



About The Department

The Department of Computer Science and Engineering of GEU has celebrated 25 years of excellence in research and education, with year-round talks by our distinguished alumni. Information, computing and communication technologies pervade nearly all aspects of today's digital society and will continue in the decades ahead to be of critical importance to the nation's technological infrastructure. We are proud of the accomplishments of our many alumni, including among them prize-winning researchers, developers and project leaders in world class multinational organizations like Microsoft, Yahoo, Amazon, Google, Intel, Oracle, Adobe, Cognizant and so on.

Department has highly qualified faculty members who have completed their degrees from IITs, IIITs, NITs and renowned foreign universities like University of Arkansas, USA, NUS Singapore etc. faculty members are involved in world-class research in Machine Learning, IoT, Networking, Cloud Computing, Bigdata Analytics and Security and are recipients of numerous national and international awards. Several faculty members serve on the editorial boards/ Reviewer of many prestigious journals, including Institute for Electrical and Electronics Engineering (IEEE), Association for Computing Machinery (ACM), Springer, Elsevier etc. The department collaborated with well-known Forbes listed MNCs like IBM, Oracle, EMC², Adobe, Sapient, Infosys, Wipro, Intel, etc to impart industry oriented training to the students. These are exciting times for computer science graduates, as the discipline is contributing towards development of tools and techniques for almost every field of technology and society.

LEARNING OUTCOMES

Learning objectives	
Name of the Department	Department of Computer Science and Engineering
Vision	To impart quality education for producing highly talented globally recognizable technocrats and entrepreneurs with sound ethics, latest knowledge and innovative ideas in Computer Science and Engineering to meet industrial needs and societal expectations.
Mission	<ul style="list-style-type: none"> M1. To impart high standard value based technical education in all aspects of Computer Science and Engineering through state of the art infrastructure and innovative approach. M2. To produce ethical, motivated and skilled engineers through theoretical knowledge and practical applications. M3. To impart the ability for tackling simple to complex problems individually as well as in a team.. M4. To develop globally competent engineers with strong foundations, capable of —out of the box thinking so as to adapt to the rapidly changing scenarios requiring social conscious green computing solutions.



Programme name	B.Tech(COMP)
Programme Code	BTCS
Program Educational Objectives (PEOs)	
PEO1	To produce students employable towards building a successful career based on sound understanding of theoretical and applied aspects as well as methodology to solve multidisciplinary real life problems.
PEO2	To produce professional graduates ready to work with a sense of responsibility, ethics and enabling them to work efficiently individually and also as a team.
PEO3	To impart the competency in students so that they are able to pursue higher studies and research in areas of engineering and other professionally related fields.
PEO4	To inculcate ability to adapt to the changing technology through continuous learning.
Program Outcomes	
PO1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
PO2	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.
PO3	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.
PO4	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.
PO5	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.
PO6	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.



PO7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for
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	sustainable development.
P08	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
P09	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
P010	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.
P011	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.
P012	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	Ability to analyze, design, implement, and test software systems based on requirement specifications and development methodologies of software systems.
PSO2	Apply computer science theory blended with engineering mathematics to solve computational tasks and model real world problems using appropriate programming language, data structure, and algorithms.
PSO3	Ability to explore technological advancements in various domains, evaluate its merits and identify research gaps to provide solution to new ideas and innovations.
Programme name	M.Tech(COMP)
Programme Code	MTCS
Program Educational Objectives (PEOs)	
PEO1	PEO I.To empower graduates to identify, formulate and solve computing problems by applying knowledge in algorithm design Paradigms and Mathematical Modeling using modern computing tools.
PEO2	PEO II.To enable students to be able to route their talents into postgraduate and research programs, promoting advancements in emerging areas.



PEO3	PEO III. To produce post graduate (PG) engineers who are ready to contribute towards research & development (R&D) effectively to the advancement of Computer Science applications.
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Program Outcomes	
PO1	PO1: An ability to independently carry out research /investigation and development work to solve practical problems
PO2	PO2: An ability to write and present a substantial technical report/document
PO3	PO3: 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.
PO4	PO4: Students should be able to 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.
PO5	PO5: An ability to 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.
PO6	PO6: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
Program Specific outcomes	
PSO1	PSO1. Ability to analyze, design, implement, and test software systems based on requirement specifications and develop methodologies of software systems.
PSO2	PSO2. Apply computer science theory blended with engineering mathematics to solve computational tasks and model real world problems using appropriate methodologies.
PSO3	PSO3. Ability to explore technological advancements in various domains, evaluate its merits and identify research gaps to provide solution to new ideas and innovations.
Programme name	B.Tech(INFO)
Programme Code	BTIT
Program Educational Objectives (PEOs)	
PEO1	PEO1 : To empower students with knowledge in information technology and allied engineering concepts required to solve industry oriented computing problems and pursue higher studies
PEO2	PEO2 : Empowering Graduates of this program to ethically apply their computing knowledge and skills considering societal, ethical, economic and environmental factors.
PEO3	PEO3 : To enable the students with required soft skills, that they can utilize in a pragmatic manner in order to excel in diverse environments in the competitive world.



