## ASSESSMENT REPORT TEMPLATE  
\*\*PHD in Computer Science and Software Engineering\*\*  
  
\*\*Student Learning Outcomes\*\*  
  
\* \*\*SLO1:\*\* Comprehend advanced concepts and technologies in specific areas of Computer Science and Software Engineering.  
\* \*\*SLO2:\*\* Analyze research publications and identify research gaps in specific areas of Computer Science and Software Engineering.  
\* \*\*SLO3:\*\* Apply research methodologies to conduct original research in Computer Science and Software Engineering.  
\* \*\*SLO4:\*\* Communicate research findings effectively in both written and oral formats to different audiences.  
  
\*\*Comprehensive Outcomes\*\*  
  
The current list of Student Learning Outcomes (SLOs) for the PhD in Computer Science and Software Engineering program is comprehensive. These outcomes are reviewed and revised on a regular basis to ensure they align with the evolving landscape of the field and the expectations for PhD graduates.  
  
\*\*Communicating Student Learning Outcomes\*\*  
  
The Student Learning Outcomes are communicated to various stakeholders in the program. They are:  
  
\* \*\*Faculty:\*\* SLOs are shared with the faculty through departmental meetings, emails, and are incorporated into the program's internal website.  
\* \*\*Students:\*\* SLOs are introduced to students during orientation and are consistently reinforced throughout their coursework and advising sessions.   
\* \*\*Prospective Students:\*\* SLOs are prominently displayed on the program's webpage.  
  
\*\*Curriculum Map\*\*  
  
A curriculum map visually represents the alignment between program student learning outcomes and required courses/experiences. Briefly, think about which courses in your curriculum touch on the outcomes you listed. Then think about how deeply they are developed in each of those courses.  
  
\* A score of mature will be assigned to maps that simply indicate that there is alignment between the student learning outcomes and required courses/experiences   
and each student learning outcome is aligned (read: developed ) in at leas t one required course or experience. Also, indicate if the relevant course is required   
or an elective in the curriculum.  
  
\* A score of exemplary will be assigned to curriculum maps that convey the extent to which each outcome is developed in particular courses. Even though this   
example uses 1, 2, 3 to indicate development and A to indicate the intended placement of programmatic assessment(s) , a program could use any symbol (i.e.   
numbers, letters, descriptions).  
  
\* Consider a set of six student learning outcomes aligned to the fictional Forrest Gump Studies program. An advanced curriculum map may look like the following:  
  
\*\*(1) History (2) Film (3) Theory (4) Cultural Influence (5) Argue Persuasively (6) Create parallel story\*\*   
GUMP 100 - Intro to Forrest Gump 1 1 1 1   
PHIL 100 - Intro to Philosophy 1   
HIST 220 - American History 2 1 1   
FILM 100 – Intro to Film Studies 2   
GUMP 200 - History, Film, Philosophical Integration 2 2 2, A   
FILM 200 - Film & Technology 3   
HIST 340 – Cold War 2   
HIST 400 - Historical Methods 3   
PHIL 300 – Theories in Philosophy 3 1   
GUMP 300 - Story -Telling 2 1 3 2   
GUMP 350 – Story -Telling in Film 3, A 3, A 1 3 2   
GUMP 400 - Story Creation 3 3, A 3, A 3, A   
GUMP 250 - Intro to Shrimp Boating   
GUMP 320 - Shrimp Industry   
GUMP 390 – Gulf Coast Biology 2   
1- Introduction, 2 - Reinforcement, 3 - Emphasis, A - Assess   
  
\*Note - the “shorthand” for our outcomes are represented on the columns of the map ; the rows reflect required courses. In addition to these courses, students have 6 elective credit hours where they can   
choose from 3 additional GUMP courses offered ; Blue Highlight - Extra courses required for the Shrimp Boating Option\*   
  
\*\*Curriculum Map for PhD in CSSE:\*\*  
  
| Courses | SLO1 | SLO2 | SLO3 | SLO4 |  
| :------------------------------------------------------------------ | :---- | :---- | :---- | :---- |  
| 6000 Web Application Development | 0.00 | 1.00 | 0.00 | 1.00 |  
| 6120 Database Systems I (Fall/Spring) | 1.00 | 1.00 | 0.33 | 0.66 |  
| 6130 Data Mining | 1.00 | 0.33 | 0.66 | 1.00 |  
| 6210 Compiler Construction | 0.66 | 1.00 | 0.33 | 0.66 |  
| 6320 Design and Analysis of Computer Networks | 0.66 | 0.66 | 1.00 | 0.00 |  
  
\*\*Measurement\*\*  
  
\*\*Outcome-Measure Alignment\*\*   
  
Each Student Learning Outcome is assessed through a combination of direct and indirect measures. Direct measures are incorporated into coursework, culminating experiences, and research milestones. Indirect measures involve student, alumni, and employer feedback, analyzed for continuous improvement.  
  
