

2015-2016 Annual Assessment Report Template

For instructions and guidelines visit our [website](#)
or [contact us](#) for more help.

Report:

Question 1: Program Learning Outcomes

Q1.1.

Which of the following Program Learning Outcomes (PLOs) and Sac State Baccalaureate Learning Goals (BLGs) **did you assess?** [Check all that apply]

- ☐ 1. Critical Thinking
- ☐ 2. Information Literacy
- ☒ 3. Written Communication
- ☒ 4. Oral Communication
- ☐ 5. Quantitative Literacy
- ☐ 6. Inquiry and Analysis
- ☐ 7. Creative Thinking
- ☐ 8. Reading
- ☐ 9. Team Work
- ☐ 10. Problem Solving
- ☐ 11. Civic Knowledge and Engagement
- ☐ 12. Intercultural Knowledge and Competency
- ☐ 13. Ethical Reasoning
- ☐ 14. Foundations and Skills for Lifelong Learning
- ☐ 15. Global Learning
- ☐ 16. Integrative and Applied Learning
- ☐ 17. Overall Competencies for GE Knowledge
- ☒ 18. Overall Competencies in the Major/Discipline
- ☐ 19. Other, specify any assessed PLOs not included above:

- a.
- b.
- c.

Q1.2.

Please provide more detailed background information about **EACH PLO** you checked above and other information such as how your specific PLOs are **explicitly** linked to the Sac State BLGs:

(1) PLO 18 is to master, integrate, and apply advanced knowledge and skills to solve complex computer science problems. It is linked to the following program learning outcomes.

- a. Apply advanced knowledge of mathematics, algorithmic principles, computing theory, and principles of computing systems in the modeling and design of computer-based systems.
- b. Apply hardware design or software development process that includes requirements, design, development, verification and validation.
- c. Apply current technology and best practices in the development of computer-based systems of varying complexity.

(2) PLOs 3 and 4 are to produce quality technical and non-technical documents and presentations for a variety of audiences. It is linked to the following program learning outcomes.

- a. Use proper structure, syntax, and organization.
- b. Communicate effectively technical content.
- c. Deliver oral presentations effectively.

Q1.2.1.

Do you have rubrics for your PLOs?

- ☐ 1. Yes, for all PLOs
- ☒ 2. Yes, but for some PLOs
- ☐ 3. No rubrics for PLOs
- ☐ 4. N/A
- ☐ 5. Other, specify:

Q1.3.

Are your PLOs closely aligned with the mission of the university?

- ☒ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know

Q1.4.

Is your program externally accredited (other than through WASC Senior College and University Commission (WSCUC))?

- ☐ 1. Yes
- ☒ 2. No (skip to Q1.5)
- ☐ 3. Don't know (skip to Q1.5)

Q1.4.1.

If the answer to Q1.4 is **yes**, are your PLOs closely aligned with the mission/goals/outcomes of the accreditation agency?

- ☐ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know

Q1.5.

Did your program use the *Degree Qualification Profile* (DQP) to develop your PLO(s)?

- ☐ 1. Yes

- ☒ 2. No, but I know what the DQP is
- ☐ 3. No, I don't know what the DQP is
- ☐ 4. Don't know

Q1.6.

Did you use action verbs to make each PLO measurable?

- ☒ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know

(Remember: Save your progress)

Question 2: Standard of Performance for the Selected PLO

Q2.1.

Select **ONE(1)** PLO here as an example to illustrate how you conducted assessment (be sure you *checked the correct box* for this PLO in Q1.1):

Oral Communication

Q2.1.1.

Please provide more background information about the **specific PLO** you've chosen in Q2.1.

Computer Science chose to assess PLO4: oral communication and used MS project/thesis presentation as the direct measure to assess this PLO.

- (1) MS project/thesis oral presentation is part of the degree requirement in Master program in Computer Science.
- (2) MS project/thesis oral presentation is done in the Computer Science Graduate Symposium that is held in each semester.
- (3) MS project/thesis oral presentation was assessed latest at Fall 2015 Graduate Symposium.

Q2.2.

Has the program developed or adopted **explicit** standards of performance for this PLO?

- ☒ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know
- ☐ 4. N/A

Q2.3.

Please **provide the rubric(s)** and **standards of performance** that you have developed for this PLO here or in the appendix.

- (1) 70% of the graduate students assessed should score 3.0 or above in overall and each assessed area.
- (2) Please see the rubrics attached herein.



OralCommunicationRubric.docx
27.81 KB



No file attached

Q2.4. PLO	Q2.5. Stdrd	Q2.6. Rubric	Please indicate where you have published the PLO , the standard of performance, and the rubric that was used to measure the PLO:
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1. In SOME course syllabi/assignments in the program that address the PLO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2. In ALL course syllabi/assignments in the program that address the PLO
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3. In the student handbook/advising handbook
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4. In the university catalogue
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5. On the academic unit website or in newsletters
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	6. In the assessment or program review reports, plans, resources, or activities
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7. In new course proposal forms in the department/college/university
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8. In the department/college/university's strategic plans and other planning documents
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9. In the department/college/university's budget plans and other resource allocation documents
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10. Other, specify: <input type="text"/>

Question 3: Data Collection Methods and Evaluation of Data Quality for the Selected PLO

Q3.1.

