

Program Outcomes, Program Specific Outcomes and Course Outcomes for Programs Offered by the Institution

AQAR : 2018-19



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Government Aided Autonomous College Affiliated to Anna University Chennai

ISO 9001:2015 Certified

Accredited by NAAC with 'A' Grade

DEPARTMENT: APPLIED MATHEMATICS & COMPUTATIONAL SCIENCES

PROGRAM: B.SC-COMPUTER SYSTEMS AND DESIGN

Program Outcomes:

1. An ability to apply knowledge of Mathematics and Computer Science.
2. An ability to design and conduct experiments, as well as to analyze and interpret data.
3. An ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, healthy and safety, manufacturability and sustainability.
4. An ability to acquire required programming skills, formulate and solve practical problems.
5. An understanding of professional and ethical responsibility.
6. An ability to communicate effectively.
7. An ability to function on multidisciplinary teams.

PROGRAM: MSC-SOFTWARE SYSTEMS-INTEGRATED

Program Outcomes:

1. Ability to apply knowledge of basic sciences, mathematics, probability and statistics to computer science and solve problems.
2. Ability to learn the fundamentals of computing systems, design and functionality of the hardware components and their underlying execution.
3. Ability to model, analyse, design, visualize and realize physical systems or processes of increasing size and complexity.
4. Ability to learn and use new development tools, software framework, middleware, programming language or methodology to aid in the development of software projects.
5. Ability to define, assess and adhere to software quality practices, and software processes and methodologies.
6. Ability to be an effective member of a multi-disciplinary software project development team with an awareness of individual, professional and ethical responsibilities.
7. Ability to communicate technical concepts in a complete, concise, and correct manner, and prepare documentation and presentations; participate in team meetings, brainstorming session, code reviews or group discussions.
8. Ability to develop technical and managerial skills needed to be an effective leader as an entrepreneur or in a software concern.
9. Ability to pursue research in computer science area.
10. Ability to recognize the need and engage in life-long learning for professional growth.

PROGRAM: MSC-THEORETICAL COMPUTER SCIENCE-INTEGRATED

Program Outcomes:

1. An ability to apply the theoretical knowledge of Mathematics and Computational Sciences to model and solve real time problems.
2. An ability to understand, analyze and design efficient algorithms.
3. Development of soft skills and practicing professional ethics.
4. An ability to design efficient protocols for advanced communication technology.
5. Acquire knowledge of contemporary computational issues.
6. In depth knowledge of foundations of computing.
7. An ability to understand and solve emerging research problems.
8. Develop programming skills to implement research projects.

PROGRAM: MSC-DATA SCIENCE-INTEGRATED

Program Outcomes:

1. Ability to apply knowledge of basic sciences, mathematics, probability and statistics, computer science and solve problems.
2. Ability to model, analyse, design, visualize and realize physical systems or processes of increasing size and complexity.
3. An ability to understand, analyse and design efficient algorithms.
4. Development of soft skills and practicing professional ethics.
5. Develop and implement data analysis strategies based on theoretical principles, and detailed knowledge of the underlying data.
6. An ability to analyze very large data sets in the context of real world problems and interpret results using data analytics.
7. An ability to understand the interdisciplinary nature of data, information and communications.
8. An ability to understand research methods used to collect and analyze data for decision making.

PROGRAM: MSC-APPLIED MATHEMATICS

Program Outcomes:

1. Provide a thorough knowledge in various fields of Applied Mathematics.
2. In depth knowledge in basics of computer science.
3. Ability to build and administrate the Mathematical models to solve real time problems.
4. Ability to understand and solve emerging research problems.
5. Prepare students to pursue their research in Top-Notch institutions.

6. Prepare students to gain technical competency and managerial skills to tackle the growing and ever widening requirements of the software industry.
7. Develop soft skills in practicing professional ethics.

PROGRAM: B.SC-APPLIED SCIENCE

Program Outcomes:

1. Applied Science knowledge: Apply the knowledge of fundamental and applied mathematics, physics and chemistry to the solution of complex scientific/engineering problems.
2. Problem analysis: Identify, formulate, research literature, and analyze scientific/engineering problems to arrive at substantiated conclusions using first principles of mathematics, natural, and engineering sciences.
3. Design/development of solutions: Design solutions for complex engineering problems and design system components, processes to meet the specifications with consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. Conduct investigations of complex problems: Use research based knowledge 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 scientific/engineering activities with an understanding of the limitations.
6. The scientist 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 practice.
7. Environment and sustainability: Understand the impact of the professional scientific/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 scientific/engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings.
10. Communication: Communicate effectively with the scientific/engineering community and with society at large. Be able to comprehend and write effective reports documentation. Make effective presentations, and give and receive clear instructions.
11. Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team. Manage projects 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.

