

Fall 2008

Cover letter for Computer Science EPCC Proposal

This document contains further information the changes specified in the Computer Science proposals submitted this Fall 2008.

Prepared by Paul Craven.

Proposal 1: Changes in the core sequence for CS and CIS majors

CIS 255 Introduction to Database Systems was added as a required class for all majors. Our computer science advisory board was polled about the importance of different classes that majors should take. The database systems class was deemed to be critical. In further discussion with the board, all the projects they were working with required at least some database knowledge. They gave examples of these projects, like dynamic web sites, business intelligence, and financial reporting. Since practically all modern software projects implement some database, the board found this class to be even more important than some of the classes that are currently in the CS/CIS core.

CmSc 220 Social Context of Computing was dropped as a required class. It is still an important class, and available as an elective. It is not so important that our department and advisory board felt that we should deny a person a degree because they didn't take the class. Moving this class to an elective we allow students more flexibility in scheduling and customizing the classes that are important to them.

CmSc/Math 180 has been moved to an elective for CIS. It is still a requirement for CS. The CIS degree is oriented towards business-track IT, where the CS has more of a Mathematics track. The 180 class has a heavy emphasis on the Mathematics side. By removing it as a requirement for CIS, we can make room for CIS 270 Web Development a required class for CIS.

Proposal 2: Changes to Computer Science major

We've added language that allows the higher level Math statistics class to be used in place of Math 201, elementary statistics. It makes sense to allow an advanced class to substitute for the elementary class.

Dropping one elective from the major drops the requirements for the CS major by 3 credit hours. The reasons for doing this:

- Lydia Sinapova surveyed several liberal arts colleges and found that only one CIS program required as many classes as Simpson. All the others required less.
- Our major is heavy enough in courses and prerequisites that it is difficult to complete if not started in a student's first year. Most day-time students in our major are recruited, and are not coming in as freshman computer science students. By dropping one course, we make it easier to pick up a CS major.
- There is a push to have few classes, but make them higher quality. By following this trend we can put more effort into our core CS classes. If students don't get the basics, it is really hard to extend into 300 level courses.

- There is worry with the faculty that this will make students less prepared for graduate school or other highly technical work. To mitigate this, we plan to advise CS-only majors to take several classes beyond the minimum requirements. For double majors, their key asset will be their ability to blend the two majors. If our major is too 'heavy' to allow the double major, then everyone loses.

Changes for the CIS major

We are adding web development as a requirement for the CIS major. The current development trends for business development have moved away from creating graphical user interfaces, to creating web applications. Understanding web development should be required for the business-oriented CIS major.

Math 180 was dropped as a requirement for the major. Web development seemed more critical than the discrete math class for today's CIS majors.

CMSC 375 Software engineering was dropped as a required class and CIS/Magt 300 Project Management replaced it. Software engineering is a class that is heavy into programming. But some students seeking a CIS degree are interested in other technical tracts that don't involve heavy programming. These tracts might include database administration, system administration, security auditing, and technical management. As a result, we are getting several students taking CMSC 375 without a strong interest in programming, making the class difficult to manage with the different interest and skill levels of the students. CIS/Magt 300 is a better fit. Many technical jobs involve skills that project management provides. Furthermore, it makes it easy for students to double major in CIS and Management because the class is cross-listed.

The CIS major's required electives were dropped by one class for the same reason that CS was dropped by one class.

Changes for the CS minor

One of the electives has been dropped. The change of the core drops Math/CmSc 180 as a requirement. This will make it easier for mathematics and science majors to pick up CS as a minor. It is still a very strong minor, even with one less class. Our hope is that this will make the minor more attractive to students. The minor requires so many classes now, it is really hard to pick up in your junior year.

Technology has shaped many of the sciences. Computers have really helped these sciences move forward. We'd like to see more people take extra classes in computer science. If students see the minor as a feasible option, I hope to see more of them take a database class, which might contain all their scientific or statistical data. With the core programming classes they can automate their work. These core classes are still in our minor.

We've changed the electives that can be selected from 250 and higher, to 180 and higher. This is because CMSC/Math 180 Discrete Math is now optional, rather than required.

Changes for the CIS minor

CMSC/Math 180 has been dropped as a requirement. This will make it easier for business majors to pick up CIS as a minor. It is still a very strong minor, even with one less class. Our hope is that this will make the minor more attractive to students. The minor requires so many classes now, not many people are interested in it.

We've changed the electives that can be selected from 250 and higher, to 180 and higher. This is because CMSC/Math 180 Discrete Math is now optional, rather than required.

Prepared by Paul V Craven

Computer Science Department Head

Nov 16, 2008.