CORE COURSE: 2.1 – ANIMAL DIVERSITY II CHORDATA

Subject Code: AMZO21

|        |  |
|--------|--|
| CO – 1 | Recall the diversity and basic taxonomy of chordates   |
| CO - 2 | Understand and examine the biological systems and evolution of chordates   |
| CO - 3 | Analyse and compare the adaptations and their importance in distribution   |
| CO – 4 | Identify and appreciate the functions of vertebrate animals at various levels  |
| CO – 5 | Apply their skills for conservation, sustainable development, economic utilisation and its potentials in technological prospects |



## CORE COURSE: 3.1 - DEVELOPMENTAL ZOOLOGY

Subject Code: AMZO31

|        |  |
|--------|--|
| CO – 1 | Find the processes right from fertilization of a single cell egg to the formation of a well structured and functional multicellular organism                   |
| CO - 2 | Understand and gain knowledge about the developmental stages like fertilization, cleavage and gastrulation   |
| CO - 3 | Compare the human embryo development to other animals and the regeneration, metamorphosis, transplantation and differentiations of stem cells in the organisms |
| CO – 4 | Identify the integrative aspects of building of organisms and examine the developmental abnormalities and other conditions such as cancer                      |
| CO – 5 | Analyse the developmental biology as a key subject in Zoology and justify it as a motor for research, in the human diseases and fertility                      |

## SKILL BASED CORE COURSE

SKB- CORE : 3.2 -NUTRITION AND DIETETICS

Sub Code: ASZO32

|        |   |
|--------|---|
| CO – 1 | Recollect the classification and types of nutrients and food stuffs                                 |
| CO - 2 | Understand the nutritive value and metabolism of food materials                                     |
| CO - 3 | Determine the energy value and BMR and limitations  |
| CO – 4 | Perceive knowledge on balanced diet and its application and importance to avoid deficiency diseases |
| CO – 5 | Evaluate therapeutic diets and prepare diets to control and overcome diseases                       |





## CORE COURSE: 4.1CELL BIOLOGY AND BIOCHEMISTRY

Subject Code: AMZO41

|        |  |
|--------|--|
| CO - 1 | Understand cell, its biology, and origin of cells, diversity and structure and learn the basic differences between prokaryotic and eukaryotic cells and understand the basis of cytological techniques, principle of working and its application of microscope |
| CO - 2 | Analyse the structural organization and function of plasma membrane, mitochondria, nucleus, lysosomes etc  |
| CO - 3 | Acquire knowledge about how cell divides by means of meiosis and mitosis and factors which control cell cycle, structure of DNA and replication of DNA in cells  |
| CO - 4 | Describe the process of transcription, RNA processing and translation in prokaryotes and eukaryotes  |
| CO - 5 | Understand the causes and effects of cancer  |

## SKILL BASED CORE COURSE

SKB- CORE COURSE: 4.2 VERMITECHNOLOGY

Sub Code: ASZO42

|        |   |
|--------|---|
| CO - 1 | Find out Vermi composting is an eco-friendly, economically and socially acceptable technology                           |
| CO - 2 | Illustrate that Vermitechnology is useful for stabilization and recycling of both industrial and domestic organic waste |
| CO - 3 | Utilize Vermitechnology to improve the soil texture, soil aeration, improve the water retention capacity in the soil    |
| CO - 4 | Apply Vermitechnology to convert rural and urban garbage into nutrient rich ecofriendly organic manure                  |
| CO - 5 | Apply the ethical principles and commit to pledge responsibilities to protect and save environment                      |



## CORE COURSE: 5.1 – ECOLOGY AND TOXICOLOGY

Subject Code: AMZO51

|        |   |
|--------|---|
| CO – 1 | Recall the principles, applications and concepts of ecology and eco system, how biotic and a biotic factors that are related to ecosystem                     |
| CO - 2 | Understand how the animals interact with each other and their natural environment   |
| CO - 3 | Analyse and compare the differences in the structure and function of different types of ecosystem   |
| CO – 4 | Emphasize the role of key factors responsible for changes in natural eco system such as pollution and urbanization and capable of pollution and other effects |
| CO – 5 | Interpret the diversity of species in relation to natural process and sustenance of life  |

## CORE COURSE: 5.2 – GENETICS

Subject Code: AMZO52

|        |   |
|--------|---|
| CO – 1 | Analyse the basic principles of Mendelian inheritance and Genic interaction |
| CO - 2 | Construct Chromosome map using crossing over                                |
| CO - 3 | Explain the concept and factors involved in gene mutation                   |
| CO – 4 | Assess the impact of chromosomal abnormalities in human                     |
| CO – 5 | Relate Eugenics & Euthenics and Inbreeding & Out breeding                   |