DEPARTMENT: AUTOMOBILE ENGINEERING

PROGRAM: B.E-AUTOMOBILE ENGINEERING

Program Outcomes:

1. Graduate will demonstrate basic knowledge in mathematics, science and engineering.
2. Graduate will demonstrate the ability to design and conduct experiments, interpret and analyze data.
3. Graduate will demonstrate the ability to design automotive system or a process that meets the designed specification and requirements.
4. Graduate will demonstrate to function on engineering and science laboratory team as well as multidisciplinary design team.
5. Graduate will demonstrate the ability to identify, formulate and solve automobile engineering problems.
6. Graduate will demonstrate an understanding of their professional and ethical responsibility.
7. Graduate will be able to communicate effectively in both verbal and written form.
8. Graduate will have confidence to apply engineering solutions in global and social contexts.
9. Graduate will be capable of self-education and clearly understand the value of lifelong learning.
10. Graduate will be broadly educated and will have an understanding of impact of engineers on society and demonstrate awareness of contemporary issues.
11. Graduate will be familiar with modern engineering software tools and equipment to analyze automobile engineering problems.

Program Specific Outcomes:

1. The graduate will demonstrate the ability to improve a system design process that meets the system specifications and requirements
2. Graduate will familiar with automotive PLM and solve real time problems and develop ecofriendly and sustainable products by working with multidisciplinary team

PROGRAM: M.E-AUTOMOTIVE ENGINEERING

Program Outcomes:

1. An ability to independently carry out research / investigation and development work to solve practical problems.
2. An ability to write and present a substantial technical report / document.
3. Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.

4. The graduate will demonstrate the ability to improve a system design process that meets the specification to requirements.
5. Graduates will be familiarize with automotive product lifecycle management and solve real time problem and develop eco-friendly and sustainable by working with multidisciplinary team.

DEPARTMENT – BIO TECHNOLOGY

PROGRAM: B. TECH BIO-TECHNOLOGY

Program Outcomes:

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.

Program Specific Outcomes:

1. Demonstrate relationship between fundamental science and engineering knowledge with biological systems.
2. Demonstrate a working knowledge that apply to advanced biological sciences
3. Utilize computational tools to analyze and interpret biological data

PROGRAM: M. TECH BIO-TECHNOLOGY

Program Outcomes:

1. An Ability to independently carry out research to identify, formulate and solve biological problems.
2. An ability to articulate facts and ideas through reports, documents.
3. An ability to demonstrate mastery in biosciences, bioprocess or bioinformatics.
4. An ability to adapt to changing professional requirements.

DEPARTMENT: BIOMEDICAL ENGINEERING

PROGRAM: B.E-BIOMEDICAL ENGINEERING

Program Outcomes:

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.

Program Specific Outcomes:

1. Acquire knowledge on fundamentals of engineering and biological sciences to identify and solve biomedical engineering problems.
2. Design, develop, acquire, analyze and test biomedical devices and processes to improve quality of healthcare

DEPARTMENT: CIVIL ENGINEERING

PROGRAM: BE – CIVIL ENGINEERING

Program Outcomes:

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problem.
2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural science, and engineering science.
3. Design/development of solution: Design solution 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 interpretations 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.

Program Specific Outcomes:

1. Plan, analyse, design, estimate the cost and execute all kinds of civil engineering structures.

2. Use modern construction techniques as well as equipment and apply the principles of economics and management so as to complete the project within the specified time and budget.
3. Maintain and rehabilitate the existing structures.

PROGRAM: M.E-STRUCTURAL ENGINEERING

Program Outcomes:

1. An ability to independently carry out research / investigation and development work to solve practical problems.
2. An ability to write and present a substantial technical report/document.
3. Students should be able to demonstrate a degree of mastery over the area as per the specialization of the programme. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
4. An ability to use modern engineering tools, software and equipment to analyze critically, design, conduct experiments and interpret investigations to solve structural engineering problems. PO
5. An ability to communicate and function effectively as an individual and as a team, within multi-disciplinary environment in executing and managing projects.
6. An ability to practice ethics, discharge professional responsibilities, to engage in life long learning to adapt oneself to the changing needs of the society and critically assess the relevant technological issues.

