

UNIVERSIDAD DE PUERTO RICO

IMPLEMENTATIONS OF RECOMMENDATIONS AND STATUS REPORT

Computer Science and Information Systems
Program

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OVERVIEW

This report is prepared at the end of the Continuous Improvement Cycle by the Accreditation and Assessment Committee to provide an insight of how to implement changes to our Computer Science and Information Systems programs based on the recommendations found after closing the 2011-2012 cycle. The AAC analyzes and summarizes recommendations for improvements for each criterion that are evaluated by the accreditation agency. This document, also, aims to capture the status of each and every criterion at the closure of the cycle.

CRITERION 1: STUDENTS

All of the following recommendations will impact students directly.

CRITERION 2: PROGRAM EDUCATIONAL OBJECTIVES

CHANGES MADE DURING THE 2011-2012 CYCLE

The PEOs wording changed during the second semester of academic year 2012-2013 as a result of the findings made by the ABET visiting team. Therefore, these PEOs are rather new. Both programs share the same PEOs since they are broader statements of what the student should achieve a few years after graduating from the program. Do they need to be different for each program? Do they need change? These are open questions that the AAC should answer on the next cycle.

NEXT CYCLE CONSIDERATIONS

We are implementing a change in the curriculum; therefore, we will not be graduating students of the August 2013 curriculum until June 2017. However, there are students that transfer from the old curriculum to this new one. We expect to graduate some students from the August 2013 curriculum on June 2016. Therefore, we need to analyze the pertinence of the results we have from the graduate and employers survey. Do we need to send them again during this cycle? Can we use the previous results? These are open questions that the AAC should have into consideration during the next cycle.

CRITERION 3: STUDENT OUTCOMES

PERFORMANCE INDICATORS

The AAC recommends a revision of the performance indicators of each and every outcome. The AAC have been talking informally about reducing the number of performance indicators for some outcomes. Also, there is the possibility of expanding others.

LABELING OF STUDENT OUTCOMES

Previously we use numbers to label each student outcome. It was a little bit cumbersome, for the faculty and the visiting team, to match our labeling system to ABET's. Therefore, the AAC proposes a change in this labeling system to match the one used by ABET. Our performance indicators need to be adjusted accordingly.

SYLLABI

SYLLABI IN ENGLISH

All Syllabi should be in English. We are encouraging that all professors have versions in English of their syllabus. The AAC envisions that this task should be accomplished by the end of the August 2013- May 2016 cycle.

PERFORMANCE INDICATORS ON SYLLABUS WITHOUT ASSESSMENT TOOLS

Some professors could not provide us with sufficient data to assess some of the performance indicators that were included in the course syllabus. This event impacted directly our Assessment Plan. However, the professors have told us that they cover the topics by some performance indicators, but sometimes, they do not have any evaluation materials. We need to revise all syllabi and classify each performance indicator according to the way they are measured and not by the way they are covered. All those that are covered but not measured should have at least some evidence of been covered to be classified. The AAC suggests using the terms introductory or supportive if there is not substantial evidence that could categorically measure the outcome. Therefore, we need to update the syllabus and meet with every professor of our department.

CRITERION 4: CONTINUOUS IMPROVEMENT PLAN

We need to upgrade our planning and our assessment methods. Our assessment plan detoured of the proposed way of implementing it. This affected the way we reach to our final analysis. We know this is a continuous improvement process, and therefore, it is subjected to change. However, we need to improve even more our way of implementing the assessment plan. Also, we need to adjust our Continuous Improvement Plan to include an extra phase of re-adjustment.

EXTRA PHASE

The AAC suggest adding a new adjustment phase to our Continuous Improvement Plan. An extra time is needed to adjust our curriculum after finalizing the August 2011- May 2013 cycle. Therefore, the new continuous improvement plan should include a new stage that includes this extra phase. This phase should allow us time to make all the necessary changes to start a new cycle. Also, if there is a change in our curriculum, we need to make the new curriculum available to our students.

ASSESSMENT PROCESS

The method of assessing student outcomes should be revised. During last cycle we used the post-test (direct measure) and the exit survey (indirect measure) to assess the outcomes that were classified as cognitive. We then analyze the data gathered from the courses if there was a difference between these two instruments. We use rubrics for outcomes that were not of cognitive nature. The AAC needs to evaluate if we can add robustness to this process. This evaluation should be performed during the new stage added to the CIP.

