Cybersecurity Specialization

Background

We currently offer a cybersecurity specialization, but few students are taking advantage of it: only 8 students graduated in FY16–17 with this specialization, even though the first ACES class graduated that year and, in 2015, there were 150 students who indicated their interest in the specialization.

For this reason, it seems worthwhile to revisit the specialization and decide whether we want to reduce the requirements for obtaining it.

Current Requirements

The current requirements are 7 courses as follows:

- Required courses: CMSC 412 (operating systems), CMSC 414 (computer security), CMSC 417 (networks), CMSC 433 (programming languages), and CMSC 456 (cryptography).
- One of CMSC 411 (computer systems) or CMSC 430 (compilers).
- One of CMSC 420 (data structures) or CMSC 451 (algorithms).

Suggestions

Of the requirements, the last (CMSC 420 or CMSC 451) seems the least relevant. I would be in favor of removing it. That would result in 6 required courses to complete the specialization.

We can make the specialization easier to obtain by allowing more flexibility in the choice of courses. For example:

- Required courses: CMSC 414 (computer security) and CMSC 456 (cryptography).
- Four courses from among CMSC 411 (computer systems), CMSC 412 (operating systems), CMSC 417 (networks), CMSC 430 (compilers), or CMSC 433 (programming languages).

If desired, we could also decrease the requirement to 5 courses in total, i.e., having students choose three of the courses in the second bullet.