PROGRAM: M.E-INFRASTRUCTURE ENGINEERING

Program Outcomes:

1. An ability to independently carry out research/investigation and development work to solve practical problems.
2. An ability to write and present a substantial technical report/document.
3. Students should be able to demonstrate a degree of mastery over the area as per the specialization of the programme. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
4. An ability to use the techniques, skills and modern engineering tools to analyze critically, carry out safe and economical design, conduct experiments and interpret investigations to solve civil infrastructure engineering problems.
5. An ability to practice ethics and discharge professional responsibilities and to engage in life-long learning to gain knowledge of contemporary issues, competencies and adapt to the changing needs of the society.
6. Knowledge on impact of infrastructure projects on environment, able to respond effectively to mitigate such impacts within realistic constraints such as economic, environmental, social, ethical, health, safety and make the projects sustainable.

DEPARTMENT: COMPUTER SCIENCE & ENGINEERING

PROGRAM: B.E-COMPUTER SCIENCE AND ENGINEERING

Program Outcomes:

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.

Program Specific Outcomes:

1. Conceptualize domain specific problems, analyze and develop efficient algorithms and provide solutions.
2. Apply standard / best industry practices and techniques in developing software systems.

PROGRAM: M.E-COMPUTER SCIENCE AND ENGINEERING

Program Outcomes:

1. Independently carry out research /investigation and development work to solve practical problems.
2. Write and present a substantial technical report/document.
3. Demonstrate a degree of mastery over the Computer Science and Engineering curriculum at a level higher than the requirements in the appropriate bachelor programme.
4. Apply mathematical foundations, algorithms and computer science principles in modeling and designing computer systems.
5. Apply computer science tools and techniques to solve different classes of engineering problems following ethical practices.

PROGRAM: M.E-SOFTWARE ENGINEERING

Program Outcomes:

1. Independently carry out research/investigation and development work to solve practical problems.
2. Write and present a substantial technical report/document.
3. Demonstrate a degree of mastery over Software Engineering domain at a level higher than the requirements in the appropriate bachelor programme.
4. Apply software engineering methodologies and software tools to provide solutions for engineering problems with ethical practices.

DEPARTMENT: ELECTRONICS AND COMMUNICATION ENGINEERING

PROGRAM: B.E- ELECTRONICS AND COMMUNICATION ENGINEERING

Program Outcomes:

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 engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects in multidisciplinary environments.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

PROGRAM: M.E-COMMUNICATION SYSTEMS

Program Outcomes:

1. An ability to independently carry out research investigation and development work to solve practical problems.
2. An ability to write and present a substantial technical report/document.
3. An ability to demonstrate a degree of mastery in the area of Communication Systems, with the mastery at a level higher than the requirements in the appropriate bachelor program.
4. An ability to apply knowledge of communication system concepts to solve engineering problems.

5. An ability to identify and apply appropriate techniques, resources and EDA tools to model, analyze and test communication systems.
6. An ability to engage in life- long learning for the design and development of communication systems taking into consideration sustainability, societal, ethical and environmental aspects.

PROGRAM: M.E-VLSI DESIGN

Program Outcomes:

1. An ability to independently carry out research investigation and development work to solve practical problems.
2. An ability to write and present a substantial technical report/document.
3. An ability to demonstrate a degree of mastery in the area of VLSI Design, with the mastery at a level higher than the requirements in the appropriate bachelor program.
4. An ability to apply knowledge of VLSI design concepts to solve engineering problems.
5. An ability to build competency and skills necessary to create VLSI system with the leading EDA tools and boards used in the semiconductor industry.
6. An ability to engage in life- long learning taking into consideration sustainability, societal, ethical and environmental aspects.