## CORE COURSE: 5.3 – ANIMAL PHYSIOLOGY AND BIOCHEMISTRY

Subject Code: AMZO53

|        |   |
|--------|---|
| CO – 1 | List out the physiological concepts in nutrition, digestion, metabolism, respiration etc.,                          |
| CO - 2 | Compare the various physiological processes in the animals  |
| CO - 3 | Identify the working mechanisms of effectors, homoeostasis and understand how the animals adapt in the environments |
| CO – 4 | Analyse the fundamental interactions between physiology and endocrinology   |
| CO – 5 | Justify the correlation of structure, coordination of functions and working system in the organs in the human body  |

## CORE COURSE : 5.4 IMMUNOLOGY AND MICROBIOLOGY

Subject Code: AMZO54

|        |  |
|--------|--|
| CO – 1 | Understand the structure, classification and culture techniques of microbes  |
| CO - 2 | Analyse and distinguish food poisoning, food spoilage and preservation methods   |
| CO - 3 | Develop entrepreneurial skills with the knowledge on the role of microbes in   |
| CO – 4 | fermentation, microbial products and the role of pathogens in human infectious diseases                                      |
| CO – 5 | Understand the concepts of immune system, cellular and molecular basis of immune responses, autoimmunity and immunoglobulins |



## CORE COURSE : 6.1 – EVOLUTION

Subject Code: AMZO61

|        |   |
|--------|---|
| CO – 1 | Understand the origin of life and evidences in favour of evolution                                      |
| CO - 2 | Accept the modern concept of evolution  |
| CO - 3 | Analyse the concept of evolution especially population genetics   |
| CO – 4 | Learn relationship between a biotic and biotic factors adaptation in the view of evolution              |
| CO – 5 | Get thorough knowledge of the tree diagram of evolution of various animals and patterns of distribution |

## CORE COURSE: 6.2- ANIMAL BIOTECHNOLOGY

Subject Code: AMZO62

|        |  |
|--------|--|
| CO – 1 | Relate the basic principles of recombinant DNA technology                  |
| CO - 2 | Explain various molecular techniques used in modern biotechnology          |
| CO - 3 | Categorise the cell and organ culture techniques                           |
| CO – 4 | Make use of hybridoma technology for the production of monoclonal antibody |
| CO – 5 | Compare the microbial enzyme and artificial enzymes                        |



## BIostatistics, Computer Applications and Bioinformatics

Subject Code: AMZO63

|        |   |
|--------|---|
| CO - 1 | Attain an insight on statistical methods for analysis of biological data  |
| CO - 2 | Undertake statistical operations in biology   |
| CO - 3 | Gain basic understanding of computer hardware and software and use productivesoftwares effectively                                      |
| CO - 4 | Acquire knowledge on the bioinformatic concepts for analyzing molecular data  |
| CO - 5 | Analyse and use the bioinformatics tools for advanced sequence alignment, databasearches, genome analysis and protein structure studies |

## CORE ELECTIVE COURSE: 6.4A –SERICULTURE

Subject Code: AEZO61

|        |  |
|--------|--|
| CO - 1 | Understand the scope sericulture and mulberry cultivation practices  |
| CO - 2 | Gain knowledge on diseases of silkworms and pests of mulberry        |
| CO - 3 | Understand the classification, life cycle and physiology of silkworm |
| CO - 4 | Apply the rearing methods, harvesting of cocoon and cocoon marketing |
| CO - 5 | Examine process of reeling, producing raw silk and marketing         |



## CORE ELECTIVE COURSE: 6.5A –APICULTURE

Subject Code: AEZO 64

|        |  |
|--------|--|
| CO – 1 | Classify the honey bees and categorize its developmental stages and explain the principles of Apiculture and methods of Bee keeping                    |
| CO - 2 | Construct modern hives and rear and recommend apiculture as a less expensive but profitable self employment  |
| CO - 3 | Make use of Honey bee products and marketing   |
| CO – 4 | Distinguish the enemies of bees and protect the bees from various diseases and identify swarming, robbing and foraging behaviour of bees in an apiary. |
| CO – 5 | Trust the less expensive but profitable self employment  |

