

Specific Student Outcomes

CODE	Specific Student Outcome
Computer Science and Engineering Fundamentals	
SO 0	Ability to solve mathematical problems in engineering. Aptitude for applying knowledge of linear algebra, differential and integral calculus, numerical methods, numerical algorithms, statistics and optimization.
SO 1	Thorough knowledge of the foremost and fundamental groundwork of computer science, including abstract concepts and theories and professional values and principles, stressing the foremost aspects of the discipline that are unchanged in face of technological change.
SO 2	Formalization and specification of real-world problems whose solution involves the use of computer science.
SO 3/4	Ability to select and use relevant analytic and modelling methods, and to describe a solution at an abstract level.
SO 5	Ability to design and conduct appropriate practical investigations (e.g., of system performance) to interpret data and draw conclusions.
SO 6	Understanding and appreciation of the central role played by algorithms and data structures.
SO 7	Understanding of computer hardware from the viewpoint of software, for example, processor, memory, disk, monitor use, etc.
SO 8	Basic programming skills to implement algorithms and data structures as software.
SO 9	Skills required to design and implement major structural units using algorithms and data structures, as well as the interfaces between these units.
SO 10	Design and development of digital systems using hardware description languages.
SO 11	Basic knowledge of cost and productivity estimation and measurement.
Analysis Design and Implementation of Solutions	
SO 12/16	Knowledge of possible application fields of computer science, and an appreciation of the need for thorough domain knowledge in certain application areas, as well as an appreciation of how necessary this is in at least one situation.
SO 13/18	Understanding of what current technologies can and cannot achieve and the limitations of computer science, making a distinction between what computer science is inherently unable to do and what science and technology can achieve in the future.
SO 14/15	Knowledge of hardware, software and application systems and use of their elements, and ability to learn new computer applications.
SO 17	Knowledge of advanced computer science topics, giving students an idea and understanding of the boundaries of the discipline by including learning experiences taking students from elementary to advanced topics or topics that are the source of innovative developments.
SO 19/20	Knowledge of appropriate solutions, and understanding of the complexity of the problems and the feasibility of the solutions in computer science.
SO 21	Elicitation, analysis and specification of customer (businesses or individual users) needs, deadlines, available resources and possible factors affecting system development.
SO 22	Ability to apply knowledge and insight to the design of hardware and/or software that meets specified requirements.
SO 23	Modelling and design of user-centered human-computer interaction, and ability to design, develop and assure accessibility, ergonomics, usability and security.
SO 24	Selection and usage of appropriate programming languages for the type of application under development.
SO 25	Conceptualization and design of software system architecture.
SO 26/27	Definition, evaluation and selection of hardware and software platforms, including operating systems, and conceptualization, implementation, installation and maintenance of centralized or distributed computing architectures integrating hardware, software and networks.

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SO 28	Proper evaluation and selection, design and construction, and integration of database management systems with other system technologies.
SO 29	Design, development and evaluation of the security of computer systems, applications, and services and the operating systems on which they run, as well as the information they supply.
SO 30	Systems design, building hardware prototypes and developing software for use in industrial and real-time environments.
SO 31	Development, deployment, organization and management of information technology services in business environments to improve business processes.
SO 32	Understanding of the concept of life cycle, including the meaning of its phases (planning, development, installation and evolution), development implications for all the computer system components (software, hardware and human-computer interface) and the relationship between life-cycle management and quality.
SO 33	Application of configuration management and control techniques and procedures.
SO 34	Construction of prototypes, simulations or models to validate the system with the customer.
SO 35	Computer system integration, installation, testing and maintenance.
SO 36	Ability to design, plan, document and budget for the installation of hardware systems and workstations in a physical space.
SO 37	Application of quality management, control and assurance techniques and procedures.
SO 38	Ability to formulate an acceptable computer-based problem solution in a cost-effective and time-efficient way.
SO 39	Knowledge and application of software engineering principles and technologies to assure robust, reliable and appropriate implementations for target users.
SO 40	Understanding of the key concept of process in regard to computer science, especially program execution and system operation.
SO 41	Selection and usage of appropriate process models and programming environments for projects involving traditional applications as well as emerging application areas.
Engineering Techniques, Skills and Tools	
SO 42	Ability to combine theory and practice to complete computing tasks.
SO 43	Ability to undertake literature searches and use databases and other sources of information.
SO 44	Release of new products to the market after analysing product development Program proposals; preparation of investment profitability analysis; marketing planning; and engineering and production scheduling.
Professional Competences and Outcomes	
SO 46	Understanding of the key concept of process in regard to professional activity, especially the relationship between product quality and the enactment of appropriate human processes during product development.
SO 47	Awareness of project management and business practices, such as risk and change management, and understanding of their limitations.
SO 48	Management of information technology services and systems in business or institutional environments to improve business processes.
SO 49	Counselling on business strategy concerning design and development of new products, distribution channel relationships and business communication strategy.
SO 50	Market release of new products after analyzing product development program proposals; preparation of investment profitability analysis; marketing planning; and engineering and production scheduling.
SO 51	Ability to complete tasks in different application areas taking into account the existing technical, economic and social context.
SO 52	Consideration of the expected economic, social, ethical and legal conditions in the profession and practice of computer science, with a commitment to respect basic rights and equal opportunities between men and women, the principles of equal opportunities and universal accessibility for disabled people, and the values consistent with a culture of peace and democratic principles.
SO 53/54	Ability to function effectively as an individual and as a member of a team, and ability to organize own work.

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SO 56	Ability to interpret the relevance and usefulness of the theory and skills learned in the academic environment in regard to real-world events.