PROGRAM: M.E- WIRELESS COMMUNICATION

Program Outcomes:

1. An ability to independently carry out research investigation and development work to solve practical problems.
2. An ability to write and present a substantial technical report/document.
3. An ability to demonstrate a degree of mastery in the area of Wireless Communication, with the mastery at a level higher than the requirements in the appropriate bachelor program.
4. An ability to apply knowledge of wireless communication concepts to solve engineering problems.
5. An ability to identify and apply appropriate techniques, resources and EDA tools to model, analyze and test wireless communication systems.
6. An ability to engage in life- long learning for the design and development of wireless communication systems taking into consideration sustainability, societal, ethical and environmental aspects.

PROGRAM: M. TECH- NANO SCIENCE AND TECHNOLOGY

Program Outcomes:

1. An ability to independently carry out research/investigation and development work to solve practical problems.

2. An ability to write and present a substantial technical report/document.
3. An ability to demonstrate a degree of mastery over nanoscience and technology.
4. An ability to apply knowledge of computing, mathematics, science and engineering for micro and nanoscale devices.
5. An ability to analyze the impact of nanostructures on device design engineering solutions for the society and will be aware of contemporary issues.
6. An ability to use modern engineering, design and analysis tools for micro and nano scale devices especially in Indian context.

DEPARTMENT: ELECTRICAL AND ELECTRONICS ENGINEERING

PROGRAM: B.E- ELECTRICAL AND ELECTRONICS ENGINEERING

Program Outcomes:

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.

PROGRAM: B.E-ELECTRICAL AND ELECTRONICS ENGINEERING (SANDWICH)

Program Outcomes:

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.

PROGRAM: M.E-POWER ELECTRONICS AND DRIVES

Program Outcomes:

1. Ability to independently carry out research and development work to solve practical problems
2. Ability to write and present a substantial technical report
3. Ability to demonstrate a degree of mastery over the area of Power Electronics & Drives
4. Ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health & safety, manufacturability & sustainability.

PROGRAM: M.E-APPLIED ELECTRONICS

Program Outcomes:

1. Ability to independently carry out research /investigation and development work to solve practical problems.
2. Ability to write and present a substantial technical report/document
3. Ability to demonstrate a degree of mastery over the area of Applied Electronics
4. Ability to function as a practitioner in multidisciplinary environment maintaining good professional ethics with a desire for life-long learning.

PROGRAM: M.E-EMBEDDED AND REAL-TIME SYSTEMS

Program Outcomes:

1. Ability to independently carry out research and development work to solve practical problems.
2. Ability to demonstrate a degree of mastery over the area of Embedded and Real-Time systems.

3. Ability to apply knowledge gained to analyze, design, and test Hardware and Software for Real-Time Embedded System Applications.
4. Ability to improve professionalism through life-long learning, along with ethical and social responsibility.

DEPARTMENT: INSTRUMENTATION & CONTROL SYSTEMS
ENGINEERING

PROGRAM: B.E-INSTRUMENTATION & CONTROL ENGINEERING

Program Outcomes:

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, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principle 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: Design and conduct experiments as well as to analyze and interpret data professionally.
5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and 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.

Program Specific Outcomes:

1. Design and analyze measurement systems.
2. Practice and contribute to control and automation field.
3. Apply software skills for measurement and control applications.

PROGRAM: M.E-CONTROL SYSTEMS

Program Outcomes:

1. An ability to independently carry out research /investigation and development work to solve practical problems.
2. An ability to write and present a substantial technical report/document.
3. Students should be able to demonstrate a degree of mastery over the area as per the specialization of the program. The mastery should be at a level higher than the requirements in the appropriate bachelor program.
4. An ability to work in teams and apply interpersonal skills to solve multidisciplinary problems.

DEPARTMENT: INFORMATION TECHNOLOGY

PROGRAM: B. TECH- INFORMATION TECHNOLOGY

Program Outcomes:

1. An ability to apply knowledge of mathematics, science, engineering fundamentals and concepts of Information Technology to solve complex problems.
2. An ability to design, conduct experiments, as well as to analyze and interpret data.
3. An ability to design, implement, and evaluate computer-based systems considering economic, environmental, social, political, ethical, health and safety issues.
4. An ability to function individually and in teams on diverse and multidisciplinary domains.
5. An ability to study a problem, identify and formulate the computing requirements appropriate to its solution.
6. An understanding of professional and ethical responsibilities.
7. An ability to communicate effectively.
8. An ability to analyze the local and global impact of computing on individuals, organizations, and society ability to engage in life-long learning.

