

ETHIRAJ COLLEGE FOR WOMEN (Autonomous)

Chennai – 600 008

Affiliated to the University of Madras

College with Potential for Excellence

Reaccredited with A+ Grade by NAAC



1.1 CURRICULAR ASPECTS

1.1.1 CURRICULUM DESIGN & DEVELOPMENT

**Programme Outcomes, Programme Specific
Outcomes & Course Outcomes**

M.Phil. RESEARCH PROGRAMME

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

On obtaining a research degree the scholar will be able to:

PEO 1: Demonstrate advanced domain knowledge competencies and display high order discerning and synthesizing capabilities to address local, regional and national concerns through innovative well researched solutions.

PEO 2: Continue to serve the community of professionals and experts as both independent and team player with a strong grounding in ethics, inclusivity, gender parity and environmental sustainability.

PROGRAMME OUTCOMES (PO)

➤ HUMANITIES

On completion of the Programme, the learner will be able to:

PO 1: apply the knowledge gained through the study of humanities to address societal issues and critically engage with history, culture, economy, gender, inclusivity and environment.

PO 2: identify students' ability to analyze challenges and make effective decisions.

PO 3: designs skills to evaluate, innovate and integrate the contemporary issues and motivate further learning.

PO 4: acquire ethical values, employability skills and communicate competently.

PO 5: analyse to gain quality education that is global in perspective and contribute to holistic development

➤ **SCIENCES**

On completion of the Programme, the learner will be able to:

PO 1: To acquire advanced conceptual knowledge and comprehensive understanding of the fundamental principles in respective discipline.

PO 2: To apply knowledge and critically evaluate the concepts and scientific developments to take up any challenge.

PO 3: To visualize and work on laboratory multidisciplinary tasks related to current research in the fields of Mathematical, Physical and Life sciences

PO 4: To acquire research based knowledge and design methods to conduct investigations of complex problems in research/ Industrial field and achieve employability / self-employment.

PO 5: To communicate effectively ideas verbally in English, leading to Entrepreneurship ventures such as consultancy and training.

PO 6: Employ innovative and environment friendly methods, novel ideas to solve complex and challenging societal and environmental issues.

➤ **BUSINESS STUDIES**

On completion of the M.Phil Programme, the researcher will be able to:

PO 1: Apply contextual and practical knowledge endowed professionally for the academic and corporate world.

PO 2: Identify the research aptitude to pursue research in new and advanced areas.

PO 3: Apply skill sets for critical and analytical thinking, communication and leadership in all walks of life.

PO 4: Identify, design & formulate projects relating to the need of the environment for sustainable development.

PO 5: Plan for any area of specialisation relating research in initiatives relating to contemporary areas in business and design teaching methodology based on practical exposure gained for lifelong learning. (USP)

PROGRAMME SPECIFIC OUTCOMES (PSO)

➤ TAMIL

PSO 1: ஆய்வு முறையை மாணவர்களுக்கு விளக்குதல்

PSO2: ஆய்வேட்டின் அமைப்புமுறையை ஆய்வு நோக்கில் விளக்கி தெளிவுபடுத்துதல்

PSO 3: ஆய்வுமுறைகளைச் சுட்டிக்காட்டி அதன்வழி மாணவர்களை ஆய்வில் ஈடுபடச் செய்தல்

PSO 4:ஆய்வேட்டின் மொழிநடை தூயத்தமிழில் அமையும் முறையைத் தெளிவுபடுத்தி அதன்வழி ஆய்வில் இடம்பெறா மொழிநடையை விளக்குதல்

PSO 5: ஆய்வு பல்துறை ஆய்வாகவும் திறனாய்வு ஆய்வாகவும் அமையும் முறையை விளக்கி ஆய்வுக்கு உட்படுத்துதல்

➤ ENGLISH

Upon completion of the programme, the graduate will be able to

PSO 1: Create a synthesis of varied knowledge in English Language and Literature and to understand the various trends and movements in the current literary world.

PSO 2: Develop a range of general skills in evaluating information and communicating to the society independently with excellent persuasive writing skills.

PSO 3: Analyse and apply the critical theories along with other skills of language competency into diverse fields, which supports good language skills to specific skills like editing, content, creative writing, documentation etc.

PSO 4: Develop critical skills, allow free expression into innovative new genres and enhanced technical perspective to use language.

PSO 5: Integrated global perspectives will bring interconnectedness between cultures, philosophies and practices for better world view and human values.

➤ **ECONOMICS**

PSO 1: To critically review salient development in world economies and integrate it with the current scenario

PSO 2: Be competent enough to pursue doctoral studies and seek professional employment

PSO 3: To demonstrate their ability in empirical research by gathering data, formulating models and testing hypotheses using analytical tools

PSO 4: To delve into health theories in resolving pertinent issues

➤ **HISTORY**

On completion of the Specific programme, the student will be able to

PSO 1: understand the various aspects of research, historians and the different schools of thought.

PSO 2: gain knowledge and is ready to teach young minds.

PSO 3: adapt to the demands and are ready to be independent physically, mentally and financially.

PSO 4: to understand the diverse nature of research focussing to regional history.

PSO 5: acquire quantitative and qualitative knowledge on the subject and gain indepth knowledge in the regional history

➤ **ZOOLOGY**

PSO 1: Display higher order thinking in the knowledge domain and demonstrate professional skills

PSO 2: Contribute to the advancement and application of relevant knowledge by self-directed learning

PSO 3: Extend and integrate knowledge and skills to design and develop novel products and explore innovative solutions to national and international goals of development.

