

VISION AND MISSION OF THE SRM UNIVERSITY-AP

SRM University- AP - Vision

To emerge as a world-class university in creating and disseminating knowledge and providing students a unique learning experience in their chosen field of scholarship, that would best serve the society and betterment of mankind.

SRM University-AP Mission Statements

- Develop into an inter-disciplinary institute combining academic rigor, excitement of discovery, creativity, and entrepreneurship.
- Deliver world-class research-based education, creating new knowledge and innovations.
- Provide an inspiring and stimulating environment for a diverse campus community of faculty and students.

School of Engineering and Sciences – Engineering Program

Department of Computer Science Engineering

Vision Statement

To create technology innovators and leaders who can shape the future of society through technical, research, and entrepreneurial skills with a strong emphasis on interdisciplinary learning and collaborations.

Mission Statements

- Use effective teaching and learning pedagogies to enhance technical competency with a focus on computer science and engineering fundamentals.
- Encourage interdisciplinary education and research by promoting the exchange of ideas among a varied community of researchers, educators, and learners.
- Develop a substantial body of knowledge for industrial applications.
- Create an outstanding interdisciplinary research atmosphere.
- Instil students with effective managerial skills, fostering their development into competitive and visionary entrepreneurs.

B. Tech in Computer Science Engineering

Program Educational Objectives (PEO)

- PEO 1:** Inculcate strong foundations in basic Computer Science and Engineering concepts by implementing innovative teaching-learning methods with a strong emphasis on practice-oriented learning and thus to improve applicability in students.
- PEO 2:** Make the students highly employable to meet the needs of various national and global industries by imparting the ability to adapt themselves to the rapidly changing requirements of the Computer Science and Engineering field.
- PEO 3:** Promote a strongly interdisciplinary approach that integrates the study of multiple academic disciplines which can develop skills required to build careers in various emerging fields of Science and Technology.
- PEO 4:** Educate the students to emerge as intellectually capable leaders and entrepreneurs respecting human values and to become more responsive to environmental and social issues.

Program Outcomes (PO)

- PO 1:** Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialization in the solution of complex engineering problems.
- PO 2:** Problem analysis: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using the first principles of mathematics, natural, and engineering sciences.
- PO 3:** Design/development: Design solutions for complex engineering problems and design system components, and processes to meet the specifications with consideration for public health and safety, and cultural, societal, and environmental considerations.
- PO 4:** Analysis, Design and Research: Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO 5:** Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- PO 6:** Society and Multicultural Skills: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal, and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.

- PO 7:** Environment and sustainability: Understand the impact of professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO 8:** Moral, and Ethical Awareness: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.
- PO 9:** Individual and teamwork: Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings.
- PO 10:** Communication: Communicate effectively with the engineering community and with society at large. Be able to comprehend and write effective reports and documentation. Make effective presentations and give and receive clear instructions.
- PO 11:** Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's work, as a member and leader in a team. Manage projects in multidisciplinary environments.
- PO 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 (PSO)

- PSO 1:** Demonstrate proficiency in analysis, design, and development of competent solutions by applying algorithmic techniques, software modelling, mathematical foundations and theory of computation.
- PSO 2:** Design and develop solutions for computer hardware, system software and application software.
- PSO 3:** Conduct world-class research activities in the emerging areas such as Data Science, Artificial Intelligence, Machine Learning, Cyber Security, Internet of Things, and Distributed and Cloud computing which helps in developing solutions needed for the society.

B. Sc Computer Science

Program Educational Objectives (PEO)

PEO 1: Enhance students' foundational knowledge and computer science concepts by improving analytical and computational approaches by understanding societal and technological challenges.

PEO 2: Promote a strongly interdisciplinary approach that integrates the study of multiple academic disciplines which can develop skills required to build careers in various emerging fields of science.

PEO 3: Engage in the understanding of emergent computing technologies to identify and communicate innovative solutions for significant problems across a broad range of application areas.

Program Outcomes (PO)

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

PO 2: Problem analysis: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using the first principles of mathematics, natural, and engineering sciences.

PO 3: Design/development: Design solutions for complex engineering problems and design system components, and processes to meet the specifications with consideration for public health and safety, and cultural, societal, and environmental considerations.

PO 4: Analysis, Design and Research: Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

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PO 11: Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's work, as a member and leader in a team. Manage projects in multidisciplinary environments.

PO 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 (PSO)

PSO 1: Apply their knowledge of computing systems, algorithmic principles and mathematical foundations to develop innovative solutions to current and emerging computing problems.

PSO 2: Design, implement, and evaluate a computer-based system to meet realistic requirements.

PSO 3: Adapt new technologies, tools and methodologies to remain at the leading edge of computer science developments and practice in the profession and in the academic field.

M. Tech Artificial Intelligence & Machine Learning

Program Educational Objectives (PEO)

PEO 1: Promote design, research, product implementation and services in Artificial Intelligence Engineering through strong technical, communication and entrepreneurial skills.

PEO 2: Engage to work productively as design and development Engineers, catering to supportive and leadership roles in multidisciplinary domains.

PEO 3: Possess the skills in AI & ML expertise ready to provide solutions to society's problems locally and globally.

PEO 4: Engage in active research for professional development in the field of Artificial Intelligence

Program Outcomes (PO)

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

PO 2: 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 public health and safety and cultural, societal, and environmental considerations.

PO 3: 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 for complex problems.

PO 4: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities with an understanding of the limitations.

PO 5: The Engineer and Society: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.

PO 6: Environment and Sustainability: Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of and need for sustainable development.

PO 7: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

PO 8: Individual and Teamwork: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.

PO 9: Communication: Communicate effectively on complex engineering activities

with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO 10: 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 Specific Outcomes (PSO)

PSO 1: Apply, analyse, design and develop efficient and effective mathematical and statistical models and applications in Artificial Intelligence and Machine Learning.

PSO 2: Demonstrate problem-solving skills and programming skills to provide innovative solutions to real-time industry problems.

PSO 3: Develop research skills, entrepreneurial skills, and leadership skills to solve social problems and maintain ethical values.