## CELL BIOLOGY, GENETICS AND BIOTECHNOLOGY

Subject Code: AAZO11

|        |   |
|--------|---|
| CO – 1 | Recall the basic structure and function of the animal cell                                  |
| CO - 2 | Understand the genetic principles about the inheritance of traits                           |
| CO - 3 | Apply the knowledge of biotechnological techniques  |
| CO – 4 | Evaluate the applications on the welfare of human beings                                    |
| CO – 5 | Production of Genetically manipulated transgenic animal for therapeutic products production |



## DEVELOPMENTAL ZOOLOGY, ECOLOGY, ANIMAL PHYSIOLOGY

### ANDEVOLUTION

Subject Code: AAZO21

|        |  |
|--------|--|
| CO – 1 | Recognize the basic concept of developmental stages of the animals                           |
| CO - 2 | Understand the interaction of abiotic and biotic factors in the ecosystem and its components |
| CO - 3 | Apply the knowledge of vital physiological functions of our body                             |
| CO – 4 | Understand the advances in medicinal therapy for heart Kidney and reproductive structures    |
| CO – 5 | Evaluate the evolutionary concepts on origin of life   |



## PG DEPARTMENT OF COMPUTER SCIENCE

**I B.Sc. Computer Science / Semester – I / Core-1**

**PROGRAMMING IN C**

**Subject Code: CMCS11**

|        |   |
|--------|---|
| CO – 1 | To obtain knowledge about the structure of the programming language |
| CO - 2 | To develop the program writing and logical thinking skill           |
| CO - 3 | To summarize statements and arrays                                  |
| CO – 4 | To make use of defined functions                                    |
| CO – 5 | To explain pointers and files                                       |

**I B.Sc. Computer Science / Semester – I / Allied – 1**

**DISCRETE MATHEMATICS**

**Sub Code: CACS11**

|        |   |
|--------|---|
| CO – 1 | To recall basic concepts for clear understanding of mathematical principles |
| CO - 2 | To explain practical problems   |
| CO - 3 | To construct matrices using discrete mathematics                            |
| CO – 4 | To analyze techniques to draw graph using mathematics                       |
| CO – 5 | To design graphs using the representations                                  |





## I B.Sc. Computer Science / Semester – I / Major Practical – I

### PROGRAMMING IN C

Subject Code: CM CSP1

|        |   |
|--------|---|
| CO – 1 | To define the features of C by applying sample problems                         |
| CO - 2 | To explore skills in implementing algorithms through the programming Language C |
| CO - 3 | To develop array of elements  |
| CO – 4 | To evaluate matrices  |
| CO – 5 | To develop the programs using pointers and functions                            |

## I B.Sc. Computer Science / Semester – II / Core - 2

### OBJECT ORIENTED PROGRAMMING IN C++

Sub Code: CMCS21

|        |  |
|--------|--|
| CO – 1 | To define the basic knowledge of object oriented programming concepts  |
| CO - 2 | To relate the idea of classes and objects  |
| CO - 3 | To analyze and develop constructors and destructors  |
| CO – 4 | To design C++ streams, Inheritance, Overloading of operators, functions, constructors, File Handling and templates concepts of C++ programming |
| CO – 5 | To develop the knowledge about how to work on files  |



## I B.Sc. Computer Science / Semester – II / Major Practical – II

### PROGRAMMING IN C++

Subject Code: CMCSP2

|        |   |
|--------|---|
| CO – 1 | To define object oriented programming concepts using class and member functions |
| CO - 2 | To develop overloading operators  |
| CO - 3 | To analyze friend function  |
| CO – 4 | To gain the knowledge about the importance of constructor                       |
| CO – 5 | To design C++ virtual functions   |

## I B.Sc. Computer Science / Semester – II / Allied Practical - II

### LINUX

Sub Code: CACSP1

|        |   |
|--------|---|
| CO – 1 | To find various Linux commands                          |
| CO - 2 | To interpret and make effective use of Linux utilities  |
| CO - 3 | To construct Shell scripting language to solve problems |
| CO – 4 | To list shell scripting conditions                      |
| CO – 5 | To develop Linux communication oriented commands        |



## III B.Sc. Computer Science / Semester – III /Core

### JAVA PROGRAMMING

Sub Code: CMCS31

|        |  |
|--------|--|
|        | simplify Boolean functions and to distinguish logical and combinational circuits |
| CO - 2 | Illustrate the concept of digital and binary systems                             |
| CO - 3 | Be able to develop combinational logic circuits                                  |
| CO – 4 | Be able to design and analyse sequential logic circuits                          |
| CO – 5 | Construct and implementation of digital circuits and systems                     |

