California State University, Los Angeles

Annual Assessment Report

Program: COMPUTER SCIENCE BACHELOR OF SCIENCE Report Semester/Year: \_ SPRING 2017\_\_ \_\_\_\_\_\_

College/School: \_\_\_ECST\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Assessment Coordinator: \_\_\_\_\_ Dr. Sun\_\_\_\_\_\_ \_\_

Specialized Accreditation: ❒ No 🗹 Yes please specify Agency/organization and Date \_\_\_\_abet\_\_\_\_\_\_\_\_\_\_\_\_

Department Mission:

To graduate well educated computer scientists who are prepared to meet the challenges of a rapidly changing, increasingly complex world. This will be accomplished through:

* A well-qualified faculty who care about students and their success.
* A dynamic, up-to-date curriculum that has an optimal balance between theory and practice.
* Laboratories, computer facilities, and instructional classrooms on par with any computer science program in the nation.
* Unique co-curricular opportunities for students such as participation in student design competitions, professional student organizations, and pre-professional employment.
* Opportunities for undergraduate and graduate students to participate in research and industry-funded design clinic projects.
* Mutually beneficial partnerships with area industry that take advantage of our location in one of the most concentrated high-tech centers in the nation.
* Strong cooperative relationships with local high schools, community colleges, and with other four-year institutions.

Please list all Program Learning Outcomes (PLOs):

1. Students will be able to apply concepts and techniques from computing and mathematics to both theoretical and practical problems.
2. Students will be able to demonstrate fluency in at least one programming language and acquaintance with at least three more.
3. Students will have a strong foundation in the design, analysis, and application of many types of algorithms.
4. Students will have a fundamental understanding of computer systems.
5. Students will have the training to analyze problems and identify and define the computing requirements appropriate to their solutions.
6. Students will have the training to design, implement, and evaluate large software systems working both individually and collaboratively.
7. Students will be able to communicate effectively orally and in writing.
8. Students will have the knowledge, skills, and attitudes for lifelong self-development.
9. Students will have the ability to analyze the local and global impact of computing on individuals and society.
10. Students will have a fundamental understanding of social, professional, ethical, legal, and security issues in computing.

**Alignment of Institutional Learning Outcomes (ILOs) and Program Student Learning Outcomes (see Appendix A for a complete description of each ILO) - Please indicate which of your PLOs best match the following ILOs.**

|  |  |
| --- | --- |
| Cal State LA Institutional Learning Outcomes | PLO(s) which match this ILO |
| 1. Knowledge: Mastery of content and processes of inquiry
 | 1, 2, 3, 4 ,5, 6 |
| 1. Proficiency: Intellectual skills
 | 5, 6, 7 |
| 1. Place and Community: Urban and global mission
 | 8, 9, 10 |
| 1. Transformation: Integrative learning
 | 8, 9, 10 |

Assessment Results - Describe any assessment activities conducted within the past 2 academic years for each outcome. See Appendix for examples of assessment measures and use of results. *Please attach any additional information as needed.*

|  |  |  |  |
| --- | --- | --- | --- |
| Program Learning Outcome(List activities for each PLO. Enter “general” for activities that pertain to multiple PLOs) | 1. How and when was this PLO assessed? (For example, which assessments were used, which courses were examined, what were the dates of data collection?) See Appendix B for other examples | 2. What were the results? (For example, how many students reached each level of proficiency on the SLOs assessed?) See Appendix C for other examples | 3. Based on the results, what instructional, programmatic, or curricular improvements were made? |
| * General (All ten PLO’s)
 | * The PLO’s are evaluated every year for its “satisfaction” and periodically (3 to 5 years) for its “importance”. 2016 is the most recent assessment cycle that also involved the Quarter to Semester Conversion.
* The main assessment measures are:
1. Rubric evaluations in targeted courses.
2. External exam - Major Field Test (MFT) conducted by Educational Testing Services.
3. Various constituent (Alumni, Faculty, IAB, Student) surveys.
4. Annual faculty retreats (Winter 2015 & Winter 2016).
5. Industry Advisory Board Annual Meeting (Spring 2015 & Spring 2016)

