

University of Puerto Rico at Bayamón

Implementation of Recommendations
For the Computer Science and
Information Systems Programs

For Cycle 2019-2022

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Overview

This report is prepared at the end of each cycle by the Accreditation and Assessment Coordinator (AAC) to provide an insight of how to implement changes to our Computer Science and Information Systems programs. The AAC analyzes, reflects, 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 and to contrast them to a previous cycle.

Criterion 1: Students

All of the following recommendations will impact students directly.

Criterion 2: Program Educational Objectives

During this cycle there were no changes to the PEOs. The PEOs are the same for both programs. The PEOs are broader statements that apply to a professional that has graduated from each of the programs.

Criterion 3: Student Outcomes

Performance Indicators and Student Outcomes

The performance indicators (PI) changed from the previous cycle to this one. The changes were presented in the document *Student Outcomes and Performance Indicators Revision*. All the PIs included in the document are analyzed. The AAC does not recommend adding or changing the PI wording. However, the AAC believes there are too many PIs and a process of streamlining them could be beneficial.

The accreditation agency has required the exposure to parallel and distributed computing for the CS program. We know we have included this exposure into several courses, however, there is no PI that could measure it. The AAC recommends adding a new PI and questions on the post-test, however, we need to discuss that at the department level.

Syllabi

Syllabi in English

All Syllabi should be in English. We are encouraging that all professors have English versions of their syllabus. This task has been an ongoing one, however, we have not achieved the goal of having each and every one in English. We are improving in that matter, however, there is much to be done in that direction. We must keep a department compromise to achieve this goal in the near future. The AAC envisions that this task should be accomplished by the end of the next cycle.

Criterion 4: Continuous Improvement

Continuous Improvement Process

The continuous improvement process is not a rigid one and therefore, it is subjected to change. However, we need to improve even our way of implementing it. Our plan was off schedule and did not end at the time we envisioned it. The lockdown that resulted from the COVID-19 global pandemic also affected our envisioned timeline. We need to stick into the deadlines we have auto imposed on ourselves.

Post Test Revision

Some of the questions related to the PIs should be revised. However, if the AAC determines that some of these questions do not require a change, then, the AAC should reconsider strengthening the PI in the courses that cover them. This event should be presented in the document called Post-Test Revision Report on the next cycle.

The revision for the CS program is composed of:

- Questions related to PI (a.3) - (revised the questions again)
- Questions related to PI (b.1)
- Questions related to PI (c.1)
- Review the drafting of questions related to (c.2)

The revision for the IS program is composed of:

- Questions related to PI (a.3), (j.1), (j.2)
- Review the drafting of questions related to PI (a.2)(j.3)

Criterion 5: Curriculum

The curriculum committee should meet to reflect on our findings. Sometimes, faculty chat in the hallways about ideas to reinforce the curricula of both programs. This is based on our findings, trends and observations that each faculty makes in the classroom. One of the issues we need to think about is whether we really need to add a course in parallel processing to the Computer Science program. Our students currently have some exposure to the topics related to parallel processing, however, is it sufficient? On the other hand, professors on the Information System program have talked informally about adding an information security course that is more focused on the Information Systems program. Those conversations have to materialize into actions over the following months.

Criterion 6: Faculty

There are some challenges that we need to address in terms of faculty.

Aging Faculty and Attrition

Two full time faculty members from the Computer Science emphasis area retired during Academic Year 2022 and 2023. The impact of losing these two faculty members has not been substantial based on system wide attrition. The department has coped with the problem by hiring adjunct professors full time and part time.

Currently, there are three professors, (two from IS one from CS) that are capable of soliciting retirement. Although their *intentions are not immediate*, we are anticipating that possibility at this time. Moreover, the last two tenure-track positions were granted in 2009. These professors who joined in 2009 are already in the middle of their careers and they already have their tenure and are currently full-professors. The department has hired young adjunct professors that could “refresh” the faculty, however, they are hired semester by semester.

The AAC recommends that the Department’s Personnel Committee along with the Department’s Chair should study the possibility of soliciting to the central administration, via the Dean of Academic Affairs, at least two full time tenured track positions for our department. These positions should be of professors with Computer Science and Engineering expertise that are capable of teaching Computer Architecture, Operating Systems, Numerical Analysis and Operations Research. The professors that retired already were the experts in these courses.

Professional Development of the Faculty

Each employee is required to complete 20 hours of continuing education in official material from the Government Ethics Office of the Government of Puerto Rico every two years. The accountability of this task rests in a central government entity and at the Chancellor. Employees that do not comply with this received a memo/letter from the Chancellor that is added to their record in human resources.

Certification 36-2010-2011 of the Academic Senate dictates that each faculty must complete a minimum of 6 hours of professional development activities, per fiscal year, related to the area of work (expertise). Those professors that are candidates for a promotion must complete a minimum of 14 hours per fiscal year. There exists accountability for those professors that are soliciting promotion via the Faculty Personnel Committee (institutional committee) and the department’s chair. Professors that do not fulfill the minimum requirements are not eligible for promotion. However, there is no accountability for those that have already been promoted to full professors or for those that never solicit a promotion.

Some of the CS and IS faculty have participated in several workshops, lectures and panels during the assessment cycle. It is evident to us that there are professors that have updated their courses via changing compilers, adding new knowledge to their courses, and imparting courses of interest to the students that use cutting-edge technology¹. However, it is not easy to account for those changes, since there is no formal training when professors are developing their professions in these matters. These elements are performed in a self-taught matter.

¹ For example: Topics include: Mobile app development using Kotlin, Arduino for IOT, Big Data (Data Science), Adding new coding trends.

The AAC tries to compile the information it receives regarding the professional development activities of the faculty to comply with the Faculty Professional Development Plan (FPDP). However, the AAC does not have the means to enforce the accountability of the faculty members into engaging in professional development. The only thing it could do is to recommend, advise, and encourage the fellow faculty members into engaging in professional development. Accountability is needed not only at the department level but also at the institutional level. The AAC recommends a meeting between the Department's Chair and the Dean of Academic Affairs to address this issue.

Criterion 7: Facilities

The serious situation that our buildings suffered after the impact of Hurricane María has been managed. FEMA approved a rebuilding plan of 5 buildings at our university. Currently the UPRB is undergoing a transformation in terms of infrastructure. Four out of five buildings have already been demolished. Currently, we have only one building left to demolish. A plan to build a new 4-story building that also will house faculty offices has already been approved.

Our faculty have been abandoning their offices in the buildings impacted by Hurricane Maria. There are already several professors who have been officially moved from the Academics Building I to building 100. There are other professors who are servicing students in offices in the Science and Technology Complex building. There are also others who officially coordinate their visits in their administrative offices. This situation has been managed organically while the new building that will harbor the new offices is being constructed.