

Dutta, Lakshmi

From: Smith, Randy
Sent: Sunday, November 05, 2006 12:57 PM
To: Smith, Randy; 'soundarajan.1@osu.edu'
Cc: Dutta, Lakshmi; 'Brian Winer'; Adelson, Edward (.3); 'Jessica Mercerhill'; Gustafson, Robert (.4); Royster, Jacqueline; Baeslack, Bud; 'mccauley.1@osu.edu'; 'andereck@mps.ohio-state.edu'; 'weide.1@osu.edu'
Subject: RE: BS-CSE Program

Neelam:

I am pleased to inform you that the proposal for an **Information and Computation Assurance Option** and an **Individualized Option** in the BS-CSE program were approved by the Council on Academic Affairs at its meeting On November 1, 2006. Professor Brian Winer, Chair of the Council, presented the proposal on your behalf.

No additional level of review/approval is necessary. This action will be included in the Council's next Annual Activities Report to the University Senate.

This message represents my formal communication with you about this proposal. Please keep a copy for your file(s) on the proposal and I will do the same for the file in the Office of Academic Affairs.

If you have any questions about this action, please contact Professor Winer or me.

Randy

W. Randy Smith
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Date: 19 October 2006

To: Randy Smith

From: Ed McCaul
Secretary College Committee on Academic Affairs

Subject: Computer Science and Engineering Technical Elective Options

Attached are two proposals from Computer Science and Engineering (CSE) requesting that two additional technical elective options for the BS-CSE degree be created. Since CSE wants to have these two technical elective options on their student's transcript it is necessary to have CAA approve them. Both options have been approved by the College of Engineering's Committee on Academic Affairs.

Attached: Proposal for an Individualized Option in the BS-CSE Program
Proposal for an "Information and Computation Assurance" Option in the BS-CSE Program

Proposal for an Individualized Option in the BS-CSE Program

Date: April 28, 2005.

Prepared by: N. Soundarajan, Chair, CSE Undergraduate Studies Committee.

Background: During the last few years, computing has evolved in many new directions. This is especially illustrated by the many new and varied applications of computing, ranging from data mining and analysis techniques applied to large volumes of bioinformatics data, to visualization of scientific data to make complex physical systems easier to understand, to the many different projects in such varied areas as literature and art history involving innovative uses of new computing technologies. The primary goal of the current proposal is to make it possible for BS-CSE majors who may have a special interest in one of these new directions of computing and its applications, to pursue a technical elective program that is tailored to their particular interests. The proposed new option will allow the student to develop, in close consultation with his or her faculty adviser, an elective program consisting of suitable advanced CSE courses as well as suitable non-CSE courses as appropriate. Another goal of the proposal is to encourage BS-CSE majors to consider doing a minor in another discipline.

Current curriculum: Currently, BS-CSE majors are required to choose, as their technical elective option, one of the following: *Software Systems*, *Hardware/Software Systems*, or *Information Systems*. Each of these requires the student to complete 27 hours of courses. These 27 hours are made up of a specified set of higher-level CSE courses the particular set of courses depending on the option, a specified set of non-CSE courses again depending on the option, and a set of elective hours, a certain number of which are required to be higher-level CSE courses.

Software Systems is the most popular option but each of the other two options also has a reasonable number of students pursuing it. But none of these options provides a perfect fit for students interested in such areas as, say, scientific and engineering visualization or computational linguistics. One solution to this would be to develop new technical options corresponding to each such area but the sheer number of possible areas, with new ones arriving on the scene on a regular basis, makes this approach impractical. The following proposal is designed to meet the needs of such students without introducing a large number of new options.

Proposal: We propose that an **Individualized Option** be introduced as a new technical elective option in the BS-CSE program as follows:

1. Students in this option must complete 27 elective hours of which at least 15 must be CSE courses. The other 12 may be CSE courses or appropriate courses from one or more other disciplines. All the CSE courses must meet the same requirements that elective CSE courses in the other options must meet.
2. In choosing the specific set of courses to be included in the option program, the student must ensure that it is a coherent program, must develop it in close consultation with his/her adviser, and must get approval of the program from the adviser at least four quarters before graduation. Students in this option are encouraged to consider with their adviser how the individualized major may work in conjunction with minors from other departments.

As per College of Engineering rules, students in this option who are pursuing a minor may double count some hours between the major and the minor to the extent that the hours to be included in the major as part of the technical elective option, in conjunction with the other technical elective hours forms a coherent program.