## III B.Sc. Computer Science / Semester – III /Core

### DIGITAL DESIGN

Subject Code: CSCS31

|        |  |
|--------|--|
| CO – 1 | To recall the basic concepts of Object Oriented Programming          |
| CO - 2 | To apply the tools of Object – Oriented Paradigm in Java programming |
| CO - 3 | To understand the fundamentals of applet, event – driven programming |
| CO – 4 | To analyze the ability to develop Applet programs with tools of Java |
| CO – 5 | To design the skills to develop software                             |



## II B.Sc. Computer Science / Semester – III /Major Practical-III

### JAVA PROGRAMMING LAB

Subject Code: CM CSP3

|        |   |
|--------|---|
| CO – 1 | Illustrate and make effective use of Java Programming to develop software |
| CO - 2 | Develop Java application programs using OOP principles                    |
| CO - 3 | Apply Constructors and Overriding methods                                 |
| CO – 4 | Develop multithreaded programs  |
| CO – 5 | To implement error handling techniques using exception handling           |

## III B.Sc. Computer Science / Semester – III / Allied-III

### SCRIPTING LANGUAGES

Subject Code: CACS31

|        |  |
|--------|--|
| CO – 1 | To understand the basic concepts of HTML and web programming                             |
| CO - 2 | To Demonstrate the concepts of scripting languages for developing web-based projects     |
| CO - 3 | Ability to compare the differences between Scripting languages and programming languages |
| CO – 4 | To understand CSS files HTML Multimedia  |
| CO – 5 | Ability to develop projects using HTML and Web pages                                     |



## III B.Sc. Computer Science/ Semester – III / Allied Practical-II

### SCRIPTING LANGUAGES LAB

Subject Code: CACSP3

|        |  |
|--------|--|
| CO – 1 | To develop knowledge in web-based projects                     |
| CO - 2 | To demonstrate programming skills in scripting languages       |
| CO - 3 | To construct the skill of designing GUI in scripting languages |
| CO – 4 | To categorize CSS files  |
| CO – 5 | To design JavaScript programs                                  |

## III B.Sc. Computer Science / Semester – IV /Core

### DATA STRUCTURES

Subject Code: CMCS41

|        |   |
|--------|---|
| CO – 1 | To understand the concepts of basic data structures                             |
| CO - 2 | To acquire the knowledge about stack, Queues and Linked list                    |
| CO - 3 | To have general understanding of the network structures through trees and graph |
| CO – 4 | To make the students to understand the basic algorithms for sorting             |
| CO – 5 | Define data structure Algorithms  |

## II B.Sc. Computer Science / Semester – IV /Skill Based Core II

### COMPUTER ARCHITECTURE

Subject Code: CSCS41

|        |  |
|--------|--|
| CO – 1 | Understand the basics of Computers and its Organization                    |
| CO - 2 | Know the various Technologies behind the Computer Architecture             |
| CO - 3 | An ability to apply knowledge about hardware implementation and algorithms |
| CO – 4 | To evaluate various input output organisations                             |
| CO – 5 | To develop the architecture using various memories                         |



## III B.Sc. Computer Science) / Semester – IV / Allied-II

### MACHINE LEARNING TECHNIQUES

Subject Code: CACS41

|        |   |
|--------|---|
| CO – 1 | To introduce students to the basic concepts of Machine Learning                         |
| CO - 2 | To acquire various techniques in Machine learning                                       |
| CO - 3 | To have a thorough understanding of the Supervised and Unsupervised learning techniques |
| CO – 4 | To study the probability based learning techniques                                      |
| CO – 5 | To understand graphical models of machine learning algorithms                           |

## III B.Sc. Computer Science / Semester – IV / Major Practical-IV

### DATA STRUCTURE

Subject Code: CMCSP4

|        |   |
|--------|---|
| CO – 1 | To develop skills in implementing sort and search data structure algorithms |
| CO - 2 | To implement queue and stack techniques                                     |
| CO - 3 | To design tree traversals   |
| CO – 4 | To implement binary search tree   |
| CO – 5 | To Compile sorting algorithms   |



## III B.Sc. Computer Science / Semester – IV /Allied Practical

### PYTHON

Subject Code: CACSP4

|        |  |
|--------|--|
| CO – 1 | To understand the basic concepts in python             |
| CO - 2 | To understand the concepts and develop python programs |
| CO - 3 | To acquire the knowledge about menu driven programs    |
| CO – 4 | To improve the knowledge in CSV files                  |
| CO – 5 | To understand the functions of python                  |

