

## Program Educational Objectives

Within a few years of graduation, graduates of the computer science program will achieve the following:

1. Graduates of the Computer Science Program will develop the professional skills and the necessary technical knowledge both in breadth and in depth to prepare them for employment and advanced study in Computer Science.
  - Implementation: using Student Outcomes 1, 2 and 6
  - Measurement: using Curriculum Outcomes 1, 2 and 3.
2. Graduates of the Computer Science Program will have sufficient awareness of the local and global societal impact of technology and of the related legal and ethical issues in computer science to make decisions regarding their personal and professional responsibilities.
  - Implementation: using Student Outcome 4
  - Measurement: using Curriculum Outcomes 4 and 5.
3. Graduates of the Computer Science Program will have the critical thinking, communication, teamwork, and leadership skills necessary to function productively and professionally.
  - Implementation: using Student Outcomes 3 and 5
  - Measurement: using Curriculum Outcomes 6, 7 and 8.
4. Graduates of the Computer Science Program will be able to demonstrate intellectual curiosity and the independent study skills necessary for life-long learning.
  - Implementation: using Student Outcome 7
  - Measurement: using Curriculum Outcome 9.

## Student Outcomes

1. Graduates of the program will have an ability to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Graduates of the program will have an ability to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
3. Graduates of the program will have an ability to communicate effectively in a variety of professional contexts.
4. Graduates of the program will have an ability to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Graduates of the program will have an ability to function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
6. Graduates of the program will have an ability to apply computer science theory and software development fundamentals to produce computing-based solutions.

7. Graduates of the program will have an ability to independently acquire new computing related skills and knowledge to pursue either further formal or informal learning after graduation.

### Curriculum Outcomes

Curriculum Outcomes are derived from Student Outcomes and more closely correspond with the material in courses. Both Student Outcomes and Curriculum Outcomes describe abilities and knowledge that graduates of the program will have. Student Outcomes are more general while Curriculum Outcomes are more specific and are measured in specific courses.

1. Software Fundamentals: Graduates will demonstrate their ability to use fundamental computer science knowledge to design, document, implement, and test software solutions to a wide range of problems, using at least two high-level programming languages.
2. Computer Science Technology Skills: Graduates will demonstrate expertise in the main content areas of computer science including.
  - Discrete and continuous mathematics including skills in logic and proof writing
  - Analysis and design of algorithms
  - Formal languages and computability theory
  - Operating systems
  - Database systems
  - Computer architecture
  - Computer networks and distributed computing concepts
3. Scientific Method: Graduates will be able to gather requirements, analyze, design and conduct simulations or other computer experiments and evaluate and interpret the data generated.
4. Societal Awareness: Graduates will be aware of and understand the impact of computer technology on society at large, on the workplace environment, and on individuals.
5. Ethical Standards: Graduates will be able to recognize and understand the importance of ethical standards as well as their own responsibilities with respect to the computer profession.
6. Collaborative Work Skills: Graduates will demonstrate the ability to work effectively in teams to conduct technical work through the exercise of interpersonal communication skills.
7. Oral Communication Skills: Graduates will demonstrate their ability to communicate clearly.
8. Written Communication Skills: Graduates will demonstrate their ability to write effectively both technical and non-technical materials with appropriate multimedia aids.

9. Continuing Education and Lifelong Learning: Graduates will demonstrate that they can independently acquire new computing related skills and knowledge in order to pursue either further formal or informal learning after graduation.

The table below illustrates the relationship between Student Outcomes, Curriculum Outcomes and Program Educational Objectives.

<b>2019-2020 Student Outcomes</b>	<b>PEO</b>	<b>Curriculum Outcomes</b>
(1) Graduates of the program will have an ability to analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.	1	3
(2) Graduates of the program will have an ability to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.	1	1,2
(3) Graduates of the program will have an ability to communicate effectively in a variety of professional contexts.	3	7,8
(4) Graduates of the program will have an ability to recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.	2	4,5
(5) Graduates of the program will have an ability to function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.	3	6
(6) Graduates of the program will have an ability to apply computer science theory and software development fundamentals to product computing-based solutions.	1	1,2
(7) Graduates of the program will have an ability to independently acquire new computing related skills and knowledge to pursue either further formal or informal learning after graduation.	4	9

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