Was assessment data/evidence **collected** for the selected PLO?

- ☒ 1. Yes
- ☐ 2. No (skip to **Q6**)
- ☐ 3. Don't know (skip to **Q6**)
- ☐ 4. N/A (skip to **Q6**)

Q3.1.1.

How many assessment tools/methods/measures **in total** did you use to assess this PLO?

Q3.2.

Was the data **scored/evaluated** for this PLO?

- ☒ 1. Yes
- ☐ 2. No (skip to **Q6**)
- ☐ 3. Don't know (skip to **Q6**)
- ☐ 4. N/A (skip to **Q6**)

Q3.2.1.

Please describe how you collected the assessment data for the selected PLO. For example, in what course(s) or by what means were data collected:

- (1) It is part of the degree requirement in Master program in Computer Science that students present their MS thesis/project work in the Computer Science Graduate Symposium. The Graduate Symposium is held in each semester.
- (2) Faculty evaluated students' presentations using the Oral Communication Rubrics, and data was collected at the end.

(Remember: Save your progress)

Question 3A: Direct Measures (key assignments, projects, portfolios, etc.)

Q3.3.

Were direct measures (key assignments, projects, portfolios, course work, student tests, etc.) used to assess this PLO?

- ☒ 1. Yes
- ☐ 2. No (skip to Q3.7)
- ☐ 3. Don't know (skip to Q3.7)

Q3.3.1.

Which of the following direct measures were used? [Check all that apply]

- ☐ 1. Capstone project (e.g. theses, senior theses), courses, or experiences
- ☐ 2. Key assignments from required classes in the program
- ☐ 3. Key assignments from elective classes
- ☐ 4. Classroom based performance assessment such as simulations, comprehensive exams, or critiques
- ☐ 5. External performance assessments such as internships or other community-based projects
- ☐ 6. E-Portfolios
- ☐ 7. Other Portfolios
- ☒ 8. Other, specify:

Q3.3.2.

Please **explain** and **attach** the direct measure you used to collect data:

- (1) All raw data and direct measure were collected and documented in the department office, and can be provided upon request.
- (2) The rubrics was provided in Q 2.3.
- (3) Please see the assessment data attached herein.



Archive.zip
63.46 KB



CSCGradAssessment.zip
63.34 KB

Q3.4.

What tool was used to evaluate the data?

- ☐ 1. No rubric is used to interpret the evidence (skip to Q3.4.4.)
- ☐ 2. Used rubric developed/modified by the faculty who teaches the class (skip to Q3.4.2.)
- ☒ 3. Used rubric developed/modified by a group of faculty (skip to Q3.4.2.)
- ☐ 4. Used rubric pilot-tested and refined by a group of faculty (skip to Q3.4.2.)
- ☐ 5. The VALUE rubric(s) (skip to Q3.4.2.)
- ☐ 6. Modified VALUE rubric(s) (skip to Q3.4.2.)
- ☐ 7. Used other means (Answer Q3.4.1.)

Q3.4.1.

If you used other means, which of the following measures was used? [Check all that apply]

- ☐ 1. National disciplinary exams or state/professional licensure exams (skip to Q3.4.4.)
- ☐ 2. General knowledge and skills measures (e.g. CLA, ETS PP, etc.) (skip to Q3.4.4.)

- ☐ 3. Other standardized knowledge and skill exams (e.g. ETC, GRE, etc.) (skip to **Q3.4.4.**)
- ☐ 4. Other, specify: (skip to **Q3.4.4.**)

Q3.4.2.

Was the **rubric** aligned directly and explicitly **with the PLO**?

- ☒ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know
- ☐ 4. N/A

Q3.4.3.

Was the **direct measure** (e.g. assignment, thesis, etc.) aligned directly and explicitly **with the rubric**?

- ☒ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know
- ☐ 4. N/A

Q3.4.4.

Was the **direct measure** (e.g. assignment, thesis, etc.) aligned directly and explicitly **with the PLO**?

- ☒ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know
- ☐ 4. N/A

Q3.5.

How many faculty members participated in planning the assessment data **collection** of the selected PLO?

16

Q3.5.1.

How many faculty members participated in the **evaluation** of the assessment data for the selected PLO?

8

Q3.5.2.

If the data was evaluated by multiple scorers, was there a norming process (a procedure to make sure everyone was scoring similarly)?

- ☐ 1. Yes
- ☒ 2. No
- ☐ 3. Don't know
- ☐ 4. N/A

Q3.6.

How did you **select** the sample of student work (papers, projects, portfolios, etc.)?

Every student making a presentation at the symposium was evaluated.

Q3.6.1.

How did you **decide** how many samples of student work to review?

Every student making a presentation at the symposium was evaluated.

Q3.6.2.

How many students were in the class or program?

15

Q3.6.3.

How many samples of student work did you evaluated?

