

CERIAS Tech Report 2004-43

**CIVIC RESPONSIBILITY AND INFORMATION SECURITY: AN INFORMATION SECURITY
MANAGEMENT, SERVICE LEARNING COURSE**

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Civic Responsibility and Information Security: An Information Security Management, Service Learning Course

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ABSTRACT

This paper describes a needed and innovative service learning Information Security Management class that was designed, developed, and offered at Purdue University in spring 2004. This paper overviews 1) the need for service learning, 2) the more specific need for service learning in information technology and educational technology programs, 3) the need for information security in K12 school corporations as these bodies of work pertain to this experimental course. For faculty interested in developing a similar course, the paper then 4) highlights the course description and objectives as a reference point, and 5) describes how this course evolved from past work with an emphasis on the type of capacity that was needed to make such a course possible.

Categories and Subject Descriptors

K.6 [Management of Computing and Information Systems]: Security and Protection – *authentication, insurance, invasive software (e.g., viruses, worms, Trojan horses), physical security, unauthorized access (e.g., hacking, phreaking).*

General Terms

Information Security Education, Information Security Management, Information Security Risk Assessment.

INTRODUCTION

This course stems from three needs. The first is the development and integration of an Information Security service-learning course

into IT/CS programs. The second need is adapting methods and models for information security risk assessment into curriculum for students so they graduate with needed knowledge and skills. The third need is service to the K12 schools by providing knowledge and skills needed to better secure their IT systems. Each need is discussed in greater detail below.

THE NEED FOR SERVICE LEARNING

Because there are many working definitions and examples of service learning in the literature and in practice, it was necessary to adopt a working definition and benchmark best practices to guide the development of the course. The definition that was adopted asserts that “service-learning is a method under which students learn and develop through active participation in thoughtfully organized service experiences that meet actual community needs, that are integrated into the students’ academic curriculum or provide structured time for reflection, and that enhance what is taught in school by extending student learning beyond the classroom and into the community” [1]. With regard to the “learning” component of “service learning”, a well-designed service learning course joins theory and practice, i.e., students experience the relevance of the subject to the real world. Students in service learning courses are empowered to make a difference with the skills they are learning in an environment where there is a need; furthermore, the learning experience and student learning outcomes are usually richer when there is a distinct and known need for the service. Student learning in service learning courses is enhanced because students are given more responsibility as well as a richer context as a classroom.

A primary outcome of service learning is to increase the civic responsibility and citizenship of students in the course; this occurs by exposing students to societal inadequacies where they can use the community service experience as a foundation for learning 1) about oneself, 2) the academic discipline, 3) real world skills and techniques, and 4) how the discipline, skills and techniques intersect with the social world around us. Research shows a strong correlation between student participation in a service learning course(s) and increased civic responsibility [3]. This course focuses on civic responsibility outcomes as relevant to the practice of system security design, development, and implementation. Ideally, the “service” piece of “service learning” will respond to a variety of social, environmental, and economic development needs [6]. A key goal for the service component of service learning is that it leads to long-term community changes

- Information Security Training and Awareness for K12 Schools
- Intrusion Detection
- Email Forensics

In addition to leveraging past work with the K12 schools, several existing service learning resources at Purdue University were leveraged to execute this course. These included working with other faculty members with more experience in service learning; working with the Service Engagement Advisory Board, and attending on campus workshops on service learning.

In addition to leveraging the resources of the University, we leveraged the resources and infrastructure of the Wabash Valley Education Center (WVEC) to work with K12 schools. The WVEC provides technology leadership to K12 school corporations in west central Indiana. WVEC is one of nine educational service centers (ESC) that serve approximately 92% of the school districts in Indiana. Wabash Valley opened in 1967 and was of the first centers in Indiana. WVEC serves 16 counties and 36 school corporations that surround Tippecanoe County. WVEC has over 70,000 students and nearly 7,000 teachers in 177 buildings with whom they communicate.

Future Work

The work described in this paper has really just begun. There are several next steps to be taken to advance the work started here. The first step will be to modify and improve the class before it is offered again. In addition to offering the class again on the Purdue University West Lafayette campus, we anticipate offering the class throughout the state of Indiana. Previously, the partnership with Wabash Valley Education Center was described.

The author is currently in the process of developing similar relationships with other educational service centers in the State of Indiana. At the same time, the author is partnering with faculty at other Purdue campuses including: Calumet, Westville, Indianapolis, Columbus, Kokomo, Richmond, and South Bend. Once these partnerships are in place, the course will be replicated throughout the State of Indiana, thereby serving more students and more schools. In addition to expanding the work throughout the State of Indiana, the author has developed partnerships with faculty in Maine, Tennessee, and Texas to export the class to these states. In addition to refining and disseminating the course, future work will also include research with regard to the influence of the course on students' civic responsibility.

In addition to expanding this work with the K12 sector, the author was invited to make a presentation about the class to the Indiana Department of Education. Through that presentation, information about the class was shared with the Indiana Cybersecurity Officer, who is responsible for cyber security coordination across Indiana governmental agencies. At this time, discussion is underway to have various state agencies as clients in the course in the spring, 2005.

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