BASIC PROGRAM INFORMATION

Program Review is about documenting the discussions and plans you have for improving student success in your program and sharing that information with the college community. It is also about linking your plans to decisions about resource allocations. With that in mind, please answer the following questions.

Program/Department Name: Computer Science

Division Name: Physical Science, Mathmetics, and Engineering (PSME)

Please list all team members who participated in this Program Review:

Name	Department	Position
Elaine Haight	Computer Science	Instructor (FT)
Bita Mazloom	Computer Science	Instructor (FT)
Mike Murphy	Computer Science	Instructor (FT)
Anand Venkataraman	Computer Science	Instructor (FT)

Number of Full Time Faculty: 4 **Number of Part Time Faculty:** 24

Please list all existing Classified positions: *Example: Administrative Assistant I*

Luis Barreto (Title?) , Mario Ramos (Instructional Computer Laboratory Administrator)

SECTION 1: PROGRAM REFLECTION

1A. Program Update: Based on the program review data, please tell us how your program did last year. We are particularly interested in your proudest moments or achievements related to student success and outcomes.

Enrollment leveled off during the 2015-16 year, this comes after an enrollment increase of of over 100% from 2012-13 to 2014-15. The number of sections went up 10% during 2015-16. The course success rate has increased by 1% since last year. The success rate for targeted groups increased by 4% while the success rate for non-targeted groups remained constant. Enrollment by ethnicity showed some major shifts year to year, Africian American enrollment dropped by 26% while Latino enrollment was up by over 20%.

1B. Program Improvement: What areas or activities are you working on this year to improve your program? Please respond to any feedback from the supervising administrator from last year's program review.

A number of factors were identified as conducive to student success. However controlled experimentation to verify anecdotal data has not been done. Key factors identified by multiple staff members were increased hands-on and practical work during lecture periods, stronger students mentoring weaker students in class, handwritten feedback from instructors on lab assignments and a flipped classroom strategy. These factors should be investigated further for continued program improvement.

1C. Measures of Success: What data or information will you use to measure your success (e.g. student success rates, changes in student or program learning outcomes)?

For most programming courses, an important measure of success is the students' ability to write effective, correct and efficient computer programs. Our lab assignments are designed to elicit important measures of concept assimilation by students and identify concept gaps for addressing by faculty and tutors. Thus our measures of success are built around assignment scores. In particular, for each SLO, we associate some subset of programming assignments and look at the fraction of students who scored above a certain threshold. Specifically, we were looking to see if greater than 80% of the students scored above 7 on a 10 point rubric in each of the measurement criteria.

1D. EMP Goal: The 2015-2020 Educational Master Plan (EMP) includes the following goal:
"Create a culture of equity that promotes student success, particularly for underserved students."

Based on the program review data, tell us some of the things your program will be doing this year to support this goal. You will be asked to report on any accomplishments on your next comprehensive program review.

Our EMP has targeted groups in which we seek to improve student success rates: African American, Latino and Female. Unfortunately, the breakdown of aggregate data into these bins yields results over statistically insignificant sample sizes. By increasing the exposure of our marketing campaigns to demographics currently underserved by our system, and those we seek to target, we may increase our enrollment counts of these populations, thus enabling us to collect better data leading to refinement of techniques to improve success rates among them.

SECTION 2: PROGRAM OBJECTIVES & RESOURCE REQUESTS

2A. New Program Objectives: Please list any new objectives (do not list your resource requests).

Program Objective	Implementation Timeline	Progress Measures
Example: Offer 2 New Courses to Meet Demand	*Winter 2016 Term*	*Course Enrollment*
Increasing our marketing of the program to underserved demographics.	Winter - Spring 2017	Increase course enrollment
Provide laboratory support for current networking, operating system, and virtualizations technologies	Winter - Spring 2017	Increase course enrollment and student success
Develop methodoligies to ensure that STEM Center tutors are properly aligned with Faculty	Winter - Spring 2017	Increase student success
Devote more time to demonstrations of topics during lectures	Winter - Spring 2017	Increase student success
Improve the hiring process new adjunct faculty and improve mentoring for all faculty	Winter - Spring 2017	Increase course enrollment and student success
Create a new Computer Science Fundamentals class	Winter - Spring 2017	Increase course enrollment and student success
Experiment with paired projects/paired presentaions in classes	Winter - Spring 2017	Increase student success
Provide personal mentoring for students teaching them how to optimize their learning in CS classes	Winter - Spring 2017	Increase student success

2B. Resource Requests: Using the table below, summarize your program's unfunded resource requests. Refer to the Operations Planning Committee (OPC) website for current guiding principles, rubrics and resource allocation information.

Resource Request	$	Program Objective (Section 2A)	Type of Resource Request			
			Full-Time Faculty/Staff Position	One-Time B-Budget Augmentation	Ongoing B-Budget Augmentation	Facilities and Equipment
Full time instructor to focus on CyberSecurity, Operating Systems, Virtualization, and Networking			☒	☐	☐	☐
Big Screen TVs in lieu of overhead projector			☐	☐	☐	☒
Large screen laptops or desktops each of which is able to project at high resolution to the class			☐	☐	☐	☒
High Resolution Projectors in classrooms			☐	☐	☐	☒
Department-level administrative assistance -- includes provide a list of administrative support for FT and adjuncts covering all non-teaching activities			☒	☐	☐	☐
Expansion of the embedded tutor program			☒	☐	☐	☐
Internship program in industry for Computer Science studentsI			☐	☐	☐	☐

Additional rooms with desktop computers available during the popular morning hours (e.g. Monday and Wednesday morning)			☐	☐	☐	☒
Equip Room 4306 and 4308 so that a combined face-to-face and online class could meet together as a synchronous class.			☐	☐	☐	☒
Provide "fair" compensation for the department coordinator			☐	☐	☒	☐

2C. Unbudgeted Reassigned Time: Please list and provide rationale for requested reassign time.

SECTION 3: LEARNING OUTCOMES ASSESSMENT SUMMARY

3A. Attach 2015-2016 Course-Level Outcomes: Four Column Report for CL-SLO Assessment from TracDat. Please contact the Office of Instruction to assist you with this step if needed.

3B. Attach 2015-2016 Program-Level Outcomes: Four Column Report for PL-SLO Assessment from TracDat. Please contact the Office of Instruction to assist you with this step if needed.

SECTION 4: FEEDBACK AND FOLLOW-UP

This section is for the Dean/Supervising Administrator to provide feedback.

4A. Strengths and successes of the program as evidenced by the data and analysis:

The computer science department has grown drastically in the last four years with it stabilizing the last year. Sections of computer courses have increased from 59 sections in 2012-13 to 147 in 2015-16 while the department in that same time have only added two additional full time faculty. Last year the department also lost a full time faculty due to retirement. This only leaves 4 full time faculty to onboard and mentor about 25 part time faculty.

The computer science faculty are involved in both regional and local (Foothill College) effort for improving computer science pathways and success. For example, Bita is leading the STEM Analytics Research group. This group is investigating how to best utilize the student data obtained from the

utulization logs created at the STEM Success Center. Anand Venkataraman is taking over curriculum develop and usage of videos for teaching. Mike Murphy and Elaine Haight are highly involved in the computer science industry and career pathways.

4B. Areas of concern, if any:

Unlike the other department in PSME, the Computer Science department is more than just a transfer or support for other programs. They are also part of the workforce pathway. Many of their students are returning students who need to upgrade or retrain. And there are students who are preparing a technical pathway, earning a well paid career upon their completion of a technical certification. All of these differing strategies and courses were at one time under one dean, a computer science dean.

Areas of concern from the last comprehensive program review done last year still maintains:
1. Course success rate of targeted groups increased from 44% (2014-15) to 48% (2015-16) but this is still below PSME Division of 56% in 2015-16
2. Latino enrollment for division has increased to 20% in 2015-16 from 17% in 2014-15 while CS department has also increase but remains below the division, 10% in 2015-16 from 8% in 2014-15
3. Recruitment and retention of part time CS faculty remain a concern. The turn over rate is high since many part time faculty work during the day making higher wages in companies like Apple or Google. Getting the needed faculty to teach all the courses in the catalog is a challenge since not all part time have experiences in these area. As stated in the last report, many of these part time faculty have strong technical skills but very little to no teaching experiences.
4. Department of 4 (2 tenured faculty and 2 on the tenure track) faculty cannot sustain the quality and mentoring of part time instructors. The same challenge as noted in past program review remains: the responsibilities of hiring new part-time faculty, mentoring and orienting them, participating in tenure review, serving on FT hiring committees, developing new curriculum, and assisting with scheduling is too high of a workload for a department of 4 full time faculty.
5. Contiunal training for a high quality online CS course remains an issue, even with Michael Loceff helping with the development and training. There cannot be a perpetual reliance on one faculty.
6. Finding embedded tutors falls under similar challenge as finding part time faculty.
7. Pathways, in particular to CTE programs, are not well advertised or communicated with students. With only one faculty (Mike Murphy) dedicated to this program, traction, attraction of students and coverage are some challenges. Course enrollment are low and are barely filling to capacity. For example, Cybersecurity Fundamentals was not able to reach anywhere near the 40 enrollment max (fall 2016 had an enrollment of 12 by census date).
8. Lack of a standard textbook for a course can be a hardship for students as they move along their CS pathway. A student can potential purchase three different kinds of textbooks if they take CS 1A, 1B, and 1C, a year sequence of programming in Java.
9. Curriculum development to keep current with the Silican Valley can be a hardship since the curriculum cycle is a two year process. Furthermore, current faculty are too busy to be well-versed in new emerging technologies and languages. As stated in the previous program review, this limits their ability to create new curriculum to service local employers

4C. Recommendations for improvement:

1. Since all of the CS courses are online or hybrid, more effort must be put into the online material. For example, videos and interactive collaboration should be explored. Continue to expand the computer lab in the STEM Center and create mini CS workshops
2. Tap into the Latino Community. CS faculty can connect with Latino faculty on staff to explore more possibilities.

3. Increase one additional FTEF. The department had asked for two position for this hiring year 2017 but was only granted one. Another position is needed.
4. Add an assistant dean to help coordinate the CS department that deserves a dean of their own.
5. The assistant dean suggested in #4 can also help with coordination, mentoring and onboarding.
6. Same suggestion/recommendation as previously stated in the last program review, HR should consider hiring part time students as embedded tutors
7. The assistant dean suggested in #4 can also help with CTE pathways.
8. Textbooks can be place in courses taught by part time instructors as standard. This must be agreed by the full time faculty and can be change by the part time faculty. However, since there are CS courses that are unstaffed until very late, it would be good to have the textbook in the bookstore ready to go on day one.
9. There are coalitions/groups that are petitioning for CS course exemption as they pertain to curriculum development/cycle. The curriculum committee needs to suppport this and acknowledge exceptions within Foothill College process and also push the need for expediated course acceptance at the state level. This may involve the Foothill-De Anza chancellor and other officers.

4D. Recommended Next Steps:

☒ Proceed as Planned on Program Review Schedule
☐ Further Review / Out-of-Cycle In-Depth Review

Upon completion of Section 4, the Program Review document should be returned to department faculty/staff for review, then submitted to the Office of Instruction and Institutional Research for public posting. Please refer to the Program Review timeline.

Unit Course Assessment Report - Four Column

Foothill College

Department - Computer Science (C S)

Mission Statement: To provide an educational pathway to careers in computer science technology and research. To make computer technology accessible to students from all backgrounds. To provide a conduit between our students and both universities and companies, so that the training and learning that they acquire at Foothill can be leveraged to pursue professional and/or advanced research positions.

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Department - Computer Science (C S) - C S 10 - COMPUTER ARCHITECTURE & ORGANIZATION - Compilation of C++ or Java to assembly language - The student will demonstrate the ability to analyze the assembly language instructions generated by a C, C++ or Java program. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2018 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment the examines and analyzes the code generated by a C, C++ or Java program. **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	09/13/2015 - Of those who finished the course, 60% had 7/10 understanding or better. Retention of enrollment was best in Fall and worst in Spring. < 60% retention in Spring, > 60% in Fall. Improved over last year, but more needs to be done. **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** another full time instructor would allow this course to be taught by a permanent faculty member, which may have benefits in success rate.	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/18/2014 - Of those who finished the course, 50% had 7/10 understanding or better. Retention of enrollment was best in Fall and worst in Spring. < 50% retention in Spring, > 50% in Fall. seemed to know why they were there. **Result:** Target Not Met **Year This Assessment Occurred:** 2013-2014	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Resource Request: TA or instructional assistant will likely provide needed support to shore up key concepts toward the end of the course. **Resource Request:** TA or instructional assistant will likely provide needed support to shore up key concepts toward the end of the course. **Resource Request:** TA or instructional assistant will likely provide needed support to shore up key concepts toward the end of the course.	
		06/30/2013 - This SLO was measured by lab assignment 3 of the computer labs. The average scores was 85%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
	Assessment Method: xx **Assessment Method Type:** Class/Lab Project		
Department - Computer Science (C S) - C S 10 - COMPUTER ARCHITECTURE & ORGANIZATION - Microprocessor Architecture - The student will demonstrate knowledge of the architecture of a microprocessor including the use of registers, the program counter, and the arithmetic logic unit. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:**	**Assessment Method:** Test that includes questions about microcomputer architecture components. **Assessment Method Type:** Pre/Post Test **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	09/13/2015 - Of those who finished the course, 60% had 7/10 understanding or better. Retention of enrollment was best in Fall and worst in Spring. < 60% retention in Spring, > 60% in Fall. Improved over last year, but more needs to be done. **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** another full time instructor would allow this course to be taught by a permanent faculty	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
06/30/2018 **Course-Level SLO Status:** Active		member, which may have benefits in success rate.	functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/18/2014 - Of those who finished the course, 50% had 7/10 understanding or better. Retention of enrollment was best in Fall and worst in Spring. < 50% retention in Spring, > 50% in Fall. seemed to know why they were there. **Result:** Target Not Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** TA or instructional assistant will likely provide needed support to shore up key concepts toward the end of the course.	
		06/30/2013 - This SLO was measured by questions on the midterm and final exams. The average score was 72%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 18 - DISCRETE MATHEMATICS - Relations - Properly identify properties in a relation (Created By Department - Computer Science (C S))	**Assessment Method:** questions on exams and/or quizzes. **Assessment Method Type:** Pre/Post Test **Target for Success:** 80% to have 7/10 understanding or better.	09/13/2015 - Of those who finished the course, 80% had 7/10 understanding or better. **Result:** Target Met **Year This Assessment Occurred:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Assessment Cycles: End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2018 **Course-Level SLO Status:** Active		2014-2015	
Department - Computer Science (C S) - C S 18 - DISCRETE MATHEMATICS - Logic and Proofs - Use formal logic and various methods of arguments to formally write proofs involving number theory, set theory, combinatorics, and discrete probability. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2018 **Course-Level SLO Status:** Active	**Assessment Method:** A formal proof written in mathematical English **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	09/13/2015 - Of those who finished the course, 80% had 7/10 understanding or better. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 18 - DISCRETE MATHEMATICS - Number theory and applications - Apply number theory, combinatorics, discrete probability, graph theory, and recursion to solve various application problems. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2018 **Course-Level SLO Status:** Active	**Assessment Method:** homework assignments incorporating math problems and derivations. **Assessment Method Type:** Class/Lab Project **Target for Success:** 80% to have 7/10 understanding or better.	09/13/2015 - Of those who finished the course, 80% had 7/10 understanding or better. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Department - Computer Science (C S) - C S 19A - THEORY OF QUANTUM COMPUTING I - Quantum Computing Fundamentals - A successful student will be able to apply basic mathematical tools of quantum mechanics to describe the fundamental component of a quantum computer: the qubit. In addition, the student will be capable of describing and analyzing simple quantum circuits, and explain how they work differently from their classical binary counterparts. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Evaluation of student performance on homework and tests that require computational proficiency in quantum mechanics and its application to quantum-bit (qubit) logic gates. **Assessment Method Type:** Pre/Post Test		
Department - Computer Science (C S) - C S 19A - THEORY OF QUANTUM COMPUTING I - Applications of Quantum Logic - A successful student will be able to describe and derive the fundamental algorithms of quantum computing in the areas of teleportation, superdense coding and the quantum Fourier transform. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments which test the student's ability to describe and utilize quantum mechanical algorithms for computing. **Assessment Method Type:** Observation/Critique		
Department - Computer Science (C S) - C S 19B - THEORY OF QUANTUM	**Assessment Method:** Evaluation of student performance on		

