Template for Program Assessment Plan

Name of the program: BS in Computer Science
Year: Academic year 2014/2015
Date: May 14, 2014
Faculty Participant: Steven Billis

Introduction:

The SoECS will be seeking ABET accreditation for the CS program in the near future. The assessment process in place for the program to ensure continuous improvement is based on a process which includes direct and indirect assessment measures. Our direct method is based on Faculty Course Assessment Reports (FCARs) which are submitted by the faculty for each course they teach in the fall and spring semesters.

The faculty developed a cyclical model of assessment in which we assess a different set of Student Outcomes (SOs) each year. This generates less data each semester for evaluation and these outcomes will be reassessed every three years, with the entire set of SOs completed on a six-year cycle. The ABET SOs a to k are:

3a. An ability to apply knowledge of computing and mathematics appropriate to the discipline.

3b. An ability to analyze a problem, and identify and define the computing requirements and specifications appropriate to its solution.

3c. An ability to design, implement and evaluate a computer-based system, process, component, or program to meet desired needs.

3d. An ability to function effectively on teams to accomplish a common goal.

3e. An understanding of professional, ethical, legal, security, and social issues and responsibilities.

3f. An ability to communicate effectively with a range of audiences.

3g. An ability to analyze the local and global impact of computing on individuals, organizations, and society.

3h. A recognition of the need for and an ability to engage in continuing professional development.

3i. An ability to use current techniques, skills, and tools necessary for computing practice.
3j. An ability to apply mathematical foundations, algorithmic principles, and computer 
science theory in the modeling and design of computer-based systems in a way that 
demonstrates comprehension of the tradeoffs involved in design choices.

3k. An ability to apply design and development principles in the construction of software 
systems of varying complexity.

1. Select Learning Outcomes: Articulate which program learning outcome(s) will be 
assessed during the period of the plan.

During the fall and spring semesters of the academic year 2014/2015, we are assessing SOs:

3c. An ability to design, implement and evaluate a computer-based system, process, 
component, or program to meet desired needs
3d. An ability to function effectively on teams to accomplish a common goal.
3f. An ability to communicate effectively with a range of audiences.

2. Identify measures: (For each of the learning outcomes you choose to assess, we suggest 
you use at least one direct ad one indirect measuring instrument.)

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The performance indicators for the Computer Science ABET SOs “c”, “d” and “f” with EGMU 
=3 are:

   c1. Identify constraints on the design problem and establish criteria for acceptability of 
solutions.
   c2. Carry solution through to the most economic/desirable solution and justify the approach.
   c3. Design the selected solution for a given problem.
   c4. Implement the designed solution for a given problem.
   c5. Evaluate the implemented solution.

   d1. Is prepared for group meetings with clearly formulated ideas and contributes a fair 
share to the project workload
   d2. Shares credit for success and accountability for team results
   d3. Shares information and provides assistance to/with others
   d4. Is able to assume a designated role in the group
   d5. Values alternative perspectives and encourages participation among all team members
   d6. Remains non-judgmental when disagreeing with others/seeks conflict resolution

and
Writing:
f1. Articulates ideas clearly and concisely
f2. Organizes written materials in a logical sequence (paragraphs, subheading, etc.) to facilitate the reader's comprehension
f3. Uses graphs, tables, and diagrams to support, interpret, and assess information in the proper format
f4. Written work is presented neatly and professionally, conforms to the prescribed format (if any), and grammar and spelling are correct

Oral
f5. Presentation has enough detail appropriate and technical content for the time constraint and the audience
f6. Presents well mechanically: makes eye contact, can be easily heard, speaks comfortably with minimal prompts (notecards), does not block screen, no distracting nervous habits
f7. Uses proper American English and visual aids effectively
f8. Has a professional appearance
f9. Listens carefully and responds to questions appropriately

<table>
<thead>
<tr>
<th>EGMU</th>
<th>Rubric</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>E - Excellent</td>
<td>• Fully demonstrates/accomplishes the attributes and behavior in the rubric</td>
<td>3</td>
</tr>
<tr>
<td>G – Good</td>
<td>• Mostly demonstrates/accomplishes the attributes and behavior in the rubric</td>
<td>2</td>
</tr>
<tr>
<td>M – Minimal</td>
<td>• Minimally demonstrates/accomplishes the attributes and behavior in the rubric</td>
<td>1</td>
</tr>
<tr>
<td>U - Unsatisfactory</td>
<td>• Does not demonstrate/accomplish the attributes and behavior in the rubric</td>
<td>0</td>
</tr>
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The FCAR has a section which provides for student comments using the Student Evaluations conducted by the administration for every course offered during the semester. This constitutes an indirect measure for assessment.

3. **Identify benchmark for “success”:**
The department has determined that the minimum level of quality that it felt was necessary in order to produce graduates that will ultimately achieve our Program Educational Objectives is an EGMU score of 1.5 for each Student Outcome. This score of 1.5 was chosen by the department because in the EGMU scoring it falls midway between the Minimal and Good indicators and therefore represents what a student would need in order to satisfy the requirements for graduation. (If each of the EGMU scores is adjusted to correspond to the grade points associated with A, B, C, D, a 1.5 is a C.) The department also uses E&G / All Percentage: This single number indicates for a student outcome, program-wide, what percentage of all scores were E or G. This number is used as a benchmark to study the percentage of individual scores falling above Minimal or Unsatisfactory. The benchmark for this value is 60%.

4. Plan Implementation and Timetable:

The courses which are strongly linked to the SOs c, d and f are:

c: CSCI 385, 380 and 455

d: CSCI 185, 260, 330, 335

f: IENG 400, ETCS 108, and CSCI 185, 455

We will use the FCARs from the fall 2014 and spring 2015 semesters for assessment and continuous improvement.