## III B.Sc. Computer Science / Semester – IV /Skill based Practical I

|        |  |
|--------|--|
| CO – 1 | To knows about the various Applications of Multimedia              |
| CO - 2 | To develop two- dimensional graphical applications                 |
| CO - 3 | To design multimedia animations                                    |
| CO – 4 | To know the knowledge about video works in multimedia applications |
| CO – 5 | To implement interactive games                                     |



## III B.Sc. Computer Science / Semester – V /Core

### RELATIONAL DATABASE MANAGEMENT SYSTEM

Sub Code: AMCS51

|        |   |
|--------|---|
| CO – 1 | To outline relational database concepts   |
| CO - 2 | To relate transaction management concepts in database system                        |
| CO - 3 | To utilize Normalizations techniques  |
| CO – 4 | To write SQL programs that use: procedure, function, package, cursor and Exceptions |
| CO – 5 | To Use current techniques and tools necessary for complex computing practices       |

## III B.Sc. Computer Science / Semester – V /Core

### DATA COMMUNICATION AND COMPUTER NETWORKS

Sub Code: AMCS52

|        |   |
|--------|---|
| CO – 1 | To define the concepts in Computer Network and Data Communication |
| CO - 2 | To outline the various protocols used in network                  |
| CO - 3 | To compare OSI Layers in Computer networks                        |
| CO – 4 | To list about Switching Techniques                                |
| CO – 5 | To discuss wireless LAN's   |

## III B.Sc. Computer Science / Semester – V /Core

### PHP and My SQL

Subject Code: AMCS53

|        |  |
|--------|--|
| CO – 1 | To define and use open source database management system MySQL |
| CO - 2 | To explain dynamic web pages and websites                      |
| CO - 3 | To identify web pages with database                            |
| CO – 4 | To compare the concepts of open sources                        |
| CO – 5 | To assess the knowledge about Arrays                           |





## III B.Sc. Computer Science / Semester – V /Major Practical-V

### PHP Lab

Subject Code: AMCSP5

|        |   |
|--------|---|
| CO – 1 | To develop knowledge about basic PHP Programs |
| CO - 2 | To evaluate PHP scripts and functions         |
| CO - 3 | To develop arrays in PHP                      |
| CO – 4 | To design loops in PHP                        |
| CO – 5 | To compare the scripts and functions in PHP   |

## III B.Sc. Computer Science / Semester – V /Major Practical-IV

### Machine learning Practical

Subject Code: AMCSP6

|        |   |
|--------|---|
| CO – 1 | Apply the concepts and practical knowledge in analysis, design and Development of computing systems |
| CO - 2 | To make use of applications to multidisciplinary problems   |
| CO - 3 | To discuss the knowledge about various algorithms   |
| CO – 4 | To interpret the knowledge about various datasets   |
| CO – 5 | Develop data frames in Machine Learning   |

## III B.Sc. Computer Science / Semester – V/Major Elective- 3.

### CLOUD COMPUTING

Subject Code: AECS53

|        |  |
|--------|--|
| CO – 1 | To understand the History of cloud computing                 |
| CO - 2 | To know in detail about the various Cloud Computing concepts |
| CO - 3 | To enquire cloud computing Architecture                      |
| CO – 4 | To understand SOA components                                 |
| CO – 5 | To know about cloud security and privacy                     |



## III B.Sc. Computer Science / Semester – VI /Core

### OPERATING SYSTEM

Subject Code: AMCS61

|        |   |
|--------|---|
| CO – 1 | To gain fundamental knowledge in computer   |
| CO - 2 | To characteristic, parts and applications of computers  |
| CO - 3 | To know the various devices and familiarize with their functions<br>To know the usage of internet |
| CO – 4 | To discuss the emerging trends in computer Science  |
| CO – 5 | To explain the concepts of Internet   |

## III B.Sc. Computer Science / Semester – VI /Core

### SOFTWARE ENGINEERING AND TESTING

Subject Code: AMCS62

|        |   |
|--------|---|
| CO – 1 | To define the fundamental knowledge of Software Engineering |
| CO - 2 | To classify the various testing methods                     |
| CO - 3 | To analyze various software life cycle models               |
| CO – 4 | To interpret User Interface design                          |
| CO – 5 | To select software project managements                      |

## III B.Sc. Computer Science / Semester – VI /Core

### COMPUTER GRAPHICS AND VISUALIZATION

Subject Code: AMCS63

|        |   |
|--------|---|
| CO – 1 | To understand the overview of the graphics visualization                    |
| CO - 2 | To acquire the fundamental knowledge of Computer Graphics and Visualization |
| CO - 3 | To understand the Algorithms in Computer Graphics                           |
| CO – 4 | To acquire the transformation technique in Graphics                         |
| CO – 5 | To understand the Interactive methods easily                                |