ASSESSMENT TOOLS

IMPROVEMENT ON ASSESSMENT TOOLS

The Continuous Improvement Report (Final Analysis Report) found that there were some performance indicators that needed proper instruments to measure them efficiently. The performance indicators that needed reinforcement on their assessment tools were:

- (2c) Choose the appropriate software and/or hardware tools to meet desired goals.
 - The AAC needs to revise the rubrics used to measure this outcome at the SICI 4038.
- (3e) Perform Unit and System Testing (Both Programs).
 - The AAC recommends creating a rubric.
- (5a) Evaluate the ethical implications of an issue in the computing discipline.
 - The AAC need to suggest coursework for the new course COTI-3XXX Computing Ethics and Society Seminar.
- (5b) Evaluate the social impact of a given computing technology
 - The AAC need to suggest coursework for the new course COTI-3XXX Computing Ethics and Society Seminar.
 - This should not be limited to the Ethics course.
- (7a) Identify the contribution of computing and other related professionals to society.
 - The AAC is evaluating this performance indicator. It is possible that will be eliminated or re-focused.
- (7b) Understand the computational or technological advances and their impact to the profession.
 - The AAC is evaluating this performance indicator. It is possible that will be eliminated or re-focused.
- (8) Recognition of the need for ability to engage in continuing professional development.
 - The AAC recommends creating a questionnaire after administering a lecture in continuing professional development. This should be implemented in the Capstone Course.
- (11b) Perform object-oriented and structured analysis and design.
 - The AAC recommends creating a rubric.
- (12a) Display basic knowledge of accounting principles.
 - The AAC is recommends creating questions on the post-test to measure this PI.

CRITERION 5: CURRICULUM

BOTH PROGRAMS

NEW COURSE

On the Assessment Report of May 2013 and submitted to ABET the AAC presented changes in the curriculum. For the CS and IS program the course COTI 3XXX – Computing Ethics and Society Seminar should be added. This course will address outcomes:

- (5) An understanding of professional, ethical, legal, security and social issues and responsibilities are in process and outcome.
- (7) The ability to analyze the local and global impact of computing on individuals, organizations,

NEW LECTURE IN OPPORTUNITIES AFTER GRADUATION

A new lecture that presents the importance of continuing professional development should be part of the capstone course SICI 4038. This lecture should speak about the opportunities the student has such as:

- Certifications
- Certificates
- Graduate School
- Courses as professional development
- Studying another area

By implementing this lecture we are meeting the following student outcome completely:

- (8) Recognition of the need for and an ability to engage in continuing professional development.

COMPUTER SCIENCE

NEW COURSES

The course COTI-4XXX Analysis of Algorithms should be included in our curriculum in order to improve student outcome:

- (a) An ability to apply knowledge of computing and mathematics appropriate to the discipline.

The AAC emphasizes that this outcome must be essential to the students in the CS program. This course also aims to make our students improve on their performance of the ACM-ICPC Programming Contests.

INFORMATION SYSTEMS

COHESIVE BODY OF KNOWLEDGE IN BUSINESS

These changes include the addition of (5) five courses that creates a cohesive body of knowledge on business environments that affect directly. These courses are:

1. CONT 3105 – Fundamentals of Accounting I
2. CONT 3106 – Fundamentals of Accounting II
3. ADMI 3005 – Administrative Theory
4. ADMI 3301 – Entrepreneurship
5. ECON 3021 – Principles of Economics I

Also the course SICI 3211 – Information Systems Fundamentals will be part of this program.

CRITERION 6: FACULTY

We are pleased to announce that Miguel Velez-Rubio finished his doctorate degree. We expect to have another doctorate degree in the area of Information Systems during next cycle.

CRITERION 7: FACILITIES

After talking to the Chairman of the Computer Science Department, we knew that the department is working to habilitate lab 110D. It would be available on the academic year 2013-2014 as a classroom equipped with tables, chairs and blackboard. It is envision that for the academic year 2014-2015 the lab will be fully equipped with computers and projector.

Also, it is scheduled that we will move to the brand new building during the 2014-2015 academic year.