Programs offered by the Institution:

SNO	UG Programs	LINK
1	Civil Engineering	View Document
2	Electrical & Electronics Engineering	View Document
3	Mechanical Engineering	View Document
4	Electronics & Communication Engineering	View Document
5	Computer Science & Engineering	View Document
6	Computer Science & Technology	View Document
7	Computer Science & Business Systems	View Document
8	CSE- Artificial Intelligence & Machine Learning	View Document
9	CSE - Data Science	View Document
	PG Programs	
10	Structural Engineering	View Document
11	VLSI & Embedded Systems	View Document
12	Computer Science and Engineering	View Document
13	Automation and Robotics	View Document
14	Advanced Manufacturing Technology	View Document

Regulations and Syllabi:

1	Civil Engineering	View Document
2	Electrical & Electronics Engineering	View Document
3	Mechanical Engineering	View Document
4	Electronics & Communication Engineering	View Document
5	Computer Science & Engineering	View Document
6	Computer Science & Technology	View Document
7	Computer Science & Business Systems	View Document
8	CSE- Artificial Intelligence & Machine Learning	View Document
9	CSE - Data Science	View Document
10	Structural Engineering	View Document
11	VLSI & Embedded Systems	View Document
12	Computer Science and Engineering	View Document
13	Automation and Robotics	View Document
14	Advanced Manufacturing Technology	View Document

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Program Outcomes (POs), Program Specific Outcomes (PSOs) and Program Educational Objectives (PEOs):

VISION:

To become the choicest institute of technology and a hub of academic and industrial research and development.

MISSION:

To provide conducive academic ambiance, excellent infrastructure, continually updated lab equipment, and committed and scholarly faculty to realize the vision of the college.

QUALITY POLICY:

G.Pulla Reddy Engineering College, Kurnool, is engaged in imparting "quality education and training" in the field of engineering and technology. It aims to be an institute of excellence of technical education through continual improvement. The institute facilitates faculty and staff to work as a team and update their knowledge and skill to match the industrial and technological development.

1. Civil Engineering Department

The department is one of the three departments with which the college was established in the academic year 1984-85 with intake strength of 60 per batch, now it is increased to 120 per batch. The Department is having an M.Tech course with Structural Engineering as Specialization. The department is having all the necessary labs with good equipment required for UG students. The department produced a large number of qualified engineers, the majority of whom settled well in India and abroad. The scheme of instruction and syllabi of subjects are revised at regular intervals to incorporate the latest topics as per the needs of the Civil Engineering Profession, such as Auto CAD, STAAD, Remote Sensing and GIS etc.

Vision :

To make the Civil Engineering Department at G. Pulla Reddy Engineering College (Autonomous), Kurnool; a leader in the education of practice-oriented Civil Engineers that benefit industry and society.

Mission:

M1: To prepare students for a career in the Civil Engineering Profession by providing technical knowledge and skills imparted by the team of faculty adopting an effective teaching-learning process.

M2: To produce quality Engineers who are capable of meeting the demands and challenges of the profession by focusing on the latest practices.

M3: To inculcate in its student's leadership abilities, research capabilities, ethical values, and work culture that would lead towards the betterment of the society.

Programme Educational Objectives (PEOs)

The educational objectives of the undergraduate program in Civil Engineering at G. Pulla Reddy Engineering College (Autonomous), Kurnool are to prepare graduates to possess the ability

1. Apply the broad, fundamental-based knowledge, and technical skills required for achieving professional success

2. Carry out design works in Civil Engineering, using relevant software tools, following appropriate procedures, keeping the economic and environmental aspects in view
3. Follow the professional ethics in the practice of the profession showing concern for social responsibilities.
4. Pursue a professional career aimed at effective management of resources and focus on lifelong learning and research.

Programme Outcomes (POs):

Engineering Graduates will be able to:
1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identity, 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 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 teamwork: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in

independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes (PSOs):

The Civil Engineering Graduates can :
1. PSO1:Plan, analyze and design the components of Engineering structures and transportation systems and estimate the cost of construction.
2. PSO2: Design and execute the construction of water resources projects and water distribution systems, using Engineering investigations and surveys.
3. PSO3: Implement the established procedures for conducting laboratory and field investigations on soils and engineering materials aimed at ensuring quality in the execution of civil engineering projects.
4. PSO4: Demonstrate professional ethics and implement the project management principles including project finance, leading to the execution of projects as per design requirement using technical skills and relevant software.

