Course Name: Electronics Engineering

A. Program Educational Objectives (PEOs)

Graduates will able to–

1. To equip graduates with a strong foundation in engineering sciences and Electronics Engineering fundamentals to become effective collaborators, researchers and real-time problem solver with technical competencies.

2. Perceive the limitation and impact of engineering solutions in social, legal, environmental, economical and multidisciplinary contexts.

3. Excel in Industry/technical profession, higher studies, and entrepreneurship exhibiting global competitiveness.

B. Program Outcomes

Engineering Graduate will be able to –

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate

consideration for the public health and safety, and the cultural, societal, and environmental considerations.

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 modeling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. 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.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering 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.

12. 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.

C. Program Specific Outcomes (PSOs)

1. Apply basic knowledge related to Electronic Circuits, Embedded & wireless communication Systems and Signal Processing to solve engineering/ societal problems in the field of Electronics Engineering.

2. Recognize and adapt to technical developments and to engage in lifelong learning and develop consciousness for professional, social, legal and ethical responsibilities.

3. Excellent adaptability to the changing industrial and real world requirements.

Course Name: Mechanical Engineering

A. Program Outcomes

Engineering Graduate will be able to –

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

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 modeling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. 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.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering 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.

12. 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.

B. Program-Specific Outcomes (PSOs)

1 Make the students employable in engineering industries.

2 Motivate the students for higher studies and research.

Course Name: Civil Engineering

A. Program Educational Objectives (PEOs)

Graduates will able to–

1**.** To perform their/duties efficiently, effectively and ethically at individual level and also at group level in a multidisciplinary team, contributing to the welfare of the society

2, To analyse data and technical concepts pertaining to the development of infrastructure, design, sustainability, construction management and any other related field of civil engineering

3. To adopt new innovative technology by continuously updating their knowledge through lifelong learning achieving personal and organization growth.

4. Graduates will be able to excel in a career while contributing to the growth of their organization.

B. Program Outcomes

Engineering Graduate will be able to –

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

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 modeling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. 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.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering 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.

12. 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.

C. Program Specific Outcomes

1.Plan, analyze, design and estimate the structures including substructures and superstructures for residences, public buildings, industries, irrigation structures, powerhouses, highways, railways, airways, docks and harbours and provide sustainable solutions to the civil Engineering problems.

2. Apply modern management and construction techniques to compete with recent structural design and construction within the specific time and funds.

<u>Course Name: Computer Science and Engineering</u>

A. Program Educational Objectives (PEOs)
Graduates will able to–

1.To provide knowledge of sound mathematical principles underlying various programming concepts.

2. To develop an ability to understand complex issues in the analysis, design, implementation and operation of information systems.

3. To provide knowledge of mechanisms for building large-scale computer-based systems.

4. To develop an ability to provide computer-based solutions to the problems from other disciplines of science and engineering.

5. To impart skills necessary for adapting rapid changes taking place in the field of information and communication technologies.

6. To provide knowledge of ethical issues arising due to deployment of information and communication technologies in the society on large scale.

B. Program Outcomes

Engineering Graduate will be able to –

1.The graduates will possess the knowledge of various discrete mathematical structures, Logic and numerical techniques.

2. The graduates will have an ability to apply mathematical formalism of Finite Automata and Probability in modeling and analysis of systems.

3. The graduates will have knowledge of core programming paradigms such as database orientation, object orientation, and agent orientation and concepts essential to implement software-based system.

4 The graduates will have an ability to analyze problem, specify algorithmic solutions to them and to evaluate alternative solutions.

5. The graduate will have broad understanding of the impact of a computer-based solutions in economic, environmental and social context and will demonstrate use of analytical tools in gathering requirements and distilling relevant information to provide computer based solutions.

6. The graduates will demonstrate the ability to build human centric interfaces to computers.

7. The graduates will possess the knowledge of advanced and emerging topics in the fields of operating systems, databases and computer networks.

8. The graduates will possess skills necessary to communicate design engineering ideas. The skills set include verbal, written and listening skills.

9. The graduates will understand ethical issues in providing computer-based solutions also they will have an ability and attitude to address the ethical issues.

10 The graduates will understand the role of system software such as operating systems, database management systems, compilers, middle-ware and internet protocols in realizing distributed information environment.

Course Name: Electrical Engineering (Electronics and Power)

A. Program Educational Objectives (PEOs)

Graduates will able to–

1.To equip graduates with a strong foundation in engineering sciences and Electrical Engineering fundamentals to become effective collaborators, researchers and real-time problem solver with technical competencies.

2.Perceive the limitation and impact of engineering solutions in social, legal, environmental, economical and multidisciplinary contexts.

3.Excel in Industry/technical profession, higher studies, and entrepreneurship exhibiting global competitiveness.

B. Program Outcomes (POs)

Engineering Graduate will be able to –

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering

fundamentals, and an engineering specialization to the solution of complex engineering problems.

2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

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 modeling to complex engineering activities with an understanding of the limitations.

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. 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.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering 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.

12. 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.

Course Name: Information Technology

A. Program Outcomes (POs)

The graduates of this programme will be able to demonstrate:

1. An Understanding of IT architecture, software and hardware concepts, functionalities and applications

2. An Ability to design, develop and test computer programs involving various algorithms, methodology and programming languages

3. Competency of business domains and functional processes that employ IT systems and applications

4. Practical use of communication protocols and their applications in the field of internet and world wide web

5. Sound understanding of fundamentals of computer as the central enabling platform for information management in 21st century

6. An Ability to develop, integrate, maintain and innovate software applications deployed in various multi-disciplinary domains

7. Thought leadership to design and implement practical solutions for global industry needs.

8. An Acumen to embrace and adopt futuristic IT technological developments

9. Sound knowledge of entrepreneurship traits to succeed

10. Adoption of practices that are ethical ensuring transparency and accountability

11.Capability to provide solutions that are socially empowering and environment friendly

12. Effective communication and collaboration techniques with stakeholders to achieve best results

Course Name: MCA

A.Program Educational Objectives (PEO) Post graduates of MCA program will be

1: Utilizing strong technical aptitude and domain knowledge to develop smart software solutions for the up liftment of society.

2: Applying research and entrepreneurial skills augmented with a rich set of communication, teamwork and leadership skills to excel in their profession.

3: Showing continuous improvement in their professional career through life-long learning, appreciating human values and ethics.

B. Program Outcomes (PO) for Master of Computer Applications (2019-2020) on completion of MCA program, the students are expected to

1: Apply knowledge of computing fundamentals, computing specialization, mathematics, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements.

2: Identify, formulate, research literature, and solve complex computing problem searching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines.

3: 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.

4: 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: Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.

6: Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practice.

7: Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.

8: 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.

9: 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.

10: 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.

11: Function effectively as an individual and as a member or leader in diverse teams and inmulti disciplinary environments.

12: 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.