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
COMPUTING II - Density Operator Formulation of Quantum Mechanics - A successful student will be able to use the density formulation of quantum mechanics to model non-orthogonal measurement and environmental noise in quantum computers. (Created By Department - Computer Science (C S)) **Start Date:** 11/01/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	homework and tests that require computational proficiency in density matrices and their application to noisy quantum systems. **Assessment Method Type:** Pre/Post Test **Target for Success:** Scores of 70% or better.		
Department - Computer Science (C S) - C S 1A - OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN JAVA - Java Control Structures and Methods - A successful student will be able to write and debug Java programs which make use of the fundamental control structures and method-building techniques common to all programming languages. Specifically, the student will use data types, input, output, iterative, conditional, and functional components of the language in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2018 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing the control structures and methods in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/07/2016 - After watching students make the same mistakes over and over again, I decided to add a sort of rubric to each assignment, titled "In order to receive full credit:" In this place I list all of the mistakes that students normally make and I word these mistakes in the affirmative. For example, I write "your program must have no duplicate code." I found that students didn't make these mistakes nearly as often after I added this to the assignments. I am happy to see that Canvas has a rubric area built in which is even more helpful to me and to the students. This does not seem to be enough however, as only 78% of the students in my two sections received 7/10 or better on the assignment "Branching Out" which is about control structures. This is not an improvement over the scores from Winter 2015 on the same assignment when the rubric was not given to them. **Result:** Target Not Met **Year This Assessment Occurred:** 2015-2016	12/07/2016 - I think that since I added a rubric my grading has become harder. Prior to giving an explicit rubric, I didn't take off the point when the student's solution included duplicate code and now I do. I will now have more points available for each assignment so that taking a point off does not result in such a bad grade.
		09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 85, 80, 80 respectively. However, these statistics don't include the drops, which occurred before	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		assignment #6. Overall course retention was only 55%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. New faculty hires starting this year should help push numbers higher. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Online TA or another full time instructor to take up large enrollments.	increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 80, 80, 86, 81, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 56%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
		03/31/2013 - This SLO was measured by lab assignments 2,3, 4 and 5 of the computer labs. The average scores were between 93%, 90%, 88% and 83%, respectively. Careful analysis of the individual assignments revealed, we met the	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 **GE/IL-SLO Reflection:** We will continue to use this SLO	
Department - Computer Science (C S) - C S 1A - OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN JAVA - Java OOP Design - A successful student will be able to use object-oriented programming techniques to design and implement a clear, well-structured Java program. Specifically, the student will use and design classes and objects in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2018 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing the classes and objects in the program **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/07/2016 - Assignment #6 asks the students to design a class where one object stores a list of integers. Students always have trouble understanding what this is for, so I have added to the assignment description some possible applications for such a class. The students' success rate (a score of 7 or better) on this assignment has gone from 90% to 93%. **Result:** Target Met **Year This Assessment Occurred:** 2015-2016	12/07/2016 - I would like to go through my assignments and make sure that all of them have a real world application that the students can relate to.
		09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 80, 80, 80 respectively. However, these statistics don't include the drops, which occurred before assignment #6. Overall course retention was only 55%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. New faculty hires starting this year should help push numbers higher. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Online TA or another full time instructor to take up large enrollments.	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 80, 80, 86, 81, respectively. Perusal showed that we met 7/10 goal on > 80% of students. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 56%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
		03/31/2013 - This SLO was measured by lab assignments 6, 7, 8 and 9 of the computer labs. The average scores were between 80%, 83%, 78% and 72%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 **GE/IL-SLO Reflection:** SLO was not quite as successful as the other SLO, but was still very good - we met our goal. No change recommended for the coming year.	
Department - Computer Science (C S) - C S 1AH - HONORS OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN	**Assessment Method:** Programming assignment that includes debugged source code and some evidence	12/07/2016 - This class has still not been offered. Now that the STEM Core is available for CS 1A, an honors section may not be necessary anymore.	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
JAVA - Java Control Structures and Methods - A successful student will be able to write and debug Java programs which make use of the fundamental control structures and method-building techniques common to all programming languages. Specifically, the student will use data types, input, output, iterative, conditional, and functional components of the language in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/01/2015 **End Date:** 12/31/2018 **Course-Level SLO Status:** Active	of a successful program run, testing the control structures and methods in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	**Result:** Target Not Met **Year This Assessment Occurred:** 2015-2016 09/13/2015 - Course will be taught for first time in Fall, 2015, so no reflection possible at this time. **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 1AH - HONORS OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN JAVA - Java OOP Design - A successful student will be able to use object-oriented programming techniques to design and implement a clear, well-structured Java program. Specifically, the student will use and design classes and objects in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/01/2015 **End Date:** 12/31/2018 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run testing OOP objects and classes in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/07/2016 - This class has still not been offered. Now that the STEM Core is available for CS 1A, an honors section may not be necessary anymore. **Result:** Target Not Met **Year This Assessment Occurred:** 2015-2016 09/13/2015 - Course will be taught for first time in Fall, 2015, so no reflection possible at this time. **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 1B - INTERMEDIATE SOFTWARE DESIGN IN JAVA - Java Inheritance - A successful	**Assessment Method:** Programming assignment that includes debugged source code and some evidence	09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 85, 80, 85 respectively. However, these statistics	11/10/2015 - Common action plan for all CS courses based on

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
student will be able to write and debug Java programs which make use of inheritance, i.e., the "is a" relationship, common to all OOP languages. Specifically, the student will define base and derived classes and use common techniques such as method chaining in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2018 **Course-Level SLO Status:** Active	of a successful program run, testing inheritance in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	don't include the drops, which occurred before assignment #6. Overall course retention was only 50%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. New faculty hires starting this year should help push numbers higher. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Online TA or another full time instructor to take up large enrollments.	common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 93, 90, 82, 88, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 31%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
		03/31/2013 - This SLO was measured by lab assignments 6, 7 and 8 of the computer labs. The average scores were 84%, 80% and 97%,	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drop-outs) by the fourth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 **Resource Request:** T/A for the course would be very useful if future budgets allow it.	
Department - Computer Science (C S) - C S 1B - INTERMEDIATE SOFTWARE DESIGN IN JAVA - Basic Java Abstract Data Types - A successful student will be able to use the Java environment to define the basic abstract data types (stacks, queues, lists) and iterators of those types to effectively manipulate the data in his or her program. (Created By Department - Computer Science (C S)) **Start Date:** 09/24/2012 **End Date:** 06/30/2018 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing a variety of abstract data types in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubr	09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 85, 80, 85 respectively. However, these statistics don't include the drops, which occurred before assignment #6. Overall course retention was only 50%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Online TA or another full time instructor to take up large enrollments.	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 93, 90, 82, 88, respectively. However, these	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 31%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20% **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
		06/18/2013 - Abstract Data Types were tested from week 8 onward, and students received the equivalent of an 7 or better at the rate of about 90% of enrolled members. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
		03/31/2013 - This SLO was measured by lab assignments 8 and 9 of the computer labs. The average scores were 97% and 91%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drop-outs) by the fourth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 **Resource Request:** T/A for the course would be very useful if future budgets allow it.	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Department - Computer Science (C S) - C S 1B - INTERMEDIATE SOFTWARE DESIGN IN JAVA - Java Generics - A successful student will be able to define and use Java generics to make their data and algorithms work with a variety of data types. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2018 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing a variety of Java generics in the program. **Assessment Method Type:** Observation/Critique	09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 85, 80, 85 respectively. However, these statistics don't include the drops, which occurred before assignment #6. Overall course retention was only 50%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Online TA or another full time instructor to take up large enrollments.	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 93, 90, 82, 88, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 31%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		in 40 hours/week. 06/18/2013 - Generics were tested from week 8 onward, and students received the equivalent of an 7/10 or better at the rate of about 80% of enrolled members. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 03/31/2013 - This SLO was measured by lab assignments 6. The average scores was 84%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 **GE/IL-SLO Reflection:** This SLO seems well met and no action needed for the coming year.	
Department - Computer Science (C S) - C S 1C - ADVANCED DATA STRUCTURES & ALGORITHMS IN JAVA - Time Complexity in Java - The successful student will be able to analyze the time complexity of a variety of algorithms and data structure access techniques and choose the best algorithm and/or data structure for the project at hand. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2018 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, measuring the time complexity of various sort, search or merge algorithms in a program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 80, 80, 90 respectively. However, these statistics don't include the drops, which occurred before assignment #6. Overall course retention was only 40%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. New faculty hires starting this year should help push numbers higher. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:**	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Online TA or another full time instructor to take up large enrollments.	and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 78, 89, 90, 86, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 47%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
		03/31/2013 - This SLO was measured by lab assignments 3, 5, 7 and 8 of the computer labs. The average scores were between 98%, 75%, 92% and 97%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 30% of the students (drop-outs) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 **GE/IL-SLO Reflection:** The SLO was successful as far as the students who stayed in the course. We will continue to keep the SLO in-tact, but we	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		should attempt to have more support for the students than can be provided by the instructor, alone. Tutors or class TAs would help. **Resource Request:** T/A for the course would be very useful if future budgets allow it.	
Department - Computer Science (C S) - C S 1C - ADVANCED DATA STRUCTURES & ALGORITHMS IN JAVA - Advanced Data Structures - The successful student will be able to write and incorporate balanced trees, hash tables, directed graphs and priority queues in his or her software. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2018 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignments that includ debugged source code and some evidence of successful program runs, demonstrating the use of each advanced data structure covered in the course. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 80, 80, 90 respectively. However, these statistics don't include the drops, which occurred before assignment #6. Overall course retention was only 40%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. New faculty hires starting this year should help push numbers higher. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Online TA or another full time instructor to take up large enrollments.	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 78, 89, 90, 86, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 47%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
		03/31/2013 - This SLO was measured by lab assignments 1, 2, and 9 of the computer labs. The average scores were between 94%, 79%, and 85%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 30% of the students (drop-outs) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 **GE/IL-SLO Reflection:** The SLO was successful as far as the students who stayed in the course. We will continue to keep the SLO in-tact, but we should attempt to have more support for the students than can be provided by the instructor, alone. Tutors or class TAs would help. **Resource Request:** T/A for the course would be very useful if future budgets allow it.	
Department - Computer Science (C S) - C S 1M - INTERMEDIATE ALGORITHM & DATA STRUCTURE METHODOLOGIES IN JAVA - Basic Java Abstract Data Types - A successful student will be able to use the Java environment to define the basic	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing a variety of abstract data types in the program.	09/13/2015 - Course being taught for first time in 2015-16 academic year so no reflections possible at this time. **Result:** Target Not Met **Year This Assessment Occurred:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
abstract data types (stacks, queues, lists) and iterators of those types to effectively manipulate the data in his or her program. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/01/2015 **End Date:** 07/31/2019 **Course-Level SLO Status:** Active	**Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	2014-2015	
Department - Computer Science (C S) - C S 1M - INTERMEDIATE ALGORITHM & DATA STRUCTURE METHODOLOGIES IN JAVA - Time Complexity in Java - The successful student will be able to analyze the time complexity of a variety of algorithms and data structure access techniques and choose the best algorithm and/or data structure for the project at hand. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/01/2015 **End Date:** 07/31/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, measuring the time complexity of various sort, search or merge algorithms in a program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	09/13/2015 - Course being taught for first time in 2015-16 academic year so no reflections possible at this time. **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 20A - PROGRAMMING IN C# - C# Control Structures and Methods - A successful student will be able to write and debug C# programs which make use of the fundamental control structures and method-building techniques common to all programming languages. Specifically, the student will use data types, input, output, iterative, conditional, and functional	**Assessment Method:** C# programming assignment that includes source code built from various control structures, input/output and data types common to C#.		