2. Electrical and Electronics Engineering Department

The Department of EEE was established in 1994 with the aim of importing high quality technical education in the area of Electrical and Electronics Engineering with an intake of 60. The intake was increased to 120 from 2008 and is affiliated to Jawaharlal Nehru Technological University, Anantapur, Ananthapuramu. The department is headed by Dr. K. Sri Gowri. The Department has a strong pool of faculty with 15 Ph.D.'s and 10 M.Tech.'s. It boasts of having highly qualified faculty with an unparalleled level of expertise in their field. The pure expertise and dedication of the faculty members along with infrastructural facilities coupled with the perseverance of the students have catapulted the branch to the top league. Break up of teaching staff is 4 Professors, 10 Associate Professors and 11 Assistant Professors. Active research is going on in the areas of Power Systems, Control Systems, Electric Vehicles, Power Electronics and Electric Drives.

Vision:

To transform the individuals into globally competent electrical and electronics engineers to realize technological needs of the society and to develop the department into an ideal education and research center.

Mission Statement:

Mission1: To impart high quality education and enhance students' skills to meet the present needs by introducing concurrent trends in curriculum and through collaborative industry-institution interaction.

Mission2: To share and disseminate expertise for use in the solution of problems faced by Electrical & Electronics Engineers and by the society.

Mission3: To mould the students into responsible citizens with social, ethical and environmental awareness.

Program Educational Objectives (PEOs):

The Programme Educational objectives (PEOs) of the under graduate programme in Electrical and Electronics Engineering at G. Pulla Reddy Engineering College (Autonomous), Kurnool are to prepare

graduates to possess the ability to

PE01: Apply fundamental knowledge and up-to-date skills required in the field of Electrical & Electronics Engineering in industry, academic and government sectors

PE02: Contribute to society as broadly educated, expressive, ethical and responsible citizens with proven expertise

PE03: Work as well grounded professionals as an individual or as a team leader or member for problem solving

PE04: Act with global, societal, ecological and commercial awareness expected of practicing engineering professionals

Program specific outcomes (PSOs):

PSO1: Specify, architect and analyze power systems that efficiently generate, transmit and distribute electrical power in the context of present Information and Communications Technology (ICT).

PSO2: Analyze, design and test the performance of modern electrical machines, drive systems and modern lighting systems to suit the need of industry.

PSO3: Specify, design, implement and test analog and embedded systems using the state of the art components and software tools.

Programme Outcomes (POs)

The Programme Educational objectives (PEOs) of the under graduate programme in Electrical and Electronics Engineering at G. Pulla Reddy Engineering College (Autonomous), Kurnool are to make the students to attain

Electrical and Electronics Engineering Program Students will be able to

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

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

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

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

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

6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess

societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

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

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

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

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

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

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

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3. Mechanical Engineering Department

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The department of **Mechanical Engineering** has come into existence, since the inception of the college, in the year 1985. The Present intake of students for B.Tech program is 120 and 12 for M. Tech. program in *Advanced Manufacturing Technology*. The Department is fortified with 26 teaching faculty and 10 supporting staff. 16 of the faculty members possess Ph. D. degrees; 9 faculty members are pursuing their Ph. D. degrees, and the rest of the faculty members are with M. E./ M. Tech. degrees.

The department is equipped with twelve well established labs that give hands on practical knowledge in the subjects. The department also runs PLM- Excellent centre that trains the final year B. tech. students in PLM software. A research lab on *Composites testing* is established to promote research in that area. APSSDC has sanctioned Siemens skill development center under which, CNC center and Manufacturing welding labs were established, in which, students from Polytechnics and Vocational courses are trained. Relevant licensed softwares like PLM, MAT Lab, Design Expert, Auto CAD, ANSYS Work Bench, CATIA R12, Uni-Graphics NX2.0, Solid Edge V14, CADian, Mechanical Desktop, Inventor-6, Esprit CAM, and Master CAM have been catering to the needs of students and faculty.