(For more details, see table below.) | * The responses to the “importance and “satisfaction” of PLO’s from all constituent surveys are satisfactory (exceeds 3 on a 5 point scale).
* The following list of activities were identified:
1. Expand Senior Design sequence to 3 quarters from 2 quarters.
2. Coordinate MATH248 and CS3112 as a sequence
3. Integrate assessment process/methods into the department adopted Computer Science Network Services (CSNS).
4. Create rubrics on CSNS
5. Examine curriculum during the Quarter to Semester Conversion.
 | * CS491AB was expanded to CS496ABC
* Extended project-based learning to multiple lower/upper division courses that is similar to the CS201-CS203 sequence.
* CS301 was enhanced to cover broader ethical and societal issues with issues specific to Computer Science to meet ABET criteria.
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| PLO# | Course/Measure | Who/Where Data is collected? |
| **1** | 1.CS490 Assessment Indicator #1 2.MFT Assessment Indicator #2 3.[SLO-1 Satisfaction Survey](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/slo1)  | Instructor conducts assignments and exams. They are added and normalized on a 5 point scale for each student. (Rubric K)  Assessment Indicator AI-2 on MFT provides the national percentile the institution is in based on the mean score of the students.Constituent surveys for this SLO. The survey is collected every year over the 2 year period. |
| **2** | 1.[CS490 Assessment Indicator #2](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/cs490_ai2) 2.[MFT Assessment Indicator #1](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/mft_ai1) 3.[SLO-2 Satisfaction Survey](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/slo2)  | Instructor conducts assignments and exams. They are added and normalized on a 5 point scale for each student. (Rubric K)  Assessment Indicator AI-1 on MFT provides the national percentile the institution is in based on the mean score of the students.Constituent surveys for this SLO. The survey is collected every year over the 2 year period. |
| **3** | 1.[CS490 Assessment Indicator #3](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/cs490_ai3) 2.MFT Assessment Indicator #2 3.[SLO-3 Satisfaction Survey](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/slo3)  | Instructor conducts assignments and exams. They are added and normalized on a 5 point scale for each student. (Rubric K) Assessment Indicator AI-2 on MFT provides the national percentile the institution is in based on the mean score of the students.Constituent surveys for this SLO. The survey is collected every year over the 2 year period. |
| **4** | 1.[CS490 Assessment Indicator #4](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/cs490_ai4) 2.[MFT Assessment Indicator #3](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/mft_ai3) 3.[SLO-4 Satisfaction Survey](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/slo4) | Instructor conducts assignments and exams. They are added and normalized on a 5 point scale for each student. (Rubric K) Assessment Indicator AI-3 on MFT provides the national percentile the institution is in based on the mean score of the students.Constituent surveys for this SLO. The survey is collected every year over the 2 year period. |
| **5** | 1.[CS337/496A Requirements](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/cs337_pra) 2.[SLO-5 Satisfaction Survey](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/slo5) | Instructor – Rubric R evaluations Constituent surveys for this SLO. The survey collected every year over the 2 year period |
| **6** | 1.[CS437/496ABC Design](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/cs337_pra) 2.[CS437/496C Team Implementation](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/cs437_dev) 3.CS337/496A/[CS496C](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/cs491b_dev) Team Work4.[SLO-6 Satisfaction Survey](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/slo6) | Instructor - Rubric D evaluationsInstructor - rubric evaluations (Rubric I) Instructor – rubric evaluations (Rubric T)Student – rubric evaluations (Rubric T)Constituent surveys for this SLO. The survey is collected every year over the 2 year period |
| **7** | 1.[CS337/496A/496C Oral](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/cs437_dev) 2.[CS496A/496C](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/cs491b_dev) Written3.[SLO-6 Satisfaction Survey](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/slo6) | Instructor– rubric evaluations (Rubric O) Instructor – rubric evaluations (Rubric W)Constituent surveys for this SLO. The survey is collected every year over the 2 year period |
| **8** | 1.CS301/496C Life Long Learning2.[SLO-8 Satisfaction Survey](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/slo8)  | Instructor – rubric evaluations (Rubric L) per studentConstituent surveys for this SLO. The survey is collected every year over the 2 year period |
| **9** | 1.[CS301 Computing](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/cs437_dev) 2.[SLO-9 Satisfaction Survey](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/slo8)  | Instructor conducts assignments, exams and presentations. The scores are added and normalized on a 5 point scale for each student. (Rubric E)Constituent surveys for this SLO. The survey is collected every year over the 2 year period |
| **10** | 1.[CS301 Ethics](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/cs437_dev) 2.[SLO-9 Satisfaction Survey](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/slo8)  | Instructor conducts assignments, exams, and presentations. The scores are added and normalized on a 5 point scale for each student. (Rubric E)Constituent surveys for this SLO. The survey is collected every year over the 2 year period |
| [**1,2,3,4**](http://csns.calstatela.edu/wiki/content/assessment/undergrad/SLO/)**Overall** | 1.[MFT Median Score Percentile](http://csns.calstatela.edu/wiki/content/assessment/undergrad/Learning_Outcomes_Graphs/mft_median)  | MFT Median data comparison |