15 out of 15

Q3.6.4.

Was the sample size of student work for the direct measure adequate?

- ☒ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know

(Remember: Save your progress)

Question 3B: Indirect Measures (surveys, focus groups, interviews, etc.)

Q3.7.

Were indirect measures used to assess the PLO?

- ☐ 1. Yes
- ☒ 2. No (skip to Q3.8)
- ☐ 3. Don't Know (skip to Q3.8)

Q3.7.1.

Which of the following indirect measures were used? [Check all that apply]

- ☐ 1. National student surveys (e.g. NSSE)
- ☐ 2. University conducted student surveys (e.g. OIR)

- ☐ 3. College/department/program student surveys or focus groups
- ☐ 4. Alumni surveys, focus groups, or interviews
- ☐ 5. Employer surveys, focus groups, or interviews
- ☐ 6. Advisory board surveys, focus groups, or interviews
- ☐ 7. Other, specify:

Q3.7.1.1.

Please explain and attach the indirect measure you used to collect data:

 No file attached No file attached**Q3.7.2.**

If surveys were used, how was the sample size **decided**?

Q3.7.3.

If surveys were used, how did you **select** your sample:

Q3.7.4.

If surveys were used, what was the response rate?

Question 3C: Other Measures (external benchmarking, licensing exams, standardized tests, etc.)

Q3.8.

Were external benchmarking data, such as licensing exams or standardized tests, used to assess the PLO?

- ☐ 1. Yes
☒ 2. No (skip to **Q3.8.2**)
☐ 3. Don't Know (skip to **Q3.8.2**)

Q3.8.1.

Which of the following measures was used? [Check all that apply]

- ☐ 1. National disciplinary exams or state/professional licensure exams
☐ 2. General knowledge and skills measures (e.g. CLA, ETS PP, etc.)
☐ 3. Other standardized knowledge and skill exams (e.g. ETC, GRE, etc.)
☐ 4. Other, specify:

Q3.8.2.

Were other measures used to assess the PLO?

- ☒ 1. Yes
☐ 2. No (skip to **Q4.1**)
☐ 3. Don't know (skip to **Q4.1**)

Q3.8.3.

If other measures were used, please specify:

CSc 295 (Internship) was assessed in Fall 2015 and Spring 2015.



CSc295AssessmentDataFall2015.xlsx
28.83 KB



CSc295AssessmentDataSpring2015.xlsx
25.25 KB

(Remember: Save your progress)

Question 4: Data, Findings, and Conclusions

Q4.1.

Please provide simple tables and/or graphs to summarize the assessment data, findings, and conclusions for the selected PLO for **Q2.1**:

(1) PLO 4 (MS project/thesis oral presentation) was assessed in Fall 2015. The results show that more than 70% of the evaluated students met or exceeded the program standard. Please see the first attachment for the assessment data (the rubrics was provided in Q 2.3).

(2) PLOs 3 and 18 were also assessed in Fall 2015. The results also show that more than 70% of the evaluated student met or exceeded the program standard. Please see the second attachment that includes both the rubrics and assessment data for PLOs 3 and 18.



OralAssessmentData2016.xlsx
10.44 KB




Technical and Written Communications.zip
63.62 KB

Q4.2.

Are students doing well and meeting the program standard? If not, how will the program work to improve student performance of the selected PLO?

Yes, the assessment shows that students are doing well. More of 70% of the student meet or exceed the program standard in overall and each assessed area. Please see the attachments in Q4.1 for details.

 No file attached

 No file attached

Q4.3.

For the selected PLO, the student performance:

- ☐ 1. **Exceeded** expectation/standard
- ☒ 2. **Met** expectation/standard
- ☐ 3. **Partially** met expectation/standard
- ☐ 4. Did not meet expectation/standard
- ☐ 5. No expectation/standard has been specified
- ☐ 6. Don't know

Question 4A: Alignment and Quality

Q4.4.

Did the data, including the direct measures, from all the different assessment tools/measures/methods directly align with the PLO?

- ☒ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know

Q4.5.

Were **all** the assessment tools/measures/methods that were used good measures of the PLO?

- ☒ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know

Question 5: Use of Assessment Data (Closing the Loop)

Q5.1.

As a result of the assessment effort and based on prior feedback from OAPA, do you anticipate *making any changes* for your program (e.g. course structure, course content, or modification of PLOs)?

- ☐ 1. Yes
- ☒ 2. No (skip to **Q5.2**)
- ☐ 3. Don't know (skip to **Q5.2**)

Q5.1.1.

Please describe *what changes* you plan to make in your program as a result of your assessment of this PLO. Include a description of how you plan to assess the impact of these changes.

Q5.1.2.Do you have a plan to assess the *impact of the changes* that you anticipate making?