## III B.Sc. Computer Science / Semester – VI /Core

### INTRODUCTION TO DIGITAL IMAGE PROCESSING

Sub Code: AMCS64

|        |   |
|--------|---|
| CO – 1 | To define the fundamental knowledge of introduction to Digital Image Processing |
| CO - 2 | To explain the features present in Digital Image Processing                     |
| CO - 3 | To outline the enhancement of spatial domain                                    |
| CO – 4 | To analyze the color Image processing   |
| CO – 5 | To interpret the image using compression  |

## III B.Sc. Computer Science / Semester – VI /Project

### PROJECT – DIGITAL IMAGE PROCESSING USING SCILAB/MATLAB

Subject Code: AMCS6P

|        |   |
|--------|---|
| CO – 1 | To get knowledge about the basic programs on Digital Image Processing |
| CO - 2 | To acquire the knowledge from Thresholding Technique                  |
| CO - 3 | To read the colour image and separate the planes                      |
| CO – 4 | To perform the brightness of the image                                |
| CO – 5 | To manipulate the contrast image                                      |

## III B.Sc. Computer Science / Semester – VI / Major Practical VII

### COMPUTER GRAPHICS LAB

Subject Code: AMCSP7

|        |  |
|--------|--|
| CO – 1 | To illustrate skills in programming computer graphics              |
| CO - 2 | To apply multimedia concepts                                       |
| CO - 3 | To compile the algorithms to draw line, circle etc                 |
| CO – 4 | To develop image using Scaling, Rotating and translation technique |
| CO – 5 | To demonstrate the image using random and bouncing balls           |



## III B.Sc. Computer Science / Semester – VI /Major Elective - II

### INTERNET OF THINGS

Subject Code: AECS61

|        |  |
|--------|--|
| CO – 1 | To define the fundamentals of IOT                              |
| CO - 2 | To outline about IOT working                                   |
| CO - 3 | To discuss the Architecture of IOT                             |
| CO – 4 | To outline how IOT is used in Education and Agricultural level |
| CO – 5 | To explain security in IOT                                     |

## I M.Sc. Computer Science / Semester – I / Core-1

### Design Analysis of Algorithm

Subject Code:ZCSM11

|        |   |
|--------|---|
| CO – 1 | Identify the Characteristics of an algorithm                                |
| CO - 2 | Understand the problem-solving approaches using computers                   |
| CO - 3 | Compute the time complexity of an algorithm                                 |
| CO – 4 | Analyze the performance of an algorithm in solving a problem                |
| CO – 5 | Compare the performance of various algorithms in solving a specific-problem |

## I M.Sc. Computer Science / Semester – I / Core-2

### Advanced Java Programming

Subject Code: ZCSM12

|        |  |
|--------|--|
| CO – 1 | Understand swing components and its usage  |
| CO - 2 | Implement Networking and Data base connectivity in Java for given application                |
| CO - 3 | Implement webpage with dynamic content and server side web application using Servlet and JSP |
| CO – 4 | Develop Java application using spring frame work   |
| CO – 5 | Understand Servlet and JSP   |



## I M.Sc. Computer Science / Semester – I / Core-3

### Mathematical Foundation for Computer Science

Subject Code: ZCSM13

|        |   |
|--------|---|
| CO – 1 | Evaluate the validity of logical arguments and construct mathematical proofs  |
| CO - 2 | administer all the basic operations with sets   |
| CO - 3 | understand abstract algebraic structure like groups and their properties  |
| CO – 4 | Analyze whether given graphs are isomorphic and apply different algorithms to find the shortest path Apply Mathematical techniques into many areas of Computer science like Algorithms, Computer Networks, and Cryptography etc |
| CO – 5 | Apply Mathematical techniques into many areas of Computer science like Algorithms, Computer Networks, and Cryptography etc  |

## I M.Sc. Computer Science / Semester – I / Core-4

### Compiler Design

Subject Code: ZCSM14

|        |   |
|--------|---|
| CO – 1 | Understand the different phases of compiler                                   |
| CO - 2 | Design a lexical analyzer for a sample language                               |
| CO - 3 | Apply different parsing algorithms to develop the parsers for a given Grammar |
| CO – 4 | Understand syntax-directed translation and run-time environment               |
| CO – 5 | Learn to implement code optimization techniques and a simple code Generator   |



