



# Department of Computer Science & Engineering

## Birla Institute of Technology, Mesra, Ranchi - 835215 (India)

### B.TECH IN INFORMATION TECHNOLOGY

#### Programme Educational Objectives (PEOs)

The program aims to create professionals who

1. Would lead in their domain and possess technical skills adoptable to complex Computer Science & Engineering problems.  
Modification: To possess technical skills adoptable to complex Computer Science & Engineering problems on order to lead in their domain.
2. Would be leading luminaries in the field of academics, enhancing their academic credentials.  
Modification: To enhance ones' academic credentials and grow to be a leading luminary.
3. Would hold the ability to become job creator and flourish further the nation agenda.
4. Modification: To develop into a job creator and flourish further the national agenda.
5. Would make social impacts that improve the social fabric of the nation.  
Modification: To inculcate ethical responsibility towards the society and impact optimistically, the social fabric of the nation.

#### (A) 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:** 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.

#### **(B) Programme Specific Outcomes (PSOs)**

**PSO 1:** Ability to identify, analyse and provide efficient solutions that cater to problems of varying complexity in the field of computer science.

**PSO 2:** Ability to justify / evaluate solutions with help of sound mathematical foundations, algorithmic principles, theoretical computer science knowhow and research-based knowledge in view of perpetual advancements in computer science.

**PSO 3:** Inculcate best software practices and principles in consideration with existent societal, cultural, environmental and financial aspects.