Board of Regents, State of Iowa

**REQUEST TO IMPLEMENT A NEW BACCALAUREATE, MASTERS,
DOCTORAL OR FIRST PROFESSIONAL DEGREE PROGRAM**

THE PURPOSE OF ACADEMIC PROGRAM PLANNING: Planning a new academic degree program provides an opportunity for a Regent University to demonstrate need and demand as well as the university's ability to offer a quality program that is not unnecessarily duplicative of other similar programs offered by colleges and universities in Iowa.

Institution: **Iowa State University**

Departments involved: Information Assurance

CIP Discipline Specialty Title: Computer and Information Systems Security

CIP Discipline Specialty Number (six digits): 11.1003

Level: B   (M)   D   FP

Title of Proposed Program: Information Assurance

Degree Abbreviation (e.g., Minor, B.S., B.A., M.A.): ME

Approximate date to establish degree: Month   August   Year 2010

Contact person(s): (name, telephone, and e-mail)

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Please provide the following information (use additional pages as needed).

1.   Describe the proposed new degree program, including the following:

   a.   A brief description of the program and a statement of objectives including the student learning outcomes and how the learning outcomes will be assessed;

   This is a coursework only version of the master of science degree in Information Assurance already offered by the interdepartmental Information Assurance Program. Students graduating from the major proposed will help to fill the current and future needs for well-educated system security specialists in the government, private sector, and academia.

   The following program objectives are identified as being critical to the accomplishment of this mission: (1) Impart and enhance knowledge about information infrastructure security; (2) Expand and develop engineering abilities; (3) Instill and nurture social awareness, and the ability to function in a team; (4) Instill and nurture a sense of ethics; and (5) Develop an understanding of strategic and policy issues.

b.	The relationship of the proposed new program to the institutional mission and how the program fits into the institution's, college's, and department/program's strategic plan;

This program is consistent with the strategic plans of the departments, college and university. Within the department of Electrical and Computer Engineering Information security and networking is one of the nine research focus areas and has been targeted as an area for growth. The program is also consistent with the college plan of increasing graduate student production and in meeting the needs of industry and government. These goals are also consistent with the university goals as a premier land grant university. The program will provide an increase in the number of individual who can help defend the country from cyber attack and can help provide increased value to the state and national economies.

c.	The relationship of the proposed new program to other existing programs at the institution; describe how the proposed program will enhance other programs at the university.

This is a coursework only version of the existing MS degree in Information Assurance. There are no other programs at ISU that focus on Information Assurance.

d.	The relationship of the proposed new program to existing programs at other colleges and universities in Iowa, including how the proposed program is different or has a different emphasis than the existing programs; and

There are no other master level degree programs in Information Assurance offered by schools in Iowa.

e.	Special features or conditions that make the institution a desirable, unique, or appropriate place to initiate such a degree program.

Iowa State University is a national leader in the area of information assurance education and research. The proposed program builds on existing strengths in several departments and places Iowa State University in the forefront of this emerging area.

f.	Does the proposing institution have personnel, facilities, and equipment adequate to establish and maintain a high quality program?

Yes, this program will use existing courses and will not require additional resources.

g.	How does student demand for the proposed program justify its development?

The Electrical and Computer Engineering department conducted a survey of their EDE students (including students enrolled in the INFAS degree) asking them if they would prefer (a) a course-work only Master of Engineering - emphasizing that the degree is named differently, (b) MS with thesis, and (c) MS with creative component. Out of 17 responses, 12 preferred coursework only MEngr, 3 preferred MS with thesis, and 2 preferred MS with creative component. The current enrollment in the Masters program in IA is over 50 students. This

proposed degree will increase the number of students enrolled in the Information Assurance graduate program.

2.   Describe the state and/or national workforce need and/or demand for graduates of the proposed program currently and in the near future (provide documentation about the sources of data used to estimate need and demand.)

The growing need for information security professionals is well documented. Very few universities offer more than a single cryptography course, and even fewer engineering departments have a presence in this area. The end result is a severe shortage of graduates proficient in the technology and policy issues critical to the security of the information infrastructure. Furthermore, because these programs are not prevalent at U.S. universities, a need now exists to attract Ph.D. students who will pursue careers in academia and build their own research and education programs enhancing the knowledge base in this area.

This program will have a major impact on the nation by producing students who can work in information system security. According to the President's Commission on Critical Infrastructure, computer security is essential to the protection of the national communication infrastructure. The commission recommends increasing educational efforts in the area of computer security. During the 1st National Colloquium for Information Systems Security Education (1997, Baltimore, MD) the National Security Agency (NSA) called for universities to create programs in information security. As noted in the last two NSF Arlie House workshop reports, the computer and communication research community strongly supports research and education in information systems security.

