

## Mathematical Sciences

### Institutional (ILO), Program (PLO), and Course (SLO) Alignment

Use the checklists provided to evaluate your SLO statements. Please add or revise PLO and SLO statements directly on this form.

Or, if you prefer to make changes on the electronic version contact your Facilitator Junko Forbes, or Angie Snider in your Division Office, to have the grid emailed to you. When SLO, PLO and ILO alignment changes are made, please make changes in red.

Return the completed grid to your Facilitator by Friday, Nov 8<sup>th</sup>

<b>Program: Computer Science</b>	<b>Number of Courses:</b> 6	<b>Date Updated</b>	<b>Submitted by</b> Junko Forbes Ext. 7217
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Institutional Learning Outcomes (ILOs)	I. Content Knowledge	II. Critical, Creative, and Analytical Thinking	III. Communication and Comprehension	IV. Professional and Personal Growth	V. Community and Collaboration	VI. Information and Technology Literacy
<b>Overall Program Rating</b> Rate each from 1-4 based on above rubric.	4	4	3	2	2	3

**Program Level SLOs** A minimum of 3 and maximum of 6 PLOS. There are, however, exceptions. For example, if department faculty have developed one or two comprehensive PLO statements that reflect the program mission and covers the major components and the overarching goals of the program, they may present them to their Dean and Facilitator for approval as is. In cases where the facilitator or dean or faculty disagree with the rigor of the statements, the PLO statement will be forwarded to the Assessment of Learning Committee (ALC) for review and recommendations.

*Include PLO #, Short Title, and PLO statement. Example: PLO #2 Ethics and Professionalism*

#### ILOs to PLOs Alignment (Rate 1-4)

	I	II	III	IV	V	VI
<b>PLO #1 Using Specifications:</b> Upon completion of their course of study in the Computer Science Department, students, when given a specification for a program or program segment, will be able to design, code, compile, test and document a solution.	4	4	3	2	2	3
<b>PLO #2 Tracing Execution</b> Upon completion of their course of study in the Computer Science Department, students, when given a code segment, will be able to trace the execution and give the output.	4	4	2	2	2	3
<b>PLO #3 Identifying and Correcting Problems</b> Upon completion of their course of study in the Computer Science Department, students, when given a code segment with errors, will be able to identify and correct the problems.	4	4	2	2	2	3
<b>PLO #4 Concepts of Computer Language</b> Upon completion of their course of study in the Computer Science Department, students will be able to explain concepts specific to a particular language.	2	2	4	2	2	3

<p><b>Course Level SLOs</b> A minimum of 3 and maximum of 6 SLOs. There are, however, exceptions. For example, if department faculty have developed one or two comprehensive SLO statements that cover the major components and the overarching goals of the course, they may present them to their Dean and Facilitator for approval as is. In cases where the facilitator or dean or faculty disagree with the rigor of the statements, the SLO statement will be forwarded to the Assessment of Learning Committee (ALC) for review and recommendations.  <i>Include SLO #, Short Title, and SLO Statement Example: Math 170 SLO #3 Vectors and Complex Numbers.</i></p>	Course to Program SLO Alignment Mark with an X				ILOs to Course SLOs Alignment (Rate 1-4)					
	P1	P2	P3	P4	I	II	III	IV	V	VI
<p><b>CSCI 1 Problem Solving and Program Design Using C++:SLO #1</b> Students will write correct and detailed algorithms. (Properly analyze a problem using top down design, and write an algorithm that can be translated into computer code)</p>	X				4	4	3	2	2	3
<p><b>CSCI 1 Problem Solving and Program Design Using C++:SLO #2</b> Students will write C++ code that uses correct syntax. (When declaring data types, writing algebraic and logical expressions, naming variables, etc.)</p>		X			4	4	3	2	2	3
<p><b>CSCI 1 Problem Solving and Program Design Using C++:SLO #3.</b> Students will write C++ code that correctly uses control structures (and nested control structures) [ Including conditionals (like "if"), loops (like "while" and "for") and user defined functions (both void and value returning)]</p>			X		4	4	3	2	2	3
<p><b>CSCI 1 Problem Solving and Program Design Using C++:SLO #4.</b> Students will write C++ code that correctly uses basic data structures (Including strings, arrays, and structs)</p>				X	4	4	3	2	2	3
<p><b>CSCI 2 Introduction to Data Structures: SLO #1</b> Students will design, code, compile, test and document a programming solution to a problem involving the basic data structures: lists, stacks, queues, trees, and related abstract data types.</p>	X				4	4	3	2	2	3
<p><b>CSCI 2 Introduction to Data Structures: SLO #2</b> Students, when given a C++ code segment, will be able to trace the execution, give the output, and analyze the efficiency of the basic data structures and techniques involved.</p>		X			4	4	3	2	2	3
<p><b>CSCI 2 Introduction to Data Structures: SLO #3.</b> Students, when given a C++ code segment with errors, will be able to identify and correct the problems.</p>			X		4	4	3	2	2	3
<p><b>CSCI 2 Introduction to Data Structures: SLO #4.</b> Students will be able to explain the C++ concepts related to pointers, classes, recursion, searching, sorting, templates and dynamic memory allocation.</p>				X	4	4	3	2	2	3

