# Integrating Information Security and Assurance into MIS Curriculums

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## ABSTRACT

The American popular press has published many stories about information systems security and privacy breaches in recent months. As a result, organizations collecting and storing data have to deal proactively with information security issues. Not coincidentally, the demand for information security literacy is increasing rapidly, spurred in part because of increased regulatory requirements, such as the Sarbanes-Oxley Act (SOX). In order to help meet this demand, management information systems (MIS) and accounting information systems (AIS) departments in universities need to develop courses and perhaps even curricula to educate students about the strategic, managerial, organizational and regulatory issues of security in addition to the technical details. Moreover, one of the more interesting developments in information assurance is the increasing demand for information technology (IT) auditors, even from among non-accounting graduates (such as MIS majors).

## INTRODUCTION

In our ongoing research, we are working on the development of new courses to help support these demands. We briefly describe the development of the demand for MIS students for information risk and security consulting and IT auditing careers and discuss what we are doing at our university to make students more aware of such careers and to better prepare them for entry-level positions. Specifically, we review sources of possible topics, class assignments, and exercises, and we also discuss the Information Systems Audit and Control Association's (ISACA) Model Curriculum. In our conference presentation, we also intend to share the lessons we have learned from developing and teaching our first MIS courses, both at the undergraduate and graduate levels, in information security management and assurance. The expected target audience of this presentation is MIS/AIS faculty who may want to add an IT security and assurance component to a course (or curriculum) to help meet the demands (from the marketplace) that we make our students cognizant of and knowledgeable about SOX, information risk and security, and IT auditing.

## OVERVIEW OF THE NEED FOR THE CONSIDERATION OF CHANGES TO MIS CURRICULUMS

ISACA is an international organization dedicated to the IS audit and control profession. In their Model Curriculum (available for no charge at www.isaca.org), they argue persuasively for the inclusion of integrated content and courses that will help universities develop IT/MIS graduates who are employable candidates to help meet the growing demand for entry-level IT audit positions:

The ISACA model curriculum provides universities with a basic framework of the education required to develop the skills needed to be employable in the profession. In the information-based business environment, business professionals who are technically competent in IS, or IS specialists who understand accounting, commerce and financial operations, are in great demand for IS audit careers (p.7).

The seven major domain areas in the Model Curriculum are: 1) Audit Process; 2) Management, Planning and Organization of IS; 3) Technical Infrastructure and Operational Practices; 4) Protection of Information Assets; 5) Disaster Recovery and Business Continuity; 6) Business Application System Development, Acquisition, Implementation and Maintenance; and 7) Business Process Evaluation and Risk Management. Because many of these topics are already covered in some format in many existing MIS curricula, using this framework precludes the necessity to start from scratch when including security and assurance coverage.

In addition to the Model Curriculum, ISACA offers other valuable resources for educators and students, including providing free memberships for faculty who advise student chapters. This relationship is called the Academic Advocate program, and these memberships become even more valuable when the faculty member becomes actively involved with the local professional ISACA chapter. A close relationship can lead to interaction between the information security and assurance business community and a university's students, such as by presentations by some of these local professionals. In addition, the monthly meetings of the local ISACA chapters can provide an opportunity for MIS faculty to become more knowledgeable about various security and assurance topics. One other notable key resource available at the ISACA Website is called "COBIT in Academia." COBIT® (an acronym for Control Objectives for Information and related Technology) is a comprehensive IT governance and control framework developed by the IT Governance Institute (ITGI), an affiliate of ISACA. According to ITGI, COBIT "has become the *de facto* standard for overall control over IT" (ITGI 2004). Although few, if any, companies adopt COBIT in its original format, it is a controls framework worth utilizing in an information security (Pattinson, 2004) and/or assurance course because it provides a common reference standard for IT students to recall when they actually start working with IT controls in their careers, either as an IS analyst or developer or as an IT audit professional.

We have already begun to incorporate the COBIT materials in our courses and will share our details of the lessons learned from this experience in our conference presentation. In general, we found the COBIT Presentation Package, the Student Book, the COBIT Caselets, and the Case Study particularly useful for giving our students the big picture perspective and then allowing them to drill down into the details of the framework. However, we deemed it necessary to supplement the teaching notes for the case and caselets and to develop our own suggested solutions to demonstrate how the framework could be used. Eventually, we intend to submit our materials to the COBIT in Academia for their use (a condition for using the materials), and we encourage our colleagues to do the same. In addition to COBIT, we plan to use Computer-Assisted Audit Tools and Techniques (CAATTs) software, such as ACL™(which is a data extraction and analysis tool popular with practitioners).

Information security and assurance is a "hot" topic for MIS/IT educators and students. Moreover, this area will only increase in importance as our global business community continues to develop a deep reliance on information technology to facilitate commerce and personal transactions. MIS and AIS departments in universities need to develop courses and perhaps even curricula to help students learn about expanding career opportunities, and we believe sharing our experiences might be useful to other educators.

**REFERENCES**
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