- ☐ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know

Q5.2.How have the assessment data from the last annual assessment been used so far? **[Check all that apply]**

	1. Very Much	2. Quite a Bit	3. Some	4. Not at All	5. N/A
1. Improving specific courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
2. Modifying curriculum	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
3. Improving advising and mentoring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
4. Revising learning outcomes/goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
5. Revising rubrics and/or expectations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
6. Developing/updating assessment plan	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
7. Annual assessment reports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
8. Program review	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Prospective student and family information	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
10. Alumni communication	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
11. WSCUC accreditation (regional accreditation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
12. Program accreditation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
13. External accountability reporting requirement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
14. Trustee/Governing Board deliberations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
15. Strategic planning	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Institutional benchmarking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
17. Academic policy development or modifications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
18. Institutional improvement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
19. Resource allocation and budgeting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
20. New faculty hiring	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
21. Professional development for faculty and staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
22. Recruitment of new students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

23. Other, specify:

Q5.2.1.

Please provide a detailed example of how you used the assessment data above:

- (1) The purpose of the assessments is to control the quality of MS program in Computer Science. The data show that students meet/exceed the program standard in oral communication.
- (2) It provides a guideline for faculty review to make sure that students meet the requirements and standards of MS project/thesis oral presentation.
- (3) The faculty discuss and review the data, and are encouraged to continue with the good practice.
- (4) The data and results will be reported to the campus program review.

(Remember: Save your progress)

Additional Assessment Activities

Q6.

Many academic units have collected assessment data on aspect of their program *that are not related to the PLOs* (i.e. impacts of an advising center, etc.). **If** your program/academic unit has collected data on program *elements*, please briefly report your results here:

N/A



No file attached



No file attached

Q7.

What PLO(s) do you plan to assess next year? [Check all that apply]

- ☐ 1. Critical Thinking
- ☐ 2. Information Literacy
- ☐ 3. Written Communication
- ☐ 4. Oral Communication
- ☐ 5. Quantitative Literacy
- ☐ 6. Inquiry and Analysis
- ☐ 7. Creative Thinking
- ☐ 8. Reading
- ☐ 9. Team Work
- ☐ 10. Problem Solving
- ☐ 11. Civic Knowledge and Engagement
- ☐ 12. Intercultural Knowledge and Competency
- ☒ 13. Ethical Reasoning
- ☐ 14. Foundations and Skills for Lifelong Learning
- ☐ 15. Global Learning
- ☐ 16. Integrative and Applied Learning

- ☐ 17. Overall Competencies for GE Knowledge
- ☒ 18. Overall Competencies in the Major/Discipline
- ☐ 19. Other, specify any PLOs not included above:

- a.
- b.
- c.

Q8. Please attach any additional files here:

 No file attached  No file attached  No file attached  No file attached

Q8.1.

Have you attached any files to this form? If yes, please list every attached file here:

Program Information (Required)

P1.

Program/Concentration Name(s): [by degree]

MS Computer Science

P1.1.

Program/Concentration Name(s): [by department]

Computer Science MS

P2.

Report Author(s):

Jinsong Ouyang

P2.1.

Department Chair/Program Director:

Cui Zhang

P2.2.

Assessment Coordinator:

Jinsong Ouyang

P3.

Department/Division/Program of Academic Unit

Computer Science

P4.

College:

College of Engineering and Computer Science

P5.

Total enrollment for Academic Unit during assessment semester (see Departmental Fact Book):

121 for Fall 2015

P6.

Program Type:

- ☐ 1. Undergraduate baccalaureate major
- ☐ 2. Credential
- ☒ 3. Master's Degree
- ☐ 4. Doctorate (Ph.D./Ed.D./Ed.S./D.P.T./etc.)
- ☐ 5. Other, specify:

P7. Number of **undergraduate degree programs** the academic unit has?

2

P7.1. List all the names:

BS in Computer Science

BS in Computer Engineering (joint program with Department of EEE)

P7.2. How many concentrations appear on the diploma for this undergraduate program?

N/A

P8. Number of **master's degree programs** the academic unit has?

3

P8.1. List all the names:

MS in Computer Science

MS in Software Engineering

MS in Computer Engineering (joint program with Department of EEE)

P8.2. How many concentrations appear on the diploma for this master's program?

N/A

P9. Number of **credential programs** the academic unit has?

0

P9.1. List all the names:

P10. Number of **doctorate degree programs** the academic unit has?

0

P10.1. List all the names:

When was your assessment plan...	1. Before 2010-11	2. 2011-12	3. 2012-13	4. 2013-14	5. 2014-15	6. No Plan	7. Don't know
P11. developed?	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
P11.1. last updated?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>

P11.3.

Please attach your latest **assessment plan**:



Assessment Plan.docx
20.78 KB

P12.

Has your program developed a **curriculum map**?

- ☒ 1. Yes
☐ 2. No
☐ 3. Don't know

P12.1.

Please attach your latest **curriculum map**:



Curriculum Map.docx
21.03 KB

P13.

Has your program indicated in the curriculum map where assessment **of student learning** occurs?

- ☒ 1. Yes
☐ 2. No
☐ 3. Don't know

P14.

Does your program have a capstone class?

- ☒ 1. Yes, indicate:
- ☐ 2. No
- ☐ 3. Don't know

P14.1.

Does your program have **any** capstone project?