VISION

To develop the department into a model center of education and research in the field of Mechanical Engineering and allied areas and to become a significant contributor to the development of industry and society.

MISSION

M1 To impart quality technical education in emerging fields of Mechanical Engineering through balanced academic curriculum in accordance with changing industry requirements.

M2 To establish centers of excellence where students can strengthen their entrepreneurial skills, technical workmanship, and research proficiency.

M3 To provide opportunities/platforms for students to nurture leadership abilities, ethical values; and to enable them learn responsibility and accountability at work.

Programme Educational Objectives (PEOs)

The educational objectives of the under-graduate programme in Mechanical Engineering at G. Pulla Reddy Engineering (Autonomous) Kurnool are to prepare graduates to possess the ability

PEO1. to apply a broad, fundamental-based knowledge, and up-to-date skills required in performing professional work in Mechanical Engineering and related disciplines.

PEO2. to design works pertaining to Mechanical Engineering, incorporating the use of design standards, realistic constraints and consideration of the economic, environmental, and social impact of the design.

PEO3. to use modern computer software tools to solve Mechanical Engineering problems and explain and defend their solutions and communicate effectively using graphic, verbal and written techniques to all audiences and

PEO4. to become successful entrepreneur or leaders in private/governmental organizations or enter graduate programs in Mechanical Engineering and related disciplines and to pursue lifelong learning and research.

Programme Outcomes (POs)

Mechanical Engineering Program Students will be able to

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

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

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

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

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

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

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

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

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

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

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

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

Program Specific Outcomes (PSOs)

Mechanical Engineering Program Students will be able to
PSO1. Understand the concepts of basic Mechanical Engineering and apply their theoretical & practical knowledge to solve problems in Thermal Engineering, Machine Design, Production Engineering and Industrial Engineering.
PSO2. Solve engineering design and manufacturing problems, using CAD, CAE, and CAM tools, along with analytical skills to arrive at the better solutions.

4. Electronics and Communication Engineering Department

The ECE dept. was established in the academic year 1984-85 with an intake of 40 and currently with 180 regular and 36 lateral entry students. The department is also offering two post graduate programme with the specialization of Communications and Signal Processing and VLSI Embedded systems with an intake of 18 students.

The department has highly qualified faculty having specialized in diversified areas of technology like Communications, Signal Processing, Microelectronics, Microprocessors, Instrumentation and control and Digital Electronics. The department is well equipped and has excellent laboratory facilities.

With the idea of "disseminating Knowledge through interaction", department has been organizing National Level Technical Symposiums for the past three years through the constant support and enthusiasm of the management, faculty and students.

VISION

The department of Electronics and Communication Engineering aims to become a resource centre for higher learning and research and to produce creative solutions for societal and technological needs.

MISSION

M1. To provide high quality education and research infrastructure.

M2. To upgrade the teaching and learning techniques continuously for achieving the excellence in the field of Electronics and Communication Engineering.

M3. To make the students globally employable and become entrepreneurs.

Goals of the department:

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●	To develop innovative, competent and quality engineers by imparting the state-of-the-art technology.
●	To organize continuing education programmes for the development of students,faculty members and supporting staff.
●	To maintain industrial relations and to establish workstations in the field of VLSI and DSP.
●	To increase the number of Ranks in gate / end examinations.
●	To encourage the students and faculty members to undertake research programmes and projects.
●	To enrich the students through value based education.

Program Educational Objectives (PEOs)

The educational objectives of the under-graduate programme in Electronics and Communication Engineering at G. Pulla Reddy Engineering (Autonomous), Kurnool (AP) are to prepare graduates to possess the ability

PEO1. To apply a broad, fundamental-based knowledge and up-to-date skills required in performing professional work in Electronics and Communication Engineering and related disciplines.
PEO2. To design components pertaining to Electronics and Communication Engineering, incorporating the use of design standards, realistic constraints and consideration of the economic, environmental, and social impact of the design.