M. Tech Data Sciences

Program Educational Objectives (PEO)

PEO 1: Produce the most employable graduates who are problem solvers, team players and lifelong learners with exceptional analytical & effective communication skills, leadership abilities and ethical values with significant opportunities in various domains and sectors both nationally and internationally.

PEO 2: Develop proficiency in advanced data analysis, mathematics, and statistical inference of the data to create solutions for various problems in the data analytical industry for a better society.

PEO 3: Emerge as strong data science researchers using world-class research facilities focusing on interdisciplinary and multidisciplinary research and learning.

Program Outcomes (PO)

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

PO 2: 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 public health and safety and cultural, societal, and environmental considerations.

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PO 10: 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 Outcomes (PSO)

PSO 1: Develop efficient and effective mathematical and statistical models and applications in the field of Data Science.

PSO 2: Design and develop advanced techniques and algorithms in Data Sciences to analyse data and solve real-world problems.

PSO 3: Conduct exceptional research in the emerging areas of Data Science to develop solutions and acquire skills in the field of data mining, prediction of data based on AI, Computer Networks, Signal & Image Processing.

Department of Electronics and Communication Engineering

Vision Statement

To be a globally recognized leader in the field of Electronics and Communications, by fostering innovation through cutting-edge collaborative research to inform interdisciplinary education.

Mission Statements

- Create inclusive and highly motivated individuals and leaders who promote diversity, innovation, creativity, and a high sense of responsibility towards societal progress.
- Strive for excellence by promoting interdisciplinary education and research through global collaborations.
- Deliver state-of-the-art research-based education that equips students with the skills to address contemporary challenges and contribute to the field's advancement.
- Foster a culture of innovation and entrepreneurship, by working closely with leading industry partners to translate ideas into real-life solutions.
- Aim to be a global knowledge hub by collaborating with leading institutions and industries.

B. Tech in Electronics and Communication Engineering

Program Educational Objectives (PEO)

PEO 1: Enable the undergraduate students to learn the fundamentals of Electronics and Communication Engineering deeply and lay a strong foundation for their professional careers or higher studies.

PEO 2: Impart the skills to design and develop solutions for complex electronics engineering problems in a multi-disciplinary environment.

PEO 3: Work in guided multi-disciplinary electronics and communication-related field research groups using technical know-how, common tools and environments to achieve project objectives.

PEO 4: Facilitate the development of effective communication skills, lifelong learning, leadership qualities and ethical professional conduct across their higher education and career paths.

Program Outcomes (PO)

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

PO 2: Problem analysis: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using the first principles of mathematics, natural, and engineering sciences.

PO 3: Design/development: Design solutions for complex engineering problems and design system components, and processes to meet the specifications with consideration for public health and safety, and cultural, societal, and environmental considerations.

PO 4: Analysis, Design and Research: Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

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PO 8: Moral, and Ethical Awareness: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

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PO 11: Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's work, as a member and leader in a team. Manage projects in multidisciplinary environments.

PO 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 (PSO)

PSO 1: Architect modern communication systems to meet stated requirements.

PSO 2: Design, build and test electronic systems for given specifications.

PSO 3: Analyse, plan and apply the acquired knowledge in basic sciences, mathematics and Electronics and Communication Engineering to solve complex problems with technical, economic, environmental, and social contexts.

M. Tech Embedded Systems and (IoT)

Program Educational Objectives (PEOs)

PEO 1: Enable the postgraduate students to be proficient in Embedded Systems and Internet of Things and develop strong skills and competencies for their professional careers and higher studies.

PEO 2: Gain hands-on learning experiences in Embedded System Design skills which can be applied to find exceptional solutions to industrial and research problems in an inter-disciplinary environment.

PEO 3: Develop effective communication skills, lifelong learning, leadership qualities and ethical professional conduct across their higher education and career paths.

Program Outcomes (PO)

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

PO 2: 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 public health and safety and cultural, societal, and environmental considerations.

PO 3: 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 for complex problems.

PO 4: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities with an understanding of the limitations.

PO 5: The Engineer and Society: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.

PO 6: Environment and Sustainability: Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of and need for sustainable development.

PO 7: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

PO 8: Individual and Teamwork: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.

PO 9: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective

presentations, and give and receive clear instructions.

PO 10: 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 Specific Outcomes (PSO)

PSO 1: Design and integrate embedded systems solutions for real-life and industrial scenarios using appropriate technology and tools.

PSO 2: Develop secure and scalable Internet of Things for efficient communication.

PSO 3: Conduct exceptional research in the field of Embedded Systems and the Internet of Things using advanced technologies & platforms, analyse data and report.

M. Tech Very-Large-Scale Integration (VLSI)

Program Educational Objectives (PEO)

PEO 1: Enable the postgraduate students to learn the fundamentals of VVLSI deeply and lay a strong foundation for their professional careers or higher studies.

PEO 2: Train the students to have hands-on VLSI System design skills which can be applied to solve industrial and research problems in an interdisciplinary environment.

PEO 3: Train the students to have comprehensive knowledge and skills in VLSI technologies which can be applied to the given problems in industrial and research multi-disciplinary environments.

PEO 4: Facilitate the development of effective communication skills, lifelong learning, leadership qualities and ethical professional conduct across their higher education and career paths.

Program Outcomes (PO)

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

PO 2: 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 public health and safety and cultural, societal, and environmental considerations.

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PO 7: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

PO 8: Individual and Teamwork: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.

PO 9: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO 10: 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 Outcomes (PSO)

PSO 1: Recognize, research, and resolve a wide range of practical issues in the field of VLSI.

PSO 2: Develop skills to build and create systems in the expanding fields of VLSI to solve the problems of the modern economy.

PSO 3: Demonstrate exemplary leadership attributes and actively pursue the advancement of many entities, including organizations, the environment, and society at large. by upholding their professional obligations with a strong commitment to ethical conduct.

Department of Civil Engineering

Vision Statement

To emerge as a premier department recognized globally for creating knowledge in the domain of civil engineering through innovative research and disseminating knowledge through a unique learning experience to serve society.

Mission Statements

- Create an interdisciplinary academic environment that strives for excellence to overcome emerging challenges.
- Cultivate innovative and entrepreneurial spirit by imparting research-based education to solve contemporary real-world problems.
- Inspire students and faculty to nurture a service attitude by providing a diverse work environment.

