

# Program Learning Goals and Objectives

## Computing Programs

### Department of Computer Science

B.A. in Computer Science (BACS)	B.S. in Computer Science (BSCS)	B.S. in Computer Engineering (BSCE)	B.S. in Computer Science and Mathematics (BSCM)
<u>Learning Goal BACS-1</u> Advance in graduate studies or be successful practitioners in applied or theoretical fields.	<u>Learning Goal BSCS-1</u> Advance in graduate studies or be successful practitioners in applied or theoretical fields.	<u>Learning Goal BSCE-1</u> Advance in graduate studies or be successful practitioners in applied or theoretical fields.	<u>Learning Goal BSCM-1</u> Advance in graduate studies or be successful practitioners in applied or theoretical fields.
<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>
<b>BACS-1.1:</b> Apply knowledge of computing, mathematics, science, and/or engineering appropriate to the discipline	<b>BSCS-1.1:</b> Apply knowledge of computing, mathematics, science, and/or engineering appropriate to the discipline	<b>BSCE-1.1:</b> Apply knowledge of computing, mathematics, science, and/or engineering appropriate to the discipline	<b>BSCM-1.1:</b> Apply knowledge of computing, mathematics, science, and/or engineering appropriate to the discipline
<b>BACS-1.2:</b> Use current techniques, skills, and tools necessary for the practice of the discipline	<b>BSCS-1.2:</b> Use current techniques, skills, and tools necessary for the practice of the discipline	<b>BSCE-1.2:</b> Use current techniques, skills, and tools necessary for the practice of the discipline	<b>BSCM-1.2:</b> Use current techniques, skills, and tools necessary for the practice of the discipline
<u>Learning Goal BACS-2</u> Apply communication and organizational skills in the context of ethical issues affecting the discipline or society.	<u>Learning Goal BSCS-2</u> Apply communication and organizational skills in the context of ethical issues affecting the discipline or society.	<u>Learning Goal BSCE-2</u> Apply communication and organizational skills in the context of ethical issues affecting the discipline or society.	<u>Learning Goal BSCM-2</u> Apply communication and organizational skills in the context of ethical issues affecting the discipline or society.
<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>
<b>BACS-2.1:</b> Communicate effectively with a range of audiences	<b>BSCS-2.1:</b> Communicate effectively with a range of audiences	<b>BSCE-2.1:</b> Communicate effectively with a range of audiences	<b>BSCM-2.1:</b> Communicate effectively with a range of audiences
<b>BACS-2.2:</b> Function effectively on multidisciplinary teams to accomplish a common goal	<b>BSCS-2.2:</b> Function effectively on multidisciplinary teams to accomplish a common goal	<b>BSCE-2.2:</b> Function effectively on multidisciplinary teams to accomplish a common goal	<b>BSCM-2.2:</b> Function effectively on multidisciplinary teams to accomplish a common goal
<b>BACS-2.3:</b> Understand the professional, ethical, legal, security and social issues and responsibilities	<b>BSCS-2.3:</b> Understand the professional, ethical, legal, security and social issues and responsibilities	<b>BSCE-2.3:</b> Understand the professional, ethical, legal, security and social issues and responsibilities	<b>BSCM-2.3:</b> Understand the professional, ethical, legal, security and social issues and responsibilities

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<u>Learning Goal BACS-3</u> Think critically and creatively to solve local or global problems and become lifelong learners and contributors to society.	<u>Learning Goal BSCS-3</u> Think critically and creatively to solve local or global problems and become lifelong learners and contributors to society.	<u>Learning Goal BSCE-3</u> Think critically and creatively to solve local or global problems and become lifelong learners and contributors to society.	<u>Learning Goal BSCM-3</u> Think critically and creatively to solve local or global problems and become lifelong learners and contributors to society.
<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>
<b>BACS-3.1:</b> Analyze the local and global impact of computing and/or engineering on individuals, organizations, and society	<b>BSCS-3.1:</b> Analyze the local and global impact of computing and/or engineering on individuals, organizations, and society	<b>BSCE-3.1:</b> Analyze the local and global impact of computing and/or engineering on individuals, organizations, and society	<b>BSCM-3.1:</b> Analyze the local and global impact of computing and/or engineering on individuals, organizations, and society
<b>BACS-3.2:</b> Recognize the need for, and an ability to engage in continuing professional development and lifelong learning	<b>BSCS-3.2:</b> Recognize the need for, and an ability to engage in continuing professional development and lifelong learning	<b>BSCE-3.2:</b> Recognize the need for, and an ability to engage in continuing professional development and lifelong learning	<b>BSCM-3.2:</b> Recognize the need for, and an ability to engage in continuing professional development and lifelong learning
<u>Learning Goal BACS-4</u> Apply knowledge and skills to solve problems effectively and efficiently that advances computer science in applied areas.	<u>Learning Goal BSCS-4</u> Apply knowledge and skills to solve problems effectively and efficiently that contributes to the technical advancement of computer science.	<u>Learning Goal BSCE-4</u> Apply knowledge and skills to solve problems effectively and efficiently that contributes to the technical advancement of computer engineering.	<u>Learning Goal BSCM-4</u> Apply knowledge and skills to solve problems effectively and efficiently that contributes to the technical advancement of computer science or mathematics.
<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>	<i>To attain this learning goal, students will accomplish the following learning objectives by the time of graduation.</i>
<b>BACS-4.1:</b> Analyze a problem, and identify and define the computing requirements appropriate to its solution	<b>BSCS-4.1:</b> Analyze a problem, and identify and define the computing requirements appropriate to its solution	<b>BSCE-4.1:</b> Identify, formulate, and solve engineering problems	<b>BSCM-4.1:</b> Analyze a problem, and identify and define the requirements appropriate to its solution
<b>BACS-4.2:</b> Design, implement, and evaluate a computer-based system, process, or program to meet desired needs within realistic constraints	<b>BSCS-4.2:</b> Design, implement, and evaluate a computer-based system, process, or program to meet desired needs within realistic constraints	<b>BSCE-4.2:</b> Design and conduct experiments, as well as to analyze and interpret data	<b>BSCM-4.2:</b> Design, implement, and evaluate a computer-based or mathematical-based system, process, or program to meet desired needs within realistic constraints
<b>BACS-4.3:</b> 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	<b>BSCS-4.3:</b> 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	<b>BSCE-4.3:</b> Use the techniques, skills, and modern engineering tools necessary for engineering practice	<b>BSCM-4.3:</b> 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
<b>BACS-4.4:</b> Apply design and development principles in the construction of software systems of varying complexity	<b>BSCS-4.4:</b> Apply design and development principles in the construction of software systems of varying complexity	<b>BSCE-4.4:</b> Attain knowledge of contemporary issues	<b>BSCM-4.4:</b> Apply design and development principles in the construction of software systems of varying complexity
<b>BACS-4.5:</b> Apply computer science principles in a broad range of non-computing applications			