PEO3. To use modern computer software tools to solve Electronics andCommunicationEngineering problems and explain and defend their solutions and communicate effectively using graphic, verbal and written techniques to all audiences.

PEO4. To pursue a career in a private or governmental organization as a leader or enter graduate programs in Electronics and Communication Engineering and related disciplines and to pursue lifelong learning and research.

Program Specific Outcomes (PSOs)

The educational objectives of the under-graduate programme in Electronics and Communication Engineering at G. Pulla Reddy Engineering (Autonomous), Kurnool (AP) are to prepare graduates to possess the ability

PSO1: Demonstrate principles of electronics, digital systems, microprocessors and signal processing in the field of consumer electronics, medical electronics, defense and aeronautical industry.

PSO2: Analyze and design a variety of electronics and computer-based components and systems for applications including signal processing, communications, computer networks, and in the field of VLSI .

PSO3: Identify the technical methods for producing high quality, compact and power efficient consumer goods at affordable price.

Program Outcomes (POs)

Electronics and Communication Engineering Program Students will be able to
1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
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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.
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11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

5. Computer Science and Engineering Department

The Department of Computer Science and Engineering (CSE) was established in the year 1991 with an intake of 30. Over the years, it has grown by leaps & bounds and the current intake is 180. The department is accredited first in 2005 by the National Board of Accreditation, New Delhi for three years, re-accredited in 2008 and recently in 2019 accredited for three more years. The department also offers M.Tech Program from 2009, in Computer Science and Engineering with an intake of 18. The department is recognized as a research centre by JNTUA to offer full-time Ph.D program.

The department is continuously undertaking the research, development and training activities in

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emerging technologies for students and faculty.To provide training and introducing new innovative courses based on the industry demands, the department is collaborating with National and International Institutes, R & D Organizations and Software Industries.The department is having MoU with IBM and CISCO and established required laboratories to offer certification courses in emerging technologies.

Vision:

The Department aims to become a leader in the field of education, training and research in Computer Science and Engineering discipline.

Mission:

M1: To strengthen the core competence in Computer Science and Engineering by imparting quality education and training.
M2: To promote innovation and research through collaborative and participatory approaches.
M3: To inculcate the leadership capabilities, ethical values and professional behaviour to face the challenges in global market.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

The Program Educational Objectives (PEOs) of the under graduate programme in Computer Science & Engineering at G. Pulla Reddy Engineering College (Autonomous) Kurnool are to prepare graduates to possess the ability to

PEO1. Analyse, Design and Develop computer based systems and applications using core areas of Computer Science & Engineering.

PEO2. Be engineering professionals, innovators, entrepreneurs engaged in their profession with social awareness and ethical values.

PEO3. Work in teams in multi-disciplinary areas to address the needs of society.

PEO4. Adapt to cutting edge technologies by engaging themselves in lifelong learning.

PROGRAM SPECIFIC OUTCOMES (PSOs)

Computer Science & Engineering program students will be able to

PSO1. Understand the principles, structure and development methodologies of system software.

PSO2. Design, develop, implement and test application software for systems including distributed software systems.

PSO3. Understand the architecture and organization of computer systems, embedded systems and networked systems.

PROGRAMME OUTCOMES

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Computer Science and Engineering Program Students will be able to

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

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

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

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

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

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

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

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

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

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

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

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

6. COMPUTER SCIENCE AND TECHNOLOGY (CST)

B.Tech in Computer Science and Technology (CST) programme is offered from the Academic Year

2020-21 with an intake of 60.

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

The Program Educational Objectives (PEOs) of the under graduate programme in Computer Science & Engineering at G. Pulla Reddy Engineering College (Autonomous) Kurnool are to prepare graduates to possess the ability to

PEO1. Analyse, Design and Develop computer based systems and applications using core areas of Computer Science & Engineering.

PEO2. Be engineering professionals, innovators, entrepreneurs engaged in their profession with social awareness and ethical values.

PEO3. Work in teams in multi-disciplinary areas to address the needs of society.

PEO4. Adapt to cutting edge technologies by engaging themselves in lifelong learning.