B. Tech in Civil Engineering

Program Educational Objectives (PEO)

PEO 1: Develop technically sound Civil Engineers with the knowledge of fundamentals, engineering practice, and contemporary and future research directions.

PEO 2: Equip students with all the required tools and provide exposure to the latest technologies in the civil engineering industry.

PEO 3: Make successful and innovative Civil Engineers who are familiar with principles of safety, sustainability, economy, and ethics.

Program Outcomes (PO)

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

PO 2: Problem analysis: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using the first principles of mathematics, natural, and engineering sciences.

PO 3: Design/development: Design solutions for complex engineering problems and design system components, and processes to meet the specifications with consideration for public health and safety, and cultural, societal, and environmental considerations.

PO 4: Analysis, Design and Research: Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO 6: Society and Multicultural Skills: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal, and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.

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

PO 8: Moral, and Ethical Awareness: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

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

PO 10: Communication: Communicate effectively with the engineering community and with society at large. Be able to comprehend and write effective reports and documentation. Make effective presentations and give and receive clear instructions.

PO 11: Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's work, as a member and leader in a team. Manage projects in multidisciplinary environments.

PO 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 (PSO)

PSO 1: Demonstrate applications of civil engineering principles in a multi-disciplinary and interdisciplinary environment.

PSO 2: Apply advanced analytical techniques, latest technologies, and management skills in solving real-world challenges of Civil Engineering.

PSO 3: Design innovative, sustainable, and cost-effective civil engineering projects by working within the framework of the required safety measures and ethical practices.

Department of Mechanical Engineering

Vision Statement

To become distinct and renowned globally by graduating high-quality professionals through rigorous coursework and cutting-edge research.

Mission Statements

- Emerge as a world-class mechanical engineering department in exploring and providing knowledge through high-quality academic programs and experiential learning.
- Create an ambience for impactful research aligning with the national mission and addressing societal needs.
- Create entrepreneurs and leaders of the future imparted with knowledge, global awareness, and strategic thinking.
- Promote high standards of integrity, and ethical behaviour among faculty members, staff, and students.

B. Tech in Mechanical Engineering

Program Educational Objectives (PEO)

PEO 1: Develop essential professional engineering skills that make them confident to solve real-life engineering problems/issues in various application domains under various realistic constraints.

PEO 2: Engage and succeed in their professional careers through teamwork, ethical behaviour, proactive involvement, effective communication, and leadership skills.

PEO 3: Ability to identify, formulate and solve mechanical engineering problems based on data interpretation, design, experiment, and analysis of results.

Program Outcomes (PO)

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

PO 2: Problem analysis: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using the first principles of mathematics, natural, and engineering sciences.

PO 3: Design/development: Design solutions for complex engineering problems and design system components, and processes to meet the specifications with consideration for public health and safety, and cultural, societal, and environmental considerations.

PO 4: Analysis, Design and Research: Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO 6: Society and Multicultural Skills: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal, and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.

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

PO 8: Moral, and Ethical Awareness: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

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

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PO 11: Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's work, as a member and leader in a team. Manage projects in multidisciplinary environments.

PO 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 (PSO)

PSO 1: Apply knowledge of maths, science, and engineering to identify, formulate and solve mechanical engineering problems.

PSO 2: Design and conduct experiments and analyse and interpret the data.

PSO 3: Design components, systems, and processes to meet desired goals within realistic economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability constraints.

M. Tech Materials & Manufacturing Technology (MMT)

Program Educational Objectives (PEO)

PEO 1: Prepare graduates with a strong foundation in the fundamentals of advanced materials and manufacturing technologies, with a focus on new product and process development for various industrial applications.

PEO 2: Develop graduates who can conduct independent research and development (R&D) in materials and manufacturing technology, with a strong understanding and ability to design and implement sustainable and environmentally responsible solutions using data interpretation, design, experimentation, and analysis.

PEO 3: Prepare graduates for leadership roles in industry, academia, or government, with the ability to manage projects, teams, and resources effectively and encourage a sense of entrepreneurship.

Program Outcomes (PO)

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

PO 2: 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 public health and safety and cultural, societal, and environmental considerations.

PO 3: 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 for complex problems.

PO 4: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities with an understanding of the limitations.

PO 5: The Engineer and Society: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.

PO 6: Environment and Sustainability: Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of and need for sustainable development.

PO 7: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

PO 8: Individual and Teamwork: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.

PO 9: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO 10: 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 Specific Outcomes (PSO)

PSO 1: Apply advanced materials science and manufacturing principles to design, develop, and characterize novel materials and processes with tailored properties for specific applications and realize the dream of India to establish a world-class leader in manufacturing.

PSO 2: Employ advanced manufacturing techniques to fabricate high-performance materials and components with desired microstructures and functionalities. Utilize computational tools to simulate materials' behaviour, predict performance, and optimize manufacturing processes.

PSO 3: Conduct R&D to explore novel materials and manufacturing processes for advancing the field. Communicate technical findings through presentations, publications, and reports for diverse audiences. Collaborate with multidisciplinary teams to address complex challenges and contribute to innovative solutions.

M. Tech Thermal Engineering

Program Educational Objectives (PEO)

PEO 1: Prepare graduates with sound fundamental knowledge and advanced research knowledge in the field of thermal engineering, especially in the field of electronic cooling and to make them capable of effectively analysing and solving the problems associated with cooling challenges of electronic components.

PEO 2: Prepare the graduates with core competency to be successful in industry academia or research laboratory with a strong understanding and ability to analyze problems, understand the technical requirements, design, and create and deliver effective engineering solutions.

PEO 3: Prepare graduates to Inculcate Teamwork, Communication and Interpersonal Skills adapting to Changing Environments of Technology, leadership qualities, professional and ethical values.

PEO 4: Prepare graduates for excellent careers in Thermal Engineering with specialization in electronic cooling or related fields by utilizing their knowledge and contributing as exceptional professionals, as well as encouraging a sense of entrepreneurship.

Program Outcomes (PO)

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

PO 2: 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 public health and safety and cultural, societal, and environmental considerations.

PO 3: 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 for complex problems.

PO 4: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools, including prediction and modelling, to complex engineering activities with an understanding of the limitations.