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
components of the language in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active			
Department - Computer Science (C S) - C S 20A - PROGRAMMING IN C# - C# OOP Design - A successful student will be able to use object-oriented programming techniques to design and implement a clear, well-structured Java program. Specifically, the student will use and design classes and objects in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** C# programming assignment that includes classes and objects in an efficient manner. **Assessment Method Type:** Observation/Critique		
Department - Computer Science (C S) - C S 21A - PROGRAMMING IN PYTHON - Python Control Structures and Methods - A successful student will be able to write and debug Python programs which make use of the fundamental control structures and method-building techniques common to all programming languages. Specifically, the student will use data types, input, output, iterative, conditional, and functional components of the language in his or her programs. (Created By Department - Computer Science (C S))	**Assessment Method:** Python programming assignment that includes debugged source code and some evidence of a successful use of control structures, methods, input and output as well as a smooth program run. **Assessment Method Type:** Observation/Critique	12/07/2016 - This class is designed for people who already know how to program, and so it is assumed that they already know about all of the topics mentioned in this objective and only need to learn the Python syntax for them. But many students who have no programming experience take CS 21A anyway. I have tried everything to talk them out of it, but they need the class for the GIS certificate. These students do not succeed, so I asked the GIS program to take CS 21A off of their list of electives for the GIS degree and instead put on the CS 3A class on the list. CS 3A is for people who have never programmed before.	12/07/2016 - I will ask the GIS program to take CS 21A off of their list of electives, since those students are not programmers. Instead, the GIS program will put CS 3A onto their list of electives 12/07/2016 - This class serves its target audience well. We just need to make sure that other, unprepared students, don't take it. I will continue

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Assessment Cycles: End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active		**Result:** Target Not Met **Year This Assessment Occurred:** 2015-2016	to ask every student on the first day what their background is, and encourage those that have never programmed before to take a different class.
		10/26/2015 - Of the students who finished the course, 80% had a 7/10 understanding of this SLO. This class had a good retention rate of >60%. It seemed that many of the students had taken some sort of programming course prior to this one and that helped their ability to master the concepts quickly. Of course, brand new college students who had not had any programming experience were still successful but the rigor of the course gave them a much greater challenge that they had to overcome. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **GE/IL-SLO Reflection:** Course does not always make due to enrollment. Consideration should be given to whether it can be maintained.	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		09/13/2015 - Of the students who finished the course, 85% had a 7/10 understanding of this SLO. This class had a good retention rate of 65%. It seemed that many of the students had taken some sort of programming course prior to this one and that helped their ability to master the concepts quickly. Of course, brand new college students who had not had any programming experience were still successful but the rigor of the course gave them a much greater challenge that they had to overcome.	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Result: Target Met **Year This Assessment Occurred:** 2014-2015	
		08/15/2014 - Of the students who finished the course, 88% had a 7/10 understanding of this SLO. This class had a good retention rate of 64%. It seemed that many of the students had taken some sort of programming course prior to this one and that helped their ability to master the concepts quickly. Of course, brand new college students who had not had any programming experience were still successful but the rigor of the course gave them a much greater challenge that they had to overcome. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** None.	
Department - Computer Science (C S) - C S 21A - PROGRAMMING IN PYTHON - Python OOP Design - A successful student will be able to use object-oriented programming techniques to design and implement a clear, well-structured Python program. Specifically, the student will use and design classes and objects in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Python programming assignment that includes classes and objects in an efficient manner. **Assessment Method Type:** Observation/Critique	12/07/2016 - The way that Python is used in the real world is different from the types of academic oriented assignments I have been using in this class. For example, most Python programs used today are not object oriented. That is why I would like to de-emphasize OOP in this class, and consult with people from industry to get some more realistic assignments that the students might be able to use in their work. **Result:** Target Not Met **Year This Assessment Occurred:** 2015-2016	12/07/2016 - I will speak with one of my contacts and talk to them about realistic assignments.
		10/26/2015 - Of the students who finished the course, 80% had a 7/10 understanding of this SLO. This class had a good retention rate of >60%. It seemed that many of the students had taken some sort of programming course prior to	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		this one and that helped their ability to master the concepts quickly. Of course, brand new college students who had not had any programming experience were still successful but the rigor of the course gave them a much greater challenge that they had to overcome. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		09/13/2015 - Of the students who finished the course, 85% had a 7/10 understanding of this SLO. This class had a good retention rate of 65%. It seemed that many of the students had taken some sort of programming course prior to this one and that helped their ability to master the concepts quickly. Of course, brand new college students who had not had any programming experience were still successful but the rigor of the course gave them a much greater challenge that they had to overcome. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		08/15/2014 - Of the students who finished the course, 88% had a 7/10 understanding of this SLO. This class had a good retention rate of 64%. It seemed that many of the students had taken some sort of programming course prior to this one and that helped their ability to master the concepts quickly. Of course, brand new college students who had not had any programming experience	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		were still successful but the rigor of the course gave them a much greater challenge that they had to overcome. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** None.	
Department - Computer Science (C S) - C S 21B - INTERMEDIATE PYTHON PROGRAMMING - Python Graphical User Interfaces - A successful student will be able to develop an event driven Python program that interacts with the user through a graphical user interface that employs windows, dialog boxes, buttons, menus and text fields. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/14/2015 **End Date:** 01/14/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Python programming assignment that includes debugged and documented code that includes successful interactions with the user through an easy-to-use graphical user interface. **Assessment Method Type:** Observation/Critique	10/26/2015 - Course was not offered in 2014/15 due to a combination of lack of student demand and qualified instructor to teach. We will consider whether to offer it in the coming year. **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Hire qualified faculty.	
Department - Computer Science (C S) - C S 21B - INTERMEDIATE PYTHON PROGRAMMING - Accessing Resources Over the Internet - A successful student will be able to develop a Python program that runs other programs, accesses a database, and transfers files over a network. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/14/2015	**Assessment Method:** A Python programming assignment that gets a query from the user and processes that query in a database that resides elsewhere on the network. **Assessment Method Type:** Observation/Critique	10/26/2015 - Course was not offered in 2014/15 due to a combination of lack of student demand and qualified instructor to teach. We will consider whether to offer it in the coming year. **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Hire qualified faculty.	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
End Date: 01/14/2019 **Course-Level SLO Status:** Active			
Department - Computer Science (C S) - C S 22A - JAVSCRIPT FOR PROGRAMMERS - Development Environment - Use a web application development environment that includes a browser, editor, debugger and code libraries. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing the control structures in the program. **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	10/26/2015 - Of the students who finished the course, 80% had a 7/10 understanding of this SLO. This class had a good retention rate of >60%. This is a basic course so should be able to sustain a better retention. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 09/13/2015 - For this rubric, 80% of the students were able to show 7/10 master or better. Retention was 60%, which is high for CS courses, so this was a good sign.Many students with a background in graphic design but no programming experience sign up for the course. The course is aimed at programmers so these students end up dropping the course or struggling in it. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 08/16/2014 - For this rubric, 83% of the students were able to show 7/10 master or better. Retention was 61%, which is high for CS courses, so this was a good sign.Many students with a background in graphic design but no programming experience sign up for the course. The course is aimed at programmers so these students end up dropping the course or struggling in it. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** None.	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Resource Request: None.	
Department - Computer Science (C S) - C S 22A - JAVSCRIPT FOR PROGRAMMERS - Quality JavaScript Programs - Write modifiable JavaScript programs that modify the DOM, respond to user events and make requests to the server. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Javascript program that is hosted on a web server. Instructor can interact with the program to gain access to data, and examine the source code to see that the programming style is acceptable. **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.		
	Assessment Method: Programming assignment that includes debugged source code, documentation and some evidence of a successful program run, testing the control structures and methods in the program. **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	10/26/2015 - Of the students who finished the course, 80% had a 7/10 understanding of this SLO. This class had a good retention rate of >60%. This is a basic course so should be able to sustain a better retention. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		09/13/2015 - For this rubric, 80% of the students were able to show 7/10 master or better. Retention was 60%, which is high for CS courses, so this was a good sign.Many students with a background in graphic design but no programming experience sign up for the course. The course is aimed at programmers so these students end up dropping the course or struggling in it. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		09/13/2015 - For this rubric, 80% of the students were able to show 7/10 master or better. Retention was 60%, which is high for CS courses, so this was a good sign.Many students with a background in graphic design but no programming experience sign up for the course. The course is aimed at	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		programmers so these students end up dropping the course or struggling in it. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		08/16/2014 - For this rubric, 83% of the students were able to show 7/10 master or better. Retention was 61%, which is high for CS courses, so this was a good sign.Many students with a background in graphic design but no programming experience sign up for the course. The course is aimed at programmers so these students end up dropping the course or struggling in it. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** None.	
Department - Computer Science (C S) - C S 26A - RUBY & FUNCTIONAL PROGRAMMING - Ruby Functional Design - A successful student will be able to use functional paradigm to design and implement a clear, well-structured Ruby program. Specifically, the student will immutability, currying, recursion and lazy evaluation in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 07/01/2015 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, incorporating the functional paradigm in the program **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.		

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Department - Computer Science (C S) - C S 2A - OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN C++ - C++ OOP Design - A successful student will be able to use object-oriented programming techniques to design and implement a clear, well-structured C++ program. Specifically, the student will use and design classes and objects in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing the classes and objects in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/06/2016 - In this course programming assignments form the bulk of the points students could earn towards their overall grade. At the time of writing students had completed all nine core programming labs (not including the extra credit programming assignment) and so we are able to look at the total scores on Labs 6-9 as indicators of student success. 54% of students have scored better than 7 on a 10 point rubric, which is below target. The overall success rate for CS2A is 65%, which compares roughly equivalently with the aggregate values at the PSME Division level (66%), All of Computer Science (66%), Foothill College (79%) Data also shows that successful course completion rates within targeted groups were at 50%, 40% and 67% for African American, Latino and Females respectively. These numbers compare with 38%, 48% and 70% from the year ago period. Unfortunately, these course-level breakdowns are based on statistically insignificant sample sizes **Result:** Target Not Met **Year This Assessment Occurred:** 2015-2016	12/06/2016 - Conversations with students during the final weeks of the quarter showed that a large number of them had enrolled with the wrong expectations only to find that they were unable to cope with the course load as the term progressed. In addition, the overall success rate would stand to improve by educating students entering these courses to have better expectations of the course demands. A primer or introductory course which gives a “taste” of the material would make sense, although we have not yet decided what such a course would look like. Promotion and marketing of the course amongst the target groups would do well to increase its exposure amongst promising students in these demographics. We have found varying degrees of success with the following teaching methodologies which appear promising and thus deserve more careful experimentation: Flipped class. Students are required to read the material before class and spend the bulk of each class coding hands-on, under the guidance and supervision of the instructor. Pair (or in some cases triplet) programming. Students program in groups of two, with driver (typer)

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
			and navigator (program coder) roles, switching roles at periodic intervals. A number of variations of this technique have been tried and the factor common to all of them is simply to get students to hunker down and code. Like swimming, programming is an active skill and learning happens only by doing. Hand-marked assignment feedback. Previously at least one instructor had anecdotal evidence that some students ignored feedback from instructors when it was supplied to them as typed text and that the rate at which feedback was heeded to improved when feedback was returned in the form of handwritten comments in red-ink on hardcopy. No substantial degradation in performance was found when the comments were made in red ink on an electronic PDF document. Since this appears to improve retention of key suggestions from the instructor, and thus learning, this technique is also worthy of further experimentation using proper controls and measurement. The action plan is in alignment with the common CS-level action plan which are to (1) reduce withdrawal and failure rate and (2) increase success rate in the targeted groups (African American, Latino and Female).

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 80, 85, 80, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 38%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 81, 79, 86, 83, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 38%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		in 40 hours/week.	
		03/31/2013 - This SLO was measured by lab assignments 6, 7, 8 and 9 of the computer labs. The average scores were between 85%, 93%, 87% and 80%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 **GE/IL-SLO Reflection:** Strong results indicating a continued use of this SLO for the coming year.	
	Assessment Method: Programming assignment that includes debugged source code and some evidence of a successful program run, testing the classes and objects in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.		
Department - Computer Science (C S) - C S 2A - OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN C++ - C++ Control Structures and Methods - A successful student will be able to write and debug C++ programs which make use of the fundamental control structures and method-building techniques common to all programming languages. Specifically, the student will use data types, input, output, iterative, conditional, and functional components of the language in his or her programs. (Created By Department - Computer Science (C S))	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing the control structures and methods in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/06/2016 - In this course programming assignments form the bulk of the points students could earn towards their overall grade. At the time of writing students had completed all nine core programming labs (not including the extra credit programming assignment) and so we are able to look at the total scores on Labs 6-9 as indicators of student success. 87% of students have scored better than 7 on a 10 point rubric, which is above target. **Result:** Target Met **Year This Assessment Occurred:** 2015-2016	12/06/2016 - Conversations with students during the final weeks of the quarter showed that a large number of them had enrolled with the wrong expectations only to find that they were unable to cope with the course load as the term progressed. In addition, the overall success rate would stand to improve by educating students entering these courses to have better expectations

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Assessment Cycles: End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active			of the course demands. A primer or introductory course which gives a “taste” of the material would make sense, although we have not yet decided what such a course would look like.
		09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 80, 85, 80, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 38%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 81, 79, 86, 83, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 38%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Target Not Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
		03/31/2013 - This SLO was measured by lab assignments 2, 3, 4 and 5 of the computer labs. The average scores were between 97%, 95%, 91% and 98%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 **GE/IL-SLO Reflection:** Extremely positive results for this SLO. Will keep in place for coming year.	
Department - Computer Science (C S) - C S 2AH - HONORS OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN C++ - C++ Control Structures and Methods - A successful student will be able to write and debug C++ programs which make use of the fundamental control structures and method-building techniques common to all programming languages. Specifically, the student will use data types, input, output, iterative, conditional, and functional components of the language in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/01/2015	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing the control structures and methods in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	09/13/2015 - to be taught for first time in 2015-16 or 61-17. **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
End Date: 12/31/2019 **Course-Level SLO Status:** Active			
Department - Computer Science (C S) - C S 2AH - HONORS OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN C++ - C++ OOP Design - A successful student will be able to use object-oriented programming techniques to design and implement a clear, well-structured C++ program. Specifically, the student will use and design classes and objects in his or her programs. (Created By Department - Computer Science (C S)) **Start Date:** 01/01/2015 **End Date:** 12/31/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing OOP, classes and objects in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	09/13/2015 - to be taught for first time in 2015-16 or 61-17. **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 2B - INTERMEDIATE SOFTWARE DESIGN IN C++ - C++ Inheritance - A successful student will be able to write and debug C++ programs which make use of inheritance, i.e., the "is a" relationship, common to all OOP languages. Specifically, the student will define base and derived classes and use common techniques such as method chaining in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing inheritance in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/06/2016 - In this course programming assignments form the bulk of the points students could earn towards their overall grade. Labs 1-3 are indicators of student success for this SLO. 66% of students have scored better than 7 on a 10 point rubric, which is below target. The overall success rate for CS2A is 65%, which compares roughly equivalently with the aggregate values at the PSME Division level (66%), All of Computer Science (66%), Foothill College (79%) Data also shows that successful course completion rates within targeted groups were at 75%, 56% and 67% for African American, Latino and Females respectively. These numbers compare with 0%, 75% and 84% from the year ago period. Unfortunately, these course-level breakdowns are based on statistically insignificant sample sizes **Result:** Target Not Met	12/06/2016 - Statistics in the reflections do not include student drops, which occurred around week 5 and earlier. Conversations with students who dropped showed that a large number of them had enrolled with the wrong expectations only to find that they were unable to cope with the course load as the term progressed, or that they had assumed this would be an “easy” course. The retention rate would stand to improve by educating students entering these courses to have better expectations of the course demands.