- ☒ 1. Yes
- ☐ 2. No
- ☐ 3. Don't know

(**Remember:** Save your progress)

Graduate Program Oral Communication Rubric for MS Project/Thesis Presentations¹

Date: _____

Project/Thesis#: _____

Evaluator: ☐ Faculty ☐ Instructor ☐ Student ☐ Alumni ☐ Industry

4 Exceeds Criteria	3 Meets Criteria	2 Progress to Criteria	1 Below Expectation	Rating
Organizational pattern: introduction and conclusion, sequenced material within the body, and transitions				
Is <i>clearly</i> and <i>consistently</i> observable, is <i>skillful</i> and makes the content of the presentation <i>cohesive</i> .	Is <i>consistently</i> observable in the presentation.	Is <i>intermittently</i> observable in the presentation.	Is <i>not observable</i> in the presentation.	
Language choices				
Are <i>captivating</i> and <i>compelling</i> , and <i>enhance</i> the effectiveness of the presentation.	Are <i>adequate</i> and <i>generally support</i> the effectiveness of the presentation.	Are <i>limited</i> and <i>partially support</i> the effectiveness of the presentation.	Are <i>inappropriate</i> and <i>adversely impact</i> the effectiveness of the presentation.	
Delivery techniques: visual aids, question handling, posture, gesture, eye contact, and vocal expression				
Make the presentation <i>compelling</i> . Speaker appears <i>polished</i> and <i>confident</i> .	Make the presentation <i>interesting</i> . Speaker appears <i>comfortable</i> .	Make the presentation <i>understandable</i> . Speaker appears <i>tentative</i> .	Make the presentation <i>difficult to understand</i> . Speaker appears <i>uncomfortable</i> .	
Supporting materials: background and related work, explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities				
A <i>variety of</i> supporting materials provided. Makes <i>appropriate</i> reference to information or analysis that <i>significantly supports</i> the presentation and demonstrates a <i>thorough</i> knowledge of problem area.	<i>Adequate</i> supporting materials provided. Make <i>appropriate</i> reference to information or analysis that <i>generally supports</i> the presentation and demonstrates a <i>good</i> knowledge of problem area.	<i>Some</i> supporting materials provided. Make reference to information or analysis that <i>partially supports</i> the presentation and shows understanding of <i>some issues</i> of problem area.	<i>No</i> supporting materials provided. Make reference to <i>irrelevant</i> information or analysis and demonstrates a lack of understanding of problem area.	
Communication of technical content: project/thesis objectives are precisely stated, appropriately repeated, logically reasoned, and strongly supported				
Communication is <i>compelling</i> . Arguments are presented <i>persuasively</i> and <i>logically</i> .	Communication is <i>clear</i> . Arguments are <i>adequate</i> .	Communication is <i>not convincing</i> . Arguments are <i>lacking</i> .	Communication is <i>poor</i> and <i>ineffective</i> . Arguments are <i>non-existent</i> .	

Additional comments including originality, technical merits, and overall quality of the work:

¹ Development of this oral communication rubric was influenced by the AAC&U Oral Communication Rubric.

Organization Pattern

Language Choices

3	3
4	4
4	4
2	3
3	3
2	2
3	3
3	3
3	3
2	2
2.5	3
3	3
3	3
4	3
3	3
3	3
2	3
3	4
3	3
2	3
3	3
3	3
3	2
3	3
4	4
4	4
4	4
3	3
3	4
3	4
3	3
3	3
3	3
4	4
3	3
3	3
3	3
2	2
3	3
3	3
3	3
3	3
3	3
4	3
3	3
3	2

4	4
3	3
4	4
3	3
3	3
3	3
3	3
3	3
4	4
4	4
4	4
4	4
4	4
4	4

Number of Students	15	
Number of Evaluation	60	60
Average Score	3.158333	3.2
Median Score	3	3
Min Score	2	2
Max Score	4	4
Standard Deviation	0.588017	0.571548
# of Score 3 or above	53	55
% of Score 3 or above	88%	92%

Delivery Techniques	Supporting Materials	Communication of Technical Content
3	3	3
4	4	4
3	3	3
3	3	2
3	3	3
2	3	3
3	2.5	3
4	4	4
2.5	4	4
3	1	3
3	2	3
3	2	3
2.5	2	3
3.5	3	3.5
3	3	2.5
3	3	3
2	2	2
4	3	4
2	2	3
2	2	3
2	2	2
3	2	2
1	2	3
2	2	3
4	4	4
4	3	4
4	3	4
3	2	3
4	2	4
2	3	4
3	3	3
2	3	3
2	4	3
4	4	4
3	3	3
3	3	4
3	3	3
2	3	2
3	3	3
2	2	3
2	3	2
3	3	3
3	2	3
3	3	3
3	3	3
3	3	3

4
3
4
3
3
3
3
3
3
3
3
3
4
3
3

4
3
3
3
3
3
3
3
4
4
3
4
4
4
4

4
3
4
3
3
3
3
3
3
3
3
3
4
3
3

60
2.941667
3
1
4
0.677567
45
75%

60
2.925
3
2
4
0.706075
44
73%

60
3.133333
3
2
4
0.569112
53
88%

Overall

3.071667

3

1.8

4

0.622464

Technical Content Evaluation for MS Projects/Theses

Faculty: _____ Student: _____ Date: _____

- a. Conduct research on related work. Create novel ideas, algorithms, and/or theoretical solutions; or develop new techniques and/or innovative implementations for a new or existing problem.