A complete description of the program assessment process with all assessment/accreditation reports are located at <http://csns.calstatela.edu/wiki/content/department/cs/assessment/>

**Assessment Plan - In this section, provide a description of assessment plan that specifies assessment activities conducted (and to be conducted) from 2015-2019.**

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| --- | --- | --- |
| Program Learning Outcome | Academic year/semester when PLO is assessed | What is your tentative plan for assessing this PLO? (For example, which assessments will be used, which courses will examined?) |
| All PLO’s | Every year – 2016-2017 and 2017-2018. | * Map all assessment measures on CSNS to the new semester curriculum.
* Conduct annual assessment activities for each PLO.
* Get curriculum feedback from annual faculty retreat in Spring 2017 and annual IAB meeting in Fall 2017.
* Prepare for ABET Accreditation visit in Fall 2018.
 |

With whom do you share your assessment information? (Please check all that apply)

🗹 faculty in the department 🗹 students in the program 🗹 campus administrators

🗹 department alumni ❒ employers ❒ external community members

🗹 Other (please specify) \_Industry Advisory Board

Append A: Cal State LA Institutional Learning Outcomes and Goals

***Institutional Learning Goals***

<https://spcc.calstatela.edu/>

**California State University, Los Angeles students expand and deepen their interdisciplinary and general understanding of the world, enhance their critical skills, and take responsibility for a lifetime of learning, and as graduates become individuals who engage, enhance, and contribute to democratic society**.

***Knowledge: Mastery of content and processes of inquiry***

CSULA graduates have a strong knowledge base in their academic major and can use powerful processes of inquiry in a range of disciplines. They engage contemporary and enduring questions with an understanding of the complexities of human cultures and the physical and natural world and are ready to put their knowledge into action to address contemporary issues.

***Proficiency: Intellectual skills***

CSULA graduates are equipped to actively participate in democratic society. They are critical thinkers who make use of quantitative and qualitative reasoning. They have the ability to find, use, evaluate and process information in order to engage in complex decision-making. They read critically, speak and write clearly and thoughtfully and communicate effectively.

***Place and Community: Urban and global mission***

CSULA graduates are engaged individuals who have contributed to the multi-lingual and multiethnic communities that constitute Los Angeles and the world of the future. They are aware of how their actions impact society and the environment, and they strive to make socially responsible decisions. They are community builders sensitive to the needs of diverse individuals and groups and committed to renewing the communities in which they live.

***Transformation: Integrative learning*** CSULA graduates integrate academic learning with life. They engage in community, professional, creative, research and scholarly projects that lead to changes in their sense of self and understanding of their worlds. Graduates integrate their knowledge, skills and experience to address complex and contemporary issues and act ethically as leaders for the 21st century.

Endorsed by Academic Senate 6/1/10 and approved by the President 6/8/10

Appendix B: Examples of Assessment Measures

The following are common measures used to assess program learning outcomes:

 Capstone course

 Project

 Embedded questions

 Public performance/exhibit

 Portfolio review

 Student survey

 Alumni survey

 Employer survey

 Licensure exam

 Student focus groups

 Observation

 Student interviews

 Case study

 Placement rates

 Graduate level thesis

 Graduate level process

 Exit interviews

 Comprehensive exam

 Peer assessment of student work

 Internship review

 Advisory board feedback

Appendix C: Examples of Use of Assessments Results

The following are examples of the use of assessment results:

Improving department assessment process/methods

Curriculum improvement

Improving instruction

Examining curriculum content coverage

Examining skill development in curriculum

Introducing new pedagogies

Stimulating faculty discussion on student learning

Re-examining student learning outcomes

Engaging students in their own learning