CIS AS Computer Programming

PLO	PLO Reflection (What were the strong points and weak points students demonstrated in the courses? What areas need more attention? What do your results show about student learning?)	PLO Action Plan (include timeline for implementation, key/responsible personnel, priority high/medium/low, status report/reflection on results of action plan)
Computer Software Development: Demonstrate the ability to apply data requirements, algorithmic principles, and software development practice in the modeling and design of computer-based systems in a way that proves comprehension of the tradeoffs involved in design choices.	**Students validated their knowledge to solve a problem and or produce a product with the use of the flowchart tool; to represent a visual graphic illustration of the process and or system used to describe the entire system or process. The student's follow-up questions concerning the system or process, involving potential problems or adaptations, allowed the students to use the flowchart to evaluate system changes.**	**Continue to assign more companies problem-solving activities to experience real world hands on practice to develop analytical skills to prepare the students to effectivity use the flowchart tool to make a better evaluation of system changes. Assigned instructor will implement additional resources in Fall 2017 to continue updates from collaboration with participation companies.**
Programming Skills: Demonstrate the ability to analyze a problem, using algorithms to create computer systems and appropriate problem solving using a programming language.	**Students performed well during programming tasks during final exam. Students struggled with short answer section of the final exam.**	**Continue to revise lecture and lab activities to help students improve written descriptions of algorithms in their own words. Assigned instructor will implement additional resources in Fall 2017.**
Solve Business Problems with Computers: Interpret and analyze a business information problem and design, code, compile, test and debug a program solution in C++ using proper program syntax balancing efficiency and maintainability, and manage project tasks required for completion of a computer system development project.	**Students programming project performance and participation was low; not all presented: 3 of 30 (10%) chose not to present their projects to the class. This assignment is highly effective and directly relates to career education goals. Two weak points: One, documentation should be better. Two, a lecture should be devoted to documentation. Since this is a valuable experience, we should consider more incentives: Higher points for the component; making it mandatory, not optional; including more coverage in the lecture; a dedicated lab period for preparation.**	**Continue necessary adjustments to improve the delivery of the course; One, Prepare lecture on documentation. Two, devise plan for presentation encouragement. Three, have a medium priority task to re-evaluate this SLO and reflect on improvements in Fall 2017.**

Dept	Course	SLOs		
CIS	005	Design and create projects with the Raspberry Pi (miniature computer the size of a credit card) to explore in the process of learning to solve problems.	Computer Software Development: Demonstrate the ability to apply data requirements, algorithmic principles, and software development practice in the modeling and design of computer-based systems in a way that proves comprehension of the tradeoffs involved in design choices.	
CIS	005	Evaluate software design and methodology to identify best practices. This outcome maps to the following Institution Outcomes: • Critical Thinking and Problem Solving - Students will be able to think critically and solve problems by identifying relevant	Programming Skills: Demonstrate the ability to analyze a problem, using algorithms to create computer systems and appropriate problem solving using a programming language.	
CIS	005	Effectively write algorithm sequence, decision, and repetition steps, to solve problems. This outcome maps to the following Institution Outcomes: • Critical Thinking and Problem Solving - Students will be able to think critically and solve problems by identifying relevant information, evaluating alternatives, synthesizing findings and implementing effective solutions. • Communication - Students will effectively express and exchange ideas through various	Solve Business Problems with Computers: Interpret and analyze a business information problem and design, code, compile, test and debug a program solution in C++ using proper program syntax balancing efficiency and maintainability, and manage project tasks required for completion of a computer system development project.	
CIS	005			
CIS	006	Design Algorithms and Programs: Proficiently and effectively plan the design of a program and write appropriate programming algorithms.		
CIS	006	Program Structure: Proficiently and effectively write programming code using a variety of programming structures, including variable definitions, alternation and iteration, functions and objects.		
CIS	006	Implement Programs: Proficiently and effectively write and debug programming code using a programming language in a development environment and tools including user interface.		
CIS	025	Solve Problems with Computers: Design, code, compile, test and debug a program solution in C++		
CIS	025	Program Structure: Select & construct data types to define variables and arrays		
CIS	025	Development Tools: Create programs using software development tools including editors, libraries and compilers		
CIS	025B	Solve Business Problems: Write C++ applications and applets to create solutions to business problems and manage project tasks required for completion of a computer system development project		
CIS	025B	Advanced Techniques: Develop programs using advanced techniques and features such as exceptions, multi-threading and concurrency		
CIS	025B	GUI: Develop event-handling code for GUI (graphical user interface) programs for environments such as .NET or other API (application programming interface) standards		
CIS	025B	Data & I/O: Access persistent data utilizing file Input/Output and/or database access		