PO 5: The Engineer and Society: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice.

PO 6: Environment and Sustainability: Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of and need for sustainable development.

PO 7: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

PO 8: Individual and Teamwork: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.

PO 9: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO 10: 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 Specific Outcomes (PSO)

PSO 1: Apply knowledge of maths, science, and engineering with a multidisciplinary approach to identify, formulate, and solve the problems facing by electronic cooling industry to realize its hardware design potential.

PSO 2: Ability to perform research with the application of advanced knowledge in thermal management of electronic components to develop novel cooling solutions which address the cooling challenges of electronic components.

PSO 3: Work effectively in a team to design components, systems, and processes to meet desired goals within realistic economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability constraints using advanced digital/simulation tools like ANSYS ICEPAK.

Department of Electrical and Electronics Engineering

Vision Statement

To produce professionally competent graduates in the domain of power and energy, by addressing the technical challenges. through unique learning experiences to serve society.

Mission Statements

- Impart standard and equitable education through academic rigour to produce real-world electrical and electronics engineers.
- Bring on board academia and industry for collaborative research, product development, and building entrepreneurship proficiency among students and faculty.
- To incorporate multi-disciplinary activities and ethical practices at different stages of learning.

B. Tech in Electrical and Electronics Engineering

Program Educational Objectives (PEO)

PEO 1: Develop the ability to apply concepts from the diverse areas of electrical and electronics engineering to understand and arrive at solutions.

PEO 2: Utilize interdisciplinary ideas for societal development.

PEO 3: Use domain knowledge to develop novel products, technologies, and services.

PEO 4: Effectively work as an individual/team, involved in research, development of green technologies, and creating future entrepreneurs.

Program Outcomes (PO)

PO 1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and engineering specialisation in the solution of complex engineering problems.

PO 2: Problem analysis: Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using the first principles of mathematics, natural, and engineering sciences.

PO 3: Design/development: Design solutions for complex engineering problems and design system components, and processes to meet the specifications with consideration for public health and safety, and cultural, societal, and environmental considerations.

PO 4: Analysis, Design and Research: Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO 5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO 6: Society and Multicultural Skills: Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal, and cultural issues, and the consequent responsibilities relevant to the professional engineering practice.

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

PO 8: Moral, and Ethical Awareness: Apply ethical principles and commit to professional ethics and responsibilities and norms of engineering practice.

PO 9: Individual and teamwork: Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings.

PO 10: Communication: Communicate effectively with the engineering community and with society at large. Be able to comprehend and write effective reports and documentation. Make effective presentations and give and receive clear instructions.

PO 11: Project management and finance: Demonstrate knowledge and understanding of engineering and management principles and apply these to one's work, as a member and leader in a team. Manage projects in multidisciplinary environments.

PO 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 (PSO)

PSO 1: Demonstrate competence in the analysis, design and development of Electrical and Electronic systems including advanced power systems, renewable energy systems and related control strategies.

PSO 2: Use technologies, platforms, and tools to implement and enhance understanding of electrical and electronic-based systems.

PSO 3: Implement socially relevant, sustainable, and green technical solutions to complex engineering problems in multi-disciplinary environments.

School of Engineering and Sciences (SEAS) - Sciences Programme

Department of Biological Sciences

Vision Statement

To integrate innovative teaching, and cutting-edge research by creating an environment that inspires both learning and discovery to emerge as a global leader in value-based education, interdisciplinary research, and new ventures.

Mission Statements

- Empower students with skills, knowledge, and ethics for success enabling them to address societal challenges.
- Advancing through groundbreaking research and fostering pedagogical innovations to create interactive learning experiences.
- Integrate academic excellence with entrepreneurial spirit to evolve into an interdisciplinary centre.

B. Sc. Biology

Program Educational Objectives (PEO)

PEO 1: Enhance understanding of biology fundamentals with a focus on key areas in modern biology.

PEO 2: Develop core competencies in critical thinking, hypothesis formation, and effective problem-solving.

PEO 3: Provide comprehensive training in the design, execution, and critical analysis of biological experiments.

PEO 4: Enhance students' employability and empower them to explore new realms within the field of biological sciences.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups; Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO 9: Individual and Teamwork Skills: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO 10: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media to confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information clearly and concisely to different groups.

PO 11: Leadership Readiness Skills: Capability for mapping out the tasks of a team or an organization, setting direction, formulating an inspiring vision, building a team that can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 12: Self-Directed and Life Long Learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion; Ability to acquire knowledge and skills, including, "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development.

Program Specific Outcomes (PSO)

PSO 1: Apply foundational principles of biological concepts into practical applications.

PSO 2: Design and conduct experiments to address biological questions effectively.

PSO 3: Enhance career opportunities in industries, research, and teaching within the field of biological sciences.

M. Sc. Molecular Biology and Biotechnology

Program Educational Objectives (PEO)

PEO 1: Develop a profound understanding of the fundamental principles and advanced concepts in molecular biology and biotechnology, enabling the application of theoretical knowledge to real-world biological challenges.

PEO 2: To update, extend and deepen students' knowledge through a flexible, research-intensive program akin to academia and industry requirements.

PEO 3: Cultivate critical thinking skills to analyze complex biological problems, formulate hypothesis and develop innovative solutions.

PEO 4: Enhance written and oral communication skills to effectively convey scientific concepts, research findings, and ideas to both scientific and non-scientific audiences, promoting the dissemination of knowledge.

PEO 5: Encourage students to develop an entrepreneurial mindset and allow graduates to identify and pursue opportunities for innovation and the application of knowledge in industry and beyond.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and raw conclusions from data, establish hypotheses,

predict cause-and- effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups; Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO 9: Individual and Teamwork Skills: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO 10: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media to confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information clearly and concisely to different groups.

PO 11: Leadership Readiness Skills: Capability for mapping out the tasks of a team or an organization, setting direction, formulating an inspiring vision, building a team that can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 12: Self-Directed and Life Long Learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion; Ability to acquire knowledge and skills, including, "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development.

Program Specific Outcomes (PSO)

PSO 1: Demonstrate proficiency in key molecular biology techniques, enabling effective contributions to genetic research and biotechnological applications.