Exceed Criteria	Meets Criteria	Progress to Criteria	Below Expectation	NA*

- b. Apply advanced knowledge of mathematics, algorithmic principles, computer theory, and principles of computing systems in the modeling and design of computer-based systems.

Exceed Criteria	Meets Criteria	Progress to Criteria	Below Expectation	NA*

- c. Apply hardware design or software development process that includes requirements, design, development, verification and validation.

Exceed Criteria	Meets Criteria	Progress to Criteria	Below Expectation	NA*

- d. Apply current technology and best practices in the development of computer-based systems of varying complexity.

Exceed Criteria	Meets Criteria	Progress to Criteria	Below Expectation	NA*

- e. Additional comments.

[illegible]

* Mark NA only when an aspect does not apply

	Novelty	Theory	Process	Technology
	4	3	3	4
	3	3	3	3
	4	3	3	4
	3	3	3	4
	2	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	4
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	4	3	3
	3	3	3	3
	4	3	3	4
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	4	3	4	4
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	4	4	3
	N/A	3	3	4
	3	3	3	3
	3	4	3	3
Number of Students	15			
Number of Evaluation	33	33	33	33
Average Score	3.09375	3.090909	3.060606	3.212121
Median Score	3	3	3	3
Min Score	3	3	3	3
Max Score	4	4	4	4
Standard Deviation	0.384006	0.28748	0.238606	0.40881
# of Score 3 or above	31	33	33	33
% of Score 3 or above	94%	100%	100%	100%

y and Best | Overall

33
3.114347
3
3
4
0.329726

Graduate Program Written Communication Rubric

Computer Science Department

Written Communication Rubric for Master's Projects/Theses

Date: _____ Project/Thesis#: _____

Evaluator: ☐ Faculty ☐ Industry ☐ Student ☐ Alumni

Table 1. Evaluation of composition and completeness						
Criteria	4 Exceeds Criteria	3 Meets Criteria	2 Progressing to Criteria	1 Below Expectations	NA	Score
Structure. <i>This section evaluates the formal structure of the project/thesis including the organization of sections and subsections. Reports should have a title and a table of contents showing logical sections and subsections.</i>						
Structure (organization and transitions)	The report is well organized, and maintains a consistent style. Transitions are logical and smooth.	Report is organized with a reasonable flow of ideas. Most transitions are logical and smooth.	Report is somewhat organized. Transitions are not always logical and smooth.	Report is not organized. Little sense of wholeness and completeness. Poor transitions.		
Syntax. <i>Sentence structure and conventions of standard English. This section evaluates the author's use of language to clearly communicate ideas. Spelling and grammar are included in the evaluation.</i>						
Syntax, sentence structure and conventions of standard English	Words are chosen with care in consideration of fine differences in meaning. Correct syntax, spelling, and grammar.	Sentence structure usually conveys the intended meaning. In general, there are few errors in syntax, spelling, and/or grammar.	Sentence structure sometimes conveys confusing meanings, but the intent can still be discerned from the context. A number of errors in syntax, spelling, and/or grammar.	Sentence structure conveys misleading meanings. Many errors in syntax, spelling, and/or grammar.		
Paragraph Structure. <i>This section evaluates the author's integration of sentences into meaningful paragraphs. Please evaluate the report with respect to the following description of a well-written paragraph: The first sentence of a paragraph establishes some perspective for the remainder of the paragraph (e.g., a topic sentence or a transitional sentence). Within a paragraph, sentences are relevant to the paragraph and are in a logical order. Near the end of the paragraph, there is some statement that unifies or completes the ideas presented in that paragraph.</i>						
Paragraph	Paragraphs are on topic and understandable. Stylistic variations show command of language.	Most paragraphs are on topic and understandable with some errors. Although there may be some loss of focus, paragraphs are reasonably written.	Some paragraphs indicate good structure, but often, paragraphs do not show unifying thought and logic. Sentences within paragraphs seem to be related.	Paragraphs are confusing, with unclear topic and meaning.		