\*\*Direct Measures\*\*  
  
\* \*\*SLO1:\*\* Performance in core coursework, comprehensive exams.  
\* \*\*SLO2:\*\* Literature reviews, research proposal presentations.  
\* \*\*SLO3:\*\* Dissertation research, publication in peer-reviewed conferences/journals.  
\* \*\*SLO4:\*\* Dissertation defense, conference presentations, publications.  
  
\*\*Data Collection Methods\*\*  
  
Assessment data is collected through a variety of methods, including:  
  
\* \*\*Rubrics:\*\* Utilized for evaluating student performance on assignments, presentations, and dissertation research.  
\* \*\*Exams:\*\* Employed to assess comprehension of fundamental concepts in core courses.  
\* \*\*Surveys:\*\* Administered to gather feedback from students, alumni, and employers.  
\* \*\*Archival Data:\*\* Includes dissertation documents, publications, and presentations for assessing research output and communication skills.  
  
\*\*Results\*\*  
  
\*\*Reporting Results\*\*  
  
| Course\\_name | Professor | A | B | C | D | F | Score | Total\\_students |  
| :---------------------------------------- | :----------------------- | - | :- | - | - | - | :---- | :------------- |  
| COMP 6000 | Marghitu | 4 | 0 | 0 | 0 | 0 | 100,0 | 4 |  
| COMP 6120 | Ku (Spring/Fall) | 5 | 0 | 0 | 0 | 0 | 100,0 | 5 |  
| COMP 6210 | Mulder | 1 | 0 | 0 | 0 | 0 | 100,0 | 1 |  
| COMP 6130 | Zhou | 3 | 0 | 0 | 0 | 0 | 100,0 | 3 |  
| COMP 6320 | Shu | 3 | 2 | 0 | 0 | 0 | 90,0 | 5 |  
| ... | ... | - | :- | - | - | - | :---- | :------------- |  
| COMP 7990/8990 | Qualtrics Measure 1 | 45| 13 | 4 | 0 | 0 | 91,5 | 62 |  
| COMP 7990/8990 | Qualtrics Measure 2 | 39| 18 | 4 | 0 | 0 | 89,3 | 61 |  
| COMP 7990/8990 | Qualtrics Measure 3 | 30| 28 | 4 | 0 | 0 | 85,5 | 62 |  
| COMP 7990/8990 | Qualtrics Measure 4 | 30| 29 | 3 | 0 | 0 | 85,9 | 62 |  
| COMP 7990/8990 | Qualtrics Measure 5 | 33| 28 | 1 | 0 | 0 | 87,9 | 62 |  
| COMP 7990/8990 | Qualtrics Measure 6 | 27| 33 | 2 | 0 | 0 | 85,1 | 62 |  
| COMP 7990/8990 | Qualtrics Measure 7 | 27| 31 | 4 | 0 | 0 | 84,3 | 62 |  
| COMP 7990/8990 | Qualtrics Measure 8 | 30| 32 | 0 | 0 | 0 | 87,1 | 62 |  
| COMP 7990/8990 | Qualtrics Measure 9 | 29| 29 | 4 | 0 | 0 | 85,1 | 62 |  
  
\*\*Communicating Results\*\*  
  
| SLOs | Score | Ratings |  
| :---- | :---- | :---------- |  
| SLO1 | 91.9 | Exemplary |  
| SLO2 | 93.4 | Exemplary |  
| SLO3 | 87.5 | Proficient |  
| SLO4 | 54.0 | Insatisfactory |  
  
\*\*Interpretation of Results:\*\*  
  
\* \*\*SLO1 (Exemplary):\*\* Students consistently demonstrate a strong grasp of advanced concepts in their coursework, suggesting effective teaching and learning.  
\* \*\*SLO2 (Exemplary):\*\* The high performance in literature reviews and research proposals indicates a strong ability to analyze research and identify gaps, exceeding expectations.  
\* \*\*SLO3 (Proficient):\*\* Students generally perform well in applying research methodologies, though there is room for improvement to reach exemplary levels. This could involve providing more structured guidance and feedback during the dissertation research phase.   
\* \*\*SLO4 (Insatisfactory):\*\* This outcome requires significant attention. The low score suggests a need to strengthen students' ability to communicate their research effectively.  
  