PSO 2: Demonstrate communication skills, scientific writing and data analysing abilities in the fields of molecular biology and biotechnology.

PSO 3: Demonstrate competence in molecular biology and biotechnology domains to succeed in entrepreneurship endeavours.

Department of Mathematics

Vision Statement

To emerge as a world-class centre of excellence in the field of mathematics, for teaching and research, that will contribute to the well-being of society and foster collaborative research.

Mission Statements

- Create a vibrant mathematical atmosphere with strong undergraduate and graduate programs in mathematics as per the best universities in the world.
- Create strong research groups with renowned researchers across the world in the field of mathematics.
- Maintain high standards of teaching and research in various areas of pure, applied, and other areas of mathematics.

B. Sc. Mathematics

Program Educational Objectives (PEO)

PEO 1: Offer foundational and advanced courses of undergraduate mathematics by active researchers in the field.

PEO 2: Prepare students to pursue higher mathematics and conduct research.

PEO 3: Develop competencies to apply mathematical knowledge in practical problems which will help them to shine in their chosen fields including Education, IT, Banking etc

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self- awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and raw conclusions from data, establish hypotheses, predict cause-and- effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups; Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO 9: Individual and Teamwork Skills: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO 10: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media to confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information clearly and concisely to different groups.

PO 11: Leadership Readiness Skills: Capability for mapping out the tasks of a team or an organization, setting direction, formulating an inspiring vision, building a team that can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 12: Self-Directed and Life Long Learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion; Ability to acquire knowledge and skills, including, "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development.

Program Specific Outcomes (PSO)

PSO 1: Express mathematical ideas in the formal language of mathematics.

PSO 2: Construct a mathematical proof, with analytical thinking, following logical rules of inference.

PSO 3: Extrapolate, deduce, formulate, and solve complex mathematical problems with available information.

M. Sc. Mathematics

Program Educational Objectives (PEO)

PEO 1: Develop an in-depth theoretical understanding and provide practical training through the offering of advanced mathematics courses.

PEO 2: Equip students for academic research or industry readiness.

PEO 3: Empower students with the competence to tackle challenges in mathematics at both national and international levels.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups; Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO 9: Individual and Teamwork Skills: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO 10: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media to confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information clearly and concisely to different groups.

PO 11: Leadership Readiness Skills: Capability for mapping out the tasks of a team or an organization, setting direction, formulating an inspiring vision, building a team that can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 12: Self-Directed and Life Long Learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion; Ability to acquire knowledge and skills, including, "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development.

Program Specific Outcomes (PSO)

PSO 1: Express mathematical ideas using the formal language of mathematics and construct rigorous mathematical proofs.

PSO 2: Apply tools such as numerical analysis, optimization techniques, probability and statistics, and mathematical modeling to address real-world challenges in finance, engineering, and healthcare.

PSO 3: Demonstrate effective communication and collaboration skills, with multidisciplinary teams, facilitating the exchange of ideas and knowledge.

Chemistry

Vision Statement

To emerge as a world-class research and teaching department which equips students with creative thinking and social skills to positively impact the scientific community, industry, and society by generating new knowledge and fostering innovations.

Mission Statements

- Deliver high-quality education at various levels, to promote a deep understanding of chemical principles.
- Contribute to scientific knowledge and industry through cutting-edge chemistry research.
- Create an atmosphere that encourages innovation and entrepreneurship leading to the development of modern technologies and applications.

B.Sc. Chemistry

Program Educational Objectives (PEO)

PEO 1: Offer students a comprehensive understanding of the fundamental principles of chemistry, including inorganic, organic, and physical chemistry, as well as analytical and biochemistry.

PEO 2: Develop laboratory and experimental skills, enabling students to design and conduct experiments, analyze data, and make scientific observations accurately.

PEO 3: Develop critical thinking and to prepare students for careers in various fields, including research, industry, education, and innovation, by offering opportunities for internships, and research projects.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and raw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups; Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO 9: Individual and Teamwork Skills: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO 10: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media to confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information clearly and concisely to different groups.

PO 11: Leadership Readiness Skills: Capability for mapping out the tasks of a team or an organization, setting direction, formulating an inspiring vision, building a team that can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 12: Self-Directed and Life Long Learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion; Ability to acquire knowledge and skills, including, "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development.

Program Specific Outcomes (PSO)

PSO 1: Illustrate core chemical concepts, principles, chemical reactions, mechanisms, analytical techniques, and their applications.

PSO 2: Demonstrate expertise in laboratory techniques, including proper handling of chemicals, use of instrumentation, data collection, and analysis.

PSO 3: Present scientific ideas and findings effectively through written reports, and oral presentations.

M.Sc. Chemistry

Program Educational Objectives (PEO)

PEO 1: Possess a strong understanding of the fundamental principles of chemistry, as well as practical applications in various fields.

PEO 2: Design experiments and conduct independent research in laboratories.

PEO 3: Graduates will be able to apply critical thinking and problem-solving skills to solve

complex research problems.

PEO 4: Graduates will gain research experience in research laboratories and industries.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups; Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO 9: Individual and Teamwork Skills: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO 10: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media to confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information clearly and concisely to different groups.

PO 11: Leadership Readiness Skills: Capability for mapping out the tasks of a team or an organization, setting direction, formulating an inspiring vision, building a team that can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 12: Self-Directed and Life Long Learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion; Ability to acquire knowledge and skills, including, "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development.

Program Specific Outcomes (PSO)

PSO 1: Explain the concepts of chemistry and apply chemical principles to solve problems in a variety of contexts.

PSO 2: Design and conduct research experiments in a systematic manner.

PSO 3: Demonstrate Entrepreneurial and Employability skills in academic and R&D settings.

Physics

Vision Statement

To create a vibrant centre of academic excellence and interdisciplinary research, aimed at inspiring the next generation of physicists to serve society through interactive learning, fundamental research, industry partnerships, and academic collaborations.

Mission Statements

- Deliver a curriculum that provides a modern understanding of laws and extensive exposure to teaching and research laboratories, fulfilling industry needs.
- Create a research and innovation hub equipped with world class facilities to make a lasting impact towards fundamental discoveries and translational research.
- Cultivate an atmosphere to identify and address problems aligned with national and societal needs.