Criteria	4 Exceeds Criteria	3 Meets Criteria	2 Progressing to Criteria	1 Below Expectations	NA	Score
----------	--------------------	------------------	---------------------------	----------------------	----	-------

Table 2. Presentation of technical content *This is an evaluation of writing skills as used to convey technical content, not an evaluation of the perceived difficulty of the project. Consider whether the student has effectively communicated the attributes of the project. If any of the following aspects does not apply, then mark NA.*

Problem Statement. <i>This section evaluates the problem statement. A problem statement describes the purpose of the work (i.e., the need being addressed) as well as how the project results will accomplish that purpose.</i>						
Problem Statement	Objective, nature of challenges and value of the project are clearly established.	Objective, nature of challenges and value of the project are adequately stated.	Some significant aspects of the objective, nature of challenges and value of the project are missing.	Significant aspects of the objective, nature of challenges and value of the project are missing.		
Background and Related Work (Research). <i>This section provides support for the project/thesis by identifying and citing background and related work.</i>						
Background and Related Work	Background and related work are extensively identified.	Background and related work are adequately identified.	Limited background and related work are identified.	No background and related work are identified.		
Design Requirements. <i>This section includes specifications of functional and/or non- functional requirements.</i>						
Design Requirements Specifications	Specifications are complete. Appropriate design constraints have been identified.	Specifications are fairly complete. Most design constraints have been identified.	Some specifications are missing. Some design constraints are not identified.	Requirements are not specified. Design constraints are not identified.		
Development Process. <i>In this section, students document their development process. The purpose is not to write a history of the project, but to document key development decisions and the factors that should be considered in making those decisions. It is possible that this section will recommend to the reader an improvement over the development process that was actually followed.</i>						
Development Process	Key development decision alternatives are well identified and/or compared. Reasoning shows a deep understanding of problem area.	Key development decision alternatives are adequately identified and/or compared. Reasoning shows a good understanding of problem area.	Limited key development decision alternatives are identified and/or compared. Reasoning shows a limited understanding of problem area.	Key development decision alternatives are not identified and compared. Reasoning does not show an understanding of problem area.		
Analysis of Project Results. <i>In this section, do not evaluate how far the student has developed the project, but evaluate whether you understand what has been accomplished in the project on the basis of data analysis and performance results.</i>						
Analysis of Results	All important aspects of the performance of the project are described with measured results or precise evaluative statements. The implementation of specified requirements is fully analyzed and verified.	Most important aspects of the performance of the project are described with measured results or evaluative statements. The implementation of specified requirements is adequately analyzed and verified.	Some aspects of the performance of the project are described with measured results or evaluative statements. The implementation of specified requirements are minimally analyzed and verified.	No aspect of the performance of the project is described with measured results or evaluative statements. The implementation of specified requirements is not analyzed and verified.		
Conclusion. <i>Evaluate how well the report summarizes and evaluates the major efforts involved in the project, and discusses future work.</i>						
Conclusion	Conclusion succinctly describes the accomplishments of the effort and relates them to the original problem. Future work is fully discussed.	Conclusion clearly describes most of the accomplishments and relates them to the original problem statement. Future work is reasonably well discussed.	Conclusion describes some of the accomplishments and relates them to the original problem statement. Discussion on future work is very limited.	No clear summary of project. No discussion of future work.		

	Structure	Syntax	Paragraph	problem st
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	4	3	4	4
	3	3	3	3
	3	2	3	2
	3	3	3	3
	3	3	3	3
	3	3	3	3
	4	3	3	4
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	4
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	4	4
	4	4	4	3
	4	4	4	4
Number of Students	15			
Number of Evaluation	34	34	34	34
Average Score	3.117647	3.029412	3.117647	3.117647
Median Score	3	3	3	3
Min Score	3	2	3	2
Max Score	4	4	4	4
Standard Deviation	0.32219	0.295585	0.32219	0.403274
# of Score 3 or above	34	33	34	33
% of Score 3 or above	100%	97%	100%	97%

I Overall

3.07853
3
2.444444
4
0.348274

	Rubric 1	Rubric 2	Rubric 3	Rubric 4
	4	4	4	4
	4	4	4	4
	3	4	3	4
	3	3	4	3
	3	3	3	3
	2	2	3 n/a	
Number of students	6	6	6	6
Average score	3.16666667	3.33333333	3.5	3.6
Median score	3	3.5	3.5	4
Min score	2	2	3	3
Max score	4	4	4	4
Standard Deviation	0.75277265	0.81649658	0.54772256	0.54772256
# of Score 3 or above	5	5	6	5
% of Score 3 or above	83%	83%	100%	100%

Rubric 5	Rubric 6	Overall
	4	4
	4	4
	3	4
	3	3
	3	3
n/a		3
	6	6
3.4	3.5	3.41666667
3	3.5	3.41666667
3	3	2.66666667
4	4	4
0.54772256	0.54772256	0.62669324
5	6	
100%	100%	

	Rubric 1	Rubric 2	Rubric 3	Rubric 4
	4	4	4	4
	4	4	4	4
	4	4	4	4
	4	4	4	4
	4	4	3	3
	3	4	3	3
	3	4	3	3
	3	4	3	3
	3	4	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	3
	3	3	3	2
	3	3	2	2
	3	3	2 n/a	
	3	3	2 n/a	
	3	3	2 n/a	
Number of students	16	16	16	13
Average score	3.3125	3.5625	3	3.15384615
Median score	3	4	3	3
Min score	3	3	2	2
Max score	4	4	4	4
Standard Deviation	0.47871355	0.51234754	0.73029674	0.68873723
# of Score 3 or above	16	16	12	11
% of Score 3 or above	100%	100%	75%	85%

Rubric 5	Rubric 6	Overall
	4	4
	4	4
	3	4
	3	4
	3	4
	3	3
	3	3
	3	3
	3	3
	3	3
	2	3
	2	3
n/a		3
n/a	n/a	
n/a	n/a	
n/a	n/a	
	12	13
	3	3.38461538 3.23557692
	3	3 3.16666667
	2	3 2.5
	4	4 4
0.60302269	0.50636968	0.58658124
10	13	
83%	100%	

Assessment Plan

The graduate program in Computer Science and Software Engineering developed a plan by which we have assessed student achievement of its Program Learning Outcomes since 2010.