\*\*Use of Results\*\*  
  
\*\*Purposeful Reflection\*\*   
  
Assessment results are reviewed annually by the CSSE faculty during the department's annual retreat. Faculty members actively engage in discussions regarding the interpretation of the results and collaborate on developing action plans. These plans aim to address areas identified for improvement and maintain strengths in student learning outcomes.  
  
\*\*Action Plan for 2029:\*\*  
  
\*\*SLO1 & SLO2 (Exemplary):\*\*  
  
\* \*\*Maintenance:\*\* Continue the current pedagogical approaches and course content that have led to high achievement in these areas.  
\* \*\*Continuous Improvement:\*\* Explore incorporating emerging technologies and advancements within the field to keep course content relevant. Encourage faculty to consider innovative teaching methods.  
  
\*\*SLO3 (Proficient):\*\*  
  
\* \*\*Enhancement:\*\* Organize workshops focusing on advanced research methodologies and provide more structured guidance during the dissertation proposal stage.   
\* \*\*Re-assessment:\*\* Evaluate the impact of the implemented workshops and guidance by analyzing student performance in research-based assignments and dissertation proposals in 2030.  
  
\*\*SLO4 (Insatisfactory):\*\*  
  
\*\*Analysis of Underperforming Areas:\*\* While student scores in COMP 7990/8990 on Qualtrics measures 1-9 are generally above the acceptable threshold, the aggregate score for SLO4, primarily assessed through research communication in the thesis/dissertation phase, is significantly lower. This indicates a disconnect between coursework performance and thesis/dissertation communication skills.  
  
\* \*\*Intervention:\*\* Implement a mandatory workshop series dedicated to scientific writing, presentation skills, and effective communication of research findings to different audiences. Integrate peer-review sessions for dissertation chapters and conference paper drafts.   
\* \*\*Re-assessment:\*\* Measure the effectiveness of the workshop series by evaluating the quality of student presentations at conferences and the clarity and effectiveness of written communication in their dissertations in 2030.  
  
  
\*\*Conclusion:\*\*   
  
The PhD in Computer Science and Software Engineering program is committed to providing a high-quality educational experience that prepares students to become leaders in their fields. The assessment plan is designed to ensure that students are meeting the program's rigorous standards and that the curriculum is effectively preparing them for successful careers. The action plan for 2029 is designed to address areas where improvements are needed and to build on the program's strengths.

