***STUDENT LEARNING ASSESSMENT PROGRAM***

***SUMMARY FORM AY 2016-2017***

**Degree and Program Name: B.S. Computer Science and Mathematics**

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**PART ONE**

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| What are the learning objectives? | How, where, and when are they assessed? | What are the expectations? | What are the results? | Committee/ person responsible? How are results shared? |
| 1. Students will demonstrate appropriate knowledge of core mathematical content | Course grades from MAT 2443, MAT 2345, MAT 2550, MAT 3701, MAT 3702 | Students should obtain at least a “C” (2.00 out of a 4.00 scale) or better on the first attempt. | FA16-  MAT 2443: 2 of 2 met or exceeded expectations.  MAT 2345: 1 of 2 students met expectations.  MAT 2550: 1 of 1 students met expectations.  MAT 3701: 2 of 2 students exceeded expectations.  SP17-  MAT 2443: 1 of 1 students met expectations.  MAT 2550: 3 of 3 met or exceeded expectations.  MAT 3702: 2 of 2 students exceeded expectations. | The data are collected by the course faculty and the department chair.  Course grade data are shared informally among course instructors and the department chair. Students who earn a “C” or lower typically are required to meet with their advisor to discuss potential issues and deficiencies that may be present moving forward. |
| 2. Students will become proficient in programming in a high-level object-oriented language. | Course grades and individual labs from CSM 2670. | Students should obtain at least a “C” (2.00 out of a 4.00 scale) or better on each individual major assignment or assessment. | Assessment 1: 3 of 7 students exceeded expectations.  Assessment 2: 3 of 7 exceeded expectations.  Assessment 3: 4 of 7 students met or exceeded expectations.  Lab 1: 5 of 7 students exceeded expectations.  Lab 2: 7 of 7 students met or exceeded expectations.  Lab 3: 7 of 7 students exceeded expectations.  Lab 4: 6 of 7 students met or exceeded expectations.  Lab 5: 2 of 7 students exceeded expectations.  Lab 6: 2 of 7 students exceeded expectations. | The data are collected by the course faculty and the department chair.  Course grade data are shared informally among computer science faculty and the department chair. Students who earn a “C” or lower typically are required to meet with their advisor to discuss potential issues and deficiencies that may be present moving forward.  Labs are examined and discussed each summer prior to next course offering. |
| 3. Students will understand the architecture, organization, and programming of modern computing systems. | Assessments Projects from CSM 3670 and CSM 4970 | Students should obtain at least a “C” (2.00 out of a 4.00 scale) or better on each individual major project or assessment. | CSM 3670  Project 1: 5 of 6 students exceeded expectations.  Project 2: 4 of 6 students exceeded expectations.  Project 3: 6 of 6 students exceeded expectations.  Project 4: 5 of 6 students exceeded expectations.  Project 5: 6 of 6 students exceeded expectations.  Project 6: 3 of 6 students exceeded expectations.  Assessment 1: 4 of 6 students exceeded expectations.  Assessment 2: 4 of 6 students exceeded expectations.  Assessment 3: 4 of 6 students exceeded expectations.  CSM 4970  Assessment 1: 3 of 4 students exceeded expectations.  Assessment 2: 1 of 4 students exceeded expectations.  Assessment 3: 3 of 4 students exceeded expectations. | The data are collected by the course faculty and the department chair.  Course grade data are shared informally among computer science faculty and the department chair. Students who earn a “C” or lower typically are required to meet with their advisor to discuss potential issues and deficiencies that may be present moving forward.  Labs are examined and discussed each summer prior to next course offering. |
| 4. Students will learn the foundations of computer science, algorithm efficiency, and computational complexity | Assignments from CSM 4880 | Students should obtain at least a “C” (7.50 on a 10.00 scale) or better on the first attempt. | Lab 1- 6 of 7 students exceeded expectations.  Lab 2- 6 of 7 students exceeded expectations.  Lab 3- 5 of 7 students exceeded expectations.  Lab 4- 5 of 7 students exceeded expectations.  Lab 5- 7 of 7 students exceeded expectations.  Lab 6 – 6 of 7 students exceeded expectations. | The data are collected by the course faculty and the department chair.  Course grade data are shared informally among computer science faculty and the department chair. Students who earn a “C” or lower typically are required to meet with their advisor to discuss potential issues and deficiencies that may be present moving forward.  Labs are examined and discussed each summer prior to next course offering. |
| 5.Students will use current techniques, skills, and tools necessary for the practice of the discipline. | Completion of internship or similar applied experience. During the internship the student is evaluated the site internship supervisor. In most cases there is a site visit or other regular communication between the student and the intern coordinator. The student must complete a report about the internship that details what work was done, how problems were overcome, and how the experience allowed him/her to apply what has been learned in the classroom to the field. | Students should receive at least an above average or higher evaluation from their internship supervisor across all rated categories. Students should complete a paper detailing the internship experience.  Please see the provided Internship Rubric/Evaluation Form for additional information. | 7 of 7 students successfully completed internships and were rated at above average across all rated categories. Internships were completed at   * Archer Daniels Midland (Decatur, IL) * Applied Systems (University Park, IL) * The HDF Group (Champaign, IL) * US Bank (Richfield, MN) * CODESYS (Kempten, Germany) * Waukegan High School (Waukegan, IL) * Wolfram Research (Champaign, IL) | Data are collected by the departmental internship coordinator.  Data are shared informally among the computer science faculty. |
| 6. Students will demonstrate speaking proficiency. | This objective is assessed at the University level in both CMN 1310G and Senior Seminar | Students will score at or above 3.0 for each individual rating category and score an average of at least 3.0 | FA16:  3 of 3 students met average scoring expectations for CMN 1310G. 1 student scored below 3 in two categories.  3 of 3 students met average and individual scoring expectations for the Senior Seminar.  SP17:  1 of 1 students met average and individual scoring expectations for CMN 1310G.  1 of 2 students met average scoring expectations in the Senior Seminar. 1 student did not meet individual scoring expectations in the Senior Seminar. | Data are reported by CASA. Data are shared informally with faculty. |
| 7. Students will demonstrate proficiency in writing. | This objective is assessed at the university level through the EWP. The three EWP submissions are collected at various times during the degree program. | Students will score at or above 3.0. | SU16:  Both submissions were scored at the 3.0 level or higher.  FA16:  Of the 11 submissions from 8 students, 9 of them were scored at the 3.0 level or higher.  SP17:  Of the 5 submissions from 5 students, all of them were scored at the 3.0 level or higher. | Data is reported by CASA. Data are shared informally with faculty. |
| 8. Students will demonstrate critical thinking skills. | This objective is measured at the university level by the Watson Glaser exam given to students during senior seminar. | Students will score at the University average or higher. | AY 17 (n = 7): 1 student scored below the University average of 25.40. | Data is reported by CASA. Data are shared informally with faculty. |