PSO 4: Exercise management skills and develop social interactions in a responsive, ethical and constructive way to meet global standards of excellence in all spheres of activity.

PSO 5: Strive for social and economic equity based on the need for gender parity and ecological sustainability.

➤ **CHEMISTRY**

On completion of the specific programme the student will be able to:

PSO 1: Apply knowledge and demonstrate professional skills in their own field of research

PSO 2: Demonstrate originality in the application of knowledge, conduction of experimental work and pursue quality research

PSO 3: Critically evaluate current research, research techniques, methodologies and design energy efficient & green experiments, scale up processes which have immense application to common man

PSO 4: Develop confidence and self-direction in tackling and solving problems, critical thinking and act independently in the planning and implementation of research

PSO 5: Use innovative and ICT enabled teaching methodology , communicate clearly and effectively, publish their research findings in peer reviewed journals and present research findings in international/ national forums

➤ **COMMERCE**

On completion of the specific programme the researcher will be able to:

PSO 1: Apply the knowledge of latest trends in Commerce relating to human resource management, marketing, banking, entrepreneurial development and finance.

PSO 2: Analyze and evaluate the complex problems in business with an understanding of the contextual and practical knowledge gained.

PSO 3: Prepare for a career in teaching and research.

PSO 4: Equipped for employment in Government and Private Research institutions **PSO 5:** Engage in lifelong learning by being equipped with a global outlook towards facing challenges of the dynamic world.

PSO 6: Acquire proficiency and analytical skills in areas of commerce along with hands on experience in organizations with respect to research project/work.

➤ **PLANT BIOLOGY & PLANT BIOTECHNOLOGY**

After completion of the course the students will be enable to

PSO 1: Acquire contextual knowledge in the process of developing new products and gain expertise of well define area of research in Plant Biology and Plant Biotechnology.

PSO 2: Apply innovative methodologies to carry out independent research leading to pursue Ph.D programme and empower student's personal and professional development.

PSO 3: Analyse the impact of new emerging areas of Plant Biology and Plant Biotechnology in the industrial environmental and social contexts.

PSO 4: Employ the scientific skills and analyse data using appropriate statistical methods and tools to design and execute the research projects.

PSO 5: Promote leadership and teaching skills to evolve as excellent professionals in academic institutes and in public sector units-CSIR, DBT, DST, DRDO laboratories and to contribute towards the growth of the country

➤ **MATHEMATICS**

On completion of the M.Phil Mathematics the student will be able

PSO 1: To develop research level thinking in the field of pure and applied mathematics.

PSO 2: To develop abstract mathematical thinking.

PSO 3: To assimilate mathematics independently and solve advanced mathematical problems.

PSO 4 : To write research articles in mathematics and to publish it in reputed journals.

PSO 5 : To develop and enhance teaching skills in mathematics.

➤ **CORPORATE SECRETARYSHIP**

The research program will produce graduates who will be able to

PSO 1: Acquire profound knowledge and understanding of advanced concepts in areas of finance, research and management thereby enhancing their cognitive and analytical skills

PSO 2: Foster potential researchers through application of experiential learning

PSO 3: Critical and quick decision making ability in all endeavours

PSO 4: Equip to face the global challenges through updated knowledge in research

PSO 5: Ability to recognise the need for research and undertake socially relevant projects

➤ **FOOD AND NUTRITION**

After completion of the specific programme, the M.Phil students will be able to

PSO 1: Acquire deep understanding principles and theories of research methodology, and undertake research and find effective teaching methods to enhance productive learning among students

PSO 2: Acquaint themselves on the different forms of education and apply analytical skills in undertaking research in the field of advanced nutrition

PSO 3: Develop critical thinking and analytical abilities to apply knowledge of advanced nutrition to solve malnourishment related problems and understand the best teaching methods to improve teacher student relationship

PSO 4: Recognize, understand and devise novel teaching learning methodologies in order to improve student participation and interaction

PSO 5: Evolve best student evaluation methods and engage in lifelong learning process and become professionally competent to take up careers in academics and health care.

PSO 6 Propose productive solutions to nutrition related problems by undertaking effective research and propose novel teaching methodologies to become efficient in teaching

➤ **PHYSICS**

On completion of M.Phil degree programme, the graduates will be able to:

PSO 1: Apply the in-depth conceptual understanding of the subject through literature survey and characterization techniques. To choose advanced level research in the country and abroad.

PSO 2: Demonstrate innovation in the application of knowledge, in solving problems, planning and implementation of research and critical evaluation.

PSO 3: Apply the practical understanding of interpreting research and enquiry as knowledge, enabling them to function effectively in multidisciplinary academic environments.

PSO 4: Evolve as excellent professionals in universities and scientific establishments like BARC/ISRO/DRDO/CSIR/TIFR laboratories and contribute towards scientific growth.

PSO 5: Analyze the impact of new emerging areas of physics in the global, economic, environmental and societal consideration.

PSO 6: Develop inventive methodologies to tackle the issues identified and contribute to the development of scientific knowledge and intellectual property

➤ **COMPUTER SCIENCE**

After completing the course, the research scholars will be able to,

PSO 1: Analyze the impact of new emerging areas of computer science in the global, economic, environmental and societal context.

PSO 2: Acquire in-depth knowledge in the process of developing new ideas as well as gain expertise in the defined areas of research in computer science.

PSO 3: Develop innovative methodologies to challenging issues identified and contributing to the development of technological knowledge and intellectual property.

PSO 4: Ability to apply mathematical knowledge to solve complex task, model real world problems using appropriate innovative technologies.

PSO 5: Facilitate knowledge in various domains to identify research gaps and hence to provide solution to new ideas and innovations.