GRADUATE CERTIFICATE PROGRAM

INFORMATION SECURITY POLICY

SUBMITTED BY

COLLEGE OF TECHNOLOGY

PURDUE UNIVERSITY

WEST LAFAYETTE CAMPUS

RECEIVED IN THE GRADUATE SCHOOL

August 8, 2011

FINAL REVISIONS RECEIVED

September 20, 2011
Proposal for a Graduate Certificate in Information Security Policy

Title: Information Security Policy

Program Description:

The purpose of the graduate certificate in information security policy is to offer a practitioner-oriented credential in this emerging area to students who are 1) pursuing a Masters or Doctoral degree on the West Lafayette campus and 2) working professionals seeking career professional development.

The need for educational programs in information security arises from the explosive growth in information and communications technology; the risks we face range from “threats of massive disruption: outages in power, transportation and communications systems resulting from denial of service; loss of privacy; alteration of critical data; and new forms of theft and fraud on an unprecedented scale. Threats from criminals, anarchists, extremists, cyber terrorists and random attackers continue to grow as we increase our reliance on computing infrastructure. The need for information assurance and security professionals has been well-documented in recent years (National Research Council report “Toward a Safer and More Secure Cyberspace,” 2007; Whitehouse report “Cyberspace Policy Review,” 2009). While the Secretary of Homeland Security has announced that they want to hire 1000 cyber security experts and the NSA has announced that they want to hire 1500, it is not clear that the country currently has anything approaching 2500 cyber security experts to hire. Although the number of university programs and active faculty in this area have increased in the last dozen years, the number involved and the support provide provided for their efforts still falls far short of the national need.

In response to this growing need, faculty at Purdue University have been at the forefront of developing and implementing an interdisciplinary program in information security. The interdisciplinary MS program was approved in 1999 and the PhD program in 2006. The interdisciplinary program and degrees in information security are intended for students who are interested in a cyber security path where technical expertise is required, but breadth and nontechnical background are also necessary.

Experience to date at Purdue has shown an increasing number of students interested in the information security field and increasing interest by potential employers including academia, research labs, business and industry, governmental agencies – civilian and defense - and law enforcement. Some of our interdisciplinary information security graduates are taking positions where they are expected to have working knowledge of policy making and policy analysis as applied to information security. One impetus for this certificate is to offer our students pursuing the Interdisciplinary MS or PhD in Information Security with a recognized credential in information security policy. Because of the growing interest by employers in business and industry, governmental agencies and law enforcement, we also recognize the need for career development for working professionals. The second impetus for this certificate is to offer a Certificate in Information Security Policy for these working professionals. With the establishment of the Purdue’s Global Policy Research Institute, this aligns with Purdue’s intent of
establishing education programs that offer professional development opportunities for leaders who work on pressing public issues, such as information security.

**Target Audience:**

We estimate this graduate certificate will enroll approximately 15-20 traditional MS and PhD students once fully implemented and 25-35 working professionals annually. The graduate certificate will be open to students from across campus.

This graduate certificate is related to three other graduate certificates that are being planned that have a public policy focus: Systems Engineering Policy, Environmental Policy and Social Policy. The faculty leadership council\(^1\) for the Global Policy Research Institute is the group that has identified these graduate certificates. The respective certificates will have the following common elements.

1. Each student who obtains the graduate certificate in public policy should have some basic knowledge about policymaking somewhere (i.e., the United States, the European Union, Nigeria, whatever institution, place or context is most important for their field of study). So they ought to have a course that gives them some understanding of the social context of policymaking. The appropriate course for this requirement will depend upon the substantive area of the certificate. For example, students in the Information Security Policy certificate will take Pol 620 Proseminar in Public Policy to meet this requirement, whereas students in the Social Policy certificate might have a different set of options to meet this requirement.

2. Each student who obtains a graduate certificate in public policy also ought to have a basic understanding of some of the most common tools used in policy analyses, such as statistical analysis, qualitative analyses (such as focus groups and case studies), and cost-benefit analysis.

In addition to these common elements, students in these graduate certificates will be expected to have some in-depth knowledge of a particular policy area. They should be able to acquire this basic knowledge in a sequence of 3-4 graduate courses. See the specific requirements for the information security policy graduate certificate below.