PROGRAM SPECIFIC OUTCOMES (PSOs)

Computer Science & Engineering program students will be able to

PSO1. Understand the principles, structure and development methodologies of system software.

PSO2. Design, develop, implement and test application software for systems including distributed software systems.

PSO3. Understand the architecture and organization of computer systems, embedded systems and networked systems.

PROGRAMME OUTCOMES
Computer Science and Engineering Program Students will be able to

1. **Engineering knowledge:**Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:**Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:**Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:**Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:**Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:**Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:**Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for

sustainable development.

8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

7. Computer Science and Business Systems (CSBS)

B.Tech in Computer Science and Business Systems (CSBS) programme is offered in association with TCS from the Academic Year 2020-21 with an intake of 60. Computer Science and Business Systems is an Industry relevant Computer Science Programme launched by TCS. To address the growing need of engineering talent with skills in digital technology, TCS, in partnership with GPREC, has designed a curriculum for 4 years undergraduate program on Computer Science titled "Computer Science and Business Systems (CSB).

This curriculum aims to ensure that the students graduating from the program not only know the core topics of Computer Science but also develop an equal appreciation of humanities, management sciences and human values. The students are also exposed to emerging topics such as Analytics, Machine Learning, Cloud Computing, Internet of Things etc to make them industry ready at the end of four years of study.

The course focuses on enhancing the following key attributes among graduating students:

- Understanding of Contemporary Technology
- Understanding of Technology Abstraction
- Knowledge of Common Business Principles
- Business Discipline and Service Orientation
- Innovation Ability
- Strong in Ethics and Life Values

Vision:
The department aims to become a leader in the field of education, training and research in emerging technologies of computer science with managerial skills and social values.

Mission:
M1: To facilitate competent Industry Relevant Education through Teaching Learning process.

M2: To inculcate interest on Research and Innovation through critical thinking.

M3: To impart values and ethics for prospective and promising engineering.

Program Outcomes:
Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
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7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11. **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12. **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

Program Specific Outcomes:
PSO1: Design, Identify and Apply Computing techniques and resources for solving real time engineering problems.
PSO2: Identify and Understand financial, global and ethical aspects of business.
PSO3: Understand technical, managerial and decision making skills in emerging technologies of Computer Science and Business Systems.

Program Educational Objectives:
Students will be able to

The Program Educational Objectives (PEOs) of the under graduate programme in Computer Science & Business systems(CSBS) at G. Pulla Reddy Engineering College (Autonomous) Kurnool are to prepare graduates to possess the ability to

PEO1: Analyze, Design and Develop computer based systems and applications using emerging areas of Computer Science and Business systems.

PEO2: Be engineering professionals, innovators, entrepreneurs engaged in their profession with social awareness and ethical values.

PEO3: Work in teams in multi-disciplinary areas to address the needs of society.

PEO4: Adapt to emerging technologies by engaging themselves in lifelong learning.

8. CSE – ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING (CSM)

The Department of Computer Science and Engineering in Artificial Intelligence and Machine Learning (CSE – AI & ML) was established in the year 2021 with an intake of 60. Over the years, it has grown by leaps & bounds and the current intake is 120.

AI&ML— Artificial Intelligence (AI) and Machine Learning (ML)—represents an important evolution in computer science and data processing that is quickly transforming a vast array of industries. Artificial intelligence (AI) refers to the development of computer systems that mimic a human brain and enable them to perform tasks that usually require human intelligence.

Machine learning is a specific form of AI that allows computers to learn and grow after they are introduced to scenarios in the form of data. As businesses and other organizations undergo digital transformation, they're faced with a growing tsunami of data that is at once incredibly valuable and increasingly burdensome to collect, process and analyze. New tools and methodologies are needed to manage the vast quantity of data being collected, to mine it for insights and to act on those insights when they're discovered.

Artificial intelligence and machine learning give organizations a way to extract value out of the troves of data they collect, delivering business insights, automating tasks and advancing system capabilities. AI/ML has the potential to transform all aspects of a business by helping them achieve measurable outcomes including: Increasing customer satisfaction, offering differentiated digital services, Optimizing existing business services, Automating business operations, increasing revenue and reducing costs.