	Outcome 1 Disciplinary Knowledge	Outcome 2 Communication	Outcome 3 Critical Thinking/Analysis	Outcome 4 Evaluation of Related Work	Outcome 5 Professionalism	Outcome 6 Social and Global Implication
2010 – 2011 (Program Review)	a. Evaluation of technical content of MS projects b. Internship employer evaluation	a. Evaluation of MS project written communication b. Internship employer evaluation	a. Evaluation of technical content of MS projects	a. Evaluation of technical content of MS projects	a. Internship employer evaluation	a. Internship employer evaluation
2011 – 2012	a. Internship employer evaluation	a. Internship employer evaluation			a. Internship employer evaluation	a. Internship employer evaluation
2012 – 2013	a. Internship employer evaluation	a. Internship employer evaluation			a. Internship employer evaluation	a. Internship employer evaluation
2013 – 2014	a. Evaluation of technical content of MS projects b. Internship employer evaluation	a. Evaluation of MS project written communication b. Internship employer evaluation	a. Evaluation of technical content of MS projects	a. Evaluation of technical content of MS projects	a. Internship employer evaluation	a. Internship employer evaluation
2014 – 2015	a. Internship employer evaluation	a. Internship employer evaluation			a. Internship employer evaluation	a. Internship employer evaluation
2015 – 2016	a. Evaluation of technical content of MS projects b. Internship employer evaluation	a. Evaluation of MS project oral presentations b. Evaluation of MS project written communication c. Internship employer evaluation	a. Evaluation of technical content of MS projects	a. Evaluation of technical content of MS projects	a. Internship employer evaluation	a. Internship employer evaluation
2016 – 2017 (Self Study)	a. Internship employer evaluation	a. Internship employer evaluation			a. Internship employer evaluation	a. Internship employer evaluation

Lines of Evidence for Assessing Graduate Program Learning Outcomes			
Year	PLO	Direct Lines of Evidence (Example: Assignments in core courses; early writing assessment)	Indirect Lines of Evidence (Mid-course assessments; Alumni Survey)
2018 – 2019	PLO 1 Disciplinary Knowledge	a. Exams/assignments in core courses b. MS projects/theses c. Internship employer evaluation	a. Industrial Advisory Committee survey
2017 – 2018 2019 – 2020	PLO 2 Communication	a. MS projects/theses b. Internship employer evaluation	a. Industrial Advisory Committee survey
2017 – 2018 2019 – 2020	PLO 3 Critical Thinking/Analysis	a. Exams/assignments in core courses b. MS projects/theses	
2017 – 2018 2019 – 2020	PLO 4 Evaluation of Related Work	a. MS projects/theses	
2018 – 2019	PLO 5 Professionalism	a. Internship employer evaluation	a. Industrial Advisory Committee survey
2018 – 2019	PLO 6 Social and Global Implication	a. Internship employer evaluation	a. Industrial Advisory Committee survey

Curriculum Map

The curriculum map of the graduate program in Computer Science and Software Engineering is provided in the following table.

Course Work	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6
CSc 201 (C)	X		X			
CSc 204 (C)	X		X			
CSc 205 (C)	X		X			
CSc 206 (C)	X		X			
CSc 209 (C)	X	X	X	X	X	X
CSc 212 (E)	X		X			
CSc 214 (E)	X		X			
CSc 215 (E)	X		X			
CSc 219 (E)	X		X			
CSc 230 (E)	X		X			
CSc 231 (E)	X		X			
CSc 232 (E)	X		X			
CSc 233 (E)	X		X			
CSc 234 (E)	X		X			
CSc 235 (E)	X		X			
CSc 236 (E)	X		X			
CSc 237 (E)	X		X			
CSc 238 (E)	X		X			
CSc 239 (E)	X		X			
CSc 242 (E)	X		X			
CSc 244 (E)	X		X			
CSc 245 (E)	X		X			
CSc 250 (E)	X		X			
CSc 251 (E)	X		X			
CSc 252 (E)	X		X			
CSc 253 (E)	X		X			
CSc 254 (E)	X		X			
CSc 255 (E)	X		X			
CSc 258 (E)	X		X			
CSc 273 (E)	X		X			
CSc 275 (E)	X		X			
CSc 280 (E)	X		X			

CSc 295 (E)	X	X	X		X	X
CSc 500/502 (Thesis/Project)	X	X	X	X	X	X