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Year This Assessment Occurred: 2015-2016	Promotion and marketing of the course amongst the target groups would do well to increase its exposure amongst promising students in these demographics. We have found varying degrees of success with the following teaching methodologies which appear promising and thus deserve more careful experimentation: Flipped class. Students are required to read the material before class and spend the bulk of each class coding hands-on, under the guidance and supervision of the instructor. Pair (or in some cases triplet) programming. Students program in groups of two, with driver (typer) and navigator (program coder) roles, switching roles at periodic intervals. A number of variations of this technique have been tried and the factor common to all of them is simply to get students to hunker down and code. Like swimming, programming is an active skill and learning happens only by doing. Hand-marked assignment feedback. Previously at least one instructor had anecdotal evidence that some students ignored feedback from instructors when it was supplied to

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
			them as typed text and that the rate at which feedback was heeded to improved when feedback was returned in the form of handwritten comments in red-ink on hardcopy. No substantial degradation in performance was found when the comments were made in red ink on an electronic PDF document. Since this appears to improve retention of key suggestions from the instructor, and thus learning, this technique is also worthy of further experimentation using proper controls and measurement. The action plan is in alignment with the common CS-level action plan which are to (1) reduce withdrawal and failure rate and (2) increase success rate in the targeted groups (African American, Latino and Female). CS continues to be understaffed, and the addition of one or more FT faculty members would benefit the expansion of class sizes, giving us the flexibility to collect data from more experiments on effective teaching methodologies for student success. Having more embedded tutors within classes would also significantly improve student retention. Although the instructor was fully engaged in helping students, past experiments with an instructional assistant have shown that this could improve retention by

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
			20%.
		09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 90, 80, 90, respectively. However, these statistics don't include the drops, which occurred before assignment #6. Overall course retention was only 35%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 92, 75, 86, 93, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 32%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
		03/31/2013 - This SLO was measured by lab assignments 6, 7 and 8 of the computer labs. The average scores were 84%, 80% and 97%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drop-outs) by the fourth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 **Resource Request:** T/A for the course would be very useful if future budgets allow it.	
Department - Computer Science (C S) - C S 2B - INTERMEDIATE SOFTWARE DESIGN IN C++ - Basic C++ Abstract Data Types - A successful student will be able to use the C++ environment to define the basic abstract data types (stacks, queues, lists) and iterators of those types to effectively manipulate the data in his or her program. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing a variety of abstract data types in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/06/2016 - Labs 4-6 are indicators of student success for this SLO. 85% of students have scored better than 7 on a 10 point rubric, which is above target. The overall success rate for CS2A is 65%, which compares roughly equivalently with the aggregate values at the PSME Division level (66%), All of Computer Science (66%), Foothill College (79%). It is encouraging to note the success of various teaching methodologies employed during the course which resulted in a dramatic improvement in student abilities during this intermediate section of the course (compared to the initial section). Data also shows that successful course completion rates within targeted groups were at 75%, 56% and 67% for African American, Latino	12/06/2016 - Statistics in the reflections do not include student drops, which occurred around week 5 and earlier. Conversations with students who dropped showed that a large number of them had enrolled with the wrong expectations only to find that they were unable to cope with the course load as the term progressed, or that they had assumed this would be an “easy” course. The retention rate would stand to improve by educating students entering these courses to have better expectations of the course demands. Promotion and marketing of the

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		and Females respectively. These numbers compare with 0%, 75% and 84% from the year ago period. Unfortunately, these course-level breakdowns are based on statistically insignificant sample sizes **Result:** Target Met **Year This Assessment Occurred:** 2015-2016	course amongst the target groups would do well to increase its exposure amongst promising students in these demographics.
		09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 90, 80, 90, respectively. However, these statistics don't include the drops, which occurred before assignment #6. Overall course retention was only 35%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 92, 75, 86, 93, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 32%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%.	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Result: Target Not Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
		03/31/2013 - This SLO was measured by lab assignments 8 and 9 of the computer labs. The average scores were 97% and 91%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drop-outs) by the fourth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 **Resource Request:** T/A for the course would be very useful if future budgets allow it.	
Department - Computer Science (C S) - C S 2B - INTERMEDIATE SOFTWARE DESIGN IN C++ - C++ Templates - A successful student will be able to define and use C++ templates to make their data and algorithms work with a variety of data types. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/23/2012 **End Date:** 06/30/2019 **Course-Level SLO Status:**	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing a variety of C++ templates in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/06/2016 - Labs 7-9 are indicators of student success for this SLO. 93.31% of students have scored better than 7 on a 10 point rubric, which is well above target. The overall success rate for CS2A is 65%, which compares roughly equivalently with the aggregate values at the PSME Division level (66%), All of Computer Science (66%), Foothill College (79%). It is encouraging to note the success of various teaching methodologies employed during the course which resulted in a dramatic improvement in student abilities during this intermediate section of the course (compared to the initial section).	12/06/2016 - Statistics in the reflections do not include student drops, which occurred around week 5 and earlier. Conversations with students who dropped showed that a large number of them had enrolled with the wrong expectations only to find that they were unable to cope with the course load as the term progressed, or that they had assumed this would be an “easy” course. The retention rate would stand to

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Active		Data also shows that successful course completion rates within targeted groups were at 75%, 56% and 67% for African American, Latino and Females respectively. These numbers compare with 0%, 75% and 84% from the year ago period. Unfortunately, these course-level breakdowns are based on statistically insignificant sample sizes. **Result:** Target Met **Year This Assessment Occurred:** 2015-2016	improve by educating students entering these courses to have better expectations of the course demands. Promotion and marketing of the course amongst the target groups would do well to increase its exposure amongst promising students in these demographics.
		09/13/2015 - Average scores on assignments #6, 7 and 8 (which included skill on this rubric) were 90, 80, 90, respectively. However, these statistics don't include the drops, which occurred before assignment #6. Overall course retention was only 35%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 92, 75, 86, 93, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		was only 32%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
		03/31/2013 - This SLO was measured by lab assignments 6. The average scores was 84%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 2C - ADVANCED DATA STRUCTURES & ALGORITHMS IN C++ - Time Complexity in C++ - The successful student will be able to analyze the time complexity of a variety of algorithms and data structure access techniques and choose the best algorithm and/or data structure for the project at hand. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2019 **Course-Level SLO Status:**	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, measuring the time complexity of various sort, search or merge algorithms in a program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/06/2016 - In this course programming assignments form the bulk of the points students could earn towards their overall grade. Labs 1-3 are indicators of student success for this SLO. 57.14% of students have scored better than 7 on a 10 point rubric, which is below target. The overall success rate for CS2A is 65%, which compares roughly equivalently with the aggregate values at the PSME Division level (66%), All of Computer Science (66%), Foothill College (79%) Data also shows that successful course completion rates within targeted groups were at 75%, 56% and 67% for African American, Latino and Females respectively. These numbers compare with 0%, 75% and 84% from the year ago period. Unfortunately, these course-level	12/06/2016 - Statistics in the reflections do not include student drops, which occurred around week 5 and earlier. Conversations with students who dropped showed that a large number of them had enrolled with the wrong expectations only to find that they were unable to cope with the course load as the term progressed, or that they had assumed this would be an “easy” course. The retention rate would stand to improve by educating students entering these courses to have

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Active		breakdowns are based on statistically insignificant sample sizes. **Result:** Target Not Met **Year This Assessment Occurred:** 2015-2016	better expectations of the course demands. Promotion and marketing of the course amongst the target groups would do well to increase its exposure amongst promising students in these demographics. We have found varying degrees of success with the following teaching methodologies which appear promising and thus deserve more careful experimentation: Flipped class. Students are required to read the material before class and spend the bulk of each class coding hands-on, under the guidance and supervision of the instructor. Pair (or in some cases triplet) programming. Students program in groups of two, with driver (typer) and navigator (program coder) roles, switching roles at periodic intervals. A number of variations of this technique have been tried and the factor common to all of them is simply to get students to hunker down and code. Like swimming, programming is an active skill and learning happens only by doing. Hand-marked assignment feedback. Previously at least one instructor had anecdotal evidence that some students ignored feedback from instructors when it was supplied to them as typed text and that the rate at which feedback was heeded to

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
			improved when feedback was returned in the form of handwritten comments in red-ink on hardcopy. No substantial degradation in performance was found when the comments were made in red ink on an electronic PDF document. Since this appears to improve retention of key suggestions from the instructor, and thus learning, this technique is also worthy of further experimentation using proper controls and measurement. The action plan is in alignment with the common CS-level action plan which are to (1) reduce withdrawal and failure rate and (2) increase success rate in the targeted groups (African American, Latino and Female). CS continues to be understaffed, and the addition of one or more FT faculty members would benefit the expansion of class sizes, giving us the flexibility to collect data from more experiments on effective teaching methodologies for student success. Having more embedded tutors within classes would also significantly improve student retention. Although the instructor was fully engaged in helping students, past experiments with an instructional assistant have shown that this could improve retention by 20%.

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		09/13/2015 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 85, 90, 95, 95, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 45%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 82, 91, 91, 97, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 50%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		06/18/2013 - This was measured in week 4 (lab #3) and selected labs thereafter. Students consistently computed accurate time complexity and compared their predictions with lab results. More than 80% of the students - approximately 90% - demonstrated understanding of this concept and its use in evaluating algorithms. The only area of improvement was in overall retention. The course is difficult and had a large drop-out rate, not due to this rubric, specifically. We continue to work on that aspect. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 2C - ADVANCED DATA STRUCTURES & ALGORITHMS IN C++ - Advanced Data Structures - The successful student will be able to write and incorporate balanced trees, hash tables, directed graphs and priority queues in his or her software. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignments that includ debugged source code and some evidence of successful program runs, demonstrating the use of each advanced data structure covered in the course. **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/06/2016 - Labs 5-9 are indicators of student success for this SLO. 71.43% of students have scored better than 7 on a 10 point rubric, which is below target. The overall success rate for CS2A is 65%, which compares roughly equivalently with the aggregate values at the PSME Division level (66%), All of Computer Science (66%), Foothill College (79%) Data also shows that successful course completion rates within targeted groups were at 75%, 56% and 67% for African American, Latino and Females respectively. These numbers compare with 0%, 75% and 84% from the year ago period. Unfortunately, these course-level breakdowns are based on statistically insignificant sample sizes. **Result:** Target Not Met **Year This Assessment Occurred:** 2015-2016	12/06/2016 - Statistics in the reflections do not include student drops, which occurred around week 5 and earlier. Conversations with students who dropped showed that a large number of them had enrolled with the wrong expectations only to find that they were unable to cope with the course load as the term progressed, or that they had assumed this would be an “easy” course. The retention rate would stand to improve by educating students entering these courses to have better expectations of the course demands. Promotion and marketing of the course amongst the target groups would do well to increase its exposure amongst promising