9. An ability to engage in life-long learning.
10. Knowledge of contemporary issues.
11. An ability to use current techniques, skills, and modern tools necessary for engineering and computing practice.
12. An understanding of engineering, finance and management principles to manage projects.

PROGRAM: M. TECH- INFORMATION TECHNOLOGY

Program Outcomes:

1. Acquire in-depth knowledge with an ability to discriminate, evaluate, analyze and synthesize solutions for real time problems in the field of Information Technology.
2. Explore IT related problems; apply knowledge for synthesizing information to promote research.
3. Apply effective problem-solving techniques to arrive at optimal solutions.
4. Apply appropriate research methodologies and contribute for the development of science and technology.
5. Assimilate and use state of the art computing techniques and tools to solve complex engineering problems.
6. Possess knowledge, recognize opportunities and contribute to collaborative and multidisciplinary research.
7. Understand the management principles to manage projects efficiently considering economical and financial factors.
8. Communicate effectively in oral and written manner.
9. Recognize the need and engage in life-long learning with enthusiasm and commitment to improve domain knowledge.
10. Acquire professional ethics and intellectual integrity, understand the responsibility and contribute to the sustainable development of the society.

PROGRAM: M.E-BIOMETRICS AND CYBER SECURITY

Program Outcomes:

1. Acquire in-depth knowledge with an ability to discriminate, evaluate, analyze and synthesize solutions for real time problems in biometrics and cyber security domain.
2. Apply knowledge to conduct research in a wider theoretical, practical and policy context.
3. Investigate security related issues, design and develop solutions considering public health and safety, societal and environmental factors.
4. Apply appropriate research methodologies and contribute for the improvement of science and technology.
5. Assimilate and use appropriate techniques and latest tools to solve complex biometrics and cyber security problems.
6. Possess knowledge, recognize opportunities and contribute to collaborative and multidisciplinary research.
7. Understand the management principles to manage projects efficiently considering economical and financial factors.

8. Develop oral and written communication skills.
9. Recognize the need and engage in life-long learning with enthusiasm and commitment to update knowledge in security domain.
10. Acquire professional and intellectual integrity, professional code of conduct, understand ethical practices and social responsibilities to contribute for the sustainable development of the society.

DEPARTMENT: COMPUTER APPLICATIONS

PROGRAM: MASTER OF COMPUTER APPLICATIONS

Program Outcomes:

1. An ability to apply knowledge of mathematics, computing and management principles appropriately to model the software applications.
2. An ability to identify, formulate problem definition for real world problems, analyze the literature and provide software solutions.
3. An ability to design, implement, and evaluate sustainable computational solutions in the form of a system, process, component, or program for various complex problems as per needs and specifications.
4. An ability to assimilate and use state of the art computing technologies, tools and techniques necessary for computing practices.
5. An ability to use research-based knowledge including design and development of algorithms, analysis and interpretation of data and synthesis of information to provide valid conclusion.
6. An ability to apply management principles to manage projects and develop soft skills, and practice professional ethics in multidisciplinary environments.
7. An ability to communicate effectively in both verbal and written form.
8. An ability to adapt standardized software engineering practices to succeed as an employee or an entrepreneur.
9. An ability to engage in self learning for continual development as a computing professional and analyze the impact of computing on individuals, organizations, research community and the society at large.
10. Ability to service and excel in fulfilling the modern day demands with their knowledge and skills.

DEPARTMENT: MECHANICAL ENGINEERING

PROGRAM: B.E- MECHANICAL ENGINEERING

Program Outcomes:

1. An ability to apply knowledge of mathematics, science, and engineering.
2. An ability to design and conduct experiments, as well as to analyze and interpret data.
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.
4. An ability to function on multi-disciplinary teams.
5. An ability to identify, formulate and solve engineering problems.
6. An understanding of professional and ethical responsibility.
7. An ability to communicate effectively.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.
9. A recognition of the need for and an ability to engage in life-long learning.
10. Knowledge of contemporary issues.
11. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.

Program Specific Outcomes:

1. An ability to design, model, simulate and analyze mechanical and thermal systems using appropriate tools, techniques and materials.
2. An ability to select appropriate manufacturing processes and systems for engineering products by applying industrial engineering principles to achieve economy.
3. An ability to understand various standard practices pertaining to design, manufacturing, operations and testing.