## I M.Sc. Computer Science / Semester – I / Core-5

### Distributed Operating System

Subject Code: ZCSM15

|        |  |
|--------|--|
| CO – 1 | Gain knowledge about the history of the Linux operating system, its unique licensing model and the major distributions that are available to use |
| CO - 2 | start and stop services from running in the Linux operating systems  |
| CO - 3 | Implement process scheduling algorithms  |
| CO – 4 | Learn to manage files and directories in the Linux operating system CO5: To use the Linux environment for problem solving                        |
| CO – 5 | To use the Linux environment for problem solving   |

## I M.Sc. Computer Science / Semester – I / Core-6 Practical-1

### Algorithm Lab

Subject Code: ZCSL11

|        |   |
|--------|---|
| CO – 1 | Implement algorithms for solving real-time problems |
| CO - 2 | Analyse the time required to solve a problem        |
| CO - 3 | Obtain optimized solution                           |
| CO – 4 | Solve different mathematical problems               |
| CO – 5 | Define new algorithm                                |



## I M.Sc. Computer Science / Semester – I / Core-7 Practical -2

### Advanced Java Programming Lab

Subject Code: ZCSL12

|        |  |
|--------|--|
| CO – 1 | Understand swing components and its usage  |
| CO - 2 | Implement Networking and Data base connectivity in Java for given application                |
| CO - 3 | Implement webpage with dynamic content and server side web application using Servlet and JSP |
| CO – 4 | Develop Java application using spring framework  |
| CO – 5 | Develop new java application   |

## I M.Sc. Computer Science / Semester – II / Core-8

### Advanced Web Technology

Subject Code: ZCSM21

|        |   |
|--------|---|
| CO – 1 | Design a webpage with Web form fundamentals and web control classes                                 |
| CO - 2 | Recognize the importance of validation control, cookies and session                                 |
| CO - 3 | Apply the knowledge of ASP.NET object, ADO.NET data access and SQL to develop a client server model |
| CO – 4 | Recognize the difference between Data list and Data grid controls in accessing data                 |
| CO – 5 | Implement security and authentication   |



## I M.Sc. Computer Science / Semester – II / Core-9

### Machine Learning

Subject Code: ZCSM22

|        |   |
|--------|---|
| CO – 1 | Have a good understanding of the fundamental issues and challenges of machine learning: data, model selection, model complexity, etc                          |
| CO - 2 | Have an understanding of the strengths and weaknesses of many popular machine learning approaches   |
| CO - 3 | Appreciate the underlying mathematical relationships within and across Machine Learning algorithms and the paradigms of supervised and un-supervised learning |
| CO – 4 | Have an understanding of the strengths and weaknesses of many popular machine learning approaches   |
| CO – 5 | Be able to design and implement various machine learning algorithms in a range of real- world applications  |

## I M.Sc. Computer Science / Semester – II / Core-10

### Advanced DBMS

Subject Code: ZCSM23

|        |  |
|--------|--|
| CO – 1 | Recognize the importance of Various Data models and Architecture |
| CO - 2 | Analyze and Design the normalized database schema                |
| CO - 3 | Decide the database for his problem                              |
| CO – 4 | Develop database solutions                                       |
| CO – 5 | Write database queries in SQL, PL SQL and No SQL                 |





## I M.Sc. Computer Science / Semester – II / Core-11

### Cryptography and Network Security

Subject Code: ZCSM24

|        |   |
|--------|---|
| CO – 1 | Understand the fundamentals of networks security, security architecture, threats and vulnerabilities      |
| CO - 2 | Apply the different cryptographic operations of symmetric/asymmetric cryptographic algorithms             |
| CO - 3 | Analyze various authentication protocols and apply them in real time                                      |
| CO – 4 | Analyze the security threats and study the various countermeasures  |
| CO – 5 | Identify the applications of network security in various fields. CO6: Design and Develop a security model |

## I M.Sc. Computer Science / Semester – II / Elective-I

### Data Mining

Subject Code: ZCSM22

|        |   |
|--------|---|
| CO – 1 | Evaluate various mining techniques on complex data objects                    |
| CO - 2 | Develop applications using Data Mining Tools                                  |
| CO - 3 | Develop ability to design various algorithms based on data mining tools       |
| CO – 4 | Develop further interest in research and design of new Data Mining techniques |
| CO – 5 | Handle Web data and use Orange tool   |