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
			students in these demographics. We have found varying degrees of success with the following teaching methodologies which appear promising and thus deserve more careful experimentation: Finally, CS2C is recognized to be a “hard” course. We must review the student success criterion and consider whether the requirement of having > 80% of the students scoring 7/10 or better makes sense in context.
		09/13/2015 - Average scores on assignments #5, 6, 7 and 8 (which included skill on this rubric) were 85, 90, 95, 95, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 45%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	11/10/2015 - Common action plan for all CS courses based on common goals: reduce withdrawals and failure rate in the course and increase success rate in targeted groups 1. Add full-time and qualified adjunct faculty capable of teaching most offered courses. 2. Place embedded tutors in classes with markedly low completion or success. 3. Obtain support and resources for online version of the course to compensate for missing functionality in new CMS (Canvas) and if resourced are not adequate, cap seat count at the published maximum to give each student time and attention necessary in light of extra time needed to adapt to new CMS.
		08/14/2014 - Average scores on assignments #5,	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		6, 7 and 8 (which included skill on this rubric) were 82, 91, 91, 97, respectively. However, these statistics don't include the drops, which occurred before assignment #5. Overall course retention was only 50%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
		06/18/2013 - Lab assignments #4, #5, #6 and #9 measure this rubric. Of those students who were in the course during each of those weeks (there was attrition due to overall difficulty with the course, not this rubric specifically) 80% or more of the students did demonstrate a very high degree of competence in these data structures. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 2M - INTERMEDIATE ALGORITHM & DATA STRUCTURE METHODOLOGIES IN C++ - Basic C++ Abstract Data Types - A successful student will be able to use the C++ environment to define the basic abstract data types (stacks, queues, lists) and iterators of those types to effectively manipulate the data in his or her program. (Created By Department - Computer Science (C S))	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing a variety of abstract data types in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	09/13/2015 - new course will be taught in upcoming year. no reflection possible at this time. **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Assessment Cycles: End of Academic Year **Start Date:** 06/01/2015 **End Date:** 07/31/2019 **Course-Level SLO Status:** Active			
Department - Computer Science (C S) - C S 2M - INTERMEDIATE ALGORITHM & DATA STRUCTURE METHODOLOGIES IN C++ - Time Complexity in C++ - The successful student will be able to analyze the time complexity of a variety of algorithms and data structure access techniques and choose the best algorithm and/or data structure for the project at hand. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/01/2015 **End Date:** 07/31/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, measuring the time complexity of various sort, search or merge algorithms in a program. **Assessment Method Type:** Observation/Critique	09/13/2015 - new course will be taught in upcoming year. no reflection possible at this time. **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 30A - INTRODUCTION TO LINUX & UNIX - Unix/Linux Operating System Components - A successful student will be able to describe the various aspects of the Unix operating system from a user and administrator perspective. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:**	**Assessment Method:** Written tests which measure the student's knowledge of specific attributes of different Unix flavors. **Assessment Method Type:** Pre/Post Test	09/13/2015 - The rubric that cover this SLO showed the following percentage of students were successful in this area: Total: 80%. This SLO is based on material taught early in the course and generally students turned in more work near the beginning of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 08/16/2014 - The rubric that cover this SLO showed the following percentage of students were successful in this area:	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
06/30/2019 **Course-Level SLO Status:** Active		Total: 75%. This SLO is based on material taught early in the course and generally students turned in more work near the beginning of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** None.	
Department - Computer Science (C S) - C S 30A - INTRODUCTION TO LINUX & UNIX - Unix/Linux Operating System Configuration and Control - A successful student will be able to perform basic sysadmin tasks, write simple shell scripts, make changes to the OS file system and use regular expressions for searching the file system. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments which require the student to perform basic Unix tasks like writing shell scripts and making changes to the OS file systems. **Assessment Method Type:** Observation/Critique	09/13/2015 - The rubric that cover this SLO showed the following percentage of students were successful in this area: Total: 80%. This SLO is based on material taught early in the course and generally students turned in more work near the beginning of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		08/16/2014 - The rubric that cover this SLO showed the following percentage of students were successful in this area: Total: 69%. This percentage is based on students who stayed in the course (did not drop), but did not necessarily complete all of the work in the class and generally students turned in more work near the beginning of the quarter than the end of the quarter. The percentages are a lot higher if we take out students who did not complete the rubric work. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Resource Request: None.	
Department - Computer Science (C S) - C S 30B - LINUX & UNIX SHELL PROGRAMMING - BASH Fundamentals - A successful student will be able to code basic commands in the BASH programming environment using a structured approach that shows mastery of the write/test/debug cycle. In particular, the student will be able to use arrays, iterative and conditional structures, sorts, regular expressions and nesting in shell scripts. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments which require the student to write scrips in the OS shell, BASH, that exercise the various control structures. **Assessment Method Type:** Observation/Critique	10/26/2015 - Of the students who finished the course, 80% had a 7/10 understanding of this SLO. This class had a good retention rate of 60%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** TAs and full time hire to help with retention.	
Department - Computer Science (C S) - C S 30B - LINUX & UNIX SHELL PROGRAMMING - Scripting Techniques - A successful student will be able to make us of redirection, pipes, advanced regular expressions, awk, jobs, signals and other advanced scripting techniques. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments that require the use of advanced scripting techniques like pipes, awk and regular expressions. **Assessment Method Type:** Observation/Critique	10/26/2015 - Of the students who finished the course, 80% had a 7/10 understanding of this SLO. This class had a good retention rate of 60%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** TAs and full time hire to help with retention.	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Department - Computer Science (C S) - C S 30C - LINUX & UNIX SYSTEM ADMINISTRATION - Unix/Linux System Set-up and Responsibilities - A successful student will be able to configure an OS and be capable of planning for the routine maintenance of the system's many components. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments that require the student to configure a Unix/Linux OS. **Assessment Method Type:** Observation/Critique	10/26/2015 - Of the students who finished the course, 80% had a 7/10 understanding of this SLO. This class had a good retention rate of 70%. This is an advanced course and has a limited audience, but those that enroll tend to succeed. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 30C - LINUX & UNIX SYSTEM ADMINISTRATION - Advanced System Management - A successful student will be able to manage and repair the many aspects of the operating system including networking, file sharing, accounting, logging, printing and disk file system. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments that challenge the student to manage and repair aspects or the operating system. **Assessment Method Type:** Interviews/Focus Groups	10/26/2015 - Of the students who finished the course, 80% had a 7/10 understanding of this SLO. This class had a good retention rate of 70%. This is an advanced course and has a limited audience, but those that enroll tend to succeed. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 31A - INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS - Database Design - Create a conceptual database design (Created By Department - Computer Science (C S))	**Assessment Method:** Design a database with at least 10 fields in each record. **Assessment Method Type:** Observation/Critique **Target for Success:** Processes used in industry are employed to	09/13/2015 - Based on those assignments that addressed this SLO about 80% had an understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 45%. Instructor was fully engaged in helping students, and past	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Assessment Cycles: End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	design a database that can be used efficiently.	experiments with an online instructional assistant, showed that this could improve retention by 20%. A significant percentage of students seemed to have had initial misconceptions about the formalisms required to develop and understand the concepts of Database Systems (Relational Algebra, Normal Forms). **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		08/15/2014 - Based on those assignments that addressed this SLO about 87% (13 out of 15 students) had an understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 43%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. A significant percentage of students seemed to have had initial misconceptions about the formalisms required to develop and understand the concepts of Database Systems (Relational Algebra, Normal Forms). **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Online course assistant would certainly improve retentiion	
Department - Computer Science (C S) - C S 31A - INTRODUCTION TO DATABASE MANAGEMENT SYSTEMS - Querying a Database - Use Structured Query Language to perform queries on a database (Created By Department - Computer Science (C S))	**Assessment Method:** Perform queries to generate a report on a database using SQL **Assessment Method Type:** Observation/Critique **Target for Success:**	09/13/2015 - Based on those assignments that addressed this SLO about 80% had an understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 45%. Instructor was fully	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Assessment Cycles: End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	Queries are expressed efficiently in SQL and the resulting reports are easy for humans to read.	engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. A significant percentage of students seemed to have had initial misconceptions about the formalisms required to develop and understand the concepts of Database Systems (Relational Algebra, Normal Forms). **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		08/15/2014 - Based on those assignments that addressed this SLO about 87% (13 out of 15 students) had an understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 43%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. A significant percentage of students seemed to have had initial misconceptions about the formalisms required to develop and understand the concepts of Database Systems (Relational Algebra, Normal Forms). **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Online course assistant would certainly improve retentiion	
Department - Computer Science (C S) - C S 3A - OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN PYTHON - Python Control Structures and Functions - A successful student will be able to write and debug Python programs which make use of	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing the control structures and methods in the program.	12/07/2016 - The students who took this class did well and the average on all assignments was over 80%. However, the class was small last year and it was cancelled to lack of enrollment this Fall '16. Since the Python language is easier than Java or C++, we would do well to funnel many of our	12/07/2016 - I need to advertise this class to other departments on campus. Many other disciplines use Python in their jobs (like GIS) and this class is perfect for those students because it covers the

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
the fundamental control structures and function-building techniques common to all programming languages. Specifically, the student will use data types, input, output, iterative, conditional, and functional components of the language in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	beginning programming students into this class. **Result:** Target Met **Year This Assessment Occurred:** 2015-2016 10/26/2015 - New course will be taught in upcoming year. no reflection possible at this time. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Hire qualified faculty.	fundamentals of computer science as well as a practical programming language that they can use in their subsequent careers.
Department - Computer Science (C S) - C S 3A - OBJECT-ORIENTED PROGRAMMING METHODOLOGIES IN PYTHON - Python OOP Design - A successful student will be able to use object-oriented programming techniques to design and implement a clear, well-structured Python program. Specifically, the student will use and design classes and objects in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing the classes and objects in the program **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/07/2016 - The assignments in this class covered both Object Oriented Programming and Procedural Programming. Procedural Programming is more common in the real world but not as commonly seen in academic programming classes. The students in this class Win '16 had the hardest time with the procedural programming assignment (81% successful) vs the success with the object oriented programming assignment (93-100%). **Result:** Target Met **Year This Assessment Occurred:** 2015-2016 10/26/2015 - New course will be taught in upcoming year. no reflection possible at this time. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Hire qualified faculty.	12/07/2016 - I will emphasize procedural programming in lectures and class activities. I will consider re -ordering the assignments so that students don't have to switch from OOP to procedural and back again.

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Department - Computer Science (C S) - C S 40A - SOFTWARE ENGINEERING METHODOLOGIES - Iterative Development - Use an iterative, agile process to develop a quality software product (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assign group projects that employ the agile process and demonstrate iterative approach to designing a software product. **Assessment Method Type:** Observation/Critique	09/13/2015 - Based on those assignments that addressed this SLO about 95% had an understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 60%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		08/15/2014 - Based on those assignments that addressed this SLO about 100% (15 out of 15 students) had an understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 58%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Online course assistant would certainly improve retentiion	
Department - Computer Science (C S) - C S 40A - SOFTWARE ENGINEERING METHODOLOGIES - MVC - Design a computer program that employs the Model/View/Controller pattern (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year	**Assessment Method:** Programming assignments which require the student to implement the model/view/controller pattern. **Assessment Method Type:** Observation/Critique	09/13/2015 - Based on those assignments that addressed this SLO about 95% had an understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 60%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant,	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Start Date: 06/30/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active		showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		08/15/2014 - Based on those assignments that addressed this SLO about 100% (15 out of 15 students) had an understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 58%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Online course assistant would certainly improve retentiion	
Department - Computer Science (C S) - C S 49 - FOUNDATIONS OF COMPUTER PROGRAMMING - Control Structures and Methods - A successful student will be able to write and debug computer programs which make use of the fundamental control structures and method-building techniques common to all programming languages. Specifically, the student will use data types, input, output, iterative, conditional, and functional components of the language in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:**	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, testing the control structures and methods in the program. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	12/07/2016 - This class has only been offered for three years now. We created it so that students who cannot complete our CS 1A, 2A nor 3A have a smaller amount of material to cover in one quarter. Looking at the completion data over the last three years for this course I see that more and more students are enrolling and more and more student are completing this successfully. The completion rate over the last two years went from 50% to 56% so we are headed in the right direction. **Result:** Target Met **Year This Assessment Occurred:** 2015-2016	
		09/13/2015 - Based on those assignments that addressed this SLO about 80% had an	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
06/30/2019 **Course-Level SLO Status:** Active		understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 55%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. A handful of students did very well so it is encouraging. The students are young and old and from all backgrounds. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		08/15/2014 - Based on those assignments that addressed this SLO about 80% had an understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 55%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. A handful of students did very well so it is encouraging. The students are young and old and from all backgrounds. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Online course assistant would certainly improve retentiion	
Department - Computer Science (C S) - C S 49 - FOUNDATIONS OF COMPUTER PROGRAMMING - Object Oriented Design - A successful student will be able to use object-oriented programming techniques to design and implement a clear, well-	**Assessment Method:** A successful student will be able to describe the algorithms used in programs by clear documentation. **Target for Success:** Evaluation of programs in which students	12/07/2016 - Now that this class is firmly entrenched in our curriculum, we need to advertise it so that departments across campus that want their majors to know some computer science can encourage their students to take it. **Result:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
structured computer program. Specifically, the student will use and design classes and objects in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	achieve a score of 7 on a scale of 10. 80% of students should meet this.	Target Met **Year This Assessment Occurred:** 2015-2016 09/13/2015 - Based on those assignments that addressed this SLO about 80% had an understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 55%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. A handful of students did very well so it is encouraging. The students are young and old and from all backgrounds. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 08/15/2014 - Based on those assignments that addressed this SLO about 80% had an understanding that was 7/10 or better. However, these statistics don't include the drops, which occurred before week five. Overall course retention was only 55%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. A handful of students did very well so it is encouraging. The students are young and old and from all backgrounds. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Online course assistant would certainly improve retentiion	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Department - Computer Science (C S) - C S 50A - NETWORK FUNDAMENTALS (CCNA) - Network Communications - The student will demonstrate an understanding of communications between two hosts on an IP network connected by an arbitrary collection of routers and switches. The student will perform a lab experiment requiring them to analyze the flow of data between two host using Wireshark or Packet Tracer. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Course-Level SLO Status:** Active	**Assessment Method:** The student will successfully design and configure a network **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will successfully complete the lab exercise	01/20/2016 - This SLO was measured by lab assignments 6 of the computer labs. The average scores were between 90%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 40% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		06/30/2013 - This SLO was measured by lab assignments 6 of the computer labs. The average scores were between 90%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 40% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 50A - NETWORK FUNDAMENTALS (CCNA) - OSI Model - The student demonstrate understanding of the role of IP addressing in the TCP/IP Network Reference Model in Networking. (Created By Department - Computer Science (C S)) **Course-Level SLO Status:** Active	**Assessment Method:** The student will be tested in chapter 6 exam on their understanding of IP address and subnet masks through the use of a multiple choice test. **Assessment Method Type:** Pre/Post Test **Target for Success:** Target for Success: 80% of the students will get a score of 70 or better on a 100 point rubric.	01/20/2016 - This SLO was measured by lab assignments 6 of the computer labs. The average scores were between 80%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 40% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Year This Assessment Occurred: 2014-2015	
		11/10/2013 - This SLO was measured by questions on the chapter 6 exam. The average score was 85%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 50B - IP ROUTING PROTOCOL FUNDAMENTALS (CCNA) - Routing Protocols - The student will demonstrate the ability to configure the interior gateway routing protocols RIP, RIPv2, OSPF, and EIGRP. (Created By Department - Computer Science (C S)) **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The students will complete laboratory experiments design to demonstrate their understanding and ability to configure and debug network configurations employing RIP, RIPv2, OSPF, and EIGRP. **Assessment Method Type:** Observation/Critique **Target for Success:** Target for Success: 80% of the students will get a score of 7 or better on a 10 point rubric in the Lb experiments.	01/20/2016 - This SLO was measured by lab assignments 3, 4, 7, and 11 of the computer labs. The average scores were between 80%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 70% of the students. However, these results don't reflect an attrition of about 30% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		06/30/2012 - This SLO was measured by lab assignments 3, 4, 7, and 11 of the computer labs. The average scores were between 80%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 25% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Department - Computer Science (C S) - C S 50B - IP ROUTING PROTOCOL FUNDAMENTALS (CCNA) - Selection of Interior Gateway Routing Protocols - The student will demonstrate the process of selecting the appropriate routing protocol for specific network requirements. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/30/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The student will perform a laboratory experiment requiring them to design a layer 3 network to satisfy specific size and performance requirements. **Assessment Method Type:** Observation/Critique **Target for Success:** Target for Success: 80% of the students will get a score of 7 or better on a 10 point rubric.	01/20/2016 - This SLO was measured by lab assignment 3 of the computer labs. The average scores was 85%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 06/30/2013 - This SLO was measured by lab assignments 11 of the computer labs. The average scores were between 90%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 25% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 50C - THE LOCAL AREA NETWORK: ETHERNET & WIRELESS NETWORKS - LAN Design - The student will demonstrate knowledge of the Composite LAN Design Model. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The students will be tested in a multiple choice exam which requires them to demonstrate knowledge of the Composite LAN Design Model. They will be asked to demonstrate knowledge of the purpose and use of each layer and of the tools and designed techniques to ensure reliability, availability, and security in the network, **Assessment Method Type:** Pre/Post Test **Target for Success:** Target for Success: 80% of the students will get a score of 70 or better on a 100 point rubric.	06/30/2013 - This SLO was measured by questions on the chapter 1 exam. The average score was 83%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 06/30/2013 - This SLO was measured by questions on the chapter 5 exam. The average score was 78%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 50C - THE LOCAL AREA NETWORK: ETHERNET & WIRELESS NETWORKS - Spanning Tree Protocol - The student will demonstrate knowledge of the Spanning Tree and Rapid Spanning Tree protocols. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The student will be given a set of criteria for the design of a network using Spanning Tree and ask to select the appropriate protocol, design the topology, and test and analyze the results. **Assessment Method Type:** Observation/Critique **Target for Success:** Target for Success: 80% of the students will get a score of 7 or better on a 10 point rubric.	01/20/2016 - This SLO was measured by questions on the chapter 5 exam. The average score was 85%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 50D - INTRODUCTION TO WIDE AREA NETWORKS, NETWORK SECURITY & IP ADDRESSING SERVICES - WAN Design - The student will demonstrate knowledge of the design and configuration of Wide Area Networks utilizing point-to-point (PPP) and point-to-multipoint (Frame Relay) topologies. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The student will be given a specific communications requirement and asked to determine the appropriate protocol to deploy and then to design, deploy, and verify the configuration of the network. **Assessment Method Type:** Observation/Critique **Target for Success:** Target for Success: 80% of the students will get a score of 7 or better on a 10 point rubric.	01/20/2016 - This SLO was measured by exam 3. The average scores was 80%, respectively. Careful analysis of the assignment revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 30% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		06/30/2013 - This SLO was measured by lab assignments 2 & 3 of the computer labs. The average scores were between 90%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 40% of the students (drops/withdrawals) by the sixth week of the quarter.	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Result: Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 50D - INTRODUCTION TO WIDE AREA NETWORKS, NETWORK SECURITY & IP ADDRESSING SERVICES - Network Security - The student will demonstrate the ability to secure a local area and wide area network. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The students will be tested using a multiple choice exam designed to determine their knowledge of current security requirements and the deployment of secure LANs and WANs. **Assessment Method Type:** Pre/Post Test **Target for Success:** Target for Success: 80% of the students will get a score of 70 or better on a 100 point rubric.	01/20/2016 - This SLO was measured by lab assignment 3 of the computer labs. The average scores was 85%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		06/30/2013 - This SLO was measured by questions on the chapter 4 exam. The average score was 86%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 50E - INTRODUCTION TO IP NETWORK SECURITY - Firewalls - The student will demonstrate the ability to configure and use firewalls to provide security for a campus network. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active			
Department - Computer Science (C S) - C S 50E - INTRODUCTION TO IP NETWORK			