PROGRAM: B.E- MECHANICAL ENGINEERING (SANDWICH)

Program Outcomes:

1. An ability to apply knowledge of mathematics, science, and engineering.
2. An ability to design and conduct experiments, as well as to analyze and interpret data.
3. An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability.
4. An ability to function on multi-disciplinary teams.
5. An ability to identify, formulate and solve engineering problems.

6. An understanding of professional and ethical responsibility.
7. An ability to communicate effectively.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context.
9. A recognition of the need for and an ability to engage in life-long learning.
10. Knowledge of contemporary issues.
11. An ability to use the techniques, skills and modern engineering tools necessary for engineering practice.

PROGRAM: M.E-ENGINEERING DESIGN

Program Outcomes:

1. Be able to acquire in depth knowledge of design concepts and application of the same to solve complex engineering design problems.
2. Be able to interpret and analyze design data to conduct investigation of complex design problems using research based knowledge and various design principles to arrive at valid conclusions.
3. Be able to find safe and cost effective solutions in the development of mechanical systems taking into consideration sustainability, societal, environmental and public health aspects.
4. Be able to function effectively as an individual and as a team member in executing and managing projects pertaining to engineering design as well as in multi disciplinary environment.
5. Be able to identify, select and apply appropriate techniques, resources and design tools to model and analyze engineering design problems.
6. Be able to uphold professional ethics and social responsibilities consistent with their roles as design engineers.
7. Be able to communicate effectively on complex design problems and disseminate the results by oral and written communication.
8. Be able to undertake research systematically in the thrust areas of engineering design and understand the impact of such solutions in the development of society.
9. Be able to engage in life-long learning so as to adapt oneself to the change in needs of the society and have an open mind for learning from mistakes.

PROGRAM: M.E-COMPUTER INTEGRATED MANUFACTURING

Program Outcomes:

1. Be able to apply inter-disciplinary knowledge and skills to the various functional areas of CIM.
2. Be able to model, analyze and integrate various manufacturing systems effectively for minimizing time to market.
3. Be able to assimilate and apply the business practices of an organization.

4. Be able to identify cost effective manufacturing solutions for sustainability, societal, environmental and safety aspects.
5. Be able to pursue research systematically in the thrust areas of manufacturing and automation systems for enhancement of technology.
6. Be able to uphold professional ethics and social responsibilities.
7. Be able to communicate effectively the ideas and solutions related to CIM.
8. Be able to function effectively as an individual and as a team member in a multidisciplinary environment.
9. Be able to engage in life-long learning so as to adapt to the changes in needs of the society.

PROGRAM: M.E-INDUSTRIAL ENGINEERING

Program Outcomes:

1. Be able to acquire in depth knowledge of Industrial Engineering concepts and application of it to formulate and solve complex Industrial engineering problems with the knowledge of contemporary issues.
2. Be able to interpret and analyze data to conduct investigation of management problems using research-based knowledge and various industrial engineering principles to arrive at valid conclusions.
3. Be able to find safe and cost-effective solutions in the development of systems taking into consideration quality, sustainability, societal, environmental and public health aspects.
4. Be able to function effectively as an individual and as a team member in executing and managing projects pertaining to engineering management as well as in multi-disciplinary environment.
5. Be able to identify, select and apply appropriate techniques, resources and industrial engineering tools to model and analyze industrial engineering problems.
6. Be able to uphold professional ethics and social responsibilities consistent with their roles as industrial engineers.
7. Be able to communicate effectively on complex system related problems and disseminate the results by oral and written communication.
8. Be able to undertake research systematically in the thrust areas of industrial engineering and understand the impact of such solutions in the development of society.
9. Be able to engage in life-long learning so as to adapt oneself to the change in needs of the society and have an open mind for continuous learning.

PROGRAM: M.E-ENERGY ENGINEERING

Program Outcomes:

1. Develop ability to analyze and solve problems through the knowledge in mathematics, science and engineering.
2. Ability to collect, interpret and analyze data by conducting and designing innovative experiments.
3. Ability to work in multi-disciplinary teams.
4. Ability to identify, formulate and solve engineering and industrial problems.
5. Ability to develop professional competence in various energy and economy, and environmental problems.
6. Ability to communicate and convince others on technical matters.
7. Ability to achieve knowledge competence in energy related subjects.
8. To achieve knowledge in contemporary national and international energy issues.
9. Ability to use modern engineering tools like design software's, and scientific models.
10. Understand and be able to describe and analyze, clearly and broadly, the way in which energy markets work.
11. Be capable of carrying out projects related to energy management in a range of production and service sectors and of recognizing and evaluating advances and new developments in this field and contributing novel ideas.