## I M.Sc. Computer Science / Semester – II / Core-12/ Practical -3

### Advanced Web Technology

Subject Code: ZCSL21

|        |   |
|--------|---|
| CO – 1 | Design a webpage with Web form fundamentals and web control classes                                 |
| CO - 2 | Recognize the importance of validation control, cookies and session                                 |
| CO - 3 | Apply the knowledge of ASP.NET object, ADO.NET data access and SQL to develop a client server model |
| CO – 4 | Recognize the difference between Data list and Data grid controls in accessing data                 |
| CO – 5 | Create a Website  |

## I M.Sc. Computer Science / Semester – II / Core-13/ Practical -4

### Machine Learning Lab Using Python

Subject Code: ZCSL22

|        |  |
|--------|--|
| CO – 1 | To learn to use Weka tool for implementing machine learning algorithms related to numeric data |
| CO - 2 | To learn the application of machine learning algorithms for text data                          |
| CO - 3 | To use dimensionality reduction algorithms for image processing applications                   |
| CO – 4 | To apply CRFs in text processing applications  |
| CO – 5 | To use fundamental and advanced neural network algorithms for solving real-world data          |



## I M.Sc. Computer Science / Semester – III / Core-14

### Digital Image Processing

Subject Code: ZCSM31

|        |  |
|--------|--|
| CO – 1 | Review the fundamental concepts of a digital image processing system and Analyze images in the frequency domain using various transforms |
| CO - 2 | Evaluate the techniques for image enhancement and image restoration. Categorize various compression techniques                           |
| CO - 3 | Interpret Image compression standards, and Interpret image segmentation and representation techniques                                    |
| CO – 4 | Gain idea to process various image used in various fields such as weather forecasting  |
| CO – 5 | Diagnosis of various disease using image such as tumor, cancer etc   |

## I M.Sc. Computer Science / Semester – III / Core-15

### Soft Computing

Subject Code: ZCSM32

|        |   |
|--------|---|
| CO – 1 | To understand the fundamental theory and concepts of neural networks, Identify different neural network architectures, algorithms, applications and their limitations |
| CO - 2 | Comprehend the fuzzy logic and the concept of fuzziness Involved in various systems and fuzzy set theory  |
| CO - 3 | Understand the concept soft fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic                   |
| CO – 4 | Understand appropriate learning rules for each of the architectures and learn several Genetic algorithms paradigms and its applications                               |
| CO – 5 | Understand the usage of Genetic Algorithm   |



## I M.Sc. Computer Science / Semester – III / Core-16

### Advanced Computer Networks

Subject Code: ZCSM33

|        |   |
|--------|---|
| CO – 1 | Understand fundamental underlying principles of computer networking                   |
| CO - 2 | Understand details and functionality of layered network architecture                  |
| CO - 3 | Apply mathematical foundations to solve computational problems in computer networking |
| CO – 4 | Analyze performance of various communication protocols                                |
| CO – 5 | Compare routing algorithms CO6: Practice packet /file transmission between nodes      |

## I M.Sc. Computer Science / Semester – III / Core-17

### Research Methodology

Subject Code: ZCSM34

|        |  |
|--------|--|
| CO – 1 | Ability to apply different research approaches and methodologies                     |
| CO - 2 | Develop data collection instrument according to the underlying theoretical framework |
| CO - 3 | Analyze quantitative data and qualitative data using software packages               |
| CO – 4 | Construct and document an appropriate research design                                |
| CO – 5 | Discuss limitations and potential contribution to theory and practice of research    |



## I M.Sc. Computer Science / Semester – III / Elective-2

### Cloud Computing

Subject Code: ZCSE31

|        |  |
|--------|--|
| CO – 1 | Interpret the key dimensions of the challenges of Cloud Computing  |
| CO - 2 | Examine the economics, financial, and technological implications for selecting cloud computing for own organization                    |
| CO - 3 | Assessing the technological, and organizational capacity of employer's for actively initiating and installing cloud-based applications |
| CO – 4 | Evaluate own organizations' needs for capacity building and training in cloud computing-related IT areas                               |
| CO – 5 | Illustrate Virtualization for Data-Centre Automation   |

## I M.Sc. Computer Science / Semester – III / Core-18 Practical-5

### Digital Image Processing Using Sci Lab

Subject Code: ZCSL31

|        |   |
|--------|---|
| CO – 1 | Identify the need for various digital images processing techniques apply them and Analyze deferent types of real world images |
| CO - 2 | Evaluate the techniques for image enhancement and image restoration. Categorize various image compression techniques          |
| CO - 3 | Interpret Image compression standards, and Interpret image segmentation and representation techniques                         |
| CO – 4 | Apply various morphological operators for image pre and post processing in specific application                               |
| CO – 5 | Solve real time problems  |