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
SECURITY - Intrusion Prevention - The student will demonstrate the configuration use of Intrusion Prevention Systems to increase the security of a campus network (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The student will configure to the Intrusion Prevention System function on a Cisco IOS based router **Assessment Method Type:** Class/Lab Project	01/21/2016 - This SLO was measured by lab assignment 27 of the computer labs. The average score was 90%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 52A - ADVANCED IP ROUTING PROTOCOLS & SERVICES (CCNP) - Route Maps - The student will demonstrate the use of route maps. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The student will perform a laboratory experiment involving route filtering for redistribution where there will use a route map to select the routes. **Assessment Method Type:** Observation/Critique **Target for Success:** Target for Success: 80% of the students will get a score of 7 or better on a 10 point rubric.	01/20/2016 - This SLO was measured by lab assignments 5 of the computer labs. The average scores was 80%. Careful analysis of the individual assignment revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 30% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		09/30/2012 - This SLO was measured by lab assignments 5 of the computer labs. The average scores was 90%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Department - Computer Science (C S) - C S 52A - ADVANCED IP ROUTING PROTOCOLS & SERVICES (CCNP) - Border Gateway Protocol (BGP) - The student will demonstrate knowledge of the Border Gateway Protocol (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The students will be tested using a multiple choice assessment which is designed to determine their knowledge of both eBGP and iBGP. The assessment will cover when to use BGP, the differences between eBGP and iBGP, and other details of the protocol. **Assessment Method Type:** Pre/Post Test **Target for Success:** Target for Success: 80% of the students will get a score of 70 or better on a 100 point rubric.	01/20/2016 - This SLO was measured by exam 8. The average scores was 85%. Careful analysis of the individual assignment revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 11/10/2013 - This SLO was measured by lab assignment 6 of the computer labs. The average scores were between 100%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 52B - ADVANCED SWITCHING & CAMPUS LAN DESIGN (CCNP) - Private VLANs - The student will demonstrate the application and configuration of private VLANs. (Created By Department - Computer Science (C S)) **Start Date:** 06/30/2013 **Course-Level SLO Status:** Active	**Assessment Method:** The student will perform a laboratory experiment requiring the use of private VLANs for traffic separation. **Target for Success:** Target for Success: 80% of the students will get a score of 7 or better on a 10 point rubric.	01/22/2016 - This course was not offered during the assessment period. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 01/20/2016 - This SLO was measured by lab assignment 6 of the computer labs. The average scores were between 90%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 25% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Target Met **Year This Assessment Occurred:** 2013-2014	
		09/30/2013 - This SLO was measured by lab assignment 6 of the computer labs. The average scores were between 90%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 52B - ADVANCED SWITCHING & CAMPUS LAN DESIGN (CCNP) - First Hop Redundancy Protocols - The student will demonstrate the knowledge of three first-hop redundancy protocols, HSRP, GLBP, and VRRP, (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Course-Level SLO Status:** Active	**Assessment Method:** The student will perform laboratory experiments and will be ask to choose the most appropriate protocol for the problem presented. **Assessment Method Type:** Observation/Critique **Target for Success:** Target for Success: 80% of the students will get a score of 7 or better on a 10 point rubric.	01/20/2016 - This SLO was measured by lab assignment 6 of the computer labs. The average score was 90%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014	
		11/10/2013 - This SLO was measured by lab assignment 5 of the computer labs. The average scores was 80%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		2012-2013	
Department - Computer Science (C S) - C S 52C - ADVANCED NETWORK TROUBLESHOOTING (CCNP) - Troubleshooting connectivity problems in a campus LAN - The student will demonstrate the ability to describe the methodology of troubleshooting and correcting connectivity problems in a campus LAN. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The student will be given a configured campus LAN topology and told to test connectivity among all of the LANs and make the necessary changes to the topology to ensure connectivity. The student will also be told to force a specific switch to be the STP root switch. **Assessment Method Type:** Observation/Critique **Target for Success:** Target for Success: 80% of the students will get a score of 7 or better on a 10 point rubric.	01/22/2016 - This course was not offered during the assessment period. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		01/20/2016 - This SLO was measured by lab assignments 5 of the computer labs. The average scores was 90%. Careful analysis of the individual assignment revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 30% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014	
		11/10/2013 - This SLO was measured by lab assignment 4 of the computer labs. The average scores was 90%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 15% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 52C - ADVANCED NETWORK TROUBLESHOOTING (CCNP) - BGP Attributes - The student will demonstrate the use of BGP attributes to influence the BGP	**Assessment Method:** The student will be given a configured topology which is not choosing the correct routes for packet forwarding. The student will be required to troubleshoot the problem.	01/20/2016 - This SLO was measured by lab assignments 8 of the computer labs. The average scores was 80%. Careful analysis of the individual assignment revealed, we met the 7/10 goal on	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
route selection decision. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active	The solution to the problem will require the student to modify the BGP attributes of the route. **Assessment Method Type:** Observation/Critique **Target for Success:** Target for Success: 80% of the students will get a score of 7 or better on a 10 point rubric.	more than 80% of the students. However, these results don't reflect an attrition of about 30% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 06/30/2013 - This SLO was measured by lab assignment 5 of the computer labs. The average scores was 80%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 15% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 53A - CYBERSECURITY FUNDAMENTALS - Public Key Infrastructure - A successful student will be able to demonstrate an understanding of the role certificates and be able to explain basic concepts of Key Management and Certificate Lifecycles (Created By Department - Computer Science (C S)) **Start Date:** 12/08/2014 **Course-Level SLO Status:** Active	**Assessment Method:** The student will be tested on their understanding of Key Management and Certificate Lifecycles through the use of a multiple choice test. **Assessment Method Type:** Pre/Post Test **Target for Success:** 80% of the students will score 70% or higher on the relevant questions	01/22/2016 - The class was not taught during the assessment period. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 53A - CYBERSECURITY FUNDAMENTALS - Remote Access Security - A successful student will be able to recognize and understand the administration of basic	**Assessment Method:** The student will perform a laboratory experiment to successfully demonstrate their ability to recognize and understand the administration of basic remote access		

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
remote access security technologies (Created By Department - Computer Science (C S)) **Start Date:** 12/08/2014 **Course-Level SLO Status:** Active	security technologies. **Assessment Method Type:** Observation/Critique		
Department - Computer Science (C S) - C S 53B - THREAT MANAGEMENT - Network Security Vulnerabilities - A successful student will be able to describe basic network security vulnerabilities (Created By Department - Computer Science (C S)) **Start Date:** 12/08/2014 **Course-Level SLO Status:** Active	**Assessment Method:** The student will be tested on their understanding of basic network security vulnerabilities through the use of a multiple choice test. **Assessment Method Type:** Pre/Post Test **Target for Success:** 80% of the students will score 70% or higher on the relevant questions.	01/22/2016 - This class was not offered during the assessment period. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 53B - THREAT MANAGEMENT - Firewalls - A successful student will be able to apply techniques used by firewalls to counteract vulnerabilities (Created By Department - Computer Science (C S)) **Start Date:** 12/08/2014 **Course-Level SLO Status:** Active	**Assessment Method:** The student will perform a laboratory exercise to successfully demonstrate their ability the to configure a firewall. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will successfully complete the lab exercise		
Department - Computer Science (C S) - C S 53C - ETHICAL HACKING - Role of the Ethical Hacker - A successful student will be able to explain what an ethical hacker can and can not do legally, and explain the credentials and roles of penetration testers (Created By Department - Computer Science (C S)) **Start Date:** 12/08/2014 **Course-Level SLO Status:**	**Assessment Method:** The student will be tested on their understanding of what an ethical hacker can and can not do legally, and show an understanding of the credentials and roles of penetration testers through the use of a multiple choice test **Assessment Method Type:** Pre/Post Test **Target for Success:** 80% of the students will score 70% or higher on the relevant questions	01/22/2016 - This class was not offered during the assessment period. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Active			
Department - Computer Science (C S) - C S 53C - ETHICAL HACKING - Footprinting - A successful student will be able to perform footprinting to learn about a company and its network (Created By Department - Computer Science (C S)) **Start Date:** 12/08/2014 **Course-Level SLO Status:** Active	**Assessment Method:** The student will perform a laboratory exercise to successfully demonstrate their ability footprint to a network. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will successfully complete the lab exercise.		
Department - Computer Science (C S) - C S 53D - INTRODUCTION TO COMPUTER FORENSICS - Computer Forensics Professional - A successful student will be able to describe computer forensics and investigations as a profession (Created By Department - Computer Science (C S)) **Start Date:** 12/08/2014 **Course-Level SLO Status:** Active	**Assessment Method:** The student will be tested on their understanding of computer forensics and investigations through the use of a multiple choice test. **Assessment Method Type:** Pre/Post Test **Target for Success:** 80% of the students will score 70% or higher on the relevant questions	01/22/2016 - This class was not offered during the assessment period. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 53D - INTRODUCTION TO COMPUTER FORENSICS - Forensic Tools - A successful student will be able to use and classify a variety of forensic tools (Created By Department - Computer Science (C S)) **Start Date:** 12/08/2014 **Course-Level SLO Status:** Active	**Assessment Method:** The student will be tested on their understanding of forensic tools through the use of a multiple choice test. **Assessment Method Type:** Pre/Post Test **Target for Success:** 80% of the students will score 70% or higher on the relevant questions.		
Department - Computer Science (C S) - C S 54A - STORAGE AREA NETWORKS - Network Attached Storage - The student will demonstrate the use of Network Attached	**Assessment Method:** The student will perform a laboratory experiment requiring the configuring of a Network Attached Server (NAS) and	01/20/2016 - This SLO was measured by lab assignment 4 of the computer labs. The average scores was 1000%. Careful analysis of the individual assignments revealed, we met the 7/10	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Storage in a data center environment (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 09/24/2012 **Course-Level SLO Status:** Active	connecting to it and sharing files from both Windows and Linux servers. **Assessment Method Type:** Observation/Critique **Target for Success:** Target for Success: 80% of the students will get a score of 7 or better on a 10 point rubric.	goal on more for 100% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 11/10/2013 - This SLO was measured by lab assignment 4 of the computer labs. The average scores was 80%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 100% of the students. However, these results don't reflect an attrition of about 15% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 54A - STORAGE AREA NETWORKS - Data Backup and Recovery - The student will demonstrate the knowledge of recovery time option (RTO) and recovery point option (RPO) in backup and recovery. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Course-Level SLO Status:** Active	**Assessment Method:** The students will take a multiple choice assessment requiring them to demonstrate their knowledge of recovery time option (RTO) and recovery point option (RPO) and to use the appropriate backup and recovery technologies to meet the objectives. **Assessment Method Type:** Pre/Post Test **Target for Success:** Target for Success: 80% of the students will get a score of 70 or better on a 100 point rubric.	01/20/2016 - This SLO was measured by questions on the midterm and final exams. The average score was 80%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 11/10/2013 - This SLO was measured by questions on the midterm and final exams. The average score was 82%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 15%	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 54B - VMWARE VSPHERE INSTALL, CONFIGURE, MANAGE - vMotion - The student will demonstrate the use of vMotion in a virtual infrastructure environment. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 09/27/2013 **Course-Level SLO Status:** Active	**Assessment Method:** The student will configure to two ESXi hosts using Virtual Center to use vMotion to move a running virtual machine from one host to the other automatically. **Assessment Method Type:** Observation/Critique **Target for Success:** Target for Success: 80% of the students will get a score of 7 or better on a 10 point rubric.	01/20/2016 - This SLO was measured by lab assignment 6 of the computer labs. The average scores was 100%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 15% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		11/10/2013 - This SLO was measured by lab assignment 6 of the computer labs. The average scores was between 90%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 54B - VMWARE VSPHERE INSTALL, CONFIGURE, MANAGE - Distributed Virtual Switches - The student will demonstrate knowledge of the configuration and use of Virtual Distributed switches in a virtual	**Assessment Method:** The student will take a multiple choice assessment which will determine the student's knowledge of VIrtual Distributed Switches, when to deploy them, how to configure them and and to verify their	01/20/2016 - This SLO was measured by a question on the Final Exam. The average scores was 85. Careful analysis of the individual assignment revealed, we met the 7/10 goal on more than 80% of the students. **Result:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
infrastructure. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 09/27/2013 **Course-Level SLO Status:** Active	functionality. **Assessment Method Type:** Pre/Post Test **Target for Success:** Target for Success: 80% of the students will get a score of 70 or better on a 100 point rubric.	Target Met **Year This Assessment Occurred:** 2014-2015 11/10/2013 - This SLO was measured by a question on the Final Exam. The average Average scores was 92, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013 11/10/2013 - This SLO was measured by lab assignment 5 of the computer labs. The average scores were between 90%, respectively. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Department - Computer Science (C S) - C S 54C - VMWARE VIEW INSTALLATION, CONFIGURATION & MANAGEMENT - Install and configure View components - The successful student will be able to install and configure the View Connection Server, Virtual desktops, Client systems, the View Composer. (Created By Department - Computer Science (C S)) **Start Date:** 12/17/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The student will install and configure the View Connection Server, Virtual desktops, Client systems, the View Composer in a lab activity, **Assessment Method Type:** Class/Lab Project	01/22/2016 - This course was not offered during the assessment period. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Department - Computer Science (C S) - C S 54C - VMWARE VIEW INSTALLATION, CONFIGURATION & MANAGEMENT - Analyzing design choices in a VMware View deployment - The successful student will be able to analyze design choices in the following areas: View Manager infrastructure, View desktop options, vSphere infrastructure, network infrastructure, client access devices, end-user management,and construct a comprehensive View solution. (Created By Department - Computer Science (C S)) **Start Date:** 12/17/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The students will take a multiple choice assessment requiring them to demonstrate their knowledge of the design choices in the following areas: View Manager infrastructure, View desktop options, vSphere infrastructure, network infrastructure, client access devices, end-user management,and construct a comprehensive View solution. **Assessment Method Type:** Exam - Course Test/Quiz	01/22/2016 - This SLO was measured by a 5 questions on the Final Exam. The average scores was 85. Careful analysis of the individual assignment revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014	
Department - Computer Science (C S) - C S 54D - CLOUD COMPUTING - Virtual Data Centers - The student will demonstrate knowledge of the architecture of a virtual data center. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/02/2014 **Course-Level SLO Status:** Active	**Assessment Method:** The students will take a multiple choice assessment requiring them to demonstrate their knowledge of the architecture of a virtual data center. **Assessment Method Type:** Exam - Course Test/Quiz **Target for Success:** Target for Success: 80% of the students will get a score of 70 or better on a 100 point rubric.	01/20/2016 - This SLO was measured by a 2 questions on the Final Exam. The average scores was 90. Careful analysis of the individual assignment revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 54D - CLOUD COMPUTING - Self-Service Deployment - The student will be able to demonstrate knowledge of the requirement for self-service deployment model in a public cloud. (Created By Department - Computer Science (C S)) **Start Date:** 07/01/2014	**Assessment Method:** The students will take a multiple choice assessment requiring them to demonstrate their knowledge of the requirement for self-service deployment model in a public cloud. **Assessment Method Type:** Exam - Course Test/Quiz **Target for Success:** 80% of the students will get a score of 70 or		