**Initiation Date of Certificate:**

We are seeking approval of the graduate certificate early Fall 2011 with the goal of admitting students for the spring semester of the 2011-12 academic year.

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\(^1\) The faculty leadership council for the Global Policy Research Institute includes: M. Kathy Banks, Professor, Environmental Engineering; Lynn A. Bryan, Professor, Curriculum & Instruction and Physics; Melissa Dark, Professor, Computer and Information Technology; Jess Lowenberg-DeBoer, Professor Agricultural Economics; Stephen Martin, Professor, Economics; Joe Pekny, Professor, Chemical Engineering; Bert Rockman, Professor, Political Science; Gene Spafford, Professor, Computer Science; Joseph Thomas III, Professor of Pharmacy Practice; Wally Tyner, Professor, Agriculture Economics; Shelley MacDermid Wadsworth, Professor, Human Development and Family Studies; S. Laurel Weldon, Professor, Political Science.
Admission Requirements:

1. Bachelor's degree from an accredited institution.
2. Minimum undergraduate GPA of 3.0/4.0.
3. Minimum TOEFL score of 550 or higher on the paper-based test, 213 or higher on the computer-based test, or 77 or higher on the Internet-based test (iBT) for applicants whose native language is not English, with the possibility of allowing exceptions, including substitution of alternate criteria. Applicants who take the TOEFL iBT must achieve the following minimum test scores, in addition to the overall required score of at least 77: reading, 19; listening, 14; speaking, 18, and writing, 18. Applicants taking the IELTS must score at least 6.5 on the Academic Module.
4. Students who are admitted to the Interdisciplinary MS or PhD Information Security program are eligible to earn a certificate. Admission to the certificate program will require students to apply through a separate application to the Graduate School.
5. Students who are in other majors may be eligible to earn the certificate as well, pending approval by the admissions committee for the Interdisciplinary Information Security program.

Completion Requirements:

1. The graduate certificate in Information Security Policy consists of 15 credit hours. 12 of the 15 credit hours must be taken for a letter grade. The remaining 3 credit hours is a practicum that will be taken pass/fail.
2. No more than 12 credit hours earned in nondegree status, including credit hours earned toward completion of a single certificate or more than one certificate, may be applied toward a graduate degree.
3. Courses that have been certified as undergraduate excess may be used to satisfy requirements for a certificate.
4. Specific course requirements are as follows:
   A. One required Course in the Context of Policymaking: Pol 60000 or Pol 62000
   B. One required Course in Policy Analysis Tools: AgEcon 60800, Stat 50200, 51200, 51300, Pol 60500, 60600
   C. Two substantive Courses: ASM 59100A, CNIT 52800, Tech 62100
      D. Practicum - supervised practical application of previously or concurrently studied theory in the policy making and policy analysis courses to the field of information security. Tech 58100
5. Students must have a GPA of 3.0/4.0 on the required courses to earn the certificate. The minimum grade for any course to be applied toward the certificate is a grade of C.
6. No more than three credits may be transferred from another institution for the certificate.
7. No undergraduate-level courses may be used toward the certificate
8. The maximum time allowed for completion of the certificate will be three years.
9. Courses may be applied to the certificate that also count toward credit hours required for the student’s MS or PhD in the interdisciplinary program in Information Security.

10. No more than 9 credit hours can be taken prior to admission to the certificate program that may be counted toward completion of the certificate.

**Administrative Procedures:**

Students who are already admitted to the Interdisciplinary MS or PhD program in Information Security will apply for consideration into the graduate certificate program in information security policy. Students who are applying for the graduate certificate only will apply online to the graduate school using the same admission process as degree-seeking students at the graduate level. To facilitate tracking of students who are enrolled in certificate programs, the Office of the Registrar will establish a special admission status for such individuals. When a student completes requirements for a certificate, the graduate program responsible for that certificate will notify the Graduate School. The Graduate School will then notify the Office of the Registrar, which will post the certificate. The certificate, itself, will be printed by the Office of the Registrar. The certificate will be awarded jointly by the appropriate academic unit and the Graduate School. It will bear the signature of the head of the academic unit and the dean of the Graduate School. Certificates will be awarded at the normal times when degrees are awarded. The process for certifying completion of requirements. This audit process will be the full responsibility of the academic unit awarding the certificate, in this case the Interdisciplinary graduate program in Information Security.