Vision:
The department aims to become a leader in the field of education, training and research in emerging technologies of computer science with managerial skills and social values.

Mission:
M1: To facilitate competent industry relevant education through teaching learning process.

M2: To inculcate interest on research and innovation through critical thinking.

M3: To impart values and ethics for prospective and promising engineering.

Program Outcomes:
Engineering Graduates will be able to:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **Problem analysis:** Identify, formulate, review research literature, and analyze complex

engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

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

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

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

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

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

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

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

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

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

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

Program Specific Outcomes:

Students will be able to

PSO1: Design, Identify and Apply Computing techniques and resources for solving real time engineering problems.

PSO2: Identify and Understand the emerging tools of Artificial Intelligence and Machine Learning.

PSO3: Understand algorithmic analysis and decision making skills in the field of Artificial Intelligence and Machine learning.

Program Educational Objectives:

The Program Educational Objectives (PEOs) of the under graduate programme in CSE- Artificial Intelligence (CSM) and Machine learning at G. Pulla Reddy Engineering College (Autonomous) Kurnool are to prepare graduates to possess the ability to

PEO1: Analyze, Design and Develop computer based systems and applications using emerging areas of computer Science.

PEO2: Be engineering professionals, innovators, entrepreneurs engaged in their profession with social awareness and ethical values.

PEO3: Work in teams in multi-disciplinary areas to address the needs of society.

PRINCIPAL
G. Pulla Reddy Engg. College
(Autonomous)
KURNOOL-518007 (A.P.)

PEO4: Adapt to emerging technologies by engaging themselves in lifelong learning.

9. CSE – DATA SCIENCE (CSD)

The Department of Computer Science and Engineering in Data Science (CSE-DS) was established in the year 2021 with an intake of 60. Over the years, it has grown by leaps & bounds and the current intake is 120.

Data science is the domain of study that deals with vast volumes of data using modern tools and techniques to find unseen patterns, derive meaningful information, and make business decisions. With the help of data science, IT companies have successfully obtaining meaningful insights from unstructured and raw data.

Data science has been helping businesses to grow beyond the conventional norms of data consolidation. It enables the companies to have access to more and more information and allows seeing new things in a better way, from a different perspective. In addition, it is the best way to find solutions to circumstances with varied and dispersed data. Data Science has varied applications, where business and commercial areas predominate. Data Science has also made inroads into the transportation industry, such as with driverless cars.

The data science field is rapidly growing. It is estimated that the market will grow by nearly 28% by 2026. Hence, there are ample high paying opportunities for qualified data science professionals, and the demand will only rise with time. The important thing right now would be to focus on acquiring the right qualifications by undergoing data science.

There are different job profiles available like Data Scientist, Data Analyst, Data Engineer, Data Mining Engineer, Data Architect, Data Statistician and many for aspirants to join the exciting, growing, and demanding field of data science.

Vision:
The department aims to become a leader in the field of education, training and research in emerging technologies of computer science with managerial skills and social values.

Mission:
M1: To facilitate competent industry relevant education through teaching learning process.

M2: To inculcate interest on research and innovation through critical thinking.

M3: To impart values and ethics for prospective and promising engineering.

Program Outcomes:
Engineering Graduates will be able to:

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

system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

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

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

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

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

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

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

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

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

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

Program Specific Outcomes:

Students will be able to

PSO1: Design, Identify and Apply Computing techniques and resources for solving real time engineering problems.

PSO2: Identify and Understand the emerging tools of data science.

PSO3: Understand statistical analysis and decision making skills in the field of data science.

Program Educational Objectives:

The Program Educational Objectives (PEOs) of the under graduate programme in CSE- Data science (CSD) at G. Pulla Reddy Engineering College (Autonomous) Kurnool are to prepare graduates to possess the ability to

PEO1: Analyze, Design and Develop computer based systems and applications using emerging areas of Computer Science.

PEO2: Be engineering professionals, innovators, entrepreneurs engaged in their profession with social awareness and ethical values.

PEO3: Work in teams in multi-disciplinary areas to address the needs of society.

PEO4: Adapt to emerging technologies by engaging themselves in lifelong learning.