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Course-Level SLO Status: Active	better on a 100 point rubric.		
Department - Computer Science (C S) - C S 56B - IT ESSENTIALS - Operating Systems - A successful student will be able to install and describe the purpose of a PC operating system (Created By Department - Computer Science (C S)) **Start Date:** 12/08/2014 **Course-Level SLO Status:** Active	**Assessment Method:** The student will perform a laboratory exercise to successfully demonstrate their ability install a PC operating system. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will successfully complete the lab exercise.	01/20/2016 - This SLO was measured by lab assignments 2 & 3 of the computer labs. The average score was 90%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 56B - IT ESSENTIALS - Laptop Computers - A successful student will be able to explain the key features and use of laptop computers (Created By Department - Computer Science (C S)) **Start Date:** 12/08/2014 **Course-Level SLO Status:** Active	**Assessment Method:** The student will be tested on their understanding of key features and uses of laptop computers through the use of a multiple choice test. **Assessment Method Type:** Exam - Course Test/Quiz **Target for Success:** 80% of the students will score 70% or higher on the relevant questions		
Department - Computer Science (C S) - C S 60A - INSTALLING & CONFIGURING WINDOWS SERVER 2012 - Active Directory Installation - The student will be able to install Active Directory Domain Services (AD DS) on a Server Core installation (Created By Department - Computer Science (C S)) **Start Date:** 12/17/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The student will be tested on their ability to install Active Directory Domain Services (AD DS) on a Server Core installation. **Assessment Method Type:** Exam - Course Test/Quiz	01/20/2016 - This SLO was measured by a 3 questions on the Final Exam. The average scores was 80. Careful analysis of the individual assignment revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Department - Computer Science (C S) - C S 60A - INSTALLING & CONFIGURING WINDOWS SERVER 2012 - DHCP Deployment and Comfiguration - The student will be able to deploy and configure the Dynamic Host Configuration Protocol (DHCP) service (Created By Department - Computer Science (C S)) **Start Date:** 12/17/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The student will be tested on their knowledge of how to deploy and configure the Dynamic Host Configuration Protocol (DHCP) service **Assessment Method Type:** Exam - Course Test/Quiz		
Department - Computer Science (C S) - C S 60B - ADMINISTERING WINDOWS SERVER 2012 - Configure File and Print Services - The student will be able to configure file and print services on a Windows 2012 Server. This includes accessing the files and print services from a remote computer. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 12/17/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The student will demonstrate their ability to configure file and print services on a Windows 2012 Server. The student will also be able to demonstrate their ability to access the file and print services from a remote computer. **Assessment Method Type:** Exam - Course Test/Quiz	01/20/2016 - This SLO was measured by 4 questions on the Final Exam. The average scores was 90. Careful analysis of the individual assignment revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 60B - ADMINISTERING WINDOWS SERVER 2012 - Configure DNS Services - The student will be able to configure a DNS Server. This includes configuring two DNS zones and the required resource records. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 12/17/2012 **Course-Level SLO Status:**	**Assessment Method:** The student will demonstrate their ability to configure a DNS Server includes configuring two DNS zones and the required resource records. **Assessment Method Type:** Exam - Course Test/Quiz		

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Active Department - Computer Science (C S) - C S 60C - CONFIGURING ADVANCED WINDOWS SERVER 2012 SERVICES - Configure and Manage High Availability - The student will be able to demonstrate their knowledge of the configuration of Network Load Balancing (NLB) and failover clustering (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 12/17/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The student will perform lab activities demonstrating the ability to configure Network Load Balancing (NLB) and failover clustering. **Assessment Method Type:** Class/Lab Project	01/22/2016 - This SLO was measured by lab assignments 6 of the computer labs. The average score was 90%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. However, these results don't reflect an attrition of about 20% of the students (drops/withdrawals) by the sixth week of the quarter. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
		01/20/2016 - This SLO was measured by a lab assignment which requires the student to demonstrate the ability to configure Network Load Balancing (NLB) and failover clustering. The average scores was 90%. Careful analysis of the individual assignments revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014	
Department - Computer Science (C S) - C S 60C - CONFIGURING ADVANCED WINDOWS SERVER 2012 SERVICES - Implement Business Continuity and Disaster Recovery - The student will be able to demonstrate their knowledge of the configuration and management of backups, recover servers, and configure site-level fault tolerance (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 12/17/2012	**Assessment Method:** The student will demonstrate their knowledge of the skills required to configure and manage backups, recover servers, and to configure site-level fault tolerance. **Assessment Method Type:** Exam - Course Test/Quiz	01/22/2016 - This SLO was measured by a 4 questions on the Final Exam. The average scores was 80. Careful analysis of the individual assignment revealed, we met the 7/10 goal on more than 80% of the students. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Course-Level SLO Status: Active			
Department - Computer Science (C S) - C S 61A - CONFIGURING WINDOWS 8 - Install and Upgrade to Windows 8 - The stident will be able to evaluate hardware readiness and compatibility, install Windows 8, and migrate and configure user data on the new system. (Created By Department - Computer Science (C S)) **Start Date:** 12/17/2012 **Course-Level SLO Status:** Active	**Assessment Method:** The students will take a multiple choice assessment requiring them to demonstrate their knowledge of the evaluation of hardware readiness and compatibility, installation of Windows 8, and migrate and the configuration user data on the new system. **Assessment Method Type:** Exam - Course Test/Quiz	01/22/2016 - This course was not offered during the assessment period. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 63A - DEVELOPING APPLICATIONS FOR IOS - Objective-C - Produce clearly written Objective-C code that solves a given problem. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful Objective C program run. **Assessment Method Type:** Observation/Critique	12/09/2016 - The success rate in this class went up from only 40% in '14-'15 to 58% in '15-'16. This signifies that we have a great adjunct instructor! **Result:** Target Met **Year This Assessment Occurred:** 2015-2016 08/20/2014 - Based on assignment scores that included skills on this rubric, 100% who completed the course had a 7/10 understanding or better. However, these statistics don't include the drops. Overall course retention was only 50%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. Also, lack of adequate preparation/background is a major problem. We are considering revising the course or breaking it into two easier sections. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** TA or instructional assistant will likely provide needed support to shore up key	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		concepts toward the end of the course.	
Department - Computer Science (C S) - C S 63A - DEVELOPING APPLICATIONS FOR IOS - Persist data - Write a program that stores user data in between sessions. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments that require the student to develop apps that store data between sessions.	12/09/2016 - As the success rate went up, the number of students served was nearly cut in half, from 68 in '14-'15 to 36 in '15-'16. The skills that this class impart are very much in demand by our local industry, and our students very much want to learn this material, so we need to make this class available to more students. **Result:** Target Met **Year This Assessment Occurred:** 2015-2016	
		08/20/2014 - Based on assignment scores that included skills on this rubric, 100% who completed the course had a 7/10 understanding or better. However, these statistics don't include the drops. Overall course retention was only 50%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. Also, lack of adequate preparation/background is a major problem. We are considering revising the course or breaking it into two easier sections. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
Department - Computer Science (C S) - C S 64A - WRITING APPS FOR THE ANDROID IN JAVA - Basic Activity Lifecycle - A successful student will be able to configure an Android SDK emulator and use it to write	**Assessment Method:** Programming assignment that includes use of Android SDK emulator to write and debugged source code and some evidence of a successful app.	12/09/2016 - The success rate in this class went up from only 40% in '14-'15 to 58% in '15-'16. This signifies that we have a great adjunct instructor! **Result:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
and debug basic apps that can be uploaded and tested on an actual Android device. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method Type:** Observation/Critique	Target Met **Year This Assessment Occurred:** 2015-2016 08/20/2014 - Based on assignment scores that included skills on this rubric, 100% who completed the course had a 7/10 understanding or better. However, these statistics don't include the drops. Overall course retention was only 50%. Instructor was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. Also, lack of adequate preparation/background is a major problem. We are considering revising the course or breaking it into two easier sections. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
Department - Computer Science (C S) - C S 64A - WRITING APPS FOR THE ANDROID IN JAVA - Apps Programming Specifics - A successful student will be able to write many different types of Android apps, making use of diverse aspects such as user interface layout, XML, the Android support library, location-awareness, 2-D and 3-D graphics, and app signing and publishing. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019	**Assessment Method:** Several Android app assignments which cover a variety of application areas. **Assessment Method Type:** Observation/Critique	12/09/2016 - As the success rate went up, the number of students served was nearly cut in half, from 68 in '14-'15 to 36 in '15-'16. The skills that this class impart are very much in demand by our local industry, and our students very much want to learn this material, so we need to make this class available to more students. **Result:** Target Met **Year This Assessment Occurred:** 2015-2016 08/20/2014 - Based on assignment scores that included skills on this rubric, 100% who completed the course had a 7/10 understanding or better. However, these statistics don't include the drops. Overall course retention was only 50%. Instructor	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Course-Level SLO Status: Active		was fully engaged in helping students, and past experiments with an online instructional assistant, showed that this could improve retention by 20%. Also, lack of adequate preparation/background is a major problem. We are considering revising the course or breaking it into two easier sections. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Suggest funds be allocated for teaching assistant to help answer questions/discuss problems beyond what the instructor can do in 40 hours/week.	
Department - Computer Science (C S) - C S 80A - OPEN SOURCE CONTRIBUTION - Tool-Based Topics - A successful student will be able to install a Git repository and issue the various commands for checking-in, checking-out, and forking a project's source code. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignment that includes creation of a repository and some evidence of a successful checking-in and -out of an evolving project. **Assessment Method Type:** Observation/Critique		
Department - Computer Science (C S) - C S 80A - OPEN SOURCE CONTRIBUTION - Concept-Based Topics - A successful student will be able to join a team that handles the workflow of a specific open-source project and become a productive contributor to such a team. (Created By Department - Computer Science (C S))	**Assessment Method:** Student demonstration of membership in a public repository and productive interaction with others in the team. **Assessment Method Type:** Observation/Critique		

