## Graduate Certificate in Information Security

### Original and Approved Program

**Plan of Study:**

**Core Courses:**

1. ITM 640: Information Security Risk Assessment (3)
2. ITM 641: Information Security Policies (3)
3. ITM 642: Computer Forensics (3) OR ACC 533: Digital Forensics (3)
4. ITM 643: Incident Handling (3)
5. ITM 691: Field Project (3) Or elective course

**Elective Courses:**

1. ACC 522: Statistical Methods for Forensic Accounting and Assurance (3)
2. ACC 581: Internal Controls and Financial Information Systems (3)
3. ACC 661: Auditing of Advanced Accounting Systems (3)
4. ACC 695: Independent Study of Accounting (3)
5. ITM 692: Special Topics of Information Technology (3)
6. ITM 695: Independent Study of Information Systems or Information Technology (3)

### New and Revised Program

**Plan of Study (15 credits)**

**Core Courