# PROGRAMME OUTCOMES

## Undergraduate General Degree Programmes

**PO1:Critical Thinking**: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

**Provision in course profile**: 1.Part III: Core papers – Theory & Practical 2. Allied papers- Theory & Practical 3.Part IV: Non-Major Electives

**PO2:Effective Communication**: Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.

**Provision in course profile**: 1.Part I : Language 2. Part II: English

**PO3: Social Interaction**: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

**Provision in course profile**: 1. Part V: Extension/Physical Education 2. Academic Enrichment activities- Extra hour classes

**PO4: Effective Citizenship**: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

**Provision in course profile**: 1.Part V: Value Education 2. Part III: Core & Major Optional papers- Women oriented, Recent Trends based papers.

**PO5: Ethics**: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

**Provision in course profile**: 1.Part V: Value Education 2. Part III: Core &Allied papers: Theory & Practical 3.Non-Major Electives

**PO6: Environment and Sustainability**: Understand the issues of environmental contexts and sustainable development.

**Provision in course profile**: 1.Part V: Extension Activities- Environmental Science

**PO7: Self-directed and Life-long Learning**: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

**Provision in course profile**: 1.Part III: Core/Major – Project/ Self - Study paper 2. NPTEL/FOSS- Online courses

**PO8**: **Economic Independence & Employability Potential:** Acquire the ability to be involved in economically sustainable employment opportunity and inculcate entrepreneurial abilities.

**Provision in course profile:** 1. Part III: Core/Major papers2. Part IV: Non-Major Elective – Theory-cum practical Courses, Entrepreneurship courses 3. Certificate & Diploma Courses

# PROGRAMME OUTCOMES

## Postgraduate General Degree Programmes

**PO1**: **Critical Thinking**: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

**Provision in course profile**: Core/Major papers

**PO2: Effective Citizenship**: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

**Provision in course profile**: 1. Value Education Courses 2. Celebration of National festivals

**PO3: Social Interaction**: Elicit views of others, mediate disagreements and help reach conclusions in group settings.

**Provision in course profile**: PGService learning course

**PO4**: **Ethics**: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

**Provision in course profile**: 1. Core/Major papers 2. Research Methodology paper

**PO5: Environment and Sustainability**: Understand the issues of environmental contexts and sustainable development.

**Provision in course profile**: Core/Major papers

**PO6**: **Self-directed and Life-long Learning**: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological changes

**Provision in course profile**: 1.Core/Major papers 2.Compulsory Project

# PROGRAMME OUTCOMES

## Research General Programmes-M.Phil. & Ph.D.

**PO1**:**Critical Thinking**: Take informed actions after identifying the assumptions that frame our thinking and actions, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives.

**Curricular Provision**: Core/Major papers

**PO2**: **Patriotism & Citizenship**: Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering.

**Non-Curricular Provision**: Celebration of national festivals

**PO3**: **Ethics**: Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.

**Curricular Provision**: Research Methodology

**PO4**: **Environment and Sustainability**: Understand the issues of environmental contexts and sustainable development.

**Non-Curricular Provision:** Study Circle & Research based paper presentation on & off campus mode.

**PO5**: **Self-directed and Life-long Learning**: Acquire the ability to engage in independent and life-long learning in the broadest context socio-technological change.

**Curricular Provision:** Research Projects

# PROGRAMME SPECIFIC OUTCOMES

## DEPARTMENT OF TAMIL

### B.A. Tamil

**PSO 1 :** இலக்கண, இலக்கிய வகைமைகளை அறிந்து கொண்டு, தன்னை படைப்பாளராக உருவாக்கிக்கொள்ளுதல்.

**PSO 2 :** தமிழ் மொழியின் தொன்மை, வடிவம் ஆகியவற்றைப்பற்றி அறிந்து மொழியியலாளராக மேம்படுத்திக்கொள்ளல்.

**PSO 3 :** ஊடகங்களில் பணிவாய்ப்பினை பெறுவதற்கான தனித்திறமைகளை வளர்த்துக்கொள்ளுதல்.

**PSO 4 :** தமிழ் இலக்கியங்கள் வழி வாழ்வியல் முறைமைகள் பற்றி அறிந்துகொண்டு சமூகத்தை மேம்படுத்துதல்.

### M.A. Tamil

**PSO 1 :** தமிழ் இலக்கியத்தை பிற இலக்கியத்துடன் ஒப்பிட்டு ஆராயும் திறனை வளர்த்துக்கொள்ளல்.

**PSO 2 :** இலக்கியங்களில் காணப்படும் பெண்ணிய கருத்தாக்கங்களை தெரிந்து கொண்டு பெண்ணிய படைப்பாளராக உருவாக்கிக்கொள்ளல்.

**PSO 3 :** ஊடகங்களின் வாயிலாக உலகளாவிய செய்திகளை அறிந்து கொண்டு ஊடகத்துறையில் பணிவாய்ப்பினை பெறுதல்.

**PSO 4 :** தொல் பழங்காலத்தை அறிவதற்கான ஆராய்ச்சியாளர்களாக உருவாகுதல்

### M.Phil. Tamil

**PSO 1 :** ஆய்வு நெறிமுறைகளை அறிந்துகொண்டு, ஆய்வேடு உருவாக்குவதற்கான திறமைகளை வளர்த்துக்கொள்ளல்.

**PSO 2 :** தமிழ் ஆராய்ச்சி வரலாற்றை அறிந்துகொண்டு, கோட்பாடுகளின் அடிப்படையில திறனாய்வு செய்தல்.

**PSO 3 :** இலக்கியங்களை ஆய்வு அடிப்படையில் அணுகி, சமூக முன்னேற்றம் அடைவதற்கான
வழிமுறைகளை கண்டறிதல்.

**PSO 4 :** தமிழ் இலக்கியங்களை திறனாய்வு நோக்கில் ஆராய்ந்து, சிறந்த திறனாய்வாளராக
உருவாக்கிக்கொள்ளல்

### Ph.D. Tamil

**PSO 1 :** இலக்கண, இலக்கியங்களைப் பற்றி ஆராய்ச்சி மேற்கொண்டு ஆராய்ச்சியாளராக விளங்குதல்

**PSO 2 :** திறனாய்வு நூல்களை ஆராய்ந்து சிறந்த திறனாய்வாளரக விளங்குதல்.

**PSO 3 :** தமிழ் இலக்கியங்கள் சார்ந்த நூல்களை வெளியிடும் படைப்பாளராக திகழ்தல்.

**PSO 4 :** பேராசிரியராக தன்னை நிலைநிறுத்திக்கொள்ளல்.

# PROGRAMME SPECIFIC OUTCOMES

## DEPARTMENT OF ENGLISH

### B.A. English

**PSO 1 :** Ability to apply the critical pondering in different forms of literature.

**PSO 2 :** Analysis ofthe socio-political aspects in literary texts.

**PSO 3 :** Capability to compare the cultural context in different literature in analyzing the literary text.

**PSO 4 :** Ability to pronouncing and transcribe the sounds of English language and making perfect stress and intonation.

### M.A. English

**PSO 1 :** Critical appreciation of the different literature and its values since 16th century to 21st century.

**PSO 2 :** Interpretation of the classical literary text and its rich translation.

**PSO 3 :** Usage of strategies of textual interpretation appropriate to different literary genres.

**PSO 4 :** Development of the Pronunciation skills through phonetics and linguistics terms.

**PSO 5 :** Ability to defend equalities in the feminist literary writings and its values.

### M.Phil. English

**PSO 1 :** Development of the skills of writing research proposal through its methodology.

**PSO 2 :** Critical analysis of the literary texts and the latest trends in literary theory.

**PSO 3 :** Interpretation of five different approaches in recent literature.

**PSO 4 :** Ability to demonstrate high-level of proficiency in literary research.

**PSO 5 :** Use of critical and analytical skills in the interpretation and evaluation of literary texts.

# PROGRAMME SPECIFIC OUTCOMES

## DEPARTMENT OF COMMERCE

### B.Com.

**PSO 1 :** Develop understanding the accounting concepts and convention.

**PSO 2 :** Ability to apply the practical tools of finance required in decision making.

**PSO 3 :** Ability to apply contextual knowledge to assess societal, health, safety, legal aspects
relevant to the professional accounting practice.

**PSO 4 :** Development of accounting and entrepreneurial skills.

### B.Com. CA

**PSO 1 :** Ability to understand the concept of accounting and Computer application in Business.

**PSO 2 :** Capacity to analyze latest technologies to solve problems in the areas of computer Application.

**PSO 3 :** Application of the knowledge of accounting fundamentals and accounting specialization in Business.

**PSO 4 :** Ability to develop accounting and e- Entrepreneurial skills.

### M.Com.

**PSO 1 :** Identification and usage of practical tools of finance required in decision making.

**PSO 2 :** Ability to assess global opportunities and challenges for business growth.

**PSO 3 :** Capacity to analyse ethical implications of business practices using advanced levels of ethical reasoning and legal implications

**PSO 4 :** Ability to investigate effectively the research tools, apply appropriate tools and draw conclusion.

### M.Phil. (Commerce)

**PSO 1 :** Ability to identify the various financial tools suitable for different investment avenues.

**PSO 2 :** Application of suitable mathematical and statistical tools and techniques according to the research need.

# PROGRAMME SPECIFIC OUTCOMES

## DEPARTMENT OF BUSINESS ADMISTRATION

### BBA

**PSO 1 :** Development of communication skills, interpersonal relationships and ability to work as a team.

**PSO 2 :** Analysis of the business scenario, organizational context and capability to apply management principles

**PSO 3 :** Ability to apply the inter-disciplinary approach to solve business problems.

**PSO 4 :** Cultivation of rational approach to make decisions for optimal use of resources and maximise returns.

# PROGRAMME SPECIFIC OUTCOMES

## DEPARTMENT OF MATHEMATICS

### B.Sc. Mathematics

**PSO 1 :** Interpretation of effective use of mathematical skills to solve quantitative problems from a wide array of authentic contexts.

**PSO 2 :** Ability to apply rigorous mathematical arguments in axiomatic and non-axiomatic systems.

**PSO 3 :** Demonstration of effective written communication of mathematical concepts.

**PSO 4 :** Capacity to formulate and develop mathematical arguments in a logical manner

### M.Sc. Mathematics

**PSO 1 :** Understanding of advanced concepts, principles and techniques from Pure & Applied topics in mathematics and application of problem-solving skills.

**PSO 2 :** Development of abstract mathematical thinking and mathematical intuition.

**PSO 3 :** Assimilation and communication of detailed technical arguments

**PSO 4 :** Proficiently to construct and formulate logical arguments, conjectures and construction of rigorous proof by abstracting principles.

**PSO 5 :** Ability to carry out extended investigation of mathematical work as various projects independently.

## M.Phil. Mathematics

**PSO 1 :** Problem solving ability in different area of pure and applied mathematics

**PSO 2 :** Inculcation of interest to take up Mathematic research as career.

**PSO 3 :** Capability to write research papers and thesis.

## Ph.D. Mathematics

**PSO 1 :** Critical thinking & creative real time problem solving ability.

**PSO 2 :** Identification and conduct of research in Pure and Applied Mathematics

**PSO 3 :** Development of effective communication in the specific field of study.

# PROGRAMME SPECIFIC OUTCOMES

# DEPARTMENT OF PHYSICS

## B.Sc. Physics

**PSO 1 :** Application of the knowledge in the principles of nature and ability to solve and apply the concepts of Physics in various fields including Material Science, Mechanics, Thermal Physics and Electricity.

**PSO 2 :** Learning of laboratory skills, enabling measurements in basic physics and analysis of measurements to draw valid conclusions.

**PSO 3 :** Development of the skills for problem solving and scientific reasoning for the prospective physicists and logical reasoning.

**PSO 4 :** Analysis of the behaviour of materials from atomic level to macroscopic level.

## M.Sc. Physics

**PSO 1 :** Proficiency in various mathematical concepts for the proper understanding of application in all physical systems especially in electronics, electromagnetism, materials science, classical and quantum mechanics.

**PSO 2 :** Learning of laboratory skills, enabling measurements in a physics and electronics laboratory and analysis of the measurements to draw valid conclusions.

**PSO 3 :** Operation of the different electronic and physical devices such as microprocessor, microcontroller, laser, linear and non-linear optical instruments in atomic scale.

**PSO 4 :** Ability to synthesise crystals and nano materials for various technological applications.

# PROGRAMME SPECIFIC OUTCOMES

## DEPARTMENT OF CHEMISTRY

### B.Sc. Chemistry

**PSO 1 :** Development of the skills in handling various chemicals, apparatus and instruments.

**PSO 2 :** Application of the principles of thermodynamics and chemical kinetics in chemical reactions

**PSO 3 :** Acquiring the knowledge on heterocyclic compounds and natural products

**PSO 4 :** Ability to apply the basic principles of various spectroscopic, electro and thermo analytical methods to characterize the compounds

**PSO 5 :** Industrial insights on polymers, textile dyes, fibre and medicinal chemistry.

### M.Sc. Chemistry

**PSO 1 :** Inculcating the ability to design and synthesis of target molecules with the support of retrosynthesis.

**PSO 2 :** Ability to apply the various spectroscopic techniques to identify the structure of the compounds.

**PSO 3 :** Acquiring the knowledge of the microscopic techniques like SEM, TEM, AFM and
STEM

**PSO 4 :** Ability to provide insights on selection of the problem and art of scientific writing

**PSO 5 :** Developing the skill for the development of nanomaterials.

### M.Phil. Chemistry

**PSO 1 :** Ability to carry out survey of literature, selection of the problem, good laboratory practices, data analysis and art of scientific writing.

**PSO 2 :** Acquiring knowledge of semi emprical and DFT methods in computational chemistry.

**PSO 3 :** Applying the various spectroscopic techniques like 1D and 2D NMR, UV-visible, FTIR EPR, HRMS to characterize the structure of the compounds.

**PSO 4 :** Applying electro and thermos-analytical methods to study the chemical reactions.

## PROGRAMME SPECIFIC OUTCOMES

## DEPARTMENT OF BIOCHEMISTRY

### B.Sc. Biochemistry

**PSO 1 :** Ability to analyze the various biological components through analytical tools in living cells and molecular machinery.

**PSO 2 :** Development of practical laboratory skills and strong speculative foundation in the cross over discipline of Chemistry, Microbiology & Bioinformatics.

**PSO 3 :** Understanding of the applications of Biochemistry in various fields such as Clinical Biochemistry, Genetic Engineering, Molecular biology & Biotechnology.

**PSO 4 :** Acquire practical skills that will prepare for a future career in the interdisciplinary subjects.

### M.Sc. Biochemistry

**PSO 1 :** Understanding of the scientific basis of life process and orientation towards the application of knowledge acquired in solving clinical problem.

**PSO 2 :** Enhancing student's skills & employability through academic, research and internship opportunities (PG service learning).

**PSO 3 :** Exposure to basic research through the provision of PG research based project.

**PSO 4 :** Developments of analytical and Cognitive skills in Biochemistry that allow independent exploration of biological science through research methods.

**PSO 5 :** Acquiring an appreciation of impact of life science on society.

**PSO 6 :** Analysis & interpretation of investigative data in life science.

# PROGRAMME SPECIFIC OUTCOMES

## DEPARTMENT OF COMPUTER SCIENCE

### B.Sc. Computer Science

**PSO 1 :** Ability to understand, analyze, design, develop and optimize solutions related to computer programming languages.

**PSO 2 :** Application of concepts in core areas related to computer programming for efficient design of computer-based systems of varying complexity.

**PSO 3 :** Ability to test the technical issues in Software Engineering and deliver a quality product for business success.

**PSO 4 :** Ability to innovate and develop new technologies.

### M.Sc. Computer Science

**PSO 1 :** Demonstration of the knowledge of advanced programming skills and distributed environmental need for sustainable development.

**PSO 2 :** Ability to design and develop hardware and software in emerging technology environments.

**PSO 3 :** Ability to solve problems using the techniques of data analytics like pattern recognition and knowledge discovery.

**PSO 4 :** Ability to work out effective and efficient real time solutions using acquired knowledge in various domains.

### M.Phil. Computer Science

**PSO 1 :** Ability to analyze and apply the latest technologies in the concepts of key areas in computer science.

**PSO 2 :** Critical analysis of problems and thorough evaluation of potential benefits of alternative solution in designing software and/or hardware systems.

**PSO 3 :** Ability to analyze and synthesize computing systems through quantitative and qualitative techniques.

**PSO 4 :** Ability to use knowledge in various domains to identify research gaps and provide solution to new ideas and innovations.

## Ph.D. Computer Science

**PSO 1 :** Developing knowledge of the literature and comprehensive understanding of scientific methods and techniques applicable to their own research.

**PSO 2 :** Demonstrate originality in the application of knowledge, together with a practical understanding of how research and enquiry are used to create and interpret knowledge in their field;

**PSO 3 :** Develop the ability to critically evaluate current research and research techniques and methodologies.

**PSO 4 :** Inculcate self-direction and originality in tackling and problems solving ability.

## B.C.A

**PSO 1 :** Understanding of the key concepts and principles of programming languages.

**PSO 2 :** Capacity to analyze a problem, identify the computing requirements and using procedures find a solution.

**PSO 3 :** Development of practical skills to solve problems and provide solutions using current trends in the discipline of Computer Applications.

**PSO 4 :** Ability to apply the algorithmic principles, mathematical foundations and computer science theory for designing computer-based systems.

## M.C.A

**PSO 1 :** Understanding of the key concepts of Computer Applications and Computing Principles.

**PSO 2 :** Analysis, Design and Development of problem solving skills in the discipline of computer applications.

**PSO 3 :** Applying the practices and strategies of computer science for software project development to deliver a quality software product and contribute to research in the chosen field and perform effectively.

**PSO 4 :** Application of computing knowledge efficiently and effectively in projects management and progress as a computer professional.

**PSO 5 :** Act autonomously in the planning and implementation of research, gain oral presentation and scientific writing skills.

THEIVANAI AMMAL COLLEGE FOR WOMEN (AUTONOMOUS)
VILLUPURAM

# COURSE OUTCOME

## DEPARTMENT OF TAMIL

### B.A. Tamil

| Course code | Course Title | Course Out Come |
|---|---|---|
| UTAM 102 | நன்னூல் - எழுத்ததிகாரம் | CO1: தமிழ் எழுத்துக்களின் பிறப்புகளையும், புணரியல் இலக்கணத்தை பயின்று தொடரமைப்பினை பிழையின்றி எழுதுதல்<br>CO2: இலக்கண உட்கூறுகளின் உத்திமுறைகளை இலக்கியத்தில் பொருத்திப்பார்த்தல். |
| UTAM105 | நவீன இலக்கியங்கள் | CO1: நவீன இலக்கியங்களின் வரலாறு மற்றும் வளர்ச்சி நிலைகளை கற்றுணர்ந்து படைப்பாளுமையினை வளர்த்துக்கொள்ளுதல்.<br>CO2: நவீன இலக்கியங்களில் படைப்புத்திறனை வெளிப்படுத்துதல். |
| UTAM106 | தமிழக வரலாறும் பண்பாடும் | CO1: தமிழகத்தின் வரலாற்றை அறிந்து கொண்டு வரலாற்றறிஞராதல்.<br>CO2: தமிழகத்தின் ஆட்சிமுறையைப் பற்றி தெரிந்துகொள்ளல் |
| UTAM107 | மொழித்திறன் | CO1: இலக்கணப்பிழையில்லாமல் எழுதுவதற்குரிய விதிகளைக் கற்றல் மற்றும் கற்பித்தல்<br>CO2: தமிழ்மொழியைப் பிழையின்றி எழுதப் பயிலுதல். |
| UTAM 202 | நன்னூல் - சொல்லதிகாரம் | CO1: சொல் அமைப்பு, சொல் உருவாக்கம், வகைகளை அறிந்து கொண்டு புதிய இலக்கணத்தில் பின்பற்றுதல<br>CO2: சொற்பிழைநீக்கல், சொற்றொடர் அமைப்பின் விதிகளை கற்று சொற்களை கையாளும் திறன் பெறுதல். |
| UTAM204 | சிற்றிலக்கியங்கள் | CO1: இலக்கியங்கள் படைப்பதற்கான திறனை வளர்த்தல்<br>CO2: சிற்றிலக்கியங்கள் மூலம் வாழிவியல் நெறிகளை பின்பற்றுதல் |
| UTAM205 | மொழிவரலாறு | CO1: தமிழ் மொழியின் தொன்மை, வடிவம் ஆகியவற்றைப்பற்றி அறிந்து மொழியியலாளராக மேம்படுத்திக்கொள்ளல்.<br>CO2: தமிழ் மொழியின் எழுத்து, பேச்சு முறைகளை அறிந்து உச்சரிப்புநிலையை மேம்படுத்திக்கொள்ளல். |
| UTAM206 | பயிற்சிப்பட்டறை | CO1: மாணவியர் படைப்புத்திறனைப் பெறுதல்.<br>CO2: ஆளுமைத்திறனை வளர்த்து சமூகத்தில் தன்னை நிலைநிறுத்திக் கொள்ளல்.<br>CO3: நிகழ்ச்சித் தொகுப்பாளராதல்.<br>CO4: கற்பனைத் திறனை வளர்த்துக் கொண்டு படைப்பாளராக உருவாகுதல் |
| UTAM303 | யாப்பருங்கலக் காரிகை | CO1: மரபுக் கவிதைகள் இயற்றுதல்<br>CO2: தற்காலநிகழ்வுகளையாப்புவடிவில் படைக்கும் திறனைவளர்த்தல் |

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| **UTAM 304** | **காப்பியங்கள்** | CO1: காப்பியங்களின் தொன்மையினையும் சிறப்புக் கூறுகளையும் கண்டறிதல்.<br>CO2: வரலாற்றுநிகழ்வுகளைப் பற்றியபுரிதலைப் பெறுதல். |
| **UTAM305** | **மொழியியல்** | CO1: மொழிகளில் உள்ள ஒலிப்புமுறைகளை வேறுபடுத்திக் காணுதல்.<br>CO2: உச்சரிக்கும் மொழித்திறனை வளர்த்துக் கொள்ளுதல். |
| **UTAM401** | **புறப்பொருள் வெண்பாமாலை** | CO1: தமிழ் மறவர்களின் வீரச்சிறப்பினை ஆவணப்படுத்துதல்.<br>CO2: புறத்திணையின் சிறப்புகளையும் அதன் வைப்புமுறைகளையும் திறனாய்வுச் செய்தல். |
| **UTAM403** | **நம்பியகப்பொருள்** | CO1: சங்க இலக்கிய அகநூல்களை அகத்திணை இலக்கணத்தோடு பொருத்திப் பார்க்கச் செய்தல்.<br>CO2: தமிழ் மொழியின் தொன்மையான இலக்கியங்களைப் பற்றிய புரிதலை இலக்கணம் வழி ஏற்படுத்தல். |
| **UTAM404** | **தமிழ் இலக்கண நூல்கள்** | CO1: காலந்தோறும் மாற்றத்திற்கு உட்பட்ட இலக்கண முறைமைகளைக் கண்டறிதல்.<br>CO2: இலக்கணவேறுபாடு கண்டு புதிய இலக்கணம் உருவாக்க முயலுதல். |
| **UTAM405** | **அற இலக்கியங்கள்** | CO1: சமூகத்தை நல்வழிப்படுத்தும் நீதி நூல்களை உருவாக்குதல்<br>CO2: அறக் கருத்துக்களின் வழி தம்மையும் சமூகத்தையும் செம்மைப்படுத்திக் கொண்டு பணியில் சிறந்த தலைமையாளராக விளங்குதல். |
| **UTAR401** | **பயிற்சிபட்டறை** | CO1: செய்தி தயாரிப்பதற்கானஅடிப்படைப் பயிற்சியினைப் பெறுதல்.<br>CO2: செய்தி வாசிப்பாளராதல்<br>CO3: நிருபராகும் திறனை வளர்த்துக்கொள்ளுதல்.<br>CO4: பேட்டியாளராதல் |
| **UTAM505** | **இதழியல்** | CO1: தழியல் தொடங்குவதற்கான வழிமுறைகளை தெரிந்துகொண்டு இதழ் தொடங்குதல்.<br>CO2: தழ்களுக்குப் படைப்புகளை அனுப்புவதற்கான முறைகளைத் தெரிந்து கொண்டு படைப்பாளராக உருவாகுதல்<br>CO3: இதழாசிரியராக உருவாகுவதற்குரிய திறனை வளர்த்துக் கொள்ளுதல். |
| **UTAM506** | **சமய இலக்கியம்** | CO1: இறைவழிபாட்டின் வழி மனிதத்தை உணரவைத்தல்.<br>CO2: இசையறிவையும், பாடல் புனையும் ஆற்றலையும் பெறுதல் |
| **UTAM508** | **பெண்ணியம்** | CO1: பெண்ணிய படைப்பாளராகுதல்<br>CO2: முற்போக்கு சிந்தனையாராகுதல் |
| **UTAA506** | **மொழிபெயர்ப் புக்கலை** | CO1: இலக்கியங்களை மொழிபெயர்ப்பு செய்வதற்கான திறனை வளர்த்தல்<br>CO2: மொழிபெயர்ப்புத் துறையில் வேலைவாய்ப்பினைப் பெறுதல். |
| **UTAM603** | **இலக்கியத் திறனாய்வியல்** | CO1: திறனாய்வுக்கோட்பாடுகளைவளர்த்துக்கொள்ளல்.<br>CO2: சிறந்த திறனாய்வாளராக ஆகுதல் |

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| **UTAM604** | **சொற்பொழிவுக கலை** | CO1: பேச்சாளராக மாணவர்களைத் தகுதிபெறச் செய்தல்.<br>CO2: தன்னம்பிக்கையுடன் நேர்காணல் எதிர்கொள்வதற்குப் பயிற்சி அளித்தல்.<br>CO3: பேச்சாளர்க்குரிய தகுதிகளை வளர்த்துக் கொண்டு சிறந்த பேச்சாளர் ஆகுதல். |
| **UTAM606** | **நாட்டுப்புறவியல்** | CO1: நாட்டுப்புறப் பாடல்களை தொகுப்பதற்கு பயிற்சி பெற்று தொகுத்து வெளியிடுதல்.<br>CO2: நாட்டுப்புறத் துறையில் வேலைவாய்ப்புபெறுதல். |
| **UTAM607** | **தண்டியலங்காரம்** | CO1: இலக்கியங்களை இலக்கணப் பார்வையோடுஅடையாளம் காணச் செய்தல்.<br>CO2: அணி இலக்கணங்களை அறிந்துகொண்டு செய்யுள்களில் பொருத்திபார்த்தல். |
| **UTAM609** | **சங்க இலக்கியம்** | CO1: பழந்தமிழ் இலக்கியங்களைத் தெரிந்துகொண்டு இலக்கிய மரபுகளைப் பின்பற்றுதல். |
| **UTAM610** | **ஊடகத்தமிழ்** | CO1: ஊடகங்களின் வாயிலாக பயிற்சி பெறுதல்.<br>CO2: ஊடகங்களில் வேலைவாய்ப்பினைப் பெறுதல். |
| **UTAR601** | **பயிற்சிபட்டறை** | CO1: மாணவியர் படைப்புத்திறனைப் பெறுதல்.<br>CO2: மேடைபேச்சாளராகதன்னைதயார் செய்துகொள்ளல்<br>CO3: ஆளுமைத்திறனை வளர்த்துக்கொண்டு சமூகத்தில் தன்னைநிலைநிறுத்திக் கொள்ளல். |

## M.A Tamil

| Course code | Course Title | Course Out Come |
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| **PTAM102** | **தொல்காப்பியம் - எழுத்ததிகாரம்** | CO1: தொல்காப்பியரின் எழுத்திலக்கணத்தை பயின்று தொடரியல் புலமையினை வளர்த்தல்<br>CO2: தமிழ் இலக்கணத்தை பிறமொழி இலக்கணத்தோடு ஒப்பிட்டு ராயும் படிநிலைகளை வளர்த்தல் |
| **PTAM104** | **தொல்லியல்** | CO1: தொல் பழங்காலத்தை அறிவதற்கான ஆராய்ச்சியாளர்களாக உருவாகுதல்<br>CO2: கல்வெட்டு, செப்பேடு, நாணங்களின் ஆராய்ச்சியாளராக உருவாகுதல்<br>CO3: புராதான சின்னங்களை ஆவணப்படுத்துதல் |
| **PTAM106** | **சங்க இலக்கியம்** | CO1: பழந்தமிழ் இலக்கியத்தின் பெட்புகளை இக்கால இலக்கியத்துடன் பொருத்திப்பார்த்தல்.<br>CO2: பழந்தமிழரின் அகம், புறம் பற்றிய போர் முறைகளை தனது படைப்புகளின் வாயிலாக வெளிப்படுதல். |
| **PTAM107** | **இலக்கிய ஒப்பாய்வியல்** | CO1: மேலை நாட்டு இலக்கிய உத்திகளை கையாளுதல்<br>CO2: தமிழ் இலக்கியங்களைப் பிறதுறை இலக்கியத்தோடு ஒப்பீட்டுபார்த்தல்.<br>CO3: உலக அளவில் இலக்கிய வகைமைகளையும், தமிழில் உள்ள இலக்கிய வகைமைகளை இனங்காணல். |

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| **PTAM108** | **தமிழ்ச்சூழலில் பெண்ணிய இயக்கங்கள்** | CO1: பெண்படைப்பாளர்களாக உருவாகுதல்<br>CO2: பிற இலக்கியத்தோடு பெண்ணிய இலக்கியங்களை பொருத்திப்பார்த்தல்<br>CO3: பெண்களுக்குரிய அடிப்படை சட்டங்களையும், அரசு திட்டங்களையும் நடைமுறைப்படுத்துதல். |
| **PTAM203** | **தொல்காப்பியம் - சொல்லதிகாரம்** | CO1: இலக்கணத்தின் தொடர் அமைப்பு முறையினை ஒப்பிட்டு ஆராய்தல்<br>CO2: தொல்காப்பிய சொல்லதிகார அமைப்பினை பிறமொழி இலக்கணத்துடன் பொருத்திப்பார்த்தல் |
| **PTAM208** | **சுற்றுலாவியல்** | CO1: சுற்றுலாத்துறையில் வேலைவாய்ப்பினை பெறுதல்<br>CO2: சுற்றுலாத்தலங்களின் வரலாற்றை அறிந்து கொண்டு சுற்றுலா வழிகாட்டியாதல் |
| **PTAM209** | **திறனாய்வுக் கோட்பாடுகள்** | CO1: உலகளாவியத் திறனாய்வுக் கோட்பாடுகளை வகைப்படுத்துதல்<br>CO2: கோட்பாடுகளை இலக்கியத்தோடு ஒப்பீட்டு திறனாய்வுச் செய்தல். |
| **PTAM210** | **அற இலக்கியங்கள்** | CO1: வாழ்வியல் நெறிகளை உணர்ந்து கொள்ளுதல்.<br>CO2: வாழ்வியல் நெறிகளை அறிந்து அற இலக்கியங்கள் வழி நல்வழிப்படுதல் |
| **PTAM211** | **அகராதியியல்** | CO1: அகராதித்துறையில் வேலைவாய்ப்பினை பெறுதல்<br>CO2: அகராதி உருவாக்க முயற்சிகளில் ஈடுபடல். |
| **PTAM301** | **தொல்காப்பியம்- பொருளதிகாரம்** | CO1: தமிழ் மக்களின் வாழ்க்கை இலக்கணத்தை தெரிந்து கொண்டு மனித சமுதாயம் மேம்படவைத்தல்<br>CO2: தொல்காப்பிய இலக்கண கூறுகளை நவீன இலக்கியத்துடன் ஒப்பிட்டு ஆராய்தல் |
| **PTAM305** | **ஆராய்ச்சி நெறிமுறைகள்** | CO1: தமிழில் ஆராய்ச்சி நெறிமுறைகளைப்பற்றி ஆய்வு மாணவர்களுக்கு அறிமுகப்படுத்துதல். |
| **PTAM306** | **உரையாசிரியர்கள்** | CO2: உரையாசிரியர்களின் உரைகளுக்கிடையிலான வேறுபாட்டினைக் கண்டறிதல்.<br>CO3: இலக்கிய இலக்கணத்திற்குப் புதியஉரை எழுதுவதற்கான திறன் பெற்று எழுதுதல். |
| **PTAM308** | **காப்பியங்களும் சிற்றிலக்கியங்களும்** | CO1: தமிழ்க் காப்பியங்களின் பொருள் சார்ந்த கட்டமைப்பினை உணர்ந்து நீதி நெறியுடன் சமுதாயத்தில் விளங்குதல்<br>CO2: சிற்றிலக்கியங்களின் பாடுபொருள்களையும் உள்ளடக்கத்தையும் கற்றுணர்ந்து இலக்கியம் படைத்தல் |
| **PTAM309** | **தமிழர் மானுடவியல்** | CO1: தமிழரின் தொன்மைப்பண்பாட்டினை தற்கால வாழ்வியலோடு ஒப்பிட்டு மானுடவியல் சாந்த ஆய்வாளராக ஆகுதல்<br>CO2: மானுடவியலின் தொன்மைக் கூறுகளை உணர்ந்து அவற்றை சமூகத்தில் கண்டறியும் கள ஆய்வாளராக உருவாதல் |
| **PTAM401** | **தொல்காப்பியம்- பொருளதிகாரம்** | CO1: தமிழ் மக்களின் வாழ்க்கை இலக்கணத்தை தெரிந்து கொண்டு மனித சமுதாயம் மேம்படவைத்தல்<br>CO2: தொல்காப்பிய இலக்கண கூறுகளை நவீன இலக்கியத்துடன் ஒப்பிட்டு ஆராய்தல் |

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| **PTAM 404** | **ஊடகவியல்** | CO1: ஊடகங்களையும் அவற்றின் செயல்பாடுகளையும் அறிந்துகொள்ளும் திறனைவளர்த்துக் கொள்ளுதல்.<br>CO2: ஊடகத்துறையில் பணிவாய்ப்புகளைஉருவாக்கிக் கொள்ளுதல்.<br>CO3: ஊடகத்தை உருவாக்கும் தனித்திறனைவளர்த்துக் கொள்ளுதல். |
| **PTAM407** | **நவீன இலக்கியம்** | CO1: நவீன இலக்கியங்களின் வரலாறு மற்றும் வளர்ச்சி நிலைகளை கற்றுணர்ந்து நவீன இலக்கியவாதிகளாக உருவாதல்<br>CO2: நவீன இலக்கியங்களின் வகைமைகளை அறிந்து படைப்பாளுமையினை மேம்படுத்திக்கொள்ளுதல்.<br>CO3: நவீன இலக்கியங்களில் படைப்புத்திறனை வெளிப்படுத்துதல். |

## M. Phil. Tamil

| Course code | Course Title | Course Out Come |
|---|---|---|
| **MTAM101** | **ஆராய்ச்சி நெறிமுறைகள்** | CO1: ஆய்வுநெறிமுறைகளை அறிந்துகொண்டு ஆய்வேட்டில் பயன்படுத்தும் முறையை மேற்கொள்ளல்<br>CO2: ஆய்வு நூல்களை வெளியிடுதல் |
| **MTAM103** | **தமிழ் ஆராய்ச்சி வரலாறு** | CO1: தமிழ் இலக்கியத்தில் ஆராய்ச்சி வரலாற்றினை அறிந்து ஆய்வாளராக உருவாகுதல்.<br>CO2: தமிழ் இலக்கிய கோட்பாடுகளை அணுகித் திறனாய்வாளராக வெளிப்படுத்திக்கொள்ளல். |

# COURSE OUTCOME

## DEPARTMENT OF ENGLISH

### B.A English

| Course Code | Course Title | Course Out Come |
|---|---|---|
| UENL107 | **Basic English- I** | CO1: Bolster up their knowledge in Literary Skills.<br>CO2: Advance skills to read and write.<br>CO3: Enhance their grammatical enlightenment in the Language. |
| UENL108 | **Advanced English – I** | CO1: Acquire creative skills through Poetry.<br>CO2: Familiarize with the Rhyme and Rhythm of Poetry.<br>CO3: Recognize the values of poetry through the different kinds of poems. |

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| UENM105 | **Foundation** | CO1: Read and write without errors.<br>CO2: Understand and practice the basic knowledge of English Grammar.<br>CO3: Conceive the grammatical rudiments of the language. |
| **UENM106** | **Poetry** | CO1: Understand the forms and Styles of poetry.<br>CO2: Explore the verse language and its devices.<br>CO3: Recognize the different types of poems. |
| **UENM107** | **Prose** | CO1: Understand the types and characteristic features of Essays.<br>CO2: Examine the Narrative Skills of different authors.<br>CO3: Analyze the intuitive Prose features of world renowned authors. |
| **UENA103** | **Literary Terms and Forms** | CO1: Collect and grasp the different Genres of English Literature.<br>CO2: Use the genres in their creative writing.<br>CO3: Attain the Genre awareness through book learning. |
| **UENL207 .** | **General English- II** | CO1: Refine their understanding of Prose, Poetry and Short Story.<br>CO2: Gain ground in the advanced skills of the language.<br>CO3: Accomplish the basic elements of English Grammar |
| **UENL208** | **English – II** | CO1: Acquire the art of Prose Writing.<br>CO2: Understand the values of life through the prescribed prose.<br>CO3: Conceive imaginary skills through different types of essays. |
| **UENM205** | **Drama** | CO1: Understand the Origin, Growth & Development of Drama in various ages.<br>CO2: Pursue the Plot, Characterization, Themes & Techniques of Drama.<br>CO3: Accomplish the condition of Drama Stages of Various Ages. |
| **UENM206** | **Fiction** | CO1: Conceive the multifarious nuances of fiction.<br>CO2: Familiarize with the social factors of English domestic life.<br>CO3: Recognize the inevitable evolution of the new Genre- Novel. |
| **UENA203** | **Social History of England** | CO1: Acquire an in-depth knowledge on the social history of England.<br>CO2: Recognize English thought, culture and history reflected from their study of literature.<br>CO3: Attain enlightenment on the royal and social harmony in English Life. |
| **UENL307** | **General English** | CO1: Understand the importance of language.<br>CO2: Acquire knowledge of different genres.<br>CO3: Enhance their grammatical skills in English Language. |
| **UENL408** | **Advanced English –IV** | CO1: Define the manifold shades of fiction.<br>CO2: Understand various types of fiction<br>CO3: Interpret the inevitable evolution of the Genre – Fiction. |

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| **UENM405** | **Diasporic Literature** | CO1: Understand Diasporic Literature.<br>CO2: Infer the culture across the continents through the study of Diasporic Literature.<br>CO3: Analyze the richness of Diasporic Literature. |
| **UENM406** | **Women's Writing** | CO1: Understand the writings of women and help them to appreciate it.<br>CO2: Compare and contrast images of women by women writers with the portrayal of the same by male-writers.<br>CO3: Analyze the conflict of women and solution to it. |
| **UENM407** | **Language and Linguistics** | CO1: Understand the various stages in the evolution of English Language and Linguistics.<br>CO2: Analyse the variations in English sounds for perfect pronunciation.<br>CO3: Write appropriate sentence by the application of Linguistics. |
| **UENA403** | **History of English Literature – II** | CO1: Understand the perspectives of the history of English Literature.<br>CO2: Analyze the aesthetic sense and appreciate literary forms of the period.<br>CO3: Create literary works. |
| **UENM509** | **English Language Teaching** | CO1: Understand English language teaching skills.<br>CO2: Adapt the new technologies for the teaching and learning process.<br>CO3: Appraise the new theories and methods in English language teaching. |
| **UENM510** | **Common Wealth Literature** | CO1: Identify the background of Commonwealth literature.<br>CO2: Criticize different themes used by the Common Wealth writers<br>CO3: Assess the colonial identity in the perspective of commonwealth writers. |
| **UENM511** | **Basics of Translation** | CO1: Understand the origin and development of translation.<br>CO2: Acquire knowledge on various theories and techniques of translation.<br>CO3: Enhance the conceptual and practical dimensions in Translation. |
| **UENM512** | **Literary Criticism – I** | CO1: Understand the features in Literary Criticism.<br>CO2: Differentiate the various methods and technique used by the critics<br>CO3: Analyze the various literary pieces and evaluate critically. |
| **UENA503** | **Contemporary Literature** | CO1: Understand the themes in Contemporary Literature.<br>CO2: Familiarize the representative writers in the different genres of literature.<br>CO3: Assess the value of life in the contemporary literature. |

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| **UENL308** | **Advanced English – III** | CO1: Identify the trends and movements in drama across times.<br>CO2: Compare the socio-cultural aspects of dramatists.<br>CO3: Assess the plot, characterization, themes and techniques of Drama |
| **UENM305** | **Indian Writing in English** | CO1: Understand the importance of Indian English literature and its culture.<br>CO2: Illustrate Indian socio-political issues in Indian literature in English.<br>CO3: Analyze the different Genres used in Indian writing in English |
| **UENM306** | **American Literature** | CO1: Identify the impression of American Literature on society.<br>CO2: Analyse various devices used by the American writers.<br>CO3: Criticise the works of great writers and thinkers of America. |
| **UENA303** | **History of English Literature – I** | CO1: Identify the historical events in The History of English literature.<br>CO2: Understand the impact of different on English literature.<br>CO3: Examine the major historical achievements in different ages of literature. |
| **UENE304 CSO** | **Media Studies** | CO1: Understand the concept, scope and significance of mass communication.<br>CO2: Develop journalistic skills in mass media.<br>CO3: Write, edit, proof read and publish articles in media |
| **UENE305 NEWS** | **Reporting: Theory And Practice** | CO1: Understand the nuances of News Reporting and writing.<br>CO2: Develop the report writing skill |
| **UENL407** | **General English- IV** | CO1: Understand different genres like Prose, Poetry and Short Story.<br>CO2: Accomplish the basic elements of English Grammar.<br>CO3: Enhance the grammatical enlightenment in the Language. |

## M.A. English

| Course Code | Course Title | Course Out Come |
|---|---|---|
| **PENM108** | **English Literature From 1500 To 1660** | CO1 : Comprehend the early trends in Modern English Poetry.<br>CO2 : Analyse and compare the features in later writings.<br>CO3: Attain an insight on the classical writers in comparison with English authors. |
| **PENM109** | **American Literature** | CO1: Identify the diction and phraseology of American Writings.<br>CO2 : Employ those themes and techniques in their projects.<br>CO3: Develop an awareness of the American thirst for Freedom. |
| **PENM110** | **Feminist Writing in English** | CO1: Gather an exclusive understanding in Gender Studies.<br>CO2: Develop an interest in the studied of this new genre.<br>CO3: Analyse and interpret their own thoughts in their writings. |

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| **PENM111** | **Indian Writing in English** | CO1: Estimate the thirst for freedom in Indian English Writers.<br>CO2: Evaluate the values of life through Indian Writing in English.<br>CO3: Understand the diverse themes in the Indian Cultural Context. |
| **PENM112** | **Shakespeare** | CO1: Understand the working of the human minds and their numerous emotions from a study of Shakespeare's myriad characters.<br>CO2: Analyze the greatness of Shakespeare as a master craftsman in the genre.<br>CO3: Discuss the traits of Shakespeare that made him the man of the millennium. |
| **PENM209** | **Restoration and Eighteenth Century English Literature** | CO1: Acquaint with styles of the authors of this period.<br>CO2: Compare and contrast with the authors of different periods.<br>CO3: Have a broad study of the Restoration Age. |
| **PENM210** | **English Phonetics: Theory and Practice** | CO1: Analyze the basic rules and functions, stress and Intonations of English words and sentences.<br>CO2: Practice correct pronunciations of English Phonology.<br>CO3: Get informed on the various speech organs and sounds produced. |
| **PENM211** | **Language and Linguistics** | CO1: Learn about language, the acceptable system of sounds and Pronunciation.<br>CO2: Familiarized with the Evolution of languages and the place of English in it.<br>CO3: Achieve a scientific knowledge of the language through Linguistics to complement the aesthetic sense from their study of literature. |
| **PENM212** | **Principles of Literary Criticism** | CO1: Understand the current trends in Literary Criticism.<br>CO2: Analyze the various literary pieces and evaluate critically.<br>CO3: Get a holistic idea of Criticism. |
| **PENM213** | **Diasporic Studies** | CO1: Understand the feelings of immigrants through Literature.<br>CO2: Explore the Culture of Immigrant people and apply in their research.<br>CO3: Make out the origin and multiple heritage of Diasporic writing. |
| **PENM309** | **Romantic and Victorian Age** | CO1: Understand Romantic and Victorian Society and its culture.<br>CO2: Differentiate the political and socio-cultural forces during the ages.<br>CO3: Analyse the cultural and moral values of the period. |
| **PENM310** | **Canadian Literature** | CO1: Understand the tone and expression in Canadian literary genres.<br>CO2: Examine the socio-political issues in Canadian literature.<br>CO3: Determine the trends emerging in Canadian literature. |

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| **PENM311** | **Research Methodology in English** | CO1: Select research problem and prepare research proposal.<br>CO2 : Understand the methods and mechanics of Research Report Writing.<br>CO3: Prepare the academic research report. |
| **PENM312** | **Literature in Translation** | CO1: Understand the richness of other culture.<br>CO2: Evaluate the reflections of tradition in translated works. |
| **PENM313** | **African American Literature** | CO1: Understand the sufferings and protests of the African American writers.<br>CO2: Differentiate the literary background of the writers.<br>CO3: Examine the relationship between cultural formation and literary production |
| **PENM408** | **Twentieth Century Literature** | CO1: Understand the trend in 20th Century Literature.<br>CS2: Evaluate the themes of 20th Century literary works.<br>CO3: Write the literary antecedents of modernism. |
| **PENM409** | **Postcolonial Literature** | CO1: Understand the aesthetic, moral and cultural values of postcolonial literature.<br>CO2: Examine the socio-political mood in "third-world" countries.<br>CO3: Assess the experience of postcolonial sufferings across the countries. |
| **PENM410** | **Feminist Literary Criticism** | CO1: Define origin and growth of new theories in Feminism.<br>CO2 : Analyze the concepts and social patterns of different feminist writers.<br>CO3: Assess the patriarchal society and to create self-identity. |
| **PENM411** | **Journalism** | CO1: Understand the importance of media in day today life.<br>CO2: Develop the media skills in the field of journalism.<br>CO3: Write, edit, proof read and publish articles. |

## M.Phil. English

| Course Code | Course Title | Course Out Come |
|---|---|---|
| **MENM103** | **Research Methodology** | CO1 : Acquaint with the mechanics of research.<br>CO2 : Apply the techniques in their research.<br>CO3 : Attain an eminence in the mode of Research Methodology. |
| **MENM104 CRITICAL** | **Approaches to Literature** | CO1: Enable the research scholars get acquainted with the latest trends in Literary Theory and Criticism.<br>CO2: Analyse the early and modern kinds of Critical approaches.<br>CO3: Identify the evolution of entirely innovative modes of criticism. |

THEIVANAI AMMAL COLLEGE FOR WOMEN (AUTONOMOUS)
VILLUPURAM

# COURSE OUTCOME

## DEPARTMENT : COMMERCE

### B.Com & B.Com (CA)

| Course Code | Course Title | Course Out Come |
|---|---|---|
| UCOM104/UCCM102 | Financial Accounting | CO1: Understand the basic rules of accounting and accounting principles.<br>CO2: single entry system into systematic accounting<br>CO3: Maintaining accounting for different types of organizations, branch and departments |
| UCOM103 /UCCM103 | Fundamentals of Commerce | CO1: Gain knowledge on fundamentals of electronic commerce.<br>CO2: Apply the knowledge of e-commerce in the real business world. |
| UCOM203/ UCCM202/ UCOA203 | Accounting Package | CO1: Gain basic knowledge in computerized accounting.<br>CO2: Create company data, vouchers and inventories<br>CO3: Extract financial and business reports |
| UCOR204/ UCCR203/ UCOR203 | Accounting Package - Practical | CO1: Gain knowledge on application of computers in accounting.<br>CO2: Create vouchers, journals and stock groups. |
| UCOM204/ UCCM203 | Business Correspondence | CO1: Develop effective communication skills by overcoming barriers to communication.<br>CO2: Prepare different types of business letters, reports and business correspondence |
| UCOE202/ UCCE201 | Modern Accounting Package | CO1: Understand the basic accounting concepts and conventions<br>CO2: Prepare trading, profit & loss a/c and balance sheet.<br>CO3: Work accounting with the help of Tally. |
| UCCE301 | Internet Banking | CO1: Understand the various banking functions<br>CO2: Compare the various merits of debit cards and credit cards in modern banking.<br>CO3: Evaluate the E-Transactions facilities provided by various banks |
| UCOM305/ UCCM305 | Cost Accounting | CO1: Gain knowledge in basic concepts of Cost Accounting.<br>CO2: Acquaint the students with various methods involved in cost ascertaining system.<br>CO3: Gain expert knowledge in cost control methods and their applications. |

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| **UCOM306 / UCCM306 / UBAM308 -** | **Marketing Management** | CO1: Understand the conceptual framework of Marketing.<br>CO2: Apply the product and pricing policies and sales promotion techniques in the emerging Marketing scenario.<br>CO3: Undertake marketing research and apply the outcome for product development. |
| **UCOM307 / UBAM309** | **Financial Markets & Services** | CO1: Understand the Indian Financial System, its constituents, the principles on which it operates, inter linkages and regulatory concerns.<br>CO2: Familiarize with various types of financial services and their role in social change.<br>CO3: Differentiate Innovative financial Services from Traditional financial services |
| **UCOM407** | **Banking Law And Practice** | CO1: Develop an understanding of the legal aspects involved in banking business.<br>CO2: Gain knowledge in Banking functions and services.<br>CO3: Understand the Negotiable Instruments.<br>CO4: Have knowledge in recent trends in Banking. |
| **UCCM405** | **E-BANKING** | CO1: Understand the e-banking transactions.<br>CO2: Familiarize with the latest development in the field of Banking and Financial System.<br>CO3: Assess Strengths, Weaknesses, Opportunities and Threats of e-banking. |
| **UCOM408/ UCCM408** | **Corporate Accounting** | CO1: Gain knowledge on the important aspects of Corporate Accounting.<br>CO2: Gain knowledge in the preparation of Bank Accounts.<br>CO3: Acquire knowledge and skills in accounting for changes in corporate structure.<br>CO4: Develop skills in the preparation of company accounting statements and in their analysis. |
| **UCOM409/ UCCM409** | **Business Law** | CO1: Equip the prospective entrepreneurs (businessmen) with knowledge of fundamentals in Business Law<br>CO2: Gain knowledge of right and obligations arising from different types of contracts.<br>CO3: Acquire knowledge in Laws relating to special Contracts, such as Sale of goods and Negotiable Instruments Act. |
| **UCOR411/ UCCR410** | **Ucom410 / Uccm410 Security Analysis & Portfolio Management** | CO1: Understand the characteristics of securities markets and the instruments.<br>CO2: Analyze risk and return of securities.<br>CO3: Manage portfolio of investments. |

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| **UCOR411/ UCCR410** | **Commerce Workshop** | CO1: Fill-up forms used in Banks, Insurance Companies and other business units.<br>CO2: Acquire knowledge on documentation procedure. |
| **UCOE302** | **Women Entrepreneurial Development** | CO1: Acquire knowledge about women entrepreneurship concepts and development.<br>CO2: Differentiate various incentives, subsidies and taxation benefits given by government for women entrepreneurs.<br>CO3: Motivate the students to earn by self employment. |
| **UCOA303** | **Financial Accounting** | CO1: Understand the basic rules of accounting and accounting principles.<br>CO2: Prepare accounting for different types of organizations.<br>CO3: Analyze and interpret financial statements. |
| **UCOR403** | **Accounting Package– Practical** | CO1: Gain knowledge on application of computers in accounting.<br>CO2: Create vouchers, journals and stock groups. |
| **UCOA403** | **Accounting Package - Theory** | CO1: Gain basic knowledge in computerized accounting.<br>CO2: Create company data, vouchers and inventories.<br>CO3: Extract financial and business reports. |
| **UCOM505/UCCM505** | **Income Tax Law and Practice - I** | CO1: Gain knowledge on Principles and Practice of Income Tax Act in India.<br>CO2: Apply Income Tax provisions for Tax planning |
| **UCOM506/UCCM506** | **Company Law** | CO1: Understand the Provisions of Company law.<br>CO2: Form and manage the companies |
| **UCOM507/ UCCM507/ UBAM504** | **Management Accounting** | CO1: To Gain knowledge of basic concepts of management accounting<br>CO2: To Analyze and interpret the financial statements<br>CO3: To Develop skills to take managerial decisions |
| **UCOM508** | **Practical Auditing** | CO1: Have basic knowledge on the principles and practice of Auditing<br>CO2: Verify the books of accounts and deduct errors and frauds<br>CO3: Prepare auditing reports |
| **UCOM609/ UCCM609** | **Indirect Taxation** | CO1: Study the concepts of Indirect Tax<br>CO2: Determine the Indirect Tax Liability<br>CO3: Apply the provisions of Indirect Tax Laws for tax planning |
| **UCOM612 /UBAM609** | **Women Entrepreneurship** | CO1: Understand the concept of women entrepreneurship<br>CO2: Identify the various schemes under various financial institutions<br>CO3: Prepare business ideas to establish small scale business |

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| **UCOM613/ UCCM613** | **Financial Management** | CO1: Understand the nature and scope of Financial Management.<br>CO2: Prepare budgets and take dividend policy<br>CO3: Develop the necessary skills and techniques to take decisions and corporate sector |
| **UCOM614 / UCCM614** | **Enterprise Resource Planning** | CO1: Understand the conceptual model of ERP<br>CO2: Integrate the benefits of ERP |
| **UCOR615/ UCCR615** | **Commerce Workshop** | CO1: Acquire knowledge on documentation procedure with regard to bank , insurance & Companies EXIM<br>CO2: Manage the Bank filing procedures in banks & insurance Companies. |
| **UCCO605 / UCOO605** | **E-Marketing** | CO1: Understand the importance of online marketing and its impact on traditional marketing<br>CO2: Analyze and design a competitive e-CRM<br>CO3: Develop strategies and innovation in online marketing |
| **UCCO606/ UCOO606** | **Income Tax Law & Practice II** | CO1: Identify the assessment procedures.<br>CO2: Apply set off and carry forward provisions.<br>CO3: Assess income tax liability |
| **UCCM615** | **E - Entrepreneurship** | CO1: Understand the concept of e- entrepreneurship<br>CO2: Identify the various e-business sites and its features<br>CO3: Establish e- business site. |

## M.Com

| Course Code | Course Title | Course Out Come |
|---|---|---|
| **PCOM104** | **Financial Policies And Decision Making** | CO1: Know the Financial Functions in Business Organization<br>CO2: Familiarize the recent Global Trends in Finance<br>CO3: Take Financial Decision using Various Techniques |
| **PCOM102** | **Business Environment & Policies** | CO1: Understand various factors influencing business environment.<br>CO2: Realize the importance of micro and macro environment of business<br>CO3: Analyse the role of socio- cultural and global factors on the development of economy and business.<br>CO4: Assess the implications of industrial, technological, political and legal factors on the conduct of business. |
| **PCOM105** | **Strategic Management** | CO1: Understand the analysis, formulation, Implementation and evaluation of management strategies<br>CO2: Formulate strategies for international business |

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| **PCOO104** | **Corporate Governance & Business Ethics** | CO1: Understand the concept of corporate governance and its various principles<br>CO2: Appraise the duties and powers of board of directors<br>CO3: Standardize business ethics in various areas of corporate sectors |
| **PCOO105** | **Organizational Behaviour** | CO1: Understand the basics of individual behavior and group behavior of people at work<br>CO2: Manage for the overall development of the organization. |
| **PCOO106** | **Banking Career Skills** | CO1: Acquire the Bank Exam Skills<br>CO2: Prepare for Bank exams and enhance their skills to tackle competitive exams for recruitment in banks. |
| **PCOM206** | **Advanced Accounting** | CO1: Gain knowledge in Corporate Accounting.<br>CO2: Create awareness with regard to Merger and Acquisition.<br>CO3: Enhance the students knowledge with regard to Banking & Insurance business. |
| **PCOM202** | **Global Marketing** | CO1: Gain awareness on International Marketing and Domestic Marketing.<br>CO2: Extend knowledge on International Marketing Strategies and Operations.<br>CO3: Enhance knowledge with regard to International Trade Promotion. |
| **PCOE101** | **Preparatory Course For Bank Exam** | CO1: Enable the students to acquire the Bank Exam Skills<br>CO2: Enhance their practical application skills |
| **PCOE102** | **Business Letters** | CO1: Gain the knowledge of banking correspondence<br>CO2: Develop effective communication skills by overcoming barriers to communication |
| **PCOE202** | **Export And Import Procedures** | CO1: Gain knowledge with the procedures of export and import transactions<br>CO2: Apply the documentation formalities related to export and import transactions. |
| **PCOE203** | **Accounting Package** | CO1: Gain knowledge in financial accounting<br>CO2: Use of computers in the area of financial accounting.<br>CO3: Become competent in the employment arena |
| **PCOM303** | **Research Methodology** | CO1: Enable the students to understand the basic concepts of research<br>CO2: Expose the students to have a thorough knowledge on research<br>CO3: Enable the students to apply statistical tools in research |

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| **PCOM304** | **Service Marketing** | CO1: Create awareness about Management of Financial Services.<br>CO2: Enable the students have an insight into Marketing of Services.<br>CO3: Provide a comprehensive overview of the new developments in Service Marketing.<br>CO4: Enhance the students knowledge with regard to CRM |
| **PCOM305** | **Income Tax & International Taxation** | CO1: Understand the basic principles of the Income Tax Act<br>CO2: Compute the taxable income of an Assessee<br>CO3: Apply income tax provisions for tax planning<br>CO4: Determine arm's length price for domestic and international transactions |
| **PCOM306** | **Contemporary Business Legislations** | CO1: Acquire knowledge and understanding of major commercial and economic laws.<br>CO2: Sensitize the importance of Intellectual property rights in the global economy. |
| **PCOM307 / PCAM311** | **Computerized Accounting - Theory** | CO1: Understand the accounting concepts and conventions<br>CO2: Prepare financial statements and reports using accounting software. |
| **PCOR308 / PCAR312** | **Computerized Accounting – Practical** | CO1: Understand the use and application of computers in accounting.<br>CO2: Prepare financial statements and reports using accounting software |
| **PCOM404** | **Indirect Taxes** | CO1: Knowledge on Indian fiscal system.<br>CO2: Create awareness on central excise and custom duties<br>CO3: Gain expert knowledge on different provisions of central sales tax<br>CO4: Enhance students knowledge on VAT and its significance |
| **PCOM405** | **Export Import Financing** | CO1: Knowledge of documentation formalities related to export - import.<br>CO2: Applying the procedures of export – import transaction<br>CO3: To enable students acquire knowledge in international trade and its practice in our country<br>CO4: To enable the students to learn the significance of foreign exchange and computation of exchange rate |
| **PCOM406** | **Advanced Cost & Management Accounting** | CO1: Understand the cost accounting techniques for evaluation, analysis and application in managerial decision making.<br>CO2: Compare and contrast marginal costing in respect of profit reporting.<br>CO3: Prepare and interpret budgets, standard costs and variance statements. |

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| **PCOM407** | **Logistics Management** | CO1: Create Knowledge of Logistics & Supply Chain Management.<br>CO2: Understand the comprehensive nature of logistics management.<br>CO3: Knowledge of the legal provision related Motor Vehicle Act. |

**M.Phil Commerce**

| Course Code | Course Title | Course Out Come |
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| **MCOM102** | **Research Methodology** | CO1: Enhance knowledge on concepts of Research Methods.<br>CO2: Develop Research Skills<br>CO3: Contribute for Theory Building |
| **MCOM104** | **Advanced Financial Management** | CO4: Enhance knowledge on the corporate finance function in business.<br>CO5: Develop skills in financial analysis and decision making.<br>CO6: Analyses financial performance of companies with Advanced Financial Management Techniques to become Financial Analyst. |

# COURSE OUTCOME

## DEPARTMENT : BUSINESS ADMINISTRATION

**BBA**

| Course Code | Course Title | Course Out Come |
|---|---|---|
| **UBAM105** | **Management Thoughts and Thinkers** | CO1: Understand the different schools of management thoughts and management contributors.<br>CO2: Identify the contributions of various management disciplines.<br>CO3: Analyze the impact of contributions in present management scenario |
| **UBAM106** | **Business Organization** | CO1: Understand the concepts of business and business organization.<br>CO2: Differentiate various types of business organizations<br>CO3: Assess the impact of recent business organizations in India. |

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| **UBAM107** | **Principles of Management** | CO1: Identify the management concepts.<br>CO2: Recall the Management Principles<br>CO3: Apply the management principles in Business |
| **UBAM204** | **Business Communication** | CO1: Identify the need for communication in business.<br>CO2: Practice various business letters.<br>CO3: Analyses the various occasions in business that require different Reports |
| **UBAM206** | **Business Environment** | CO1: Identify the components of Business Environment.<br>CO2: Compare the importance of a variety of environmental variables.<br>CO3: Assess the impact of environmental variables on business. |
| **UBAM308** | **Marketing Management** | CO1: Understand different concept in marketing.<br>CO2: Realize the significance of marketing mix decisions in capturing market share.<br>CO3: Analyze the marketing strategies of companies for market segmentation & positioning. |
| **UBAM309** | **Financial Markets and Services** | CO1: Understand the Indian Financial System, its constituents, the principles on which it operates, inter linkages and regulatory concerns.<br>CO2: Familiarize with various types of financial services and their role in economic development.<br>CO3: Differentiate Innovative financial Services from Traditional financial services. |
| **UBAM406** | **Organizational Behaviour** | CO1: Acquire knowledge of theories of Organization, individual and group behavior.<br>CO2: Understand the motivation techniques, group dynamics & work environment in organizations.<br>CO3: Function effectively in teams. |
| **UBAM407** | **Human Resource Management** | CO1: Identify the significance of Human Resources<br>CO2: Understand the concepts in Human Resource Management.<br>CO3: Gain awareness on contemporary HR practices in Industry |
| **UBAM405** | **Production & Materials Management** | CO1: Understand the basic concepts of production.<br>CO2: Analyze the various methods of production planning and control techniques.<br>CO3: Apply the production process using store keeping & material handling procedures |
| **UBAM507** | **Research Methods in Business** | CO1: Understand the role of research in business.<br>CO2: Formulate research problem and use different methods of sampling and tools<br>CO3: Write research report. |

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| **UBAM508** | **Services Marketing** | CO1: Understand the various concepts of services marketing.<br>CO2: Use elements of marketing mix in services marketing.<br>CO3: Implement the strategies for better services. |
| **UBAM509** | **Mercantile Law** | CO1: Understand the basic concepts of Indian Contract Act, 1872.<br>CO2: Analyze the various methods of discharge of contract and their remedies<br>CO3: Appraise the recent amendments in laws related to business. |
| **UBAM504** | **Management Accounting** | CO1: Gain knowledge of basic concepts of management accounting<br>CO2: Analyze and interpret the financial statements<br>CO3: Develop skills to take managerial decisions based on accounting information |
| **UBAM504** | **Management Accounting** | CO1: Gain knowledge of basic concepts of management accounting<br>CO2: Analyze and interpret the financial statements<br>CO3: Develop skills to take managerial decisions based on accounting information |
| **UBAM608** | **Strategic Management** | CO1: Understand the concept of corporate strategy<br>CO2: Study various business models<br>CO3: Analyze the practical corporate strategies |
| **UBAM609** | **Women Entrepreneurship** | CO1: Understand the concept of women entrepreneurship.<br>CO2: Identify assistance schemes from various financial institutions.<br>CO3: Prepare business ideas to establish small scale business |
| **UBAM610** | **Financial Management** | CO1: Understand the nature and scope of Financial Management.<br>CO2: Develop the necessary skills and techniques to take decisions in corporate sectors.<br>CO3: Prepare budgets and make policies. |
| **UBAO607** | **Industrial Relations** | CO1: Understand the basic concepts of Industrial relations.<br>CO2: Interpret the growth of trade unions and examine workers participation in management.<br>CO3: Assess the practical industrial relations scenario. |
| **UBAO603** | **Event Management** | CO1: Understand the concepts in event management<br>CO2: Learn the managerial aspects of event management<br>CO3: Ensure Event safety and security. |

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| **UBAO604** | **Customer Relationship Management** | CO1: Understand the importance of customer satisfaction in today's' competitive world.<br>CO2: Identify CRM process and apply framework for successful CRM.<br>CO3: Use the modern technologies to build customer relationship. |
| **UBAO605** | **Retail Management** | CO1: Acquaint with different types of retail outlets.<br>CO2: Understand Customer Management and Show Room Management.<br>CO3: Evaluate different retailing methods for different kinds of products. |
| **UBAO606** | **Emerging Business Practices in India** | CO1: Understand the emerging business practices in India<br>CO2: Realism the significance of IT enabled services<br>CO3: Apply the above in organizational context |
| **UBAO608** | **Rural Marketing** | CO1: Understand rural marketing scenario in India.<br>CO2: Examine the consumer behavior in rural market.<br>CO3: Analyze the impact of government schemes in rural development. |
| **UBAE202** | **Leadership Skills** | CO1: Understand the importance & effects of leadership.<br>CO2: Make use of the leadership skills in student's life.<br>CO3: Inspire them to become a leader. |
| **UBAA504** | **Travel Management** | CO1: Gain knowledge about itinerary planning and tour package<br>CO2: Identify various trade associations.<br>CO3: Analyze various HRD issues and problems in travel industry |
| **UBAA505** | **Green Management** | CO1: Understand the basic concept of green management.<br>CO2: Develop green economy.<br>CO3: Analyze green competencies in marketing. |
| **UBAA506** | **Marketing Communication** | CO1: Understand the basic concepts of marketing communication<br>CO2: Identify Internet marketing and to develop online Promotion strategies.<br>CO3: Analyze various perceptions of customer in Indian Scenario**.** |
| **UBAA507** | **Women In Management** | CO1: Understand the nature of management<br>CO2: Carryout the functions of management<br>CO3: Get sensitized to the challenges faced by the women at work. |

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| **UBAA509** | **Front Office Management** | CO1: Understand the essential qualities of front office manager.<br>CO2: Develop the knowledge of managing front office.<br>CO3: Prepare front office documents for effective management |

# COURSE OUTCOME

## DEPARTMENT : PHYSICS

### B.Sc. Physics

| Course Code | Course Title | Course Out Comes |
|---|---|---|
| **UPHM 101** | **Fundamental of Physics** | CO1: Apply the basic knowledge of Mechanics, Optics, Thermal physics and Electronics to explain the natural physical processes and related technological advances.<br>CO2: Establish the elementary mathematics to solve physical problems encountered in everyday life.<br>CO3: Design the experiments and assess the contributions of physics concepts for everyday life. |
| **UPHM 103** | **Mechanics** | CO1: Provide an elementary understanding on static and dynamics of objects.<br>CO2: Realize the relation between linear and angular motions of objects.<br>CO3: Demonstrate different applications of Newton's laws of motion in physical systems and applications of concepts such as centripetal, centrifugal and moment of inertia |
| **UPHM104** | **Thermal and Statistical Physics** | CO1: Understand the basic principles of heat, measurement and laws of thermodynamics.<br>CO2: Acquire knowledge of Maxwell's thermodynamic relations and low temperature application.<br>CO3: Understand the concepts of statistical physics and its applications. |
| **UIDM 201** | **Materials Science** | CO1: Provide elementary ideas of an electrochemical cell based on electrolytes to design batteries.<br>CO2: Demonstrate the application of modern engineering materials.<br>CO3: Provide ability to synthesize nanophase materials such as fullerenes, scaffolds, nanodendrimers etc for various |

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| | | medical and technological applications. |
| **UPHM 202** | **Properties of Matter and Acoustics** | CO1: Provide extensive knowledge on elastic properties of materials to attain good mechanical properties in materials in everyday life.<br>CO2: Demonstrate the principle and applications of liquid properties such as surface tension, viscosity for different application in fluid dynamics.<br>CO3: Apply the principles of acoustics to achieve good architecture. |
| **UPHM402** | **Electricity and Magnetism** | CO1: Understand the concept of electric field, potential, magnetic field and electromagnetic induction.<br>CO2: Analyze physical situations involving static electric charge, alternating current circuits, magnetic field associated with bar magnet and magnetic dipole.<br>CO3: Apply the fundamental laws of electricity and magnetism in electric motor, computer disk drives, tape recorder, televisions, radios, microwave ovens, telephone systems, and computers. |
| **UPHM 405** | **Atomic and Molecular Physics** | CO1: Develop the conceptual and mathematical understanding of the Atomic and Molecular Physics principles.<br>CO2: Analyse the fundamental principles governing the structure of the both atom and molecules and their interaction with electric and magnetic field.<br>CO3: Characterize the materials (crystals and nanomaterials) by the molecular spectroscopic tools.<br>CO4: Apply the Photo Electric principle to fabricate photo electric cells. |
| **UPHM501** | **Quantum Mechanics and Relativity** | CO1: Apply the principles of quantum mechanics to predict the results of measurements in simple systems such as a free particle, simple potential wells, and central potentials.<br>CO2: Solve problems and answer conceptual questions applying the principles of quantum mechanics and special relativity to topics in modern physics such as atomic physics, molecular physics, the physics of solids, statistical physics, nuclear physics, radioactivity, and particle physics |
| **UPHM505** | **Basic Electronics** | CO1: Provide better understanding on the principle of basic electronics.<br>CO2: Develop the skills to design basic electronic devices |

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| | | such as diodes, rectifiers etc for various applications.<br>CO3: Demonstrate the principle and operation of oscillators and amplifiers for technical applications |
| **UPHM 509** | **Mathematical Physics** | CO1: Good knowledge of the basic elements and important theorems of vector, complex<br>CO2: and statistical analysis.<br>CO3: Demonstrate the utility and limitations of a variety of calculational concept ssuch as vectors, complex numbers, fourier series and statistics to provide a deeper understanding of Theoretical Physics.<br>CO4: Apply efficient use of specific mathematical physics techniques to the Faraday law, Electrostatics, Electronics, Newton law of cooling and Radioactive Decay |
| **UPHM 510** | **Radiation Physics** | CO1: Providegood understanding in ionizing and non – ionizing radiations. CO2 : Perform the synthesis of radioactive isotopes based on cyclotron and nuclear reactor.<br>CO2: Demonstrate the non-ionizing radiations applications in medical diagnosis and radiation therapy. |
| **UPHO601** | **Nanophysics** | CO1: Provide an excellent introductory to nanoscience and nanotechnology.<br>CO2: Provide knowledge on various methods to synthesize nanomaterials.<br>CO3: Demonstrate the principle and operation various scientific instruments to Characterize the nanomaterials<br>CO4: Develop the skills to synthesize the nanomaterials for various technological applications |
| **UPHM 603** | **Nuclear Physics** | CO1: Provide basic understanding on nucleus and different nuclear models.<br>CO2: Provide necessary understanding on various radiation detectors for detection of radiations.<br>CO3: Realize the mechanism of different nuclear reactions involved in nuclear reactor and cosmos. |

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| **UPHM 607** | **Digital Electronics and Microprocessor** | CO1: Provide the understanding on the fundamental concepts and techniques involved in digital electronics.<br>CO2: Develop the skills to design data processing circuits, counters and registers for the application digital systems.<br>CO3: Demonstrate the operation of microprocessor to perform various mathematical operations. |
| **UPHM 608** | **Solid State Physics** | CO1: Provide basic concepts of crystalline materials.<br>CO2: Demonstrate the application of X-ray diffraction to study crystal structures.<br>CO3: Apply magnetic and dielectric materials in various applications. |
| **UPHM609** | **Numerical Methods and Basic Computational Physics** | CO1: Provide the consequences of finite precision and the inherent limits of the numerical methods for solving various physical problems.<br>CO2: Demonstrate good understanding and implementation of numerical solution algorithms applied to the algebraic equations, Curve fitting and Interpolation.<br>CO3: Develop the mathematical and computer programming skills for different physical problems. |

## M.Sc. Physics

| Course Code | Course Title | Course Out Comes |
|---|---|---|
| **PPHM 101** | **Mathematical Physics – I** | CO1: Good familiarity of the basic elements and important theorems of vector, complex and special functions.<br>CO2: Demonstrate the utility and limitations of a variety of calculational concepts such as vectors, complex numbers, fourier series, differential equation and special functions provide a deeper understanding of Theoretical Physics.<br>CO3: Apply the Fourier series, special functions and differential equations to periodic functions in Physics especially in Electronics, Mechanics and Thermal Physics. |
| **PPHM102** | **Classical Mechanics** | CO1: Apply the mechanics to analysis the total energy of the dynamical system<br>CO2: Analyze and solve the theoretical concept of dynamics by using Lagrangian, Newtonian and |

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| | | Hamiltonian mechanics. |
| **PPHM103** | **Advanced Electronics** | CO1: Create electronic systems, from 'building block' to timing in circuits, interfacing in mixed- signal electronic systems, power, and filters.<br>CO2: Analyze the simple circuits containing active elements such as bipolar and MOS transistors, and Op-amps<br>CO3: Appreciate the practical limitations of such devices<br>CO4: Apply links between mathematical concepts to a range of electrical problems |
| **PPHM104** | **Electromagnetic Theory** | CO1: Application of vector algebra to simplify the physical relations of electric and magnetic parameters<br>CO2: Analysis of electromagnetic behavior of the system in static and dynamic way. |
| **PPHM201** | **Quantum Mechanics-I** | CO1: Apply the principles of quantum mechanics to predict the results of measurements in simple systems such as a free particle, simple potential wells, and central potentials.<br>CO2: Analysis and predict the properties of system through matter wave by using Schrödinger equation of wave function in time dependent and independent problems<br>CO3: Apply the commutation algebra to solve the quantum problems<br>CO4: Solve problems and answer conceptual questions applying the principles of quantum mechanics and special relativity to topics in modern physics such as atomic physics, molecular physics, the physics of solids, statistical physics, nuclear physics, radioactivity, and particle physics. |
| **PPHM 202** | **Statistical Mechanics** | CO1: Provide thermodynamic (low temperature) behaviour of small and large scale systems.<br>CO2: Develop the statistical ideas for Bose-Einstein, Fermi-Dirac and photon gases.<br>CO3: Provide a bridge between micro and microstates of physical systems. |
| **PPHM203** | **Molecular Spectroscopy** | CO1: Acquire the knowledge of electromagnetic radiation with atoms and molecules and study the different types of spectra.<br>CO2: Apply these techniques in finding the molecular |

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| | | structure, bond angles, bond length etc. |
| **PPHM204** | **Advances in Material Sciences** | CO1: Demonstrate the different types of engineering materials and its different levels of structures.<br>CO2: Provide the good understanding of chemical bonds in materials and knowledge on the mechanical behaviour and magnetic properties of materials.<br>CO3: Apply the concepts of nucleation of crystals to grow crystals for various |
| **PPHM301** | **Quantum Mechanics-II** | CO1: Apply the principles of quantum scattering theory, radiation theory in research based problems.<br>CO2: Solve the problems in quantum world at relativity speed of the particle. |
| **PPHM302** | **Solid State Physics I** | CO1: Offer extensive ideas in arrangement of atoms in solids and dynamics of atoms.<br>CO2: Provide instrumental skills to study the structure of crystalline materials.<br>CO3: Demonstrate the background theoretical concepts for the evolution of electrical, electronics, magnetic, thermal and mechanical properties of solid state materials. |
| **PPHM303** | **Microprocessor and Microcontroller** | CO1: Plan the internal organization of microprocessor and microcontroller.<br>CO2: Design the microprocessor and microcontroller based systems.<br>CO3: Apply the interfacing system in applications. |
| **PPHM304** | **Laser and Nonlinear Optics** | CO1: Apply the theoretical concepts in crystal, thin film, nano-materials to study of NLO properties in research studies<br>CO2: Understand and distinguish the linear and nonlinear behavior of materials. |
| **PPHM 401** | **Mathematical Physics – II** | CO1: Establish the capacity for mathematical reasoning through analyzing, proving and explaining concepts from mathematical physics.<br>CO2: Demonstrate the utility and limitations of a variety of calculation concepts such as Probability, Matrix, Tensor, Group theory and Green functions to provide a deeper understanding of Theoretical Physics.<br>CO3: Apply matrices and special functions to solve simultaneous linear equations arising from physical problems.<br>CO4: Apply Tensor and Group theory to solve the |

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| | | molecular structure |
| **PPHM402** | **Nuclear and Particle Physics** | CO1: Understand the atomic nuclei and their constituents and interactions also the nature of the particles that constitute matter and radiation.<br>CO2: Acquire the working process of nuclear reactor and detectors.<br>CO3: Compare the different elementary particles. |
| **PPHM403** | **Solid State Physics II** | CO1: Proficiency in excellent understanding in the principle and operation of Semiconductor Materials.<br>CO2: Provide ideas on generation of dielectric and optical properties in solids extensively.<br>CO3: Explore the applications of superconducting materials |
| **PPHM404** | **Crystal Growth and Characterization** | CO1: Interpret various techniques of crystal growth.<br>CO2: Analyze the crystal growth techniques.<br>CO3: Standardize the crystalline and its characterization. |

# COURSE OUTCOME

## DEPARTMENT : CHEMISTRY

### B.Sc. Chemistry

| Course Code | Course Title | Course Out Come |
|---|---|---|
| **UCHM104** | **Fundamentals of Chemistry** | CO1: Acquire knowledge and calculate the equivalent weight of the molecules<br>CO2: Classify acid, base and chemical bonding<br>CO3: Formulate the organic reactions and solutions |
| **UCHM105** | **General Chemistry-I** | CO1: Recognize the modern periodic classification of element & states of matter<br>CO2: Predict the Nomenclature of the organic compounds<br>CO3: Evaluate the gaseous and thermo chemical equations |
| **UCHM106** | **Analytical Chemistry** | CO1: Understand the manipulating skills in handling apparatus & instruments<br>CO2: Employ the first aid techniques in laboratory<br>CO3: Formulate the theoretical aspects of qualitative, volumetric analysis & analytical techniques in chemistry |
| **UCHR204** | **Semimicro Qualitative Inorganic Analysis** | CO1: Identify the basic and acid radicals<br>CO2: Develop analytical skills in qualitative inorganic analysis |
| **UCHM202** | | CO1: Acquire the basics in acids& bases, solid state, |

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| | **General Chemistry-II** | s-block element and metallurgy.<br>CO2: Developing the structure determination skills in conformational analysis<br>CO3: Validate the properties of acids& bases, solid state, s-block element and metallurgy |
| **UCHM303** | **General Chemistry - III** | CO1: Understand the characteristics of Boron and carbon family.<br>CO2: Write the mechanism of dienes and aromatic compounds.<br>CO3: Apply the principles of thermodynamics in chemical reactions. |
| **UCHR404** | **Volumetric Analysis** | CO1: Estimate the presence of chemical substances using Volumetric analysis. |
| **UCHM304** | **Separation and Purification Techniques** | CO1: Understand principles of Separation and Purification techniques.<br>CO2: Use the Separation and Purification techniques through lab demonstration. |
| **UCHM403** | **General Chemistry-IV** | CO1: Understand the properties of Nitrogen, Oxygen, Halogen & Noble gas family.<br>CO2: Apply the concepts of Second and Third Law of Thermodynamics.<br>CO3: Find the mechanism of various organic chemical reactions. |
| **UCHM404** | **Instrumental Methods of Analysis** | CO1: Acquire the fundamentals and principles of spectroscopic techniques.<br>CO2: Enhance the knowledge in thermo and electro analytical methods. |
| **UCHM505** | **Organic Chemistry - I** | CO1: Impart the knowledge of the synthetic applications of organic compounds.<br>CO2: Enable the students to be more inquisitive in learning the mechanistic details in organic chemistry through the teaching of the named reactions.<br>CO3: Structural elucidation of organic compounds by spectral methods. |
| **UCHM608** | **Organic Chemistry - II** | CO1: Impart the knowledge about carbohydrate chemistry, and lipids.<br>CO2: Develop the student's interest in learning bio-organic chemistry through the introduction of topics such as proteins, and Nucleic acids<br>CO3: Generate keen interest and thinking in understanding the mechanisms of Molecular Rearrangements. |

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| **UCHM609** | **Physical Chemistry-II** | CO1: Facilitate the students have the knowledge of group theory and photochemistry.<br>CO2: Understand the inter conversion of chemical and electrical energy<br>CO3: Comprehend the salient features of photochemical reactions |
| **UCHM610** | **Physical Chemistry III** | CO1: Introduce and give an insight into the fascinating area of solid state chemistry<br>CO2: Classify the different types of crystal structure and their properties. |
| **UCHM507** | **Green Chemistry** | CO1: To focus on the principles of green chemistry..<br>CO2: To make the students aware of green chemistry by evaluating with examples.<br>CO3: To enlighten the students about the future trends in green chemistry. |
| **UCHM601** | **Inorganic Chemistry – II** | CO1: To create awareness about the basic principles involved in Nuclear chemistry.<br>CO2: To take the students to an advanced level of nuclear chemistry.<br>CO3: To comprehend the nature of metals of f block elements<br>CO4: To enhance the students to know about applications of nuclear energy |
| **UCHM503** | **Physical Chemistry-I** | CO1: To improve the ability of mathematical calculations involved in Physical Chemistry.<br>CO2: To enable the students to understand the concepts of thermodynamics and apply it to more space physical and chemical system.<br>CO3: To make the students know the concepts of Chemical Kinetics and to apply the concepts of Kinetics to different processes. |
| **UCHM501** | **Inorganic Chemistry – I** | CO1: To comprehend the nature of metals of d block elements<br>CO2: To learn the basic concept and theory in Co-ordination chemistry.<br>CO3: To create an awareness of the biological aspects of metal. |

## M.Sc. Chemistry

| Course Code | Course Title | Course Out Come |
|---|---|---|
| PCHM107 | Organic Chemistry- I | CO1: Recall the structure & reactivity in organic molecules.<br>CO2: Develop the advanced reaction mechanism in aliphatic compounds.<br>CO3: Deduce the structures of organic compounds in Stereo chemical aspects |
| PCHM108 | Inorganic Chemistry– I | CO1: Recognize the properties of Periodicity.<br>CO2: Interpolate the properties in bonding nature of the compounds.<br>CO3: Assess the various types of coordination compounds using p- block element |
| PCHM109 | Physical Chemistry – I | CO1: Acquire the knowledge of thermodynamics, quantum and photochemical reactions.<br>CO2: Deduce the Quantum mechanics & photo chemical reactions.<br>CO3: Assess the properties of kinetic and photochemical reactions |
| PCHR203 | Organic Practical | CO1: Acquire the skills in the Estimation & Preparation of organic compounds.<br>CO2: Analyze the various isolation techniques |
| PCHR204 | Inorganic Practical | CO1: Formulate the preparation of inorganic complexes.<br>CO2: Develop the skills to separate and analyze the inorganic compounds.<br>CO3: Analyze the metal or ions present in the compound or substance by volumetrically or gravimetrically. |
| PCHM204 | Organic Chemistry- II | CO1: Analyze the advanced reaction mechanism in aromatic compounds.<br>CO2: Predict the chemistry of Hormones.<br>CO3: Synthesize to extract terpenoids from natural products. |
| PCHM205 | Inorganic Chemistry – II | CO1: Recognize the bonding of inorganic & organo-metallic compounds.<br>CO2: Interpret the arrangements of ions in the structure from various solid substances.<br>CO3: Deduce the photochemistry of inorganic compound and function of bio-inorganic compounds. |

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| **PCHM206** | **Physical Chemistry - II** | CO1: Understand the fundamentals of group theory and identify the point group in the molecules.<br>CO2: Analyze different chemical reaction occurring in electrode and electrochemistry.<br>CO3: Apply the wave mechanics to simple system. |
| **PCHM301** | **Organic Chemistry- III** | CO1: Understand the various spectroscopic methods to interpret the structure of the compounds<br>CO2: Apply the gained knowledge from Alkaloids to extract it from natural products. |
| **PCHM302** | **Inorganic Chemistry- III** | CO1: Know about the application of Nuclear Chemistry in various fields<br>CO2: Understand the properties & applications of f-block elements.<br>CO3: Interpret the spectra for Inorganic compounds. |
| **PCHM303** | **Physical Chemistry-III** | CO1: Acquire the fundamental knowledge in the spectroscopy<br>CO2: Know about the function of the catalysts and its surface action and apply it for research work. |
| **PCHM305** | **Research Methodology** | CO1: Identify the research problems<br>CO2: Analysis of data using Chem softwares.<br>CO3: Drafting of research reports efficiently |
| **PCHR401** | **Physical Chemistry Practical-I** | CO1: Understand some theoretical concepts by experimental methods<br>CO2: Interpret the results in accurate manner |
| **PCHM404** | **Organic Chemistry- IV** | CO1: Understand the principles to differentiate the Photochemical and Pericyclic reactions.<br>CO2: Apply the chemistry concepts to categorize the different reagents and rearrangements in organic synthesis.<br>CO3: Expose the mechanism of writing skill in Retro synthesis reactions. |
| **PCHM402** | **Inorganic Chemistry – IV** | CO1: Understand the basic concept of supramolecular and green chemistry<br>CO2: Acquire skill to interpret the spectra of NMR,EPR and NQR for inorganic compounds. |
| **PCHM405** | **Physical Chemistry-IV** | CO1: Understand the principles of Magnetic, Quadruple and Electron resonance spectroscopy.<br>CO2: Analyse the samples using different analytical techniques like SEM, TEM, AFM, STM, Polarography and cyclic voltammetry.<br>CO3: Differentiate cells by using photo analytical |

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| | | techniques. |
| **PCHM406** | **Nanotechnology and Nano Materials** | CO1: Understand the concepts of nanomaterials and their Properties.<br>CO2: Enhance the concepts using synthesis of nanomaterials.<br>CO3: Implement the applications of nanodevices . |

# COURSE OUTCOME

## DEPARTMENT : BIO-CHEMISTRY

### B.Sc. Bio-Chemistry

| Course Code | Course Title | Course Out Come |
|---|---|---|
| **UBCM105/ UBCM201** | **Cell Biology** | CO1: Understand the structures and purposes of basic components of prokaryotic and eukaryotic cells, especially macromolecules, membranes, and organelles<br>CO2: Acquire the knowledge about how these cellular components are used to generate and utilize energy in cells. |
| **UMBA201** | **Microbiology** | CO1: Provides an introduction to the structure, function and taxonomy of the microbial world including bacteria, fungi, protozoa and viruses.<br>CO2: Identify ways microorganisms play an *integral role* in disease, and microbial and immunological methodologies are used in disease treatment and prevention.<br>CO3: Demonstrate knowledge of the interaction between humans and microorganisms. |
| **UBCE203** | **Nutrition and Health** | CO1: Evaluate food quality based on food labelling, nutrition labeling, and food safety practices.<br>CO2: Identify the nutrients needed to maintain health and body. |
| **UBCM304** | **Biochemical Techniques** | CO1: Identify the types of electrophoretic techniques used in bio molecule separation.<br>CO2: Apply an understanding of basic principles to the operation of biochemical instrumentation techniques including Chromatographic techniques. |
| **UBCR301** | **Biochemical Techniques Practical I** | CO1: Prepare chemical solution and reagents to the precision appropriate to the task<br>CO2: Demonstrate knowledge of the current state of research in particular areas of the biomolecular sciences.<br>CO3: Attain technical competence in the specific discipline of Biochemistry like Chromatography techniques |

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| **UBCE303** | **Clinical Nutrition** | CO1: Acquire knowledge of nutrition principles and their application to disease prevention and treatment in adults.<br>CO2: Evaluate the normal and therapeutic nutrition needs of adults and children and design appropriate dietary plans based on individual and group needs. |
| **UBCM403** | **Immunology** | CO3: Understand the immunological basis of immune response and demonstrate key concepts in microbiology and immunology.<br>CO4: Identify the role of antigen presenting cells, lymphocytes, and phagocytic cells in immune responses. |
| **UBCM404** | **Nutrition & Women's Health** | CO1: Identify strategies for food access, procurement, preparation, and safety for individuals, families, and communities.<br>CO2: Provide nutrition education to individuals, groups, and communities throughout the lifespan using a variety of communication strategies. |
| **UIDM401** | **Pharmaceutical Chemistry** | CO1: Knowledge on crude drug adulteration and its evaluation<br>CO2: Understand current drugs were developed and new scientific techniques will provide future drugs. |
| **UBCR401** | **Biochemical Techniques Practical II** | CO1: Understand principles of calibration of, fundamental laboratory apparatus determine concentrations of biological molecules<br>CO2: Provides thorough training and hands-on experience in fundamental practical skills required for employment as a biochemical scientist |
| **UBCM501** | **Enzyme and Intermediary Metabolism** | CO1: Provide a mechanistic overview of enzyme activity and regulation in cells<br>CO2: Understand the metabolic pathways, the energy yielding & energy requiring reactions in life.<br>CO3: Understand the chemical relationship between the glucose molecules used by cells as fuel and the carbon dioxide generated by the same cells as waste. |
| **UBCM502** | **Human Physiology** | CO1: Analyze and describe the structures and functions of human anatomy and physiology.<br>CO2: Identify some of the early discoveries that lead to our current understanding of the human body. |
| **UBCM503** | **Basics of Bioinformatics** | CO1: Understand the concepts of biology in computer science and mathematics using software to extract information from large data base.<br>CO2: Assess the interface between computational and Biological Science. |

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| **UBCR501** | **Enzymology practical** | CO1: Aware of the influence of enzyme structure on catalytic properties<br>CO2: Perform fixed time and kinetic enzyme assays that investigate factors which influence reaction rates, and demonstrate industrial applications of enzymes.<br>CO3: Knowledge on and insight into the chemical principles of enzyme catalysis, including cofactor chemistry. |
| **UBCA502** | **Clinical Diagnostics** | CO4: Analyze etiologies, risk factors, underlying pathologic process, and epidemiology for disease conditions.<br>CO5: Provide competent health care to patients with acute & chronic diseases. |
| **UBCM601** | **Introduction to Biotechnology** | CO1: Demonstrate cognitive skills in mastery of advanced theoretical knowledge in biotechnology and apply this knowledge to solve complex problems in existing and new areas.<br>CO2: Produce responsible biotechnologists that can work within the interdisciplinary framework of biotechnology and related fields. |
| **UBCM602** | **Clinical Biochemistry** | CO1: Able to clinically assess the laboratory indicators of physiologic conditions and diseases<br>CO2: Acquire in-depth knowledge on diseases and disorders in human life. |
| **UBCM603** | **Molecular Biology** | CO1: Acquire knowledge of molecular mechanisms by which DNA controls development, growth or morphological characteristics of organisms.<br>CO2: Apply the concepts of population and quantitative genetics in relevant branches of life sciences. |
| **UBCO605** | **Molecular Endocrinology** | CO1: Identify the integration of the endocrine system in general with focus on specific interactions<br>CO2: Apply endocrinological principles to determine the pathophysiological basis and consequences of specific endocrine disorders. |
| **UBCR601** | **Clinical biochemistry Practical** | CO1: Analyze the appropriate specimen collection procedures, staining methods, and Biochemical techniques use in the laboratory.<br>CO2: Perform and interpret body fluid tests, detect abnormalities, assign a diagnosis and prescribe follow-up testing.<br>CO3: Prepare graduates for a career in clinical biochemistry or to pursue postgraduate research in the discipline. |
| **UBCR602** | **Hematology and urine analysis** | CO1: Demonstrate the theoretical knowledge and technical skills in the performance of routine clinical laboratory testing<br>CO2: Distinguish normal and abnormal microscopic characteristics of blood cells through performance of a |

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| | | complete blood count. |
| **UBCP601** | **Mini Project** | CO3: Identify practical problem that had to be solved using the laboratory techniques and biochemistry underpinning the set experiment.<br>CO4: Provide hands-on experience of designing, performing, and analyzing results from a molecular biology/biochemical mini-project.<br>CO5: Practice & Theory Budge |

## M.Sc. Bio-Chemistry

| Course code | Course Title | Course Out Come |
|---|---|---|
| **PBCM101** | **Biomolecular Chemistry** | CO1: Understand the relationship between the properties of macromolecules and cellular activities.<br>CO2: Able to assess the significance of fundamental chemical properties on biomolecular structure<br>CO3: Able to evaluate, summarize and critique papers from the scientific literature. |
| **PBCM102** | **Cell Biology** | CO1: Understand the structure and functions of prokaryotic, eukaryotic cells and their metabolic process.<br>CO2: Apply the biochemical techniques for identification of morphological and functional changes in cell related to pathology. |
| **PBCM103** | **Analytical Biochemistry** | CO1: Creates awareness about the instruments used in biological research.<br>CO2: Apply and analyze the biochemical samples using of various instruments in biological research. |
| **PBCR101** | **Analytical Biochemistry Practical** | CO1: Recognize analytical techniques that are commonly used in research and clinical laboratories<br>CO2: Demonstrate practical skills and interpret experimental results within the context of taught material.<br>CO3: Provides thorough training and hands-on experience in fundamental practical skills required for employment as a biochemical scientist. |
| **PBCM104** | **Endocrinology** | CO1: Peruse the regulation of metabolic functions of human body by the endocrine system through various signaling pathways.<br>CO2: Acquire in-depth knowledge about types, classification, biosynthesis, interaction, function and regulation of hormones. |

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| **PBCM104** | **Endocrinology** | CO1: Peruse the regulation of metabolic functions of human body by the endocrine system through various signaling pathways.<br>CO2: Acquire in-depth knowledge about types, classification, biosynthesis, interaction, function and regulation of hormones. |
| **PBCE103** | **Modern Lifestyle Associated Diseases** | CO1: Obtain knowledge and understanding of health, nutrition and other lifestyle and associated diseases.<br>CO2: Develop own thinking, opinions and attitudes to global health issues. |
| **PBCM201** | **Metabolism and Regulation** | CO1: Demonstrate an understanding of the diversity of metabolic regulation, and how this is specifically achieved in different cells.<br>CO2: Provides the knowledge of the basic metabolic pathways, inborn errors of metabolism and the control and integration of metabolism. |
| **PBCM202** | **Human Physiology** | CO1: Understand the physiology of human body and to study the way the body functions.<br>CO2: Interpret and draw inferences from experimental measures of physiological functions of organs. |
| **PBCM203** | **Microbiology** | CO1: Demonstrate practical skills in the use of tools, technologies and methods common to microbiology.<br>CO2: Acquire and demonstrate competency in laboratory safety and in routine and specialized microbiological laboratory skills applicable to microbiological research or clinical methods, including accurately reporting observations and analysis. |
| **PBCM204** | **Molecular Biology** | CO1: Demonstrate knowledge of how biochemistry, genetics and molecular biology are used to elucidate both the function of cells and their organization into tissues.<br>CO2: Acquire and in-depth knowledge of biological and/or medicinal processes through the investigation of the underlying molecular mechanisms. |
| **PBCM204** | **Microbiology and Molecular Biology Practical** | CO1: Understand safe laboratory practices and perform basic molecular biology techniques<br>CO2: Provide training in the practical skills necessary for microbiology in academic research or in the workplace<br>CO3: Analyse and report on complex research questions, and solve problems, plan a work program or diagnostic strategy and learn independently. |
| **PBCX201** | **Mushroom Cultivation** | CO1: Apply laboratory techniques to the capture, culture, and fruiting of many types of mushrooms in the home kitchen lab.<br>CO2: Identify self employment business opportunities in chosen sector / sub-sector and plan and market and sell products / services. |

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| **PBCM301** | **Enzymology and Enzyme Technology** | CO1: Provides theoretical knowledge on functioning of enzyme based on the metabolic signaling of the human body.<br>CO2: Interpret the role of enzymes in disease diagnosis and therapeutic measures. |
| **PBCM302** | **Clinical Biochemistry** | CO1: Apply the processes of scientific research to use in emergency services in clinical biochemistry.<br>CO2: Interpret the causes to identify the diseases at early stage. |
| **PBCM303** | **Immunology** | CO3: Demonstrate literature review skills in undertaking a large survey of a complex field within immunology.<br>CO4: Articulate and adhere to safe working practice in a mixed microbiology/immunology laboratory. |
| **PBCM304** | **Research Methodology** | CO1: Understand the link between quantitative research questions and data collection and how research questions are operationalized in educational practice.<br>CO2: Critically assess research methods pertinent to technology innovation research in life science. |
| **PBCR301** | **Enzymology and Clinical Diagnostics Practical** | CO1: Acquire knowledge on various biochemical tests involved in clinical diagnosis.<br>CO2: Examine marker enzymes during pathological conditions. |
| **PBCM401** | **Genetics and Genetic Engineering** | CO1: Understands the need to inform the public about the new achievements of genetics and genetic engineering.<br>CO2: Analyzes the flow of genetic information in the living organisms. |
| **PIDM401** | **Plant biochemistry and Pharmaceutical chemistry** | CO1: Understand the significance of Pharmaceutical Analysis in the profession.<br>CO2: Impart basic knowledge in the area of pharmaceutics, various dosage forms and unit operations involved in pharmaceutical industries. |

# COURSE OUTCOME

## DEPARTMENT : MATHEMATICS

## B.Sc. Mathematics

| Course Code | Course Title | Course Out Come |
|---|---|---|
| UMAM103 | **Fundamentals of Mathematics** | CO1: Acquire in depth knowledge in theory of equation, Algebra and Discrete Mathematics.<br>CO2: Solve the Problems of theory of equation, Algebra and Discrete Mathematics.<br>CO3: Use the Mathematical Method of Induction, contradiction, implication for proving the theorems |
| UMAM104 | **Differential Calculus** | CO1: Understand functions, limits, derivative, continuous and inverse trigonometrically functions.<br>CO2: Solve problems that deal with continuous change in quantities.<br>CO3: Determine the limit existing, continuous, differentiable functions |
| UMAM105 | **Analytical Geometry** | CO1: Understand the fundamentals aspects of conics, Straight lines, Sphere and cone.<br>CO2: Solve the geometrical problems of curves, straight lines, cone and sphere |
| UMAA111 | **Mathematical Statistics** | CO1: Study some Statistical Characteristics, Discrete and Continuous Distributions and their properties.<br>CO2: Introduce sampling theory significance tests and testing of hypothesis.<br>CO3: Study Correlation and Regression. |
| UMAM204 | **Integral Calculus** | CO1: Acquire knowledge of Integration, techniques of Integration, Multiple and line integrals.<br>CO2: Determine the Area, volume, length of a curve. |
| UMAM402/UMAM205 | **Graph Theory** | CO1: Understand the fundamentals of graph theory<br>CO2: Relate the basic concepts of graph theory with the real life problems.<br>CO3: Apply the concepts of colorings, matching in real life challenges like scheduling, map colouring etc. |

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| **UMAM606/UMAM206** | **Discrete Mathematics** | CO1: Know the concept of automation and Boolean algebra.<br>CO2: Apply Automata formal Languages in compiling and complexity theory.<br>CO3: Apply Boolean algebra in Logic circuits |
| **UMAM306** | **Differential Equations** | CO1: Understand linear, non- linear ordinary and partial differential equations.<br>CO2: Classify the Differential Equations.<br>CO3: Formulate differential equations in geometrical and physical problems. |
| **UMAM307** | **Introduction to Probability Theory** | CO1: Understand basic ideas and concepts of probability theory.<br>CO2: Compute conditional probability and conditional expectations.<br>CO3: Apply Markov chain for solving real life problems |
| **UMAM405** | **Applications of Transforms** | CO1: Acquire knowledge of Transformation techniques.<br>CO2: Analyse various Transformations.<br>CO3: Solve difference equations and differential equations using transforms. |
| **UMAM406** | **Mechanics** | CO1: Understand forces acting on a particle.<br>CO2: Examine a mechanical system.<br>CO3: Evaluate the trajectory of a projectile, Circular Motion. |
| **UMAM404** | **Mathematical Modeling** | CO1: Classify mathematical models involving differential equations, difference equation, dynamics and graph theory.<br>CO2: Analyze Mathematical Models for real life problems. |
| **UMAM507** | **Modern Algebra** | CO1: Understand the Algebraic structures such as Groups, Rings and Ideals<br>CO2: Compare the operations of Group structures with Rings and Ideals.<br>CO3: Solve the problems based on the basic algebraic structures. |
| **UMAM508** | **Sequences and Series** | CO1: Gain the Knowledge of Sequences and Series of real numbers.<br>CO2: Understand the concept of Metric Spaces and, differentiate the sets and functions defined on it<br>CO3: Illustrate the Sequences and Series, and analyze them. |

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| **UMAM602/509** | **Complex Analysis** | CO1: Understand imaginary value and concept winding around imaginary numbers.<br>CO2: Apply the methods to solve problems in pure as well as in applied mathematics. |
| **UMAM610** | **Linear Algebra** | CO3: Understand the concepts of Vector spaces, linear transformations and Matrix Algebra.<br>CO4: Solve system of linear equations and assess the nature of solutions.<br>CO5: Compute determinants and canonical forms of a matrix. |
| **UMAM611** | **Real Analysis** | CO1: Understand the sequence and series of functions, and fundamental properties of real numbers.<br>CO2: Construct rigorous mathematical proofs of basic results in real analysis.<br>CO3: Apply principles of real analysis to perform Riemann integration. |
| **UMAM612** | **Astronomy** | CO1: Gain the knowledge of spherical trignometers, time scale in the universe, phases of moon and zones of earths.<br>CO2: Apply the Kepler's laws to study the planetary motion. |
| **UMAM613** | **Operations Research** | CO1: Gain the knowledge of optimization techniques<br>CO2: Analyze the systems of queuing and networking<br>CO3: Solve real life problems in Business and Management. |
| **PMAM101** | **Modern Algebra** | CO1: Introduce the concepts and to develop working knowledge on class equation, solvability of groups, finite abelian groups, linear transformations, real quadratic forms.<br>CO2: Understand the concept of algebra in detail.<br>CO3: Apply real time problems. |
| **PMAM102** | **Real Analysis** | CO1: Introduce functions of bounded variation, Riemann- Stieltjes Integration, Convergence and its interplay between various limiting operations.<br>CO2: Apply functions of bounded variation, Riemann- Stieltjes Integration, Convergence and its interplay between various limiting operations. |

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| **PMAM103** | **Ordinary Differential Equations** | CO1: Develop a strong background on finding solutions to liner differential equations with constant and variable coefficients and also with singular points.<br>CO2: Apply the existence and uniqueness of the solutions of first order differential equations.<br>CO3: Understand and develop analytical skills. |
| **PMAM104** | **Graph Theory** | CO1: Develop the concepts of graphs, subgraphs, trees, connectivity, Euler tours, Hamilton cycles, matching, coloring of graphs, independent sets, cliques, vertex coloring, and planar graphs. |
| **PMAM201** | **Field Theory** | CO1: Understand foundation in various algebraic structures.<br>CO2: Develop the computational skill in abstract algebra.<br>CO3: Introduce the general concepts in Abstract Algebra |
| **PMAM202** | **Measure and Integration** | CO1: Understand basics of knowledge in Lebesgue Measure.<br>CO2: Acquire indepth knowledge in Multivariable differential calculus. |
| **PMAM206** | **Partial Differential Equations** | CO1: Understand the physical behavior of the mathematical model.<br>CO2: Find the solution of higher order partial differential equations |
| **PMAM207** | **Classical Mechanics** | CO1: Develop the structure of classical mechanics and to outline some of its applications in physics .<br>CO2: Acquire Knowledeg of Lagrange's and Hamilton's Principle. |
| **PMAM208** | **Operations Research** | CO1: Acquire Knowledge on queuing systems, Network Schedule, Sensitivity and Decision Analysis.<br>CO2: Use algorithms for solving problems. |
| **PMAM305** | **Complex Analysis** | CO1: Lay the foundation for topics in Advanced Complex Analysis.<br>CO2: Develop clear thinking and analyzing capacity for research.<br>CO3: Introduce the fascinating world of complex variable theory which is markedly different<br>CO4: from analyzing of real variable. |

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| **PMAM310** | **Fluid Dynamics** | CO1: Understand incompressible and compressible fluid flows.<br>CO2: Analyse fluid motion. |
| **PMAM311** | **Topology** | CO1: Understand topological spaces, continuous function, connectedness, countability and separation axioms.<br>CO2: Distinguish Topological Spaces.<br>CO3: Develop analytical thinking. |
| **PMAM308** | **Number Theory And Cryptography** | CO1: Understand the concepts of Number Theory and cryptography<br>CO2: Apply the concepts of number theory in cryptography. |
| **PMAM309** | **Stochastic Process** | CO1: Understand the concepts of Stochastic process.<br>CO2: Analyse and apply the stochastic models for real life probabilistic situations |
| **PMAM405** | **Functional Analysis** | CO1: Understand Banach and Hilbert Spaces.<br>CO2: Understand Operator theory leading to the spectral theory of Operators on a Hilbert space. |
| **PMAM406** | **Mathematical Statistics** | CO1: Understand axiomatic approach to probability theory to study some statistical characteristics, discrete and continuous functions and their properties.<br>CO2: Understand sampling theory significance tests, estimation and testing of hypothesis. |
| **PMAM403** | **Differential Geometry** | CO1: Understand space curves and their intrinsic properties of a surface and geodesics further the non-intrinsic properties of surface and the differential geometry of surfaces are explored.<br>CO2: Apply abstract algebra and analysis to geometrical problems and facts. |
| **PMAM407** | **Fuzzy Analysis** | CO1: Gain knowledge of fuzzy set, fuzzy subset and fuzzy logic.<br>CO2: Distinguish fuzzy logic from classical logic.<br>CO3: Apply fuzzy logic whenever uncertainty arises |
| **MMA103** | **Algebra and Analysis** | CO1: Gain Knowledge in Foundations of Algebra and Analysis for further developments in Research.<br>CO2: Develop analyzing skill. |
| **MMA102** | **Topology and Differential Geometry** | CO1: Explore the concept of Topology through Manifold Differential geometry etc.<br>CO2: Develop analyzing skill. |

| Course Code | Course Title | Course Out Come |
|---|---|---|
| PMAM101 | **Modern Algebra** | CO1: Introduce the concepts and to develop working knowledge on class equation, solvability of groups, finite abelian groups, linear transformations, real quadratic forms.<br>CO2: Understand the concept of algebra in detail.<br>CO3: Apply real time problems. |
| PMAM102 | **Real Analysis** | CO1: Introduce functions of bounded variation, Riemann-Stieltjes Integration, Convergence and its interplay between various limiting operations.<br>CO1: Apply functions of bounded variation, Riemann-Stieltjes Integration, Convergence and its interplay between various limiting operations. |
| PMAM103 | **Ordinary Differential Equations** | CO1: Develop a strong background on finding solutions to liner differential equations with constant and variable coefficients and also with singular points.<br>CO2: Apply the existence and uniqueness of the solutions of first order differential equations.<br>CO3: Understand and develop analytical skills. |
| PMAM201 | **Field Theory** | CO1: Understand foundation in various algebraic structures.<br>CO2: Develop the computational skill in abstract algebra.<br>CO3: Introduce the general concepts in Abstract Algebra |
| PMAM202 | **Measure and Integration** | CO1: Understand basics of knowledge in Lebesgue Measure.<br>CO2: Acquire indepth knowledge in Multivarible differential calculus. |
| PMAM206 | | CO1: Understand the physical behavior of the mathematical model.<br>CO2: Find the solution of higher order partial differential equations |
| PMAM207 | **Classical Mechanics** | CO1: Develop the structure of classical mechanics and to outline some of its applications in physics .<br>**CO1:** Acquire Knowledge of Lagrange's and Hamilton's Principle. |
| PMAM208 | **Operations Research** | CO1: Acquire Knowledge on queuing systems, Network Schedule, Sensitivity and Decision Analysis.<br>CO2: Use algorithms for solving problems. |
| PMAM208 | **Operations Research** | **CO1:** Acquire Knowledge on queuing systems, Network Schedule, Sensitivity and Decision Analysis.<br>**CO2:** Use algorithms for solving problems. |

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| **PMAM310** | **Fluid Dynamics** | CO1: Understand incompressible and compressible fluid flows.<br>**CO2:** Analyse fluid motion. |
| **PMAM311** | **Topology** | CO1: Understand topological spaces, continuous function, connectedness, countability and separation axioms.<br>CO3: Distinguish Topological Spaces.<br>**CO4:** Develop analytical thinking. |
| **PMAM308** | **Number Theory And Cryptography** | CO1: Understand the concepts of Number Theory and cryptography<br>**CO5:** Apply the concepts of number theory in cryptography. |
| **PMAM309** | **Stochastic Process** | CO1: Understand the concepts of Stochastic process.<br>**CO2:** Analyse and apply the stochastic models for real life probabilistic situations |
| **PMAM405** | **Functional Analysis** | CO1: Understand Banach and Hilbert Spaces.<br>**CO2:** Understand Operator theory leading to the spectral theory of Operators on a Hilbert space. |
| **PMAM406** | **Mathematical Statistics** | CO1: Understand axiomatic approach to probability theory to study some statistical characteristics, discrete and continuous functions and their properties.<br>**CO2:** Understand sampling theory significance tests, estimation and testing of hypothesis. |
| **PMAM403** | **Differential Geometry** | CO1: Understand space curves and their intrinsic properties of a surface and geodesics further the non-intrinsic properties of surface and the differential geometry of surfaces are explored.<br>**CO2:** Apply abstract algebra and analysis to geometrical problems and facts. |
| **PMAM407** | **Fuzzy Analysis** | CO1: Gain knowledge of fuzzy set, fuzzy subset and fuzzy logic.<br>CO2: Distinguish fuzzy logic from classical logic.<br>**CO3:** Apply fuzzy logic whenever uncertainty arises |

## M.Phil Mathematics

| Course Code | Course Title | Course Out Come |
|---|---|---|
| **MMA103** | **Algebra and Analysis** | CO1: Gain Knowledge in Foundations of Algebra and Analysis for further developments in Research.<br>CO2: Develop analyzing skill. |
| **MMA102** | **Topology and Differential Geometry** | CO1: Explore the concept of Topology through Manifold Differential geometry etc.<br>CO2: Develop analyzing skill. |

THEIVANAI AMMAL COLLEGE FOR WOMEN (AUTONOMOUS)
VILLUPURAM

# COURSE OUTCOME

## DEPARTMENT : COMPUTER SCIENCE

### B.Sc. Computer Science

| Course Code | Course Title | Outcomes |
|---|---|---|
| UCSR106 | Computer Operations | CO1: Obtain knowledge in basics of Hardware Management.<br>CO2: Document preparation and worksheet handling.<br>CO3: Develop presentation skill in PowerPoint presentation. |
| UCSM104 / UCAM105 | Programming in C | CO1: Understand the concepts of structured Programming.<br>CO2: Acquire Knowledge on control structures, arrays, Functions, pointers<br>CO3: Solve Logical problems using C language. |
| UCSM105 | Information Technology | CO1: Obtain basic knowledge about computer classification & anatomy.<br>CO2: Understand the concepts of Input, Output, CPU and Memory.<br>CO3: Acquire knowledge about Hardware, Software and Networks. |
| UCSR107 / UCAR103 | Programming in C- Lab | CO1: Design, build, execute and debug C programs.<br>CO2: Develop programs by using control structures, arrays, functions. |
| UCSM205/ UCAM204 | Data Structures and Algorithms | CO1: Acquire the knowledge about Data Structures and Algorithms concepts<br>CO2: Understand and Implement the different Data Structures.<br>CO3: Analyze the Time and Space Complexity. |
| UCSM204/ UCAM203 | Object Oriented Programming using C++ | CO1: Understand the concepts of object oriented programming<br>CO2: Acquire knowledge on Exception handling and file system<br>CO3: Develop programming skills on OOPs concept |
| UCSR204/ UCAR203 | Object Oriented Programming and Data Structures and algorithm using C++ - Lab | CO1: Understand and implement OOPS concepts<br>CO2: Develop, compile and run simple to moderately complex C++ programs and Data Structures concepts.<br>CO3: Implement data structures concepts using C++ |

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| **UCSA103** | **PC Software** | CO1: Understand the basics of Computer<br>CO2: Acquire knowledge on MS Office application software<br>CO3: Develop own applications using MS Office |
| **UCSR108** | **PC Software – Lab** | CO1: Impart knowledge in document preparation.<br>CO2: Create tables in MS Excel and data base in MS Access<br>CO3: Design presentations with animation effects |
| **UCSA203** | **Programming in C** | CO1: Understand the concepts of structured Programming.<br>CO2: Acquire Knowledge on control structures, arrays, Functions, pointers<br>CO3: Solve Logical problems using C language. |
| **UCSR205** | **Programming in C - Lab** | CO1: Implement basic concepts of the C programming language.<br>CO2: Design, build, execute and debug C applications. |
| **UCSM304** | **Java Programming** | CO1: Understand theConcepts in Object Oriented Programming.<br>CO2: Practice the Java Controls.<br>CO3: Design and Build Java Application |
| **UCSR305** | **Java Programming-Lab** | CO1: Write Java code in the form of both applications and applets.<br>CO2: Implement Exception, threads and AWT controls.<br>CO3: Creating files using I/O Packages |
| **UCSM405 / UCAM405** | **Data Communication Network** | CO1: Identify the different types of network model.Apply Multiplexing techniques in the Telecommunication.<br>CO2: Select appropriate routing algorithm. |
| **UCSM406** | **Web Programming** | CO1: Understand the Concepts of Tags & Scripts.<br>CO2: Apply scripts in both Client and Server side.<br>CO3: Apply the Client and Server Side Scripting. |
| **UCSM407** | **Data Base Management System** | CO1: Acquire knowledge on Structure Query Language.<br>CO2: Analyse the database using the Normal Forms.<br>CO3: Design a database using SQL Commands. |
| **UCSR409** | **Web Programming – Lab** | CO1: Acquire knowledge about Scripting.<br>CO2: Apply conditional and looping statements in PHP.<br>CO3: Develop web page using PHP and MySQL. |
| **UCSR404** | **Data Base Management System – Lab** | CO1: Develop practical skills on DBMS.<br>CO2: Design the database using Oracle |

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| | | CO3: Select the techniques to access the database. |
| **UCSA303** | **Multimedia** | CO1: Grasp the concepts in Multimedia<br>CO2: Apply Multimedia concepts in Photoshop and Flash<br>CO3: Develop multimedia applications with their creative ideas. |
| **UCSR306** | **Multimedia – lab** | CO1: Understand the basic concepts in Multimedia.<br>CO2: Design Multimedia projects in Photoshop and Flash.<br>CO3: Develop multimedia in real time applications |
| **UCSA403** | **Database Management System** | CO1: Understand the concepts of DBMS.<br>CO2: Design the ER diagram for database.<br>CO3: Create database using SQL queries and normal forms. |
| **UCSR405** | **Database Management System - Lab** | CO1: Develop practical skills on DBMS.<br>CO2: Design the database using Oracle.<br>CO3: Select the techniques to access the database. |
| **UCSA405** | **Computer Applications in Business** | CO1: Understand the concepts of computer application.<br>CO2: Apply the application concepts in real time.<br>CO3: Create web page with their own ideas using application. |
| **UCSR410** | **Computer Applications in Business – Lab** | CO1: Develop skill in document preparation.<br>CO2: Create the power point presentation in business manner.<br>CO3: Prepare database for the given data in business application. |
| **UCSA304** | **Mathematical Programming using C** | CO1: Understand the concept of Structured Programming Language.<br>CO2: Apply Control Statements in the C Program.<br>CO3: Write C Programs using functions, pointers, structure and union for the real time problem. |
| **UCSR307** | **Mathematical Programming using C – Lab** | CO1: Acquire knowledge on Structured Programming Language.<br>CO2: Choose appropriate programming techniques to develop a program.<br>CO3: Solve the real time problems using c programming. |
| **UCSE302** | **Programming in C** | CO1: Understand the concepts of the C programming language.<br>CO2: Design, build, execute and debug C applications.<br>CO3: Apply variables, arrays, strings, and flow control statement, point and disk files in C applications. |

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| **UCSE304** | **HTML Programming** | CO1: Implement basic concepts of the HTML language.<br>CO2: Design a website using HTML. |
| **UCSE402** | **Programming in C++** | CO1: Analyse the concept of object oriented programming.<br>CO2: Write simple applications using C++.<br>CO3: Understand all file operations. |
| **UCSE403** | **Multimedia and its Applications** | CO1: Gain knowledge in Multimedia concepts.<br>CO2: Develop multimedia applications.<br>CO3: Introduce Photoshop. |
| **UCSE404/ UCSE502** | **Visual Programming** | CO1: Apply the concepts of windows programming.<br>CO2: Understand GUI programming using Microsoft Foundation Classes.<br>CO3: Design simple programming project. |
| **UCSE405/ UCSE503** | **Web Designing** | CO1: Gain the knowledge of scripting language.<br>CO2: Make use of the basic concepts of the HTML to create Web Page.<br>CO3: Usage of tags, tables, frames, forms, CSS to design Web page |
| **UCSM506** | **Middleware Technologies** | CO1: Understand Principles of programming using a .NET Framework.<br>CO2: Analyze the importance of server side programming and web development.<br>CO3: Develop applications for distributed environments |
| **UCSM507** | **System Analysis and Design** | CO1: Understand the principles of System Analysis and Design and the "professional and ethical" responsibilities of practicing the computer professionals.<br>CO2: Analysis and Design of system of small sizes and specify the importance of linking the information systems to business needs.<br>CO3: Plan and undertake an individual project and deliver coherent, structured verbal and written technical reports. |
| **UCSM508** | **Microprocessor and its Application** | CO1: Understand the Architecture and Instruction set.<br>CO2: Develop simple programming Skills<br>CO3: Gain hands-on experience in Interfacing Peripherals. |

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| **UCSR509** | **Middleware Technologies – Practical** | CO1: Improve the programming skills in .NET.<br>CO2: Design a database with enhanced models and techniques.<br>CO3: Create web based applications for distributed environments |
| **UCSR510** | **Web Application – Practical** | CO1: Explore markup language features and create interface web pages for real time.<br>CO2: Acquire knowledge about open source JavaScript libraries.<br>CO3: Design and implement Dynamic Websites. |
| **UCSM608** | **Multimedia System Design** | CO1: Understand the Multimedia Design and Image Security techniques<br>CO2: Analyze and Compare various Compression, Multimedia file formats and Storage media.<br>CO3: Develop integrated and collaborative multimedia systems. |
| **UCSM609/ UCAM606** | **Operating System** | CO1: Acquire knowledge on basics of operating systems.<br>CO2: Analyze the various scheduling algorithms in process and memory management.<br>CO3: Exposure to LINUX Operating System. |
| **UCSM610** | **Big Data Tools** | CO1: Understand the basics concepts of Big data use cases and solutions.<br>CO2: Build and maintain reliable, scalable, distributed systems with Apache Hadoop and also write Map-Reduce based Applications.<br>CO3: Learn difference between conventional SQL and NoSQL(MongoDB) query language.<br>CO4: Design MongoDB based Big data Applications. |
| **UCSR606** | **Operating System – Practical** | CO1: Understand the design aspects of Operating system.<br>CO2: Implement CPU scheduling algorithm and Banker algorithm used for Deadlock avoidance.<br>CO3: Implement Memory Management and Page Replacement Algorithm.CO4: Stimulate various algorithms using C Program. |
| **UCSO606/ UCSO607** | **Network Security / Mobile Technologies** | CO1: Understand the Cryptography and Network Security concepts and application.<br>CO2: Acquire knowledge in various types of Encryption and Decryption mechanism.<br>CO3: Classify and evaluate computer and security threats and models.<br>CO4: Understand the Wireless communication and its devices.<br>CO5: Examine Wireless Communication Protocols, and Principles.<br>CO6: Determine the network infrastructure requirements to support mobile devices. |

## M.Sc. Computer Science

| Course Code | Course Title | Outcomes |
|---|---|---|
| PCSM109 | Open source Technologies | CO1: Gain knowledge about Open Source Technologies.<br>CO2: Develop programming skills onLinux system, Apache.<br>CO3: Design web page using MySql and PHP. |
| PCSM110 | Advanced Java Programming | CO1: Understand the concepts of Java<br>CO2: Develop programs using JDBC<br>CO3: Design own Webpage. |
| PCSR104 | Advanced Java Programming - Lab | CO1: Acquire knowledge on web oriented programming.<br>CO2: Develop Java Application program and Applet program.<br>CO3: Design own Webpage. |
| PCSR105 | Open source Technologies - Lab | CO1: Gain knowledge about Open Source Technologies.<br>CO2: Develop programming skills onLinux system, Apache.<br>CO3: Design web page using MySql and PHP. |
| PCSM206 | Compiler Design | CO1: Learn the basic functions of compiler design.<br>CO2: Study the principles and concepts of Analysis and type checking<br>CO3: Understood the syntax analysis and run time environments contents. |
| PCSM209 | Web Programming | CO1: Gain knowledge about .Net frame work<br>CO2: Apply concepts on Server Side Scripting.<br>CO3: Develop Web Applications. |
| PCSM210 | Design and Analysis of Algorithms | CO1: Understand the concept of Algorithm.<br>CO2: Solve problems on Greedy and backtracking<br>CO3: Analysis the algorithm. |
| PCSM208 | Research Methodology | CO1: Understand the concepts of Research Methodology.<br>CO2: Acquired knowledge on use-case models, object analysis, testing and quality assurance.<br>CO3: Gain Practical Knowledge in MATLAB. |
| PCSM211 | Software Testing | CO1: Acquire the knowledge in software Testing.<br>CO2: Gain knowledge in Quality assurance& Control.<br>CO3: Analyze the quality of the project |
| PCSR205 | Web Programming - Lab | CO1: Acquire practical skills in C# programming and designing simple web application.<br>CO2: Gain knowledge about Server Side Scripting.<br>CO3: Develop Web Applications using ADO.NET |
| PCSM309 | TCP / IP Networks | CO4: Understand the concepts of TCP/IP.<br>CO5: Examine the process of TCP/IP.<br>CO6: Implement TCP/IP concepts in network. |
| PCSM310 | Service Oriented Architecture | CO1: Understand the concepts of Service Oriented Architecture. |

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| | | CO2: Analyse the techniques of Service Oriented Architecture.<br>CO3: Implement Service Oriented Architecture in Java. |
| **PCSM311** | **Cloud Computing** | CO1: Understand the Cloud computing concepts.<br>CO2: Gain substantial knowledge in application of cloud computing<br>CO3: Identify the cloud services. |
| **PCSM312** | **Big Data Analytics** | CO1: Understand the concepts in Database.<br>CO2: Analyse the data using Regression and Bayesian Modeling.<br>CO3: Choose appropriate algorithm to perform Data mining. |
| **PCSR304** | **Networking – Lab** | CO1: Understand concepts in Network.<br>CO2: Apply programming skills in network.<br>CO3: Develop application in network. |
| **PCSR305** | **Big Data Analytics - Lab** | CO1: Understand Analytical concepts using PIG<br>CO2: Gain knowledge on higher level of abstraction<br>CO3: Develop programming skills in PIG. |
| **PCSM403** | **Internet of Things** | CO1: Understand the basic issues, policy and challenges in the Internet.<br>CO2: Examine the components and the protocols in Internet.<br>CO3: Build a small low cost embedded system with the Internet |
| **PCSM404** | **Digital Image Processing** | CO1: To study the image enhancement techniques<br>CO2: To study image restoration procedures.<br>CO3: To study the image compression procedures.<br>CO4: To study the image segmentation and representation techniques. |

## M.Phil. Computer Science

| Course Code | Course Title | Course Out Come |
|---|---|---|
| **MCSM105** | **Research Methodology** | CO1: Understand the basic knowledge and concepts required for research and thesis writing.<br>CO2: Gain knowledge on Operation research.<br>CO3: Analyse topics in Computer Science such as logics, relation and functions. |
| **MCSM106** | **Advanced Topics in Computer Science** | CO1: Understand the concepts of knowledge engineering in Cloud Computing.<br>CO2: Implement the Data mining and Image processing.<br>CO3: Gain deep knowledge on advance topics in Computer Science. |

# BCA

| Course Code | Course Title | Outcomes |
|---|---|---|
| UCAM106 | Digital logic computer design | CO1: Understand the concepts of logic fundamentals.<br>CO2: Learn the systematic way of processors.<br>CO3: Inculcate Knowledge on digital concepts. |
| UCAM105 /UCSM104 | Programming in C | CO1: Understand the concepts of structured Programming.<br>CO2: Acquire Knowledge on control structures arrays, Functions, pointers.<br>CO3: Solve Logical problems using C language and develop software. |
| UCAR103/ UISR103 | Introduction to Computer Applications | CO1: Develop the knowledge of document preparation, excel calculation and PowerPoint presentation. |
| UCAR103/ UCSR105 | Programming in C-Practical | CO1: Design, build, execute and debug C programs.<br>CO2: Develop programs by using control structures arrays, functions. |
| UCAM203 /UCSM204 | Object oriented Programming using C++ | CO1: Understand the concepts of object oriented programming.<br>CO2: Acquire knowledge on Exception handling and file system .<br>CO3: Develop programming skills on OOPs concept |
| UCAM204 /UCSM205 | Data Structure and Algorithms | CO1: Acquire the knowledge about Data Structures and Algorithms concepts<br>CO2: Create a Data Structure using Array, Stack and Queues.<br>CO3: Analyze the Time and Space Complexity |
| UCAR203/ UCSR204 | Object oriented Programming and data structures using C++ Practical | CO1: Understand and implement OOPS concepts<br>CO2: Develop, compile and run simple to moderately complex C++ programs and Data Structures concepts.<br>CO3: Implement data structures concepts using C++. |
| UCAM307 /UCSM302 | Java Programming | CO1: Understand the OOP Concepts, Exception and String Handling in Java.<br>CO2: Construct programs using Applets and JDBC concepts.<br>CO3: Execute Java and Applet Programs in various applications |
| UCAM308 | MIS and ERP | CO1: Define transaction and decision making process.<br>CO2: Analyse the risks and benefits of MIS and ERP in enterprises. |

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| | | CO3: Evaluate the production, marketing and accounting information in ERP. |
| **UCAM309** | **Web User Interface Design** | CO1: Learn the characteristics and components used in GUI.<br>CO2: Analyse the requirements for designing.<br>CO3: Design the web page using various tools and controls. |
| **UCAR303/ UCSR303** | **Java Programming Practical** | CO1: Create programs using Inheritance, Exceptio and String Handling.<br>CO2: Build programs using Threads, Packages an Interfaces.<br>CO3: Design simple applet programs using Swing an JDBC. |
| **UCAM404** | **Database Management System** | CO1: Understand the data models and represent the database system using ER diagram.<br>CO2: Create a database using SQL queries and access database using normal forms.<br>CO3: Query the database using PL/SQL commands. |
| **UCAM403** | **Object Oriented Analysis and Design** | CO1: Understand the concepts of object oriented and designing process.<br>CO2: Analyze and compare various designing patterns.<br>CO3: Choose appropriate testing strategies and debugging principles. |
| **UCAM405 / UCSM405** | **Data Communication Networks** | CO1: Identify the different types of network model.<br>CO2: Apply Multiplexing techniques in the Telecommunication.<br>CO3: Select appropriate routing algorithm. |
| **UCAM406** | **Data Mining and Warehousing** | CO1: Understand the Data Preprocessing Techniques.<br>CO2: Analyse the various algorithms in Data Mining.<br>CO3: Extract the data using classification and cluster algorithms in the research field. |
| **UCAR402** | **Database Management System Practical** | CO1: Develop practical skills on various queries, views, indexes, triggers in SQL.<br>CO2: Design the database for different applications using Oracle.<br>CO3: Implement the Procedures and functions in PL/SQL to access the database. |
| **UCAR403** | **Case Tools Lab** | CO1: Gain practical skills on UML techniques.<br>CO2: Develop their creativity in designing the projects, to analyse the problem and to provide solution to the problem. |
| **UCAM501** | **Visual Programming** | CO1: Understand the standard and custom controls in Visual Studio Environment.<br>CO2: Implement application design specifications with a visual object-oriented. |

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| | | CO3: Inculcate knowledge on event-driven programming language. |
| **UCAM504** | **Software Engineering** | CO1: Introduce the basic concepts of Software Engineering and the various phases in Software development.<br>CO2: Understand User Conceptual Models and Interface Design.<br>CO3: Specification of participatory design & interactive debugging. |
| **UCAM505** | **Web Programming** | CO1: Understand the concepts of web programming languages.<br>CO2: Analyze the various controls for designing web applications.<br>CO3: Develop the web applications using .Net Technologies. |
| **UCAM506** | **Multimedia and its Applications** | CO1: Learn about multimedia and their technologies.<br>CO2: Inculcate knowledge on Media, Text, Image, Audio, Video, Animation etc.<br>CO3: Analyze the future planning strategies in multimedia projects. |
| **UCAR504** | **Visual Programming Practical** | CO1: Acquire practical knowledge and develop skills on visual programming.<br>CO2: Design a Database with enhanced models and Techniques.<br>CO3: Develop real time applications. |
| **UCAR505** | **Web Programming Practical** | CO1: Understand the real time requirements of web based programs.<br>CO2: Explore the functionalities of web tools.<br>CO3: Develop the client-server architecture. |
| **UCAM606 / UCSM609** | **Operating System** | CO1: Acquire knowledge on basics of operating system.<br>CO2: Analyze the various scheduling algorithms in process and memory management.<br>CO3: Exposure to Linux Operating System. |
| **UCAM607** | **Software Testing** | CO1: Acquire the knowledge of Software Testing.<br>CO2: Apply the different levels of Testing to debug the errors.<br>CO3: Evaluating the Software quality to review the result report. |
| **UCAM608** | **Computer Graphics** | CO4: Acquire Knowledge on two and three dimensional graphical structures.<br>CO5: Analyze the Multimedia compression and animations.<br>CO6: Design 2D and 3D objects for animation. |
| **UCAR602** | **Operating System Practical** | CO1: Understand the different types of processes.<br>CO2: Implement various process scheduling |

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| | | algorithms.<br>CO3: Develop the shell script for file operations. |
| **UCAO605/ UCAO604** | **Big Data Analytics/ Cloud Computing** | CO4: Understand the importance of Big Data.<br>CO5: Analyse the modern data analytical tools.<br>CO6: Apply algorithm in various real-time applications. |
| **UCAE205** | **Desktop Publishing** | CO1: Develop the knowledge about the concepts of Photoshop, Corel Draw and Page Maker. |
| **UCAE206** | **PC Hardware Troubleshooting** | CO1: Develop the knowledge about the PC hardware and Troubleshooting. |
| **UCAE305** | **Internet Applications** | CO2: Understand the various HTML tags.<br>CO3: Design web pages using CSS and Multimedia. |
| **UCAE306** | **Web Tools** | CO1: Learn the tags of HTML and Scripting Language.<br>CO2: Apply the SCRIPT element and CSS for creating dynamic web pages. |

## MCA

| Course Code | Course Title | Outcomes |
|---|---|---|
| **PCAM308** | **Java Programming** | CO1: Develop the students to write programs in Java Application and Applets.<br>CO2: Understand the web oriented programming using servlet, JSP and Java Beans |
| **PCAM309** | **Visual Programming and Web Hosting** | CO1: The students will be able to design the visual basic project.<br>CO2: Develop creativity in designing the project.<br>CO3: Make the students to analyze the problem.<br>CO4: Developing the students to design the model of the project. |
| **PCAM311** | **Operating System** | CO1: Define the process and memory management in OS.<br>CO2: Analyse the various algorithms in CPU Scheduling.<br>CO3: Apply the scheduling algorithms to avoid deadlock in LINUX OS. |
| **PCAR304** | **Visual programming-Practical** | CO1: It helps the student to acquire knowledge practical skills on visual programming.<br>CO2: Enable students to design and code visual programs.<br>CO3: Develop their creativity in designing the project and to analyze the problem and to provide solution to the problem |
| **PCAR305** | **Java Programming-Practical** | CO1: Enable the students to develop Java Application program and Applet program.<br>CO2: Help the student to acquire practical knowledge on Advanced Java programming.<br>CO3: Enable the students to have deep knowledge in the network programming on Java Bean, Servlets. |
| **PCAM407** | **Cloud** | CO1: To inculcate the knowledge of cloud computing |

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| | **Computing** | techniques, best practices in cloud computing.<br>CO2: To understand the current challenges in cloud computing.<br>CO3: To design and implement cloud-based applications. |
| **PCAM408** | **Unified modeling Techniques** | CO1: To specify, visualize, construct and document the artifacts of a software systems.<br>CO2: Development and methodologies of UML.<br>CO3: Apply the testing strategies in various applications. |
| **PCAM410** | **Web Technology** | CO1: Understand the Dot.Net framework.<br>CO2: Build applications using ASP.Net.<br>CO3: Develop web applications and connect it to the database using ADO.NET. |
| **PCAM411** | **Principles of Compiler Design** | CO1: Study the principles of finite automata.<br>CO2: Analyse the various algorithms in storage allocation techniques.<br>CO3: Apply DFA and NFA in automata to produce the optimum results. |
| **PCAR405** | **UML LAB** | CO1: Acquire practical skills on various tools in UML Language.<br>CO2: Analyze and test the project using UML diagrams.<br>CO3: Design the project and provide solution to the applications. |
| **PCAR406** | **Web Technology - Practical** | CO1: Acquire practical skills in C# programming and Server Side Scripting.<br>CO2: Develop Web Applications using ADO.NET. |
| **PCAM512** | **Android Programming** | CO1: Understand how android applications work.<br>CO2: Analyze SQLite database in android applications.<br>CO3: Build new Android apps. |
| **PCAM507** | **Data Mining and Warehousing** | CO1: Gain knowledge in Data Mining Techniques.<br>CO2: Analyze Patterns in Data.<br>CO3: Acquire depth knowledge in Clustering and Classification Algorithms |
| **PCAM511** | **Digital Image Processing** | CO1: Understand the techniques for processing images in different File formats.<br>CO2: Examine different image enhancement and segmentation techniques.<br>CO3: Implement the role of multi resolution analysis in image processing |
| **PCAM510** | **Software Engineering** | CO1: To introduce the basic concepts of Software Engineering and the various phases in Software development.<br>CO2: To Understand User Conceptual Models and Interface Design<br>CO3: Specification of participatory design and interactive debugging. |
| **PCAR504** | **Android Programming - Practical** | CO1: Understand the android application tools and its architecture.<br>CO2: Design various layouts of Android.<br>CO3: Create Android apps using SQLite queries. |