PROGRAM: M.E-INDUSTRIAL ENGINEERING (PART TIME)

Program Outcomes:

1. Be able to acquire in depth knowledge of Industrial Engineering concepts and application of it to formulate and solve complex Industrial engineering problems with the knowledge of contemporary issues.
2. Be able to interpret and analyze data to conduct investigation of management problems using research based knowledge and various industrial engineering principles to arrive at valid conclusions.
3. Be able to find safe and cost effective solutions in the development of systems taking into consideration quality, sustainability, societal, environmental and public health aspects.
4. Be able to function effectively as an individual and as a team member in executing and managing projects pertaining to engineering management as well as in multi disciplinary environment.
5. Be able to identify, select and apply appropriate techniques, resources and industrial engineering tools to model and analyze industrial engineering problems.
6. Be able to uphold professional ethics and social responsibilities consistent with their roles as industrial engineers.

7. Be able to communicate effectively on complex system related problems and disseminate the results by oral and written communication.
8. Be able to undertake research systematically in the thrust areas of industrial engineering and understand the impact of such solutions in the development of society.
9. Be able to engage in life-long learning so as to adapt oneself to the change in needs of the society and have an open mind for continuous learning.

DEPARTMENT: METALLURGICAL ENGINEERING

PROGRAM: B.E METALLURGICAL ENGINEERING

Program Outcomes:

1. Apply the knowledge of mathematics, science, engineering fundamentals, and metallurgical engineering to the solution of complex metallurgical engineering problems.
2. Identify, formulate, review research literature, and analyze complex metallurgical engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and metallurgical and allied engineering sciences.
3. Design solutions for complex metallurgical engineering problems and design system components or processes that meet the specified needs with appropriate considerations for the public health and safety, and the 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, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex metallurgical engineering activities with an understanding of the limitations.
6. Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the metallurgical engineering practice.
7. Understand the impact of the metallurgical engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Apply ethical principles and commit to professional ethics and responsibilities and norms of the metallurgical engineering practice.
9. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communicate effectively on complex metallurgical engineering activities with the metallurgical 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 receive clear instructions.

11. Demonstrate knowledge and understanding of the metallurgical 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. Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadcast context of technological change.

PROGRAM: M.E-INDUSTRIAL METALLURGY

Program Outcomes:

1. Post graduate students of Industrial metallurgy will have a good knowledge of Metallurgical fundamentals.
2. Post graduate students will have the ability to understand and analyze engineering data.
3. Post graduate students will be able to provide solutions to various metallurgical problems.
4. Post graduate students will exhibit the capacity to experiment, analyze the results and provide the suitable solutions to engineering problems.
5. Post graduate students will have the necessary skills to develop or identify engineering tools needed to solve metallurgical problems .
6. Post graduates students will acquire sufficient theoretical and practical skills to solve the needs of Academia, Industry as well as Research and Development.
7. Post graduate students will have necessary knowledge to solve or develop solutions to the problems with emphasis on cost effectiveness and environmental safety.
8. Post graduate students will have adequate capacity to present problems and solution in an effective way.
9. Post graduate students will be endowed with an ability to pursue lifelong learning and be competent.
10. Post graduate students will develop a strong sense of ethics and learn to contribute to the society selflessly .
11. Post graduate students will be endowed with both technical competency and strong interpersonal skills and an ability to take independent decisions to solve the engineering problems.

DEPARTMENT: PRODUCTION ENGINEERING

PROGRAM: B.E- PRODUCTION ENGINEERING

Program Outcomes:

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.

PROGRAM: B.E- PRODUCTION ENGINEERING (SANDWICH)

Program Outcomes:

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.

PROGRAM: M.E-MANUFACTURING ENGINEERING

Program Outcomes:

1. Independently carry out research / investigation and development work to solve practical problems.
2. Write and present a substantial technical report / document.
3. Demonstrate a degree of mastery over the area as per the specialization of the programme.
4. Use modern equipment and problem-solving tools for improving manufacturing systems and processes from technical, financial and social perspectives.
5. Pursue higher studies / pursue their careers with OEMs / become entrepreneurs.