# Curriculum Map (from SLO Computed - Year 2029)

| Courses | SLO1 | SLO2 | SLO3 | SLO4 |
| --- | --- | --- | --- | --- |
| 6000 Web Application Development | 0,00 | 1,00 | 0,00 | 1,00 |
| 6120 Database Systems I (Fall/Spring) | 1,00 | 1,00 | 0,33 | 0,66 |
| 6130 Data Mining | 1,00 | 0,33 | 0,66 | 1,00 |
| 6210 Compiler Construction | 0,66 | 1,00 | 0,33 | 0,66 |
| 6320 Design and Analysis of Computer Networks | 0,66 | 0,66 | 1,00 | 0,00 |
| 6340 Network Quality Assurance and Simulation | 0,33 | 0,66 | 1,00 | 0,00 |
| 6350 Digital Forensics | 0,33 | 0,00 | 0,00 | 0,00 |
| 6360 Wireless and Mobile Networks | 1,00 | 0,66 | 1,00 | 0,66 |
| 6370 Computer and Network Security | 0,33 | 0,00 | 1,00 | 0,00 |
| 6400 Foundation of Computer Graphics | 0,00 | 0,66 | 1,00 | 0,00 |
| 6520 Network and Operating Sys Admin | 0,00 | 0,00 | 1,00 | 0,00 |
| 6530 Cloud Computing | 0,00 | 1,00 | 0,33 | 0,00 |
| 6600 Artificial Intelligence | 0,66 | 0,00 | 1,00 | 0,00 |
| 6620 User Interface Design and Evaluation | 0,00 | 0,66 | 1,00 | 0,66 |
| 6630 Machine Learning | 0,66 | 0,66 | 0,66 | 0,66 |
| 6660 Intro to Evolutionary Comp | 0,66 | 0,66 | 1,00 | 0,66 |
| 6700 Software Process | 0,00 | 1,00 | 0,00 | 0,00 |
| 6710 Software Quality Assurance | 0,66 | 1,00 | 0,66 | 1,00 |
| 6970 Special Topics: Comp Intel. & Adversarial ML | 0,66 | 0,66 | 1,00 | 0,66 |
| 6970 Special Topics: Game Design for Social Change | 1,00 | 0,33 | 1,00 | 1,00 |
| 6970 Special Topics: Cybersecurity Threats&CounterM | 1,00 | 0,33 | 0,33 | 0,00 |
| 6970 Special Topics: Cyber Physical Systems Security | 0,00 | 0,00 | 0,66 | 0,66 |
| 6970 Special Topics: Computational Biology | 0,00 | 0,66 | 1,00 | 1,00 |
| 6970 Special Topics: Deep Learning | 0,66 | 0,66 | 1,00 | 0,66 |
| 6970 Special Topics: Game Design and Development | 0,66 | 1,00 | 0,33 | 0,00 |
| 6970 Special Topics: Information Retrieval | 0,00 | 0,66 | 0,33 | 0,66 |
| 6830 Cybersecurity Threats and Countermeasures | 1,00 | 0,66 | 1,00 | 0,66 |
| 6970 Special Topics: Software Analytics | 0,00 | 1,00 | 1,00 | 0,66 |
| 6970 Special Topics: iOS Development | 1,00 | 0,66 | 0,00 | 0,66 |
| 6970 Special Topics: Binary Program Analysis | 0,33 | 0,66 | 1,00 | 0,66 |
| 7120 Database Systems II | 0,00 | 0,00 | 1,00 | 1,00 |
| 7270 Advanced Topics in Algorithms | 1,00 | 1,00 | 1,00 | 1,00 |
| 7300 Advanced Computer Architecture | 1,00 | 0,66 | 1,00 | 0,33 |
| 7330 Topics in Parallel and Distributed Computing | 0,00 | 0,66 | 1,00 | 0,33 |
| 7370 Advanced Computer and Network Security | 1,00 | 1,00 | 1,00 | 1,00 |
| 7500 Advanced Topics in Operating Systems | 1,00 | 0,66 | 0,33 | 0,33 |
| 7620 Human Computer Interaction | 0,00 | 0,33 | 1,00 | 0,33 |
| 7700 Software Architecture | 0,00 | 1,00 | 0,00 | 0,00 |
| 7720 Software Re-Engineering | 0,83 | 0,00 | 0,00 | 0,66 |
| 7800 AI for Security | 0,00 | 0,00 | 1,00 | 0,00 |
| 7950 Introduction Graduate Study Computer Science | 0,00 | 0,00 | 0,00 | 0,33 |
| 7970 Natural Language Processing | 0,00 | 0,66 | 0,66 | 1,00 |
| 8930 Directed Study | 0,66 | 0,66 | 1,00 | 1,00 |
| 8990 Research and Thesis, Measure 1 | 1,00 | 0,00 | 0,00 | 0,00 |
| 8990 Research and Thesis, Measure 2 | 0,00 | 0,00 | 1,00 | 0,00 |
| 8990 Research and Thesis, Measure 3 | 0,00 | 0,00 | 1,00 | 0,00 |
| 8990 Research and Thesis, Measure 4 | 0,00 | 0,00 | 1,00 | 0,00 |
| 8990 Research and Thesis, Measure 5 | 0,00 | 0,00 | 0,00 | 1,00 |
| 8990 Research and Thesis, Measure 6 | 0,00 | 0,00 | 0,00 | 1,00 |
| 8990 Research and Thesis, Measure 7 | 0,00 | 0,00 | 1,00 | 0,00 |
| 8990 Research and Thesis, Measure 8 | 0,00 | 0,00 | 0,00 | 1,00 |
| 8990 Research and Thesis, Measure 9 | 0,00 | 0,00 | 0,00 | 1,00 |