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Assessment Cycles: End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active			
Department - Computer Science (C S) - C S 81A - 3-D GRAPHICS PROGRAMMING - 3D API Mastery - A successful student will be able to write code using a specific 3D API such as OpenGL that generates 3-D images and motion. Aspects of the API that will be mastered include setting up the configuration space, specifying the projection, camera positions and lighting parameters, and attaching material properties to the scene members. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program that produces dynamically animated 3-D scenes through use of the OpenGL library. **Assessment Method Type:** Observation/Critique	09/13/2015 - Course was not offered in 2014/15 due to a qualified instructor to teach. Student interest is high and will offer in 2015/16 **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Hire qualified faculty.	
Department - Computer Science (C S) - C S 81A - 3-D GRAPHICS PROGRAMMING - Dynamics of 3D Scenes and Motion - A successful student will apply the mathematical tools of matrices, normal vectors and linear transformations to the design of graphics programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013	**Assessment Method:** Tests that reveal student knowledge of mathematical tools needed to write 3-D animated programs. **Assessment Method Type:** Observation/Critique	09/13/2015 - Course was not offered in 2014/15 due to a qualified instructor to teach. Student interest is high and will offer in 2015/16 **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Hire qualified faculty.	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
End Date: 06/30/2019 **Course-Level SLO Status:** Active			
Department - Computer Science (C S) - C S 82A - INTRODUCTION TO SOFTWARE QUALITY ASSURANCE - Writing a Test Plan - Write a QA test plan that reveals defects in source code (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignment that includes writing a QA plan for specific project specification. **Assessment Method Type:** Observation/Critique	10/26/2015 - Of the students who finished the course, 80% had a 7/10 understanding of this SLO. This class had a good retention rate of >70%. This is above average retention for our courses. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 82A - INTRODUCTION TO SOFTWARE QUALITY ASSURANCE - Testing Tools - Use test automation software (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/30/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignment that includes using test automation tools for specific project specification and testing the project using those tools for success and failure.	10/26/2015 - Of the students who finished the course, 80% had a 7/10 understanding of this SLO. This class had a good retention rate of >70%. This is above average retention for our courses. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 83A - THEORY OF QUANTUM COMPUTING I - Quantum Computing Fundamentals - A successful student will be able to apply basic mathematical tools of quantum mechanics to describe the fundamental component of a quantum computer: the qubit. In addition, the student will be capable of describing and analyzing	**Assessment Method:** Evaluation of student performance on homework and tests that require computational proficiency in quantum mechanics and its application to quantum-bit (qubit) logic gates. **Assessment Method Type:** Pre/Post Test	09/13/2015 - course being taught for first time in 15-16 so no possible reflection yet. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
simple quantum circuits, and explain how they work differently from their classical binary counterparts. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active			
Department - Computer Science (C S) - C S 83A - THEORY OF QUANTUM COMPUTING I - Applications of Quantum Logic - A successful student will be able to describe and derive the fundamental algorithms of quantum computing in the areas of teleportation, superdense coding and the quantum Fourier transform. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 01/07/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments which test the student's ability to describe and utilize quantum mechanical algorithms for computing. **Assessment Method Type:** Observation/Critique		
Department - Computer Science (C S) - C S 83B - THEORY OF QUANTUM COMPUTING II - Density Operator Formulation of Quantum Mechanics - A successful student will be able to use the density formulation of quantum mechanics to model non-orthogonal measurement and environmental noise in quantum computers. (Created By Department - Computer Science (C S)) **Start Date:**	**Assessment Method:** Evaluation of student performance on homework and tests that require computational proficiency in density matrices and their application to noisy quantum systems. **Assessment Method Type:** Pre/Post Test **Target for Success:** Scores of 70% or better.	09/13/2015 - course being taught for first time in 16-17 so no possible reflection yet. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
11/01/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active			
Department - Computer Science (C S) - C S 83C - THEORY OF QUANTUM COMPUTING III - Algorithm Complexity - A successful student will be able define the problem classes P and NP, and compare classical vs. quantum mechanical algorithms in this context. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 11/01/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments which test the student's ability to categorize algorithms as being P vs. NP, and define NP-Completness. **Assessment Method Type:** Observation/Critique **Target for Success:** 70% or better on assignments.	09/13/2015 - course being taught for first time in 16-17 so no possible reflection yet. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 83C - THEORY OF QUANTUM COMPUTING III - Error Correction Codes - A successful student will be able define the stabilizer code, and test whether given error correction codes satisfy certain analytically-defined bounds. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Quarter **Start Date:** 11/01/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Evaluation of student performance on homework and tests that require computational proficiency in error correction codes. **Assessment Method Type:** Pre/Post Test **Target for Success:** 70% or better on tests or assignments	09/13/2015 - course being taught for first time in 16-17 so no possible reflection yet. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 84A - DATABASE-DRIVEN WEB APPLICATION DEVELOPMENT -	**Assessment Method:** Assignments which require the student to download, install, and test MySQL.	10/26/2015 - Course was not offered in 2014/15 due to a qualified instructor to teach. Student interest is high and will offer in 2015/16	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Installation/Configuration - The student will be able to download, install, configure and test the MySQL system on a local operating system. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/01/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method Type:** Observation/Critique	**Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Hire qualified faculty.	
Department - Computer Science (C S) - C S 84A - DATABASE-DRIVEN WEB APPLICATION DEVELOPMENT - PHP Scripting - The student will be able to write web pages that have PHP scripts embedded for access to MySQL databases. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 06/01/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments which require the student to write and deploy web pages that contain PHP code and successfully test the code in its ability to access MySQL databases. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% success getting > 7/10	10/26/2015 - Course was not offered in 2014/15 due to a qualified instructor to teach. Student interest is high and will offer in 2015/16 **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Hire qualified faculty.	
	Assessment Method: Assignments which require the student to write and deploy data integration plans. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% success getting > 7/10		
Department - Computer Science (C S) - C S 84B - DISTRIBUTED DATABASES - Design - Design a distributed database with implementation strategies to maintain transaction and concurrency control (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year	**Assessment Method:** Assignments which require the student to write transaction implementation strategies. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% success getting > 7/10	10/26/2015 - Course was not offered in 2014/15 due to a qualified instructor to teach. Student interest is high and will offer in 2015/16 **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Start Date: 11/01/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active		Hire qualified faculty.	
Department - Computer Science (C S) - C S 84B - DISTRIBUTED DATABASES - Query Processing - Develop query processing and optimization strategies for an existing distributed database design (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 11/01/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments which require the student to develop optimization strategies. **Target for Success:** 80% success getting > 7/10	10/26/2015 - Course was not offered in 2014/15 due to a qualified instructor to teach. Student interest is high and will offer in 2015/16 **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 84B - DISTRIBUTED DATABASES - Replication and Integration - Develop data replication and integration plans for an existing distributed database design (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 11/01/2013 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method:** Assignments which require the student to write and deploy data integration plans. **Assessment Method Type:** Observation/Critique **Target for Success:** 80% success getting > 7/10	10/26/2015 - Course was not offered in 2014/15 due to a qualified instructor to teach. Student interest is high and will offer in 2015/16 **Result:** Target Not Met **Year This Assessment Occurred:** 2014-2015	
Department - Computer Science (C S) - C S 85A - RUBY & FUNCTIONAL PROGRAMMING - Ruby Functional Design - A successful student will be able to use functional paradigm to design and implement	**Assessment Method:** Programming assignment that includes debugged source code and some evidence of a successful program run, incorporating the functional paradigm in the program	10/26/2015 - Course was not offered in 2014/15 due to a qualified instructor to teach. Student interest is high and will offer in 2015/16 **Result:**	

Course-Level SLOs	Means of Assessment & Targets for Success / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
a clear, well-structured Ruby program. Specifically, the student will immutability, currying, recursion and lazy evaluation in his or her programs. (Created By Department - Computer Science (C S)) **Assessment Cycles:** End of Academic Year **Start Date:** 07/01/2015 **End Date:** 06/30/2019 **Course-Level SLO Status:** Active	**Assessment Method Type:** Observation/Critique **Target for Success:** 80% of the students will get a score of 7 or better on a 10 point rubric.	Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Hire qualified faculty.	

Unit Assessment Report - Four Column

Foothill College

Program (PSME-C S) - Computer Science AS

PL-SLOs	Means of Assessment & Target / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Program (PSME-C S) - Computer Science AS - Software Development Expertise - The successful student will be able to develop quality, maintainable software using current tools and object oriented design techniques. **Year PL-SLO implemented:** End of Academic Year **Start Date:** 09/19/2012 **End Date:** 06/29/2018 **SLO Status:** Active	**Assessment Method:** The development of a program that follows a given set of style guidelines and satisfies the given user requirements. The student must demonstrate that the program meets the requirements, and must be prepared to answer questions about why she solved the problem the way she did. **Assessment Method Type:** Class/Lab Project **Target:** 100% of students awarded this degree must pass the assessment.	11/05/2015 - The number of students graduating in this degree, has increased when considering that the AS-T degree is now a second path that some students are taking. All graduates must satisfy this SLO in multiple courses to be awarded the degree. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** Full Time Faculty and Support with new Course Management System	11/09/2015 - 1. Increase the number of total awards by reducing the withdrawals and failure rate in core courses and the software development course. 2. Increase success rate and graduation in targeted groups by use full-time and qualified adjunct faculty in the field of software development and OOP. 3. Increase success rate and graduation in targeted groups by placing embedded tutors in classes emphasizing software development. 4. Reduce the negative impact of a new CMS on students taking online software development and OOP-based courses either by obtaining support and resources for new online deliver paradigm or capping seat count at the published maximum so as each student gets more attention
		10/10/2014 - Reviewing SLOs for multiple courses, with focus on core degree requirements, we see a trend. Students who do not drop the course by the third or fourth week, do meet at general target of 70%+ mastery of the topics by the end of the quarter. The larger issue is retention: in CS many students do drop in the first three weeks, and we want to find ways to address this problem. **Result:** Target Met	

PL-SLOs	Means of Assessment & Target / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		Year This Assessment Occurred: 2013-2014 **Resource Request:** Tutorial Center growth, Teaching assistants.	
		06/18/2013 - Based on course SLO reflection and evaluation of software submitted by students in the required core courses for this program, students who complete the final required programming courses (CS 1C or 2C) all demonstrate a high degree of software development expertise using object oriented design and current tools. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Program (PSME-C S) - Computer Science AS - Ability to design data structures - The successful student will be able to design a complex program using different types of data structures and their corresponding algorithms. **Year PL-SLO implemented:** End of Academic Year **Start Date:** 09/19/2012 **End Date:** 06/29/2018 **SLO Status:** Active	**Assessment Method:** The development, test and modification of a program that contains complex data structures. The student must be able to tell how her chosen data structure and algorithm works, and why she chose the design that she used in the project. **Assessment Method Type:** Class/Lab Project **Target:** 100% of the students earning this degree will pass this assessment.	11/05/2015 - The number of students graduating in this degree, has increased when considering that the AS-T degree is now a second path that some students are taking. All graduates must satisfy this SLO in multiple courses to be awarded the degree. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** More qualified faculty and support for new CMS	11/09/2015 - 1. Increase the number of total awards by reducing the withdrawals and failure rate in core courses utilizing data structures. 2. Increase success rate and graduation in targeted groups by use full-time and qualified adjunct faculty in the field of data structures.. 3. Increase success rate and graduation in targeted groups by placing embedded tutors in classes emphasizing data structures.. 4. Reduce the negative impact of a new CMS on students taking online courses utilizing data structures-based courses either by obtaining support and resources for new online deliver paradigm or capping seat count at the published maximum so as each student gets more attention

PL-SLOs	Means of Assessment & Target / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
		10/10/2014 - Reviewing SLOs for multiple courses, with focus on ADVANCED degree requirements, we see a trend. Students who do not drop the course by the third or fourth week, do meet at general target of 80%+ mastery of the topics by the end of the quarter. The larger issue is retention, especially in these advanced courses: About 20% of the students drop in the first three weeks, and we want to find ways to address this problem. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Tutorial Center growth, Teaching assistants.	
		06/18/2013 - These skills are tested in the courses CS 1B/1C or 2B/2C and the programs written by students completing those courses consistently demonstrate a high degree of skill in designing data structures and using them in a variety of complex algorithms. **Result:** Target Met **Year This Assessment Occurred:** 2012-2013	
Program (PSME-C S) - Computer Science AS - Pursuit of Excellence Toward Further Education and Vocation - Each student will be exposed to topics and courses which go beyond the minimum required for graduation in order to maximize their ability to succeed in the field of computer science. The student will work cooperatively with ohter students of all levels and backgrounds, lending support to, and getting support from, other members of the college's uniquely diverse and experienced student population.	**Assessment Method:** Evaluation of the optional, application-specific, assignments, which can be selected by the students based on their individual interests and goals. Evaluation of group projects in courses admitting those. Evaluation of peer support and group forum contributions **Target:** At least 70% of the students should be showing active participation in either optional/advanced assignments or engaging in forums and group participation with some	11/05/2015 - The number of students graduating in this degree, has increased when considering that the AS-T degree is now a second path that some students are taking. All graduates must satisfy this SLO in multiple courses to be awarded the degree. **Result:** Target Met **Year This Assessment Occurred:** 2014-2015 **Resource Request:** More qualified faculty and support for new CMS	11/09/2015 - 1. Increase the number of total awards by reducing the withdrawals and failure rate in courses utilizing advanced methods and group cooperation. 2. Increase success rate and graduation in targeted groups by use full-time and qualified adjunct faculty teaching courses incorporating advanced methods and group cooperation. 3. Increase success rate and

PL-SLOs	Means of Assessment & Target / Tasks	Assessment Findings/Reflections	Action Plan & Follow-Up
Start Date: 11/01/2013 **End Date:** 06/29/2018 **SLO Status:** Active	passing or excelling evaluation by the instructor.		graduation in targeted groups by placing embedded tutors in classes emphasizing advanced methods and group cooperation. 4. Reduce the negative impact of a new CMS on students taking online courses utilizing advanced methods and group cooperation either by obtaining support and resources for new online deliver paradigm or capping seat count at the published maximum so as each student gets more attention
		10/10/2014 - Students who complete the advanced courses of the program sequence do show excellent results in these optional and supportive areas. This is probably due to the demands required to make it though the sequence, which self-selects motivated students. The main goal here would be trying to help those who do not make it to the end, and improve retention. **Result:** Target Met **Year This Assessment Occurred:** 2013-2014 **Resource Request:** Tutorial Center growth, Teaching assistants.	