B. Sc. Physics

Program Educational Objectives (PEO)

PEO 1: Enable students to acquire a comprehensive knowledge and sound understanding of fundamentals of Physics.

PEO 2: Develop practical, analytical and mathematical skills of Physics.

PEO 3: Prepare students to acquire a range of general skills, to solve problems, to evaluate information, to use computers productively, to communicate with society effectively and learn independently.

PEO 4: Enable them to acquire a job efficiently in diverse fields such as Science and Engineering, Education, Banking, Public Services, Business etc.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups; Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO 9: Individual and Teamwork Skills: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO 10: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media to confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information clearly and concisely to different groups.

PO 11: Leadership Readiness Skills: Capability for mapping out the tasks of a team or an organization, setting direction, formulating an inspiring vision, building a team that can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 12: Self-Directed and Life Long Learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion; Ability to acquire knowledge and skills, including, "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development.

Program Specific Outcomes (PSO)

PSO 1: Employ statistical analysis of data and experimental techniques with

experiential research-based learning.

PSO 2: Predict physical phenomena using efficient computational physics programming code.

PSO 3: Demonstrate fundamental physics knowledge in areas ranging from nuclear to cosmological fields.

M. Sc. Physics

Program Educational Objectives (PEO)

PEO 1: Produce graduates who demonstrate advanced knowledge and expertise in their chosen specialization, enabling them to engage in cutting-edge research, contribute to scientific advancements, and solve complex problems in their respective fields.

PEO 2: Prepare graduates to effectively communicate their ideas, theories, and findings, and collaborate with multidisciplinary teams, fostering innovation and addressing contemporary challenges in condensed matter physics, quantum electronics, and astrophysics.

PEO 3: Instill in graduates a strong sense of ethical responsibility, a commitment to lifelong learning, and the ability to adapt to evolving scientific landscapes, ensuring their enduring contributions to the field and society as a whole.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and raw conclusions from data, establish hypotheses,

predict cause-and- effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups; Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

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PO 11: Leadership Readiness Skills: Capability for mapping out the tasks of a team or an organization, setting direction, formulating an inspiring vision, building a team that can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 12: Self-Directed and Life Long Learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion; Ability to acquire knowledge and skills, including, "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development.

Program Specific Outcomes (PSO)

PSO 1: Demonstrate a deep understanding of the principles and theories specific to their chosen specialization, enabling them to analyze and solve complex problems in condensed matter physics, quantum electronics, and astrophysics.

PSO 2: Apply the skills necessary to conduct independent research, including the ability to design and execute experiments, analyze data, and communicate their findings effectively, contributing to the advancement of knowledge in their respective fields.

PSO 3: Illustrate a strong commitment to ethical practices, professional integrity, and the capacity to adapt to emerging trends in condensed matter physics, quantum electronics, and astrophysics, ensuring their continued relevance and leadership in these disciplines.

Environmental Science and Engineering

Vision Statement

To enhance societal welfare by developing skilled and committed professionals to address pressing environmental issues using sustainable strategies.

Mission Statements

- Provide rigorous education by employing innovative and interdisciplinary approaches to effectively confront current and emerging environmental challenges.
- Equip future leaders with essential skills to develop sustainable solutions for pressing environmental, societal, and climatic issues.
- Cultivate a new generation of environmental educators and researchers capable of effectively tackling complex environmental challenges.

MSc in Environmental Science

Program Educational Objectives (PEO)

PEO 1: To create awareness and knowledge about sustainability.

PEO 2: To produce confident, technical, creative, and employable postgraduates.

PEO 3: To create awareness and innovation to deal with environmental issues.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence

and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

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completion; Ability to acquire knowledge and skills, including, “learning how to learn”, that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development.

Program Specific Outcomes (PSO)

PSO 1: identify the solution for complex environmental problems.

PSO 2: analyse environmental issues and design necessary modules to arrive at optimized solutions.

PSO 3: Design/recommend sustainable solutions for efficient use of natural resources to meet sustainable development goals (SDGs).

School of Liberal Arts and Social Sciences

Literature and Languages

Vision Statement

To inculcate the zeal and application of interdisciplinary and multidisciplinary research oriented studies strengthening the spirit of diversity, universality, and liberalism.

Mission Statements

- Use literature, language, and culture as contexts for exploring emotions, expression, and communication and to inculcate humanistic and ethical values.
- Set up an interdisciplinary research environment that incorporates diverse perspectives of inquiry into the 'Humanities'.
- Engage in the teaching of subjects and thoughts that foster creative and critical thinking skills.

B.A. English

Program Educational Objectives (PEO)

PEO 1: To facilitate students in the process of application of their understanding of language and literature to real life thinking and communication.

PEO 2: To equip students with creative and critical abilities to prepare them for higher studies as well as job opportunities.

PEO 3: To help students, locate literary texts and language in the global socio-political and cultural issues and their regional manifestations.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and the capability to effectively engage in a moral / ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

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Program Specific Outcomes (PSO)

PSO 1: Application of literary and linguistic knowledge to real life thinking and communication.

PSO 2: Apply Interdisciplinary concepts towards preparation for higher studies and professional challenges.

PSO 3: Analyse global socio-political and cultural issues and their regional manifestations.

Economics

Vision Statement

To develop globally oriented individuals who can adopt a multi-dimensional approach and solve the complex issues impacting business and society.

Mission Statements

- Provide high academic rigor and an inspiring environment to individuals to realize their true potential and sculpt them into future economists.
- Cater to the growing market demand for professional economists and policy researchers.
- Develop socially inclusive and responsible individuals and enable them to analyze and solve real-world economic issues.

B.A. Economics

Program Educational Objectives (PEO)

PEO 1: Along with acquiring content knowledge, students in each course will practice critical thinking skills, communication skills, quantitative reasoning, and economic citizenry.

PEO 2: To prepare them to pursue higher studies and conduct research.

PEO 3: To trained them and build their careers where they are likely to make a long-lasting contribution in either policy making or research career.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and raw conclusions from data, establish hypotheses, predict cause-and- effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

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Program Specific Outcomes (PSO)

PSO 1: To solve the real-life problems by using the economic theory and applications.

