

Proposed Changes in the BS-CIS Program

1. Background

There are three majors programs in the CSE Department, these being BS-CIS and BA-CIS in Arts & Sciences, and BS-CSE in Engineering. Over the years, we have attempted to keep the *computer science* of the BS-CIS and BS-CSE programs as close to identical as possible. This was a deliberate decision, intended to ensure that graduates of either program are equally attractive to potential employers.

Recently, the BS-CSE program which is accredited by the *Computing Accreditation Commission* (CAC) and by the *Engineering Accreditation Commission* (EAC), both of ABET (www.abet.org), went through its periodic reevaluation by ABET. The CAC accreditation criteria for computer science programs include the requirement that the curriculum include coverage of *programming language concepts*. Some of the courses currently required of all students in both the BS-CSE and BS-CIS programs, such as CSE 2221 and 2231, do include coverage of some topics that are normally included under the rubric of programming-language-concepts, but other topics are not included. We do offer a course, CSE 3341, *Principles of programming languages*, 3 credit hours, that is devoted to in-depth coverage of programming-language-concepts but this course is a *core-choice* course; i.e., students may choose to take either CSE 3341 or an alternative course, CSE 3321, *Automata and formal languages*, 3 credit hours. Students may also take both of these courses in which case the second one counts as a technical elective in their program. Although CSE 3321 includes some topics that are relevant to the discussion of programming language concepts, the approach is formal and focuses on theoretical results rather than practical considerations that are expected in discussions of programming language concepts.

2. Recent developments

During the recent ABET evaluation of the BS-CSE program, the evaluators cited us for insufficient coverage of programming language concepts in the curriculum that all students in that program must complete. The evaluators noted that while many students do indeed take *CSE 3341*, not all students do so, hence the shortcoming.

3. Proposed change and Process

Following this finding, the departmental faculty had an extensive e-mail discussion about the appropriate course of action to address this finding by ABET. One proposal considered was to make CSE 3341 a *required* course rather than a *core-choice* course, with CSE 3321 becoming strictly a technical elective course; this would apply to all students who enter the university after the proposal is approved.

A selection of juniors and seniors who are currently taking CSE 3341, some of whom had completed CSE 3321 previously, were polled for their opinions on this proposal. An email message describing the proposed change was sent to all students currently in either major. Although there was some concern among faculty that this change would reduce the flexibility of the programs, there was consensus that, given ABET's finding, we have to take this action. Most students also agreed that making CSE 3341 a required course with 3321 becoming a technical elective was appropriate.

The proposal to make *CSE 334I*, Principles of Programming Languages, a required course for all future students in the BS-CIS (and BS-CSE) program(s), with *CSE 332I* becoming a technical elective, was discussed and approved unanimously at a meeting of the CSE faculty on Oct. 25, 2017.

4. Summary

The *only* change being proposed is that BS-CIS (and BS-CSE) majors will be required to take *CSE 334I* instead of being required to take either CSE 334I or CSE 332I. As is the case currently, students may take both courses in which case CSE 332I will count as a technical elective. All other aspects of the program, including the total number of credit hours for the program, will remain unchanged. This change, once implemented, will ensure that the program is consistent with the curricular requirements of the accreditation criteria of the CAC. We request speedy approval of this change by the NMS Curriculum Committee and by CAA.