Program Name: Master of computer applications (MCA)

Program Outcomes (PO)

PROGRAM OUTCOMES (Followed till June 2024)

1. **Computational Knowledge**: Apply the knowledge of mathematics, fundamentals of computing, and fundamentals of machine learning to solve software development problems.
2. **Problem analysis:** Identify, formulate, review and analyse computing processes and arrive at substantial conclusions using principles of mathematics, and computing sciences.
3. **Design/development of solutions**: Design and evaluate solutions for *complex* computing problems, along with their components, and processes that meet the requirements with appropriate consideration of public health and safety measures.
4. **Conduct investigations of complex 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.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling for the computational problem with an understanding of its limitations.
6. **Environment and sustainability:** Understand the impact of developing a solution for a computational problem in societal and environmental contexts and demonstrate the knowledge context of the sustainable development environment.
7. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of professional computing practice.
8. **Individual and teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and multidisciplinary settings.
9. **Communication**: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
10. **Project management and finance:** Demonstrate knowledge and understanding of the computing and management principles and apply these to one's work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
11. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
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.

PROGRAM OUTCOMES (Followed from August 2024: As per NBA SAR New format)

PO1 (Foundation Knowledge): Apply knowledge of mathematics, programming logic and coding fundamentals for solution architecture and problem solving.

PO2 (Problem Analysis): Identify, review, formulate and analyse problems for primarily focussing on customer requirements using critical thinking frameworks.

PO3 (Development of Solutions): Design, develop and investigate problems with as an innovative approach for solutions incorporating ESG/SDG goals.

PO4 (Modern Tool Usage): Select, adapt and apply modern computational tools such as development of algorithms with an understanding of the limitations including human biases.

PO5 (Individual and Teamwork): Function and communicate effectively as an individual or a team leader in diverse and multidisciplinary groups. Use methodologies such as agile.

PO6 (Project Management and Finance): Use the principles of project management such as scheduling, work breakdown structure and be conversant with the principles of Finance for profitable project management.

PO7 (Ethics): Commit to professional ethics in managing software projects with financial aspects. Learn to use new technologies for cyber security and insulate customers from malware

PO8 (Life-long learning): Change management skills and the ability to learn, keep up with contemporary technologies and ways of working.