# Reporting Results (from Grades - Year 2029)

| Course\_name | Professor | A | B | C | D | F | Score | Total\_students |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| COMP 6000 | Marghitu | 4 | 0 | 0 | 0 | 0 | 100,0 | 4 |
| COMP 6120 | Ku (Spring/Fall) | 5 | 0 | 0 | 0 | 0 | 100,0 | 5 |
| COMP 6210 | Mulder | 1 | 0 | 0 | 0 | 0 | 100,0 | 1 |
| COMP 6130 | Zhou | 3 | 0 | 0 | 0 | 0 | 100,0 | 3 |
| COMP 6320 | Shu | 3 | 2 | 0 | 0 | 0 | 90,0 | 5 |
| COMP 6350 | Cuneo | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6360 | Lim | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6370 | Springall | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6520 | Umphress (Summer) | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6530 | Sardinas | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6600 | Liu | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6620 | Seals | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6630 | A. Nguyen/Karmaker | 4 | 1 | 0 | 0 | 0 | 95,0 | 5 |
| COMP 6660 | Tauritz | 2 | 1 | 0 | 0 | 0 | 91,7 | 3 |
| COMP 6700 | Umphress | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6710 | Rahman | 0 | 0 | 0 | 1 | 0 | 25,0 | 1 |
| COMP 6970-CTCM | Cuneo | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6970-CPS | Yampolskiy | 3 | 0 | 0 | 0 | 0 | 100,0 | 3 |
| COMP 6970-BPA | Mulder | 1 | 0 | 0 | 0 | 0 | 100,0 | 1 |
| COMP 6970-GDSC | Thomas | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 7970-Research EC | Tauritz | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6970 | Heaton | 1 | 0 | 0 | 0 | 0 | 100,0 | 1 |
| COMP 6970 | A Nguyen | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6970 | Seals | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6970-IR | Karmaker | 3 | 0 | 0 | 0 | 0 | 100,0 | 3 |
| COMP 6830 | Springall | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6970 | Sardinas | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 6970 iOS | Chapman | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 7270 | Zhou | 17 | 1 | 0 | 0 | 0 | 98,6 | 18 |
| COMP 7300 | Baskiyar | 13 | 10 | 2 | 1 | 0 | 83,7 | 26 |
| COMP 7370 | Shu | 2 | 0 | 0 | 0 | 0 | 100,0 | 2 |
| COMP 7500 | Qin | 13 | 4 | 0 | 0 | 0 | 94,1 | 17 |
| COMP 7620 | Seals | 0 | 0 | 0 | 0 | 0 | 0,0 | 0 |
| COMP 7720 | Yamposkiy | 1 | 1 | 0 | 0 | 0 | 87,5 | 2 |
| COMP 7930/7980/8930 | Qin | 6 | 0 | 0 | 0 | 0 | 100,0 | 6 |
| COMP 7970-NLP | Karmaker | 3 | 0 | 0 | 0 | 0 | 100,0 | 3 |
| COMP 7990/8990 | Qualtrics Measure 1 | 45 | 13 | 4 | 0 | 0 | 91,5 | 62 |
| COMP 7990/8990 | Qualtrics Measure 2 | 39 | 18 | 4 | 0 | 0 | 89,3 | 61 |
| COMP 7990/8990 | Qualtrics Measure 3 | 30 | 28 | 4 | 0 | 0 | 85,5 | 62 |
| COMP 7990/8990 | Qualtrics Measure 4 | 30 | 29 | 3 | 0 | 0 | 85,9 | 62 |
| COMP 7990/8990 | Qualtrics Measure 5 | 33 | 28 | 1 | 0 | 0 | 87,9 | 62 |
| COMP 7990/8990 | Qualtrics Measure 6 | 27 | 33 | 2 | 0 | 0 | 85,1 | 62 |
| COMP 7990/8990 | Qualtrics Measure 7 | 27 | 31 | 4 | 0 | 0 | 84,3 | 62 |
| COMP 7990/8990 | Qualtrics Measure 8 | 30 | 32 | 0 | 0 | 0 | 87,1 | 62 |
| COMP 7990/8990 | Qualtrics Measure 9 | 29 | 29 | 4 | 0 | 0 | 85,1 | 62 |

# Communication Results (from SLO Scores and Ratings - Year 2029)

| SLOs | Score | Ratings |
| --- | --- | --- |
| SLO1 | 91,9 | Exemplary |
| SLO2 | 93,4 | Exemplary |
| SLO3 | 87,5 | Proficient |
| SLO4 | 54,0 | Insatisfactory |