PEO4	PEO4 : Providing an exposure to emerging cutting edge technologies, adequate opportunities and training to enable students to work as teams on multidisciplinary projects with effective communication skills
Program Outcomes	
P01	1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
P02	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.
P03	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.
P04	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.
P05	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
P06	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.
P07	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.
P08	8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice
P09	9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
P010	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.
P011	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
P012	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	PSO1 : An ability to use current techniques, skills and modern IT tools necessary to solve Complex and Contemporary Engineering Problems and to analyse the impact of IT solutions in the societal and human context
PSO2	PSO2 : Ability to update knowledge in accordance with contemporary technologies to analyze both customary and unaccustomed business functions in order to offer solutions for IT and IT-enabled-services
PSO3	PSO3 : Ability to analyse, design, model, develop , test and manage complex software and information management systems.
Programme name	M.C.A
Programme Code	MCAP
Program Educational Objectives (PEOs)	-
PEO1	To produce students employable towards building a successful career based on sound understanding of theoretical and applied aspects as well as methodology to solve multidisciplinary real life problems.
PEO2	To produce professional graduates ready to work with a sense of responsibility, ethics and enabling them to work efficiently individually and also as a team.
PEO3	To impart the competency in students so that they are able to pursue higher studies and research in areas of engineering and other professionally related fields.
Program Outcomes	-
P01	Knowledge Application: Apply the knowledge of mathematics, management and computer applications to the solution of complex real world problems.
P02	Problem Analysis: Identify, formulate, review and analyze complex problems reaching substantiated conclusions using principles of mathematics, management sciences, and computer applications.
P03	Design/development of solutions: Design solutions for complex real world problems and design system components or processes that meet the specified needs with appropriate consideration for the health and safety, and the cultural, societal, and environmental considerations.



PO4	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern computer software and IT tools includina prediction and modeling to complex software
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	engineering activities with an understanding of the limitations.
PO5	Environment and sustainability: Understand the impact of the professional software engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO6	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the development practice.
PO7	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO8	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.
PO9	Project management and finance: Demonstrate knowledge and understanding of the software 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.
PO10	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	Ability to analyze, design, implement, and test software systems based on requirement specifications and development methodologies of software systems.
PSO2	Develop the applications to solve computational tasks and model real world problems using appropriate programming language, data structure, and algorithms.
PSO3	Ability to explore application based technological advancements in various domains, evaluate its merits and identify research gaps to provide solution to new ideas and innovations.
Programme name	B.C.A
Programme Code	BCAP
Program Educational Objectives (PEOs)	-
PEO1	To produce students employable towards building a successful career based on sound understanding of theoretical and applied aspects as well as methodology to solve multidisciplinary real life problems.



PEO2	To produce professional graduates ready to work with a sense of responsibility, ethics and enabling them to work efficiently individually and also as a team.
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PEO3	To impart the competency in students so that they are able to pursue higher studies and research in areas of engineering and other professionally related fields.
PEO 4	To inculcate ability to adapt to the changing technology through continuous learning.
Program Outcomes	-
PO1	Knowledge Application: Apply the knowledge of mathematics, management and computer applications to the solution of complex real world problems.
PO2	Problem Analysis: Identify, formulate, review and analyze complex problems reaching substantiated conclusions using principles of mathematics, management sciences, and computer applications.
PO3	Design/development of solutions: Design solutions for complex real world problems and design system components or processes that meet the specified needs with appropriate consideration for the health and safety, and the cultural, societal, and environmental considerations.
PO4	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern computer software and IT tools including prediction and modeling to complex software engineering activities with an understanding of the limitations.
PO5	Environment and sustainability: Understand the impact of the professional software engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO6	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the development practice.
PO7	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO8	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.
PO9	Project management and finance: Demonstrate knowledge and understanding of the software 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.
PO10	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	Ability to analyze, design, implement, and test software systems based on requirement specifications and development methodologies of software systems.
PSO2	Develop the applications to solve computational tasks and model real world problems using appropriate programming language, data structure, and algorithms.



