KLS Gogte Institute of Technology

Program Outcomes and Program Specific Outcomes

B.E programs

PROGRAM OUTCOMES (POs):

These POs are generic to engineering education and applies to all branches of Engineering.

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

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

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

4.**Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

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

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

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

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

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

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

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

12. **Life-long learning:** Recognize the need for and have the preparation and ability to engage in independent and lifelong learning in the broadest context of technological change.

PROGRAM SPECIFIC OUTCOMES (PSOs):

B.E. in Computer Science and Engineering

1. Problem solving skills: Ability to identify and analyze problems of varying complexity and propose solutions by applying fundamental knowledge acquired in the field of Computer Science and Engineering.
2. Project development skills: Ability to apply design principles and demonstrate best practices of software development processes to solve real life problems.
3. Carrier advancement: Ability to demonstrate professional and leadership qualities required to pursue opportunities in Information Technology/self-employment/ higher studies.

B.E. in Civil Engineering

1. Understanding and applying mathematical and scientific concepts for analytical and design skills concerned with civil engineering practice.
2. Inculcating communicational skills, and leadership attributes towards the team work. Developing critical thinking abilities with competence in the use of computational tools for current research.
3. Sensitizing towards contemporary issues, societal needs with professionalism and ethics for sustainable development

B.E. in Electronics and Communication Engineering

1. Understanding and applying the mathematical and scientific concepts, for analysis and design of basic Electronics and Communication systems.
2. Developing critical thinking abilities coupled with competence in use of computational tools for professional growth; complimented with communication skills and leadership attributes.
3. Identifying societal needs and sensitizing individuals towards finding innovative solutions to contemporary issues with multidisciplinary outlook.

B.E in Electrical & Electronics Engineering

1. To demonstrate an understanding of the basic concepts Electrical and Electronics technology with an adequate knowledge of mathematics and science during problem analysis, formulation of solutions, design and development activities.
2. To demonstrate an understanding of the concepts of the core Electrical Engineering aspects such as Electrical machines and Power systems during real time analysis, design and operation.
3. To demonstrate an understanding of the concepts of Electronics technology in the form of Analog and Digital Electronics, Microprocessors and embedded systems required in data acquisition, data

processing, automation and control applications and demonstrate capability to comprehend the technological advancements and usage of modern tools keeping up lifelong learning attitude.

B.E. in Information Science and Engineering

1. Problem solving Skills: An ability to analyze a problem design, implement and evaluate software solutions related to algorithms, system software, web design, big data analytics & networking.
2. Professional skills: An ability to develop standard software solutions for existing and emerging industry verticals and research domains.
3. Career Skills: An ability to harness Information Science & Engineering knowledge with ethics and societal concern for career and further educational abilities along with entrepreneurial skills.

B.E. in Mechanical Engineering

1. The graduates will acquire core competence in basic science and mechanical engineering fundamentals necessary to formulate, analyze and solve engineering problems and to pursue advanced study or research.
2. The graduates will engage in the activities that demonstrate desire for ongoing personal and professional growth and self-confidence to adapt to rapid and major changes.
3. The graduates will maintain high professionalism and ethical standards, effective oral and written communication skills, work as part of teams on multi-disciplinary projects under diverse professional environments and relate engineering issues to the society, global economy and to emerging technologies.

B.E. in Aeronautical Engineering

1. An ability to identify, formulate and apply knowledge of mathematics, science to solve Aeronautical engineering problems keeping in mind economical, environmental and social context.

2. A Knowledge of contemporary issues and an ability to use the techniques, skills and modern engineering tools necessary to engage in lifelong learning in the field of Aerodynamics, propulsion, Avionics and structures streams.

3. An ability to work in multidisciplinary projects professionally and ethically.

Post Graduate Programs

M.Tech Programs:

PROGRAM OUTCOMES(POs):

These POs apply to all M.Tech programs

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

PROGRAM SPECIFIC OUTCOMES (PSOs):

M.Tech. in Computer Science Engg.

1.Analyzing and Modeling skills: Ability to analyze and use of mathematical concepts and algorithms along with tools to solve real world problems
2. Develop Research Aptitude: Ability to identify research problem statement, carryout experimentation, draw inferences and present them at national and international level.
3. Professional skills and Entrepreneurship: Ability to demonstrate professional and leadership qualities required to pursue innovative career in Information Technology, self-employment and research activities.

M.Tech in Structural Engineering
1. Graduates shall have the ability of critical thinking based on in-depth knowledge in structural engineering to obtain optimal solutions to the complex engineering problems.
2. Graduates shall pursue research in collaborative multidisciplinary area using appropriate research methodologies and advanced tools.
3. The Graduates shall imbibe ethical practices and social responsibility in their professional endeavors.