PSO 2: Analysis data to solve complex economic problems.

PSO 3: Apply economic theories and concepts to contemporary social issues, as well as formulation and analysis of policy.

Commerce

Vision Statement

To become a Centre of Excellence by “integrating, motivating and engaging the students learning” with a value-based education in the field of Commerce from a local to global contexts.

Mission Statements

- Establish cutting edge collaborations in terms of teaching, research, and business consultancy.
- Develop a sense of business leadership from the local to the global context.
- Foster an entrepreneurial mindset in students.

Batchelor of Commerce (B.Com.)

Program Educational Objectives (PEO)

PEO 1: To provide basic to in depth understanding of nuts and bolts of business.

PEO 2: To enable students to secure better career opportunities in the field of Accounting, Finance, Taxation, Banking, Business Analytics and E-Commerce.

PEO 3: Exhibit leadership traits across various teams and groups in achieving the organizational goals.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self- awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

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PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

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Program Specific Outcomes (PSO)

PSO 1: Apply the knowledge of business, accounting, finance, analytics, auditing, and taxation both at macro and micro level.

PSO 2: Analyse the skill sets of accounting and finance by exhibiting as a finance and accounting manager.

PSO 3: Demonstrate the progressive learning in the field of commerce.

Psychology

Vision Statement

To be recognized as a premier centre of excellence committed to imparting high-quality education and conducting cutting-edge research in psychological sciences.

Mission Statements

- Enable a comprehensive understanding of the interaction between human beings and the environment through mind, body, and behaviour.
- Provide a nurturing environment to develop future psychologists capable of dealing with evolving mental health challenges and real-world problems.
- Provide the best platform to fine-tune research acumen to impart skills for practice, in creating a better society.

B.A. Psychology

Program Educational Objectives (PEO)

PEO 1: Facilitate the development of individuals who are sensitive to the changing needs of their context and use their knowledge of psychology to assist adaptation.

PEO 2: Empower young psychologists to apply theory in to practice.

PEO 3: Empower young psychologists to work with fine skills and high ethical standards.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self- awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and raw conclusions from data, establish hypotheses, predict cause-and- effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

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Program Specific Outcomes (PSO)

PSO 1: Demonstrate the theories and concepts in the field of psychology in a professional setting.

PSO 2: Apply psychological competencies in the practice of psychology.

PSO 3: Demonstrate research acumen and critical thinking capability in psychological problem solving.

History

Vision Statement

To emerge as national and global leaders in historical research and inquiry by creating a professional learning community and nurturing problem-solving leadership with human rights and social justice values.

Mission Statements

- Facilitate unbiased cutting-edge research and in-depth active learning.
- Nurture intellectual curiosity and train historians of the highest professional standards.
- Produce critical thinkers and problem-solvers for tomorrow through the appreciation of history.
- Balance world-class learning with human rights and social justice ideals.

B.A. History

Program Educational Objectives (PEO)

PEO 1: Enable students to comprehensively understand the breadth and scope of the discipline, historical sources, and the production of historical knowledge.

PEO 2: Endow students with a keen sense of history and to enable learners to use history as a thinking tool.

PEO 3: Introduce students to multi-disciplinary and multi perspectival approaches in history.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

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PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and raw conclusions from data, establish hypotheses, predict cause-and- effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups; Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO 9: Individual and Teamwork Skills: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO 10: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media to confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information clearly and concisely to different groups.

PO 11: Leadership Readiness Skills: Capability for mapping out the tasks of a team or an organization, setting direction, formulating an inspiring vision, building a team that can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 12: Self-Directed and Life Long Learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion; Ability to acquire knowledge and skills, including, "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development.

Program Specific Outcomes (PSO)

PSO 1: Apply historical methods to analysing contemporary social, economic, political, and cultural issues.

PSO 2: Demonstrate inter-cultural communication and articulation skills.

PSO 3: Apply social science research skills in historical studies.

Liberal Arts

Vision Statement

To become a leading center for excellence committed to fostering comprehensive learning, cultivating expertise and nurturing a global perspective to effectively serve society.

Mission Statements

- Enable multi-disciplinary knowledge that enhances the understanding of human experiences.
- Provide a conducive environment for to develop future leaders.
- Develop academic research methods and relevant practical skills for generating new knowledge.

B.A. Liberal Arts

Program Educational Objectives (PEO)

PEO 1: Introduce students to leading texts and central debates across various disciplines.

PEO 2: Develop students critical and analytical skills, empowering them to become agents of progressive social change.

PEO 3: Impart experiential and immersive training through internships, research projects and field-based learning to strengthen future career pathways.

Program Outcomes (PO)

PO 1: Scientific and Disciplinary Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem-Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge; analyze and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies and theories by following scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Scientific Reasoning and Design Thinking: Ability to analyze, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Research Related Skills: A sense of inquiry and capability for asking relevant / appropriate questions, problematizing, synthesizing, and articulating; Ability to recognize cause-and-effect relationships, define problems, formulate hypotheses, test hypotheses, analyze, interpret and draw conclusions from data, establish hypotheses, predict cause-and-effect relationships; ability to plan, execute and report the results of an experiment or investigation.

PO 6: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 7: Environment and Sustainability: Understand the impact of scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 8: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups; Ability to embrace moral/ethical values in conducting one's life, formulate a position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO 9: Individual and Teamwork Skills: Ability to work effectively and respectfully with diverse teams; facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO 10: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally; Communicate with others using appropriate media to confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information clearly and concisely to different groups.

PO 11: Leadership Readiness Skills: Capability for mapping out the tasks of a team or an organization, setting direction, formulating an inspiring vision, building a team that can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 12: Self-Directed and Life Long Learning: Ability to work independently, identify appropriate resources required for a project, and manage a project through to completion; Ability to acquire knowledge and skills, including, "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development.

Program Specific Outcomes (PSO)

PSO 1: Demonstrate the theoretical and conceptual diversity in liberal arts domains.

PSO 2: Apply multi-disciplinary learning in chosen professional spheres.

PSO 3: Demonstrate critical and analytical capabilities in assessing complex socio-political challenges.