Once the student has, in consultation with the advisor, designed the technical elective option he or she wishes to pursue, the student will complete a form specifying the details of the option, the advisor will sign it indicating approval, and the completed form will be submitted to the CSE Advising Office for approval by the Undergraduate Studies Committee. The committee approval will ensure that the intent of the individualized option is met. Over time, the Advising Office will maintain a file of previously approved Individualized Option programs for the benefit of future students who may have similar interests.

Process: The initial ideas for introducing the Individualized Option arose in the form of ideas for new specific technical elective options such as scientific visualization, bioinformatics, etc. Over time though, it became clear that there were many variations possible and what was really needed was an option that could be tailored to the needs and interests of individual students. These ideas were discussed in several meetings of the departmental Undergraduate Studies Committee during the last couple of years. The BS-CSE student representative to the committee was an active participant in these discussions. The minutes of the meetings were posted on the electronic student and faculty newsgroups allowing both students and faculty to offer their comments. During this period, discussions in CCAA also reiterated the importance of encouraging students to pursue minor programs, in addition to their major program.

The proposal described above was arrived at following these discussions. At its meeting of April 15, the Undergraduate Studies Committee approved the proposal and recommended it to the full faculty for its approval. The CSE faculty approved the proposal at its meeting of April 25. Given the added flexibility that the new option will provide to BS-CSE majors to appropriately tailor their technical elective program to suit their interests, and the encouragement that it will offer to our students to pursue minor programs, we request expeditious approval by CCAA of the proposal so that it can go into effect in Autumn 2005.

Proposal for an “Information and Computation Assurance” Option in the BS-CSE Program

Date: October 6, 2006.

Prepared by: N. Soundarajan, Chair, CSE Undergraduate Studies Committee.

Background: Over the last few years, issues related to information and computation assurance (ICA) have become increasingly important. These issues are related to privacy concerns of individuals, national security considerations, as well as private businesses concerned with protecting trade and other secrets. Partly in response to this, the CSE Department has developed two new courses, CSE 551 (“Information Assurance”), and CSE 694K (“Network Security”). Both of these have been popular with students. In addition, there are a number of courses offered by other units in the university available to students interested in this topic; a list of these courses appears at the web site for the Center for Information System Security (see web site: <http://www.cse.ohio-state.edu/caeia/>).

The current proposal will allow students interested in ICA to follow a named technical elective option focused on this topic. It is true that current students are already able, using the *Individualized Option* to take essentially the same set of courses as being proposed for this new option. However, having a named option would make it a bit more attractive to students and others. For example, the NSA has a program that will fund centers devoted to these topics, but one of their requirements is that the university offer suitable undergraduate programs in the area.

Current curriculum: Currently, BS-CSE majors are required to choose, as their technical elective option, one of the following: *Software Systems*, *Hardware/Software Systems*, *Information Systems*, or *Individualized Option*. Each of the first three of these requires the student to complete 27 hours of courses. These are made up of a specified set of higher-level CSE courses the particular set of courses depending on the option, a specified set of non-CSE courses again depending on the option, and a set of elective hours, a certain number of which are required to be higher-level CSE courses. The Individualized Option requires students to complete 27 hours of courses with at least 12 of these being CSE courses, the actual set of courses being determined by the student's interests and plans, and in close consultation with the faculty adviser.

Proposal: We propose that an **Information and Computation Assurance Option** be introduced as a new technical elective option in the BS-CSE program as follows:

1. **Required Courses:** CSE 551, 677, 678, 694K; one of Math 568, 571, 647, or 648.
2. **Elective Courses:** 12 hours; at least 3 hours must be CSE courses.

The following non-CSE courses may be of special interest:
AMIS 531, 627, 653, 658, 659; CRP/GEOG 607.

As per College of Engineering rules, students in this option who are pursuing a minor may double count some hours between the major and the minor to the extent that the hours to be included in the major as part of the ICA option are appropriate to the option.

Process: The initial ideas for introducing the ICA Option arose as a result of discussion among faculty interested in setting up a NSA-funded center on Information System Security. These ideas were discussed at the October 26, 2005 and November 2, 2005 meetings of the departmental Undergraduate Studies Committee. The BS-CSE student representatives to the committee were active participants in these discussions.

The minutes of the meetings were posted on the electronic student and faculty newsgroups allowing both students and faculty to offer their comments.

The proposal described above was arrived at following these discussions. At its meeting of November 2, 2005, the Undergraduate Studies Committee approved the proposal and recommended it to the full faculty for its approval. The CSE faculty approved the proposal at its meeting of November 7, 2005. Given the importance of the area, we request expeditious approval by CCAA of the ICA Option so that it becomes available to students as soon as possible.