M.Tech. in Computer Integrated Manufacturing

1. The graduate will acquire core competence in basic science and mechanical engineering fundamentals necessary to formulate, analyze and solve engineering problems and pursue advanced study or research.
2. The graduates will engage in the activities that demonstrate desire for ongoing personal and professional growth and self confidence to adopt to rapid and major changes.
3. The graduates will maintain high professionalism and ethical standards, effective oral and written communication skills, work as part of teams on multi-disciplinary projects under diverse professional environments and relate engineering issues to the society, global economy and to emerging technologies.

M.Tech. in Industrial Engineering

1. Post graduates shall develop an ability to identify, formulate and apply knowledge of Industrial Engineering to solve mechanical engineering problems pertaining to economical, environmental and social context.
2. Post graduates shall develop knowledge of contemporary issues and an ability to use the techniques, skills and modern engineering tools necessary to engage in lifelong learning in the field of Industrial Engineering.
3. The graduate shall develop an ability to work on projects using multidisciplinary tools professionally and ethically.

M.Tech. in Machine Design

1. Post graduates shall develop an ability to identify, formulate and apply knowledge of machine design to solve mechanical engineering problems pertaining to economical, environmental and social context.
2. Post graduates shall develop knowledge of contemporary issues and an ability to use the techniques, skills and modern engineering tools necessary to engage in lifelong learning in the field of Machine Design.
3. The graduate shall develop an ability to work on projects using multidisciplinary tools professionally and ethically.

M.Tech. in Automotive Electronics

1. Understanding and applying the mathematical and scientific concepts, for analysis and design of Automotive systems.
2. Developing critical thinking abilities coupled with competence in use of computational tools for professional growth; complimented with communication skills and leadership attributes.
3. Identifying societal needs and sensitizing individuals towards finding innovative solutions to contemporary issues with multidisciplinary outlook.

M.Tech in Digital Communication and Networking

1. Understanding and applying the mathematical and scientific concepts, for analysis and design of Communication and Networking systems.
2. Developing critical thinking abilities coupled with competence in use of computational tools for professional growth; complimented with communication skills and leadership attributes.
3. Identifying societal needs and sensitizing individuals towards finding innovative solutions to contemporary issues with multidisciplinary outlook.

Masters in Business Administration

PROGRAM OUTCOMES (POs)

1. Apply knowledge of management theories and practices to solve business problems.
2. Foster analytical and critical thinking abilities for data based decision making.
3. Ability to develop value based leadership ability.
4. Ability to understand, analyze and communicate global, economic, legal and ethical aspects of business.
5. Ability to lead themselves and others in the achievement of organizational goals, contributing effectively to a team environment.
6. Ability to make use of relevant skills acquired during the programme for career advancement.
7. Ability to acquire entrepreneurial competencies to create value for the society at large.

PROGRAM SPECIFIC OUTCOMES (PSOs)

1. To groom students to manage, understand, develop and create competitive and sustainable advantage to organizations and society through managerial and technical skills, moral values and ethical practices
2. To train students to acquire analytical and research competencies for continuous learning, professional growth and career advancement
3. To encourage entrepreneurial competences amongst learners to create, innovate and provide better service to community

Master of Computer Applications

PROGRAM OUTCOMES (POs) :

1. Postgraduates will demonstrate knowledge of mathematics, computer applications, and management.
2. Postgraduates will demonstrate an ability to identify, formulate and solve engineering problems.
3. Postgraduates will demonstrate an ability to design and conduct experiments, analyze and interpret data.
4. Postgraduates will demonstrate an ability to design a system, component or process as per needs and specifications.
5. Postgraduates will demonstrate an ability to analyze and build computer applications for multiple domains.
6. Postgraduates will demonstrate skills to use modern software tools and technology to build and test applications.
7. Postgraduates will demonstrate knowledge of professional and ethical responsibilities.
8. Postgraduates will be able to communicate effectively in both verbal and written form.
9. Postgraduates will show the understanding of impact of engineering solutions on the society as a successful entrepreneur or IT professional.
10. Postgraduates will develop confidence for self-education and ability for life-long learning.
11. Postgraduates can participate and succeed in competitive examinations.
12. Postgraduates will 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.

PROGRAM SPECIFIC OUTCOMES (PSOs):

1. **Professional Skills:** The ability to understand, analyze and develop computer programs in the areas related to algorithms, system software, simulation, software design, web design, big data analytics, and networking for efficient design of computer-based systems of varying complexity.
2. **Problem-Solving Skills:** The ability to apply standard practices and strategies in software project development using open-ended programming environments to deliver a quality application for business success.
3. **Successful Career and Entrepreneurship:** The ability to employ modern computer languages, technologies, environments, and platforms in creating innovative career paths to be an entrepreneur, and a zest for higher studies.