PROGRAM: M.E-PRODUCT DESIGN AND COMMERCE

Program Outcomes:

1. Independently carry out research / investigation and development work to solve practical problems.
2. Write and present a substantial technical report / document.
3. Demonstrate a degree of mastery over the area as per the specialization of the programme.
4. Assess the feasibility of developing an innovative product from technical, financial and social perspective and provide various cost / benefit trade off through different phases of product development with the help of case studies.
5. Use modern software used by OEMs and develop work flow to work in concurrent engineering environment to expedite product development process as a team.
6. Pursue higher studies / pursue their careers with OEMs / become entrepreneurs.

PROGRAM: M.E-VIRTUAL PROTOTYPING AND DIGITAL MANUFACTURING

Program Outcomes:

1. Independently carry out research / investigation and development work to solve practical problems.
2. Write and present a substantial technical report / document.
3. Demonstrate a degree of mastery over the area as per the specialization of the program.
4. Create virtual environments / digital mock up for immersive visualisation of data related to products / environments using the knowledge on computer graphics and virtual reality.
5. Pursue higher studies / pursue their careers with OEMs / become entrepreneurs.

PROGRAM: M.E-PRODUCTION ENGINEERING (PART TIME)

Program Outcomes:

1. Postgraduates will apply the knowledge acquired in mathematics, science, and engineering to understand and solve the problems related to manufacturing.
2. Postgraduates will use modern equipment and technology that can be applied to improve manufacturing systems and processes with industry participation.
3. Postgraduates will identify the need of automation and demonstrate ability to automate manufacturing systems.
4. Postgraduates will be encouraged to have out of box thinking in continuous improvement of manufacturing processes with integration of design systems.
5. Postgraduates will be motivated to become entrepreneurs.
6. Postgraduates will be capable of developing new manufacturing systems and assessing the feasibility from technical, financial and social perspectives.
7. Postgraduates will be mentored in their areas of interest and will demonstrate abilities to communicate their research outcomes.
8. Postgraduates can pursue their careers with manufacturing industries in supporting manufacturing activities and in the area of Research and Development.

DEPARTMENT: ROBOTICS & AUTOMATION ENGINEERING

PROGRAM: B.E- ROBOTICS & AUTOMATION ENGINEERING

Program Outcomes:

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.

DEPARTMENT: TEXTILE TECHNOLOGY

PROGRAM: B.TECH -TEXTILE TECHNOLOGY

Program Outcomes:

1. Apply knowledge of science, mathematics and engineering to troubleshoot and solve textile and allied industry problems.
2. Identify the research gaps, review literature and formulate research scheme in textiles in order to arrive at substantiated conclusion.
3. Design system components, processes and product to meet the desired needs with appropriate practical considerations.
4. Plan and conduct experiments, characterize, analyze and interpret data statistically for innovative and optimal solutions and product developments.
5. Create, select, and apply techniques, resources, and modern engineering and IT tools for engineering activities.

6. 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. Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communicate effectively on complex engineering activities with the engineering community and with society at large.
11. Demonstrate knowledge and understanding of the engineering and management principles, finance, branding and marketing principles and apply these to manage projects in multidisciplinary environments.
12. Recognize the need for, and have the base and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM: B. TECH -TEXTILE TECHNOLOGY (PART TIME)

Program Outcomes:

1. Apply knowledge of science, mathematics and engineering to troubleshoot and solve textile and allied industry problems.
2. Identify the research gaps, review literature and formulate research scheme in textiles in order to arrive at substantiated conclusion.
3. Design system components, processes and product to meet the desired needs with appropriate practical considerations.
4. Plan and conduct experiments, characterize, analyze and interpret data statistically for innovative and optimal solutions and product developments.
5. Create, select, and apply techniques, resources, and modern engineering and IT tools for engineering activities.
6. 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. Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

10. Communicate effectively on complex engineering activities with the engineering community and with society at large.
11. Demonstrate knowledge and understanding of the engineering and management principles, finance, branding and marketing principles and apply these to manage projects in multidisciplinary environments.
12. Recognize the need for, and have the base and ability to engage in independent and life-long learning in the broadest context of technological change.