According to the latest National Plan for Information Systems Protection released by the president of United States in January of 2000, "Defending America's cyberspace will require action by all Americans - Business leaders, education, and other private sector institutions, the government (Federal, state, and local), and ultimately, the general public. A foundation for the many actions outlined in the plan (National Plan for Information Systems Protection) is the understanding, and awareness of the new threats posed to our information systems, and the need for action".

Students graduating from the major proposed will help to fill the current and future needs for well-educated system security specialists in the government, private sector, and academia.

3.   List all other public and private institutions of higher education in Iowa currently operating programs similar to the proposed new degree program. (For comparison purposes, use a broad definitional framework, e.g., such identification should not be limited to programs with the same title, the same degree designation, having the same curriculum emphasis, or purporting to meet exactly the same needs as the proposed program.)

No other institutions of higher education in Iowa offer a masters degree in Information Assurance.

If the same or similar program exists at another public or private institution of higher education in Iowa, respond to the following questions:

    a. Could the other institution reasonably accommodate the need for the new program through expansion? Through collaboration?

    b. With what representatives of these programs has there been consultation in developing the program proposal? Provide a summary of the response of each institution consulted.

    c. Has the possibility of an inter-institutional program or other cooperative effort been explored? What are the results of this study? (Consider not only the possibility of a formally established inter-institutional program, but also how special resources at other institutions might be used on a cooperative basis in implementing the proposed program solely at the requesting institution.)

4. Estimate the number of majors and non-majors students that are projected to be enrolled in the program during the first seven years of the program.

    a. Undergraduate

Undergraduate	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Majors							
Non-Majors							

    b. Graduate

Graduate	Yr 1	Yr 2	Yr 3	Yr 4	Yr 5	Yr 6	Yr 7
Majors	10	15	20	25	30	30	40
Non-Majors							

    c. What are the anticipated sources of these students?

This program will be offered primarily through distance education. Currently our distance education MS degree in IA draws students from all of the country.

5. If there are plans to offer the program away from the campus, briefly describe these plans, including potential sites and possible methods of delivery instruction.

Yes through engineering distance education.

6. Has the proposed program been reviewed and approved by the appropriate campus committees and authorities? List them:

Approved by:

    Information Assurance faculty

    Department of electrical and computer engineering

    College of engineering

    Graduate curriculum committee

    Graduate council

7.   List date the program proposal was submitted to the Iowa Coordinating Council for Post High School Education (ICCPHSE) and the results of listserv review.   (THIS WILL BE FILLED IN BY THE PROVOST OFFICE.)

8.   Will the proposed program apply for accreditation? When?

No professional accreditation exists in this new discipline. ISU has, however earned recognition from the national Security Agency. On 11 May 1999, NSA issued a Press Release designating seven universities as the first Centers of Excellence in Information Assurance under the Centers of Excellence Program. NSA granted the designations following a rigorous review of university applications against published criteria based on training standards established by the National Security Telecommunications and Information Systems Security Committee (NSTISSC).

NSA's establishment of this program was spurred by the growing demand for professionals with Information Assurance expertise in various disciplines. The Centers for Academic Excellence are expected to become focal points for recruiting and to create a climate to encourage independent research in Information Assurance.

9.   Will articulation agreements be developed for the proposed program? With whom?

Not Applicable

10.   Describe the faculty, facilities, and equipment that will be required for the proposed program.

This program will use existing faculty and facilities used to teach the Master of Science degree in Information Assurance.

11.   From where will the financial resources for the proposed program come (list all that apply, e.g., department reallocation, college reallocation, grants, new to the university)?

SOURCES	TOTAL AMOUNT
No additional resources are needed beyond additional tuition revenues generated	

12.   Estimate the total costs/total new costs (incremental increases each year in expenditures) that will be necessary for the next seven years as a result of the new program:

No additional resources are required. The program is currently funded as part of the operational expenses of the departments involved and the Information Assurance Center. These costs are hard to separate from the overall operating budgets.

	TOTAL COSTS	TOTAL NEW COSTS
Year 1		
Year 2		

Year 3		
Year 4		
Year 5		
Year 6		
Year 7		

**Supplemental materials
(to be used at Iowa State University in the review of the proposal):**

13.   Program requirements, including:
        a. prerequisites for prospective students;
        b. language requirements;
        c. courses and seminars presently available for credit toward the program;
        d. proposed new courses or modifications of existing courses;
        e. thesis and non-thesis options in master's programs;
        f. implications for related areas within the university;
        g. admissions standards for graduate programs

14.   Attach to the program proposal memos from the department chair(s), the college
        dean(s), and other appropriate persons, agreeing to the allocation of new
        resources and/or the reallocation of resources as described in the Regents
        questions

15.   Attach to the program proposal, letters of support, recommendations, and
        statements when appropriate:
        a. from programs at the other Regents universities
        b. from programs and departments at ISU which are associated with the
        proposed program or have an interest in the proposed program

Notes:

1.   The CIP Specialty name and number is found at:
        http://nces.ed.gov/pubs2002/cip2000/