BS in Computer Science: Program Goals & Outcomes

Goal 1: Equip students with knowledge and advanced skills in mathematical reasoning, problem solving, modeling and scientific computation

Student Outcomes:

Students will be able to:

- 1.1. Use concepts and methods of mathematical disciplines relevant to mathematical modeling
- 1.2. Have in-depth knowledge of analytical and numerical methods and be able to apply it to solving problems arising in computational sciences
- 1.3. Utilize and adapt software and select and use hardware systems related to computer science

Goal 2: Train students for careers and advanced studies in a wide range of applied mathematical and computational disciplines

Student Learning Outcomes:

Students will be able to:

- 2.1 Apply computational methods to one or more domains of application (e.g. thermodynamics, finance, artificial intelligence)
- 2.2 Utilize contemporary computing technologies, such as high-performance, parallel and distributed computing
- 2.3 Formulate and critically assess problems and sub-tasks including conduct of appropriate research, identification of sources and investigative techniques

Goal 3: Prepare students for development of scientific, engineering and industrial software applications

Student Learning Outcomes:

Students will be able to:

- 3.1 Design and analyze complex data structures and algorithms
- 3.2 Develop and implement software applications in one or more programming languages
- 3.3 Develop and test software tools and methods

Goal 4: Develop articulate, conscientious leaders and problem solvers who are committed to contributing to their fields and society.

Student Learning Outcomes:

Students will be able to

- 4.1 Produce and deliver written and oral presentations, and communicate with specialists and non-specialists using appropriate media and technology.
- 4.2 Think critically and creatively, conceptualizing real-world problems from different perspectives.
- 4.3 Work productively in diverse teams and solve problems collaboratively.

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*Goal 5: **Provide students with a broad foundation of knowledge and skills and cultivate a commitment to life-long learning.***

Student Learning Outcomes:

Students will be able to

5.1 Use common software and information technology to pursue inquiry relevant to their academic and professional fields, and personal interests.

5.2 Weigh evidence and arguments, and appreciate and engage in diverse modes of inquiry characteristic of historical, cultural, political, economic, and quantitative disciplines.

5.3 Properly document and synthesize existing scholarship and data, keep current with developments, conduct independent research, and discover and learn new material on their own.