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| **CSM**  **MS Program in Computer Science**  **Department of Computer Science** |
| **Annual Assessment Report for AY 2016-17** |

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| 1. **What learning outcome(s) did you assess this year?** |
| In AY 2016-17, we have assessed the following learning outcome:  C.2. 2. Prepare and deliver a technical presentation |

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| 1. **What instruments did you use to assess them?** |
| We used direct method A.3 (Oral Communication) in CSci 201 (Colloquium). Please note that originally the department proposed to assess CSCi 297/298/299 in AY 2016-2017. These courses either did not have enough oral presentations or have been evaluated before. CSci 201 is a newly approved course and was offered first time in Spring 2017.  The criterion is that “A score of 0-4 is given for each item on the rubric. It is considered acceptable that 70% of the evaluated presentations receive an average of 2.8.”  We also conducted MS Program Exit Survey. |

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| 1. **What did you discover from these data?** |
| **a. CSci 201 (Colloquium)**   |  |  |  |  |  | | --- | --- | --- | --- | --- | | **Student** | **Organization** | **Delivery** | **Technical Content** | **Average** | | 1 | 2.54 | 2.29 | 2.14 | **2.32** | | 2 | 3.28 | 3.33 | 3.23 | **3.28** | | 3 | 2.78 | 2.72 | 2.92 | **2.81** | | 4 | 3.31 | 3.13 | 3.20 | **3.22** | | 5 | 3.12 | 2.98 | 3.12 | **3.07** | | 6 | 3.38 | 3.45 | 3.45 | **3.43** | | 7 | 2.92 | 2.53 | 2.73 | **2.73** | | 8 | 2.98 | 3.06 | 2.96 | **3.00** | | Average | **3.04** | **2.94** | **2.97** | **2.98** |   For CSci 201 (Spring 2017), a total of 8 graduate students were evaluated on their presentation of approved research papers. These papers were published in leading IEEE/ACM journals or conferences and therefore ensured the quality of the contents. Each student was evaluated by a group of voluntary peer students based on Rubric for A.3. Evaluators were given clear instruction and guideline on how to score each of the items. Each student received 4 to 13 evaluations. The evaluation scales from 0-4 based on the attached form. Omitted scores are recorded as 0 by default. There are three major categories: “Organization”, “Delivery”, and “Technical Content”. We then collected and run statistics on the data.  As shown in the above table, student scores range from 2.32 to 3.43 overall, with six out of eight (75%) above 2.8 (70%), which meets the proposed criteria in section II (from SOAP). A closer examination shows that all categories receive very similar score between 2.94-3.04, indicating that students get consistent rating for all categories.  We further analyze student performance as follows:   * Strength   + Three students received scores of higher than 3.2 (80%), indicating their high quality presentations.   + Students have a good balance on all three categories, largely due to their training on technical presentations in the course.   + Scores for “Technical content” are at the same level as “organization” and “delivery”, reflecting the efforts by students on understanding the papers, which are usually comprehensive, many times theoretic, and require solid background in related areas. * Weaknesses:   + Some presentations received low score due to the inability to sufficiently introduce the background and motivation of the presented research, therefore making it difficult for evaluators to follow.   + Some students selected papers due to their general interest without in-depth understanding of the solutions.   + Some students include too many formulas in slides without clear explanation.   Overall, we are satisfied with the performance of all evaluated students. Given its first time offering, we have made good progress on training students how to do research in computer science and make technical presentations. We plan to make the further improvement in Fall 2017 and following semesters:   * Redesign the course and streamline with CSci 200. * Focus more on improving presentation skills and in-depth understanding of research papers.   **b. Exit Interview**  In May 2017, we invited all graduating students to complete a CSCI MS Program Exit Survey. Six responses were received. A total of 21 questions were asked. Analysis of these responses is summarized as follows:   * Most students graduate within 5-6 semesters. * Most students attend Fresno State for its affordable tuition and fees, as well as low cost of living in Fresno. * Most students wanted to focus on Artificial Intelligence and Software Engineering and most ended up with focusing on Programming Languages, Graphics, and Data Structures. * Only 16.7% students had BS in Computer Science. * Students are moderately satisfied with the program. * Students listed strength such as dedicated faculty and ability to join without BS in Computer Science. * Students listed weakness such as understaffed and faculty not sticking to the syllabi, and courses being professor dependent, not enough courses, and outdated information and methodologies. |

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| 1. **What changes did you make as a result of the findings?** |
| Most of the low scored presentations show the common issue of no in-depth understanding of the presented research papers. The main reason was the lack of sufficient theoretical foundation on the solutions. Therefore, we plan to enhance student preparation on the preliminary knowledge through additional efforts such as:   * Reading reference list of presented papers. * Discussion of core ideas and solutions of papers before formal presentation. * Request students to answer questions in the paper before formal presentation. |

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| 1. **What assessment activities will you be conducting in the 2015-16 academic year?** |
| During the next academic year, we will work on three assessment methods: |
| Method A.1 Comprehensive Exam CSci 297 (for SLO A.1, A.2, A.3) |
| Method B.4 Discussion of Student Strength and Weakness |

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| 1. **What progress have you made on items from your last program review action plan?** |
| The department has made the following progress on MS action plan. We have successfully completed our BS five-year program review and received final report in July 2017.  **a) Rebuild the faculty**  **Progress**: we recruited a new tenure track faculty, Dr. Hubert Cecotti, in Fall 2017. The department has been approved to conduct a tenure track search in AY 2017-18.  **b) Adding laboratory and classroom facilities**  **Progress**: The department has refreshed McF 201 computer lab with 30 new Windows PCs in July 2015. The department has remodeled McF 205 to a hybrid lecture/computer lab by placing 12-15 PCs. We have also remodeled Science II 258 and converted it to a department conference room.  **c) Re-examining culminating experiences**  **Progress**: CSci 297 (Comprehensive Exam, 3 units) and CSci 201 (Colloquium, 2 units) have been offered (CSci 297 in Fall 2016 and CSCi 201 in Spring 2017).  **d) Graduate prerequisites and admission requirements**  **Progress**: The graduate committee has discussed improvement on the admission requirements. Starting Fall 2015, we have significantly improved our admission standard as follows:   * Students who needs lower division courses such as CSci 40, 41, and 60 will not be admitted (except those very potential domestic applicants who have working experience in Computer Science industry or have outstanding scores in Computer Science related courses) * Students who need more than 2 prerequisites will be given low priority for admission   As a result, for Fall 2016 admission *only*, we admitted 92 students out of 541 students (17% acceptance rate overall. Domestic student acceptance rate: 22.22% and international student acceptance rate: 16.73%). Among 28 students checked-in, only 9 students require CSci 117 prerequisite in Fall 2016. The arriving rate is 30.43% (28 out of 92), which is about 5% higher than those in Fall 2014 and 2015.  We conclude that the new standard significantly improved the quality of graduate students starting Fall 2015. It will help most students graduate within 2 years.  **e) Assessing course and program**  **Progress**: The Department assessed CSCi 201 this AY and plan to assess 297 next AY.  **f) Graduate retention plan**  **Progress**: The department continues to support graduate students with TAs and GAs. The department recently established two endowed scholarships and one of them is for graduate students. The department also established a CSCI Student Club with president and many active members were graduate students.  Recently, the department has worked together with local companies to provide job opportunities for students. Many graduate students received part-time job employment during summer or regular semesters. |
| In addition, the reputation of our graduate program plays an important role in improving retention. Our recently graduated students Ryan Melvin and Andy Clifton accepted a tenure track position in other institutions. |