**PART TWO**

Describe your program’s assessment accomplishments since your last report was submitted. Discuss ways in which you have responded to the CASA Director’s comments on last year’s report or simply describe what assessment work was initiated, continued, or completed.

As we did for the first time last year, we continue to look at several individual assignments and experiences within courses as a way to assess program objectives. We also are continuing to look at three additional university measures as part of our program report- EWP ratings, WG ratings, and the speaking proficiency ratings. The data from last year helped inform the need for additional presentation opportunities in coursework. However, moving forward we will need a new measure of critical thinking with the loss of the Watson-Glaser exam.

Objective 5 was once again measured through the internship. In order to address concerns expressed last year, we have included the evaluation form for this experience along with this assessment report.

**PART THREE**

Summarize changes and improvements in **curriculum, instruction, and learning** that have resulted from the implementation of your assessment program. How have you used the data? What have you learned? In light of what you have learned through your assessment efforts this year and in past years, what are your plans for the future?

Work was completed on the revised computer science degree. The revised degree is a “pure” computer science program that has fewer mathematics courses and an increase in credits of computer science experiences. Therefore, the assessment plan will need changes for next year as some of the courses currently being used for assessment will no longer be part of the program. The new assessment measures will be partially informed by the *Association for Computing Machinery* and their recommendations for computer science programs. These recommendations are more based on experiences and dispositions, rather than specific courses. This will be a challenging process. Additionally, as the revised program phases in, I foresee the assessment program changing each year until the new degree program is fully implemented in our department.

Another aspect of the revised degree program is a reduction in the number of hours required for the internship. In its place will be additional coursework and an experience to be part of a programming team. While the programming team experience will need to be part of the assessment plan, the internship still yields positive results that showcase our student’s learning and abilities. It also continues to provide a way to advertise our program.

It is clear that some sort of exit survey is still needed for our graduating students. Due to loss of faculty and increased workloads, this is not something that has received much priority over the past academic year. We will try again for the coming year to have a survey or some sort of exit measure generated.