Student Learning Outcomes

University of North Carolina at Greensboro

Provost & Academic Affairs

College of Arts and Sciences

Computer Science

Computer Science (BS)

SLO01: Knowledge (A)

Outcome a): "An ability to apply knowledge of computing and mathematics appropriate to the discipline"

Performance criteria for outcome a): Upon completion of the program, the student should be able to

1. choose computing and mathematical principles to formulate models,
2. interpret computing and mathematical terms,
3. translate computing and mathematical theory into application,
4. execute mathematical calculations, and
5. evaluate solutions to computational problems using mathematical and statistical concepts.

The three levels of performance used in assessment are:

1. Below Expectation
2. Meets Criterion
3. Exceeds Criterion

To be assessed once per three year assessment cycle.

SLO02: Analysis (B)

Outcome b): "An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution"

Performance criteria for outcome b): Upon completion of the program the student should be able to

1. identify the essential tasks to solve a problem and
2. define the computing requirements for each essential element

The three levels of performance used in assessment are:

1. Below Expectation
2. Meets Criterion
3. Exceeds Criterion

To be assessed once per three year assessment cycle.

SLO03: Design (C)

Outcome c): "An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs"
Performance criteria for outcome c): Upon completion of the program the student should be able to

1. analyze and document requirements,
2. design and specify a system that supports the requirements,
3. implement the system in a manner consistent with the design, and
4. evaluate the work products of requirements, design and implementation

The three levels of performance used in assessment are:

1. Below Expectation
2. Meets Criterion
3. Exceeds Criterion

To be assessed once per three year assessment cycle.

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**SLO04: Teamwork (D)**

Outcome d): “An ability to function effectively on teams to accomplish a common goal”

Performance criteria for outcome d): Upon completion of the program the student should be able to

1. understand the principles of effective teamwork,
2. define and assign team tasks/roles,
3. actively participate in group activities,
4. collectively make decisions,
5. support other team members, and
6. fulfill individual roles and team objectives

The three levels of performance used in assessment are:

1. Below Expectation
2. Meets Criterion
3. Exceeds Criterion

To be assessed once per three year assessment cycle.

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**SLO05: Ethics (E)**

Outcome e): “An understanding of professional, ethical, legal, security and social issues and responsibilities”

Performance criteria for outcome e): Upon completion of the program, the student should be able to

1. identify a specific problem,
2. consider stakeholders, and
3. analyze professional, ethical, legal, security and social alternatives and consequences and choose an appropriate action.

The three levels of performance used in assessment are:

1. Below Expectation
2. Meets Criterion
3. Exceeds Criterion

To be assessed once per three year assessment cycle.

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**SLO06: Communication (F)**

Outcome f): “An ability to communicate effectively with a range of audiences” (for oral communications)

Performance criteria for outcome f): Upon completion of the program the student should be able to
1. organize information in a manner appropriate for the intended audience,
2. utilize supplemental materials in a manner appropriate for the intended audience,
3. deliver information in a manner appropriate for the intended audience, and
4. relate to the intended audience

Outcome f): “An ability to communicate effectively with a range of audiences” (for written communications)

Performance criteria for outcome f): Upon completion of the program the student should be able to

1. create written information with detail to support solution/argument, deliverable,
2. organize written information in a manner appropriate for the intended audience,
3. present written information in a style appropriate for the intended audience, and
4. utilize proper grammar/spelling in written documentation

The three levels of performance used in assessment are:

1. Below Expectation
2. Meets Criterion
3. Exceeds Criterion

To be assessed once per three year assessment cycle.

SLO07: Society (G)

Outcome g): “An ability to analyze the local and global impact of computing on individuals, organizations, and society”

Performance criteria for outcome g): Upon completion of the program, the student should be able to

1. understand the historical impact of computer science and its local and global impact on individuals, organizations, and society,
2. identify current events and trends in computer science and their local and global impacts on individuals, organizations, and society, and
3. develop a personal perspective on the importance of computer science in society.

The three levels of performance used in assessment are:

1. Below Expectation
2. Meets Criterion
3. Exceeds Criterion

To be assessed once per three year assessment cycle.

SLO08: Continued Development (H)

Outcome h): “Recognize the need for and ability to engage in continuing professional development”

Performance criteria for outcome h): Upon completion of the program, the student should be able to

1. Recognize the need for continuing professional development and
2. Engage in continuing professional development

The three levels of performance used in assessment are:

1. Below Expectation
2. Meets Criterion
3. Exceeds Criterion

To be assessed once per three year assessment cycle.

SLO09: Technique (I)

Outcome i): “An ability to use current techniques, skills, and tools necessary for computing practice”

Performance criteria for outcome i): Upon completion of the program the student should be able to
1. utilize current and appropriate tools and methods for testing software and other artifacts,
2. incorporate current software engineering techniques in the design, development, and documentation of software, and
3. program effectively, using both procedural and object-oriented techniques.

The three levels of performance used in assessment are:

1. Below Expectation
2. Meets Criterion
3. Exceeds Criterion

To be assessed once per three year assessment cycle.

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**SLO10: Tradeoff (J)**

**Outcome J):** “An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices”

Performance criteria for outcome j): Upon completion of the program the student should be able to

1. select the proper programming language and/or data structure to solve a problem and
2. derive, recognize, and analyze the time and resource complexity class of a problem.

The three levels of performance used in assessment are:

1. Below Expectation
2. Meets Criterion
3. Exceeds Criterion

To be assessed once per three year assessment cycle.

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**SLO11: Complexity (K)**

**Outcome K):** “An ability to apply design and development principles in the construction of software systems of varying complexity”

Performance criteria for outcome k): Upon completion of the program the student should be able to

1. Utilize abstraction and encapsulation in software design
2. Utilize modern object-oriented techniques in software implementation
3. Understand and utilize UML diagrams for software design and development when appropriate

The three levels of performance used in assessment are:

1. Below Expectation
2. Meets Criterion
3. Exceeds Criterion

To be assessed once per three year assessment cycle.
Filter Criteria
Prepared by: William Jones
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