

Computer and Information Science Department's Undergraduate Student Learning Outcomes (SLOs)

The Department's Undergraduate Committee states the following Student Learning Outcomes. After graduation, a student should be able to:

- 1) Write software programs in multiple programming languages
- 2) Understand the theoretical foundations of computer science, including the study of discrete computational structures
- 3) Understand and use different programming language paradigms such as procedural, object-oriented, etc.
- 4) Use different data structures such as linked lists, arrays, stacks, trees, graphs, hash tables, etc to improve efficiency of software, and mathematically or experimentally analyze them and operations on them.
- 5) Know a diverse array of computational algorithms and their analysis techniques, as related to searching, sorting, optimization, and graph problems
- 6) Know fundamental limitations of designing efficient algorithms and the theoretical meaning of the $P \stackrel{?}{=} NP$ problem
- 7) Know the basic concepts in formal language theory and their application to compiler design
- 8) Understand the basic design of computer architecture and their relationship to software design
- 9) Understand and design the basic functionalities of different computer operating systems
- 10) Acquire knowledge in multiple advanced areas of computer science, such as databases, data mining, multimedia, graphics, computing security, networking, software engineering, bio-computing, etc.
- 11) Design, develop, and test small scale software projects
- 12) Write scientific project reports and software documentation