

Contact: Diana Gonzalez

MASTER OF ENGINEERING PROGRAM IN INFORMATION ASSURANCE
NEW PROGRAM REVIEW REPORT

Action Requested: Consider receiving the new program review report for the Master of Engineering Program in Information Assurance at Iowa State University in the College of Engineering.

Executive Summary: In 2010, the Board approved the new program whose purpose was to provide an option for students who seek advanced study in information assurance but are not interested in conducting the research required for the existing Master of Science Program in Information Assurance. The purpose of this new program review is to present evidence that the program is addressing the goals, objectives, projected student data, and resources identified in the 2010 program proposal. This program review addresses the Board of Regents Strategic Plan priorities to “provide educational excellence and impact as well as economic development and vitality” and Goal #8 – “Iowa’s public universities and special schools shall be increasingly efficient and productive.”

Background:

- ◇ **Description of program.** The program is offered only to off-campus students. It is designed to assist all individuals who already have a bachelor’s degree in computing or related areas to pursue an in-depth study in information assurance. With the rapidly changing technological landscape in engineering industries, an advanced degree or continuing education is becoming increasingly necessary. The Master of Engineering program (MEng) is based on coursework credits only (no thesis or creative component is required, and no visit to campus is required). Courses are offered through our Engineering-Liberal Arts and Sciences Online Learning streaming media online education program. The Master of Engineering in Information Assurance is one of several graduate programs that are offered by the interdepartmental graduate program in Information Assurance. In addition to this program, the interdepartmental graduate program offers Master of Sciences degrees (with and without thesis, on campus and off campus) and a Ph.D. program in a home academic department with a focus in Information Assurance. The program requires completion of 30 credits of graduate work.
- ◇ **Need identified for program.** The program proposal stated, “According to the President’s Commission on Critical Infrastructure, computer security is essential to the protection of the national communication infrastructure. The Commission recommended increasing education efforts in the area of computer security. According to the National Plan for Information Systems Protection released in 2000, ‘Defending America’s cyberspace will require action by all Americans. A foundation for the many actions outlined in the plan is the understanding and awareness of the new threats posed to our information systems, and the need for action.’”
- ◇ **Changes in goals and objectives from program proposal.** None.

◇ Projected and actual headcount enrollment for past five years.

Fall 2011		Fall 2012		Fall 2013		Fall 2014		Fall 2015	
P	A	P	A	P	A	P	A	P	A
10	11	15	21	20	37	25	46	30	50

This is a new program so there was an expected growth that exceeded the 20% level criterion. The enrollment is on track to meet the projection listed in the proposal of 40 students by Year Seven.

◇ Total number of credit hours delivered during the past five years. Data are not available on the exact number of credit hours. Most program students take six or 12 credit hours per year. Estimates are provided on the following table.

Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015
99	189	333	414	450

◇ Number of graduates during the past five years.

Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015
3	5	1	8	6

This is a new program so the number of graduates exceeded the 20% level criterion. At graduation, 88% were employed; 100% were employed six months after graduation.

◇ Program strengths.

- ⇒ The program continues to address a national need for qualified cyber security professionals. There is an increase of students from a military background applying to the program.
- ⇒ There has been strong growth in demand for the program. More than half of the courses in the program have one or more hands-on lab experiment, which is unique with on-line graduate programs.

◇ Program concerns. Students are asking that the core courses be offered every semester. This requires resources that are not currently available. The increased enrollment is also placing a burden on lab equipment.

◇ Recommendations. In order to continue growing, the program needs a dedicated lab environment with a staff person. Currently, the faculty members teaching the courses are responsible for setting up and running the labs. There is a need to start offering the four core courses each fall and spring semester to meet the student demands for quicker completion times.

◇ Conclusions. The program serves a national need and is showing robust growth.

◇ Program improvements. Additional courses are needed to address new areas in cyber security, including cyber physical security, software security, and web security.

- ◇ Program cost. The program proposal indicated that the program would not incur new costs. *Departmental expenditures are not disaggregated or tracked at the program level.*
- ◇ Major changes planned for the next 2-3 years. None other than adding one or two courses.
- ◇ Program accreditation. None.
- ◇ Program revenue. Departmental revenue is not disaggregated or tracked at the program level.
- ◇ Assigned program faculty. An accurate estimate is not possible at the program level.
- ◇ Additional information. Accurate responses regarding costs and revenues did not appear to be possible because “the program is part of an interdepartmental program that offers multiple master’s and doctoral degrees, as well as “service” courses that are taken by graduate and undergraduate students in other majors. It is difficult to accurately separate revenue and costs among the programs offered by the interdepartmental program. The programs share faculty and other resources, as well as revenue streams. In addition, the faculty in the program have primary appointment and responsibilities in “home” departments associated with disciplines related to information assurance, such as computer engineering, computer science, management information systems and mathematics.”