<b>Course Level SLOs</b> Minimum of 3 and maximum of 6 SLOs. <i>Include SLO #, Short Title, and SLO Statement</i> <i>Example: Math 170 SLO #3 Vectors and Complex Numbers</i>	<b>Course to Program SLO Alignment</b> Mark with an X				<b>ILOs to Course SLOs Alignment</b> (Rate 1-4)					
	P1	P2	P3	P4	I	II	III	IV	V	VI
<b>CSCI 3 Computer Programming with Java: SLO #1</b> Students, when given a specification for a program or program segment, will be able to design, code, compile, test and document a solution.	X				4	4	3	2	2	3
<b>CSCI 3 Computer Programming with Java: SLO #2</b> When given a code segment involving control structures, iteration structures and method calls, students will be able to trace the execution and give the output.		X			4	4	3	2	2	3
<b>CSCI 3 Computer Programming with Java: SLO #3</b> When given a code segment involving data objects, graphical interface objects, and processing objects, students will be able to describe what the users sees and the events that take place as the user interacts with the interface.		X	X		4	4	3	2	2	3
<b>CSCI 3 Computer Programming with Java: SLO #4</b> Students understand and be able to develop both desktop and web applications involving graphical user interfaces, animations, sound manipulations, File I/O, database, applets, and threads.	X	X	X	X	4	4	3	2	2	3
<b>CSCI 12 Internet Applications using PHP, JavaScript, and XHTML: SLO #1 Interactive Web Pages</b> Design and implement an interactive web page.	X			X	4	4	3	2	2	3
<b>CSCI 12 Internet Applications using PHP, JavaScript, and XHTML: SLO #2 Side-Scripts</b> Develop a client-side script to create a drop down menu for a web page.	X				4	4	3	2	2	3
<b>CSCI 12 Internet Applications using PHP, JavaScript, and XHTML: SLO #3 Web Pages Date and Time</b> Design and implement a program or function to process data collected from a web form.	X	X			4	4	3	2	2	3
<b>CSCI 12 Internet Applications using PHP, JavaScript, and XHTML: SLO #4 Processing Web Data</b> Design and implement a server-side program or function to a database and interact (insert, delete, update records) with it.			X	X	4	4	3	2	2	3

<b>Program Level SLOs</b> Minimum of 3 and maximum of 6 PLOS. <i>Include PLO #, Short Title, and PLO statement.</i> <i>Example: PLO #2 Ethics and Professionalism      Please reduce the SLOS for CSCI 30 to a maximum of 6.</i>	Course to Program SLO Alignment Mark with an X				ILOs to Course SLOs Alignment (Rate 1-4)					
	P1	P2	P3	P4	I	II	III	IV	V	VI
<b>CSCI 16 Assembly Language SLO #1</b> Students will design, code, compile, test and document programming solutions to problems by developing PC assembly language code that makes direct use of processor instructions, interrupts, registers, the stack, as well as existing macro and procedure libraries.	X				4	4	3	2	2	3
<b>CSCI 16 Assembly Language SLO #2</b> Students, when given a code segment will be able to trace the execution, providing the real-time content of registers during operations, the dynamic content of the stack during procedure calls and returns, and tracing the conditional execution of code generally, and within looping structures specifically.		X			4	4	3	2	2	3
<b>CSCI 16 Assembly Language SLO #3</b> Students, when given PC assembly language code with errors, will be able to identify what those errors are and will be able to modify the PC assembly language code to eliminate those errors.			X		4	4	3	2	2	3
<b>CSCI 16 Assembly Language SLO #4</b> Students will be able to explain the concepts of PC assembly language registers, interrupts, data segment organization, addressing modes, internal data representation, decision structures, macros and procedures.				X	4	4	3	2	2	3
<b>CSCI 30 Advanced Programming in C++: SLO #1</b> Students will design, code, compile, test and document programming solutions to problems requiring the development of C++ classes (by inheritance, by composition; templates), requiring C++ operator overloading, requiring effective use of the Standard Template Library, requiring effective use of pointers and dynamic memory allocation.	X				4	4	3	2	2	3
<b>CSCI 30 Advanced Programming in C++: SLO #2</b> Students, when given a code segment involving use of a class, will be able to trace the construction of class objects, trace the destruction of class objects, verify whether memory leaks have occurred, trace object assignment operations, verify when copy constructors are invoked and when overloading of copy constructors is required.		X			4	4	3	2	2	3
<b>CSCI 30 Advanced Programming in C++: SLO #3</b> Students, when given C++ code with errors, will be able to identify what those errors are and will be able to modify the C++ code to eliminate those errors.			X		4	4	3	2	2	3
<b>CSCI 30 Advanced Programming in C++: SLO #4</b> Students will be able to explain the concept of C++ class templates and how they relate to the concept of generics, the concept of virtual functions and polymorphism, the concept of multiple inheritance and virtual base classes, the concept of container types and the				X	4	4	3	2	2	3

circumstances where specific containers should or should not be used.										
<b>CSCI 40 Introduction to UNIX and LINUX Operating Systems: SLO #1.</b> Given a specification for a set of operating system tasks, students will create, edit, move, display, copy and delete files and subdirectories.				X	4	4	3	2	2	3
<b>CSCI 40 Introduction to UNIX and LINUX Operating Systems: SLO #2.</b> Students use shell programming to create file processing applications and control user interaction.	X				4	4	3	2	2	3
<b>CSCI 40 Introduction to UNIX and LINUX Operating Systems SLO #3</b> Students create, schedule, filter, monitor, format, sort and redirect and delete input / output of programs and processes.		X	X		4	4	3	2	1	3
<b>CSCI 40 Introduction to UNIX and LINUX Operating Systems SLO #4</b> Students perform basic administration functions in system installation and maintenance, network services, user services.				X	4	4	3	2	1	3