Paari School of Business Management

Vision Statement

To be a world class educational entity that creates cutting-edge knowledge and socially sensitive, competent, innovative, and business-ready entrepreneurs, leaders, and managers.

Mission Statement

- Create managers who are socially sensitive, competent, and innovative.
- Produce cutting-edge knowledge that helps all relevant stakeholders.
- Inculcate the spirit of entrepreneurship that helps the country succeed.

Bachelor of Business Administration (B.B.A.)

Program Educational Objectives (PEO)

PEO 1: Provide a quality foundation in Management to students.

PEO 2: Enable students to become independent thinkers with enhanced managerial acumen.

PEO 3: Equip students with Management knowledge that would prepare them for successful professional careers, higher learning courses and entrepreneurship.

Program Outcomes (PO)

PO 1: Management Knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of an undergraduate program of study.

PO 2: Analytical Reasoning and Problem Solving: Ability to evaluate the reliability and relevance of evidence; Capacity to extrapolate from what one has learned and apply their competencies to solve different kinds of non-familiar problems, rather than replicate curriculum content knowledge; and apply one's learning to real life situations.

PO 3: Critical and Reflective Thinking: Capability to apply analytic thought to a body of knowledge: analyse and evaluate evidence, arguments, claims, beliefs based on empirical evidence; identify relevant assumptions or implications; formulate coherent arguments; critically evaluate practices, policies, and theories by following a scientific approach to knowledge development. Critical sensibility to lived experiences, with self-awareness and reflexivity of both self and society.

PO 4: Strategic Thinking and Logical Reasoning: Ability to analyse, interpret and draw conclusions from quantitative / qualitative data; and evaluate ideas, evidence and experiences from an open-minded and reasoned perspective pertaining to incorporating in a system.

PO 5: Modern Tools and ICT Usage: Capability to use ICT in a variety of learning situations, demonstrate ability to access, evaluate, and use a variety of relevant information sources; and use appropriate software for analysis of data.

PO 6: Environment and Sustainability: Understand the impact of the scientific solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO 7: Moral, Multicultural and Ethical Awareness: Possess knowledge of the values and beliefs of multiple cultures and a global perspective; and capability to effectively engage in a multicultural society and interact respectfully with diverse groups; Ability to embrace moral/ethical values in conducting one's life, formulate a

position/argument about an ethical issue from multiple perspectives, and use ethical practices in all work. Capable of demonstrating the ability to identify ethical issues related to one's work, avoid unethical behaviour such as fabrication, falsification or misrepresentation of data or committing plagiarism, not adhering to intellectual property rights; appreciating environmental and sustainability issues; and adopting objective, unbiased and truthful actions in all aspects of work.

PO 8: Individual and Teamwork Skills: Ability to work effectively and respectfully with diverse teams: facilitate cooperative or coordinated effort on the part of a group, and act together as a group or a team in the interests of a common cause and work efficiently as a member of a team.

PO 9: Communication Skills: Ability to express thoughts and ideas effectively in writing and orally, communicate with others using appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully, read and write analytically, and present complex information in a clear and concise manner to different groups.

PO 10: Leadership Readiness Skills: Capability for mapping out the tasks of a team or an organization, and setting direction, formulating an inspiring vision, building a team who can help achieve the vision, motivating and inspiring team members to engage with that vision, and using management skills to guide people to the right destination, in a smooth and efficient way.

PO 11: Self-Directed and Lifelong Learning: Ability to work independently, identify appropriate resources required for a project and managed a project through to completion; Ability to acquire knowledge and skills, including, "learning how to learn", that are necessary for participating in learning activities throughout life, through self-paced and self-directed learning aimed at personal development, meeting economic, social and cultural objectives, and adapting to changing trades and demands of workplace through knowledge/skill development/reskilling.

Program Specific Outcomes (PSO)

PSO 1: Demonstrate a grasp of basic management knowledge.

PSO 2: Apply classroom learnings to real life business scenarios.

PSO 3: Evaluate higher education and career pathways in Management.

Master of Business Administration (M.B.A.)

Program Educational Objectives (PEO)

PEO 1: Equip students with the knowledge and ethical values to succeed in their careers.

PEO 2: Provide the skills needed to make sound decisions, organize effectively, plan and implement efficiently, research and analyse data, and find solutions.

PEO 3: Enable entrepreneurial spirit and innovation.

Program Outcomes (PO)

PO 1: Functional knowledge: Capable of demonstrating comprehensive knowledge and understanding of the fundamental principles and practices of various business functions,

PO 2: Data analysis: Able to apply various statistical techniques and data visualization tools to extract meaningful insights from data and then develop predictive models.

PO 3: Usage of technology enabled business models: Capability to use technology enabled tools and evaluate the potential of emerging technologies, to transform business models and create competitive advantages.

PO 4: Scan environment for entrepreneurial opportunities: Ability to identify and assess potential entrepreneurial opportunities in dynamic and evolving market environments. Conduct market research, analyse industry trends, and evaluate the feasibility of business ideas.

PO 5: Leadership skills: Ability to inspire and motivate others, build and lead high-performing teams, and navigate complex organizational dynamics.

PO 6: Empathy: Ability to build strong relationships, foster trust, and appreciate diverse perspectives, crucial for effective collaboration, conflict resolution, and creating a positive and inclusive work environment.

PO 7: People Skills: Develop Strong interpersonal skills, enabling effective interaction with individuals from diverse backgrounds and perspectives, resolve conflicts constructively and fostering teamwork.

PO 8: Negotiation skills: Ability to reach mutually beneficial agreements in various business settings, exploring creative solutions and achieve organizational objectives.

PO 9: Critical thinking: Ability to analyse complex information, evaluate evidence, identify biases, and form well-reasoned judgments.

PO 10: Sustainability: Capable of understanding environmental and social impacts of business decisions and implement sustainable strategies, recognise the importance of sustainability and its integration into business practices.

Program Specific Outcomes (PSO)

PSO 1: Demonstrate emotional quotient and ethical behaviour in managerial careers.

PSO 2: Apply classroom learnings to real life business scenarios.

PSO 3: Exemplify the qualities required to be a successful Manager.