PSO3	Ability to explore application based technological advancements in various domains, evaluate its merits and identify research gaps to provide solution to new ideas and innovations.
Programme name	M.Sc(INFO)
Programme Code	MSIT
Program Educational Objectives (PEOs)	-
PEO1	Develop expertise required in software industry, academia, research, entrepreneurial pursuit and other IT enabled services.
PEO2	Achieve recognition by adopting ethics and professionalism and communicate effectively to excel well in inter-disciplinary teams.
PEO3	Continue a lifelong professional development in computing to contribute for self and societal growth.
Program Outcomes	-
P01	Computational Knowledge: Apply knowledge of computer Science, mathematics, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models from defined problems and requirements.
P02	Problem Analysis: Identify, formulate, research literature, and solve complex computing problems reaching substantiated conclusions using fundamental principles of mathematics, computing sciences, and relevant domain disciplines.
P03	Design /Development of Solutions: Design and evaluate solutions for complex computing problems, and design and evaluate systems, components, or processes that meet specified needs with appropriate consideration for public health and safety, cultural, societal, and environmental considerations.
P04	Conduct Investigations of Complex Computing 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.
P05	Modern Tool Usage: Create, select, adapt and apply appropriate techniques, resources, and modern computing tools to complex computing activities, with an understanding of the limitations.
P06	Professional Ethics: Understand and commit to professional ethics and cyber regulations, responsibilities, and norms of professional computing practice.



P07	Life-long Learning: Recognize the need, and have the ability, to engage in independent learning for continual development as a computing professional.
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PO8	Project management and finance: Demonstrate knowledge and understanding of the computing and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
PO9	Communication Efficacy: Communicate effectively with the computing community, and with society at large, about complex computing activities by being able to comprehend and write effective reports, design documentation, make effective presentations, and give and understand clear instructions.
PO10	Societal and Environmental Concern: Understand and assess societal, environmental, health, safety, legal, and cultural issues within local and global contexts, and the consequential responsibilities relevant to professional computing practice.
PO11	Individual and Team Work: Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary environments.
PO12	Innovation and Entrepreneurship: Identify a timely opportunity and using innovation to pursue that opportunity to create value and wealth for the betterment of the individual and society at large.
Program Specific outcomes	
PSO1	Ability to analyze, design, implement, and test software systems based on requirement specifications and development methodologies of software systems.
PSO2	Develop the applications to solve computational tasks and model real world problems using appropriate programming language, data structure, and algorithms.
PSO3	Ability to explore application based technological advancements in various domains, evaluate its merits and identify research gaps to provide solution to new ideas and innovations.
Programme name	B.Sc(INFO)
Programme Code	BSIT
Program Educational Objectives (PEOs)	-
PEO1	To produce students employable towards building a successful career based on sound understanding of theoretical and applied aspects as well as methodology to solve multidisciplinary real life problems.
PEO2	To produce professional graduates ready to work with a sense of responsibility, ethics and enabling them to work efficiently individually and also as a team.



PEO3	To impart the competency in students so that they are able to pursue higher studies and research in areas of engineering and other professionally related fields.
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PEO 4	To inculcate ability to adapt to the changing technology through continuous learning.
Program Outcomes	-
PO1	Knowledge Application: Apply the knowledge of mathematics, management and computer applications to the solution of complex real world problems.
PO2	Problem Analysis: Identify, formulate, review and analyze complex problems reaching substantiated conclusions using principles of mathematics, management sciences, and computer applications.
PO3	Design/development of solutions: Design solutions for complex real world problems and design system components or processes that meet the specified needs with appropriate consideration for the health and safety, and the cultural, societal, and environmental considerations.
PO4	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern computer software and IT tools including prediction and modeling to complex software engineering activities with an understanding of the limitations.
PO5	Environment and sustainability: Understand the impact of the professional software engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO6	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the development practice.
PO7	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
PO8	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.
PO9	Project management and finance: Demonstrate knowledge and understanding of the software 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.
PO10	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	Ability to analyze, design, implement, and test software systems based on requirement specifications and development methodologies of software systems.
PSO2	Develop the applications to solve computational tasks and model real world problems using appropriate programming language, data structure, and algorithms.
PSO3	Ability to explore application based technological advancements in various domains, evaluate its merits and identify research gaps to provide solution to new ideas and innovations.



Programme name	B.Sc(COMP)
Programme Code	BSCS
Program Educational Objectives (PEOs)	-
PEO1	To produce students employable towards building a successful career based on sound understanding of theoretical and applied aspects as well as methodology to solve multidisciplinary real life problems.
PEO2	To produce professional graduates ready to work with a sense of responsibility, ethics and enabling them to work efficiently individually and also as a team.
PEO3	To impart the competency in students so that they are able to pursue higher studies and research in areas of engineering and other professionally related fields.
PEO 4	To inculcate ability to adapt to the changing technology through continuous learning.
Program Outcomes	-
PO1	Depth of knowledge: Apply the knowledge of mathematics, computer science fundamentals to the solution of complex problems.
PO2	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.
PO3	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.
PO4	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.
PO5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction.
PO6	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.



PO7	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
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