SCHOOL OF COMPUTER & INFORMATION SCIENCES

Master of Computer Applications
2 Years Programme

Name of the Academic Program: **Master of Computer Applications**

Program Educational Objectives (PEOs)

PEO-1: To train the graduates to acquire in depth knowledge of fundamental concepts and programming skills for holistic development

PEO-2: To prepare the graduates for productive careers in software industry, corporate sector, Government Organizations.

PEO-3: To prepare graduates to acquire excellent computing ability so that they can analyze, design and create Solutions for real time problems.

PEO-4: To apply the current tools and techniques to create systems for solving Industry oriented problems.

PEO-5: To prepare graduates to gain multidisciplinary knowledge through real time case studies, projects and industry internship to meet the industry needs.

Program Outcomes (POs)

PO-1: Computational Knowledge	Apply knowledge of computing fundamentals, computing specialisation, mathematics, and domain knowledge to conceptualise computing models
PO-2: Problem Analysis	Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines.
PO-3: Design/Development of Solutions	Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
PO-4: Conduct Investigation of Complex Computing Problems	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO-5: Model Tool Usage	Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.
PO-6: Professional Ethics	Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practice.
PO-7: Life Long Learning	Recognise the need, and have the ability, to engage in independent learning for continual development as a computing professional.
PO-8: Project Management and Finance	Demonstrate knowledge and understanding of the computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO-9: Communication Efficacy	Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.
PO-10: Societal and Environmental Concern	Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practice.
PO-11: Individual Team Work	Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.
PO-12: Innovation and Entrepreneurship	Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.

MCA II YEAR PROGRAM CURRICULUM

Overall Structure
• The first three semesters each consist of 5 theory and 2 lab courses giving a total of 15 theory (12 Core + 2 Electives+ 1 Foundation) and 6 labs.
• Project/Internship to be done in the last semester.
•Communication Skills and Technical Writing as Zero-Credit courses during Summer (or on SWAYAM/other online platforms with supervision/evaluation by our faculty)

Semester-Wise Course Structure

SEMESTER	SUBJECTS	CREDITS
Semester I	Theoretical Foundations of Computer Science Programming Methodology Computer Organization and Architecture Computer Based Optimization Techniques Foundation Course (in Management Area) PM Lab, IT Lab	17-0-4
Semester II	Computer Networks Operating Systems Data Structures Object Oriented Programming EL01 DS Lab, OOP Lab	16-1-4/5
Semester III	Algorithms Software Engineering Software Project Management (with Industry participation) Database management Systems EL02 SE Lab, DBMS Lab	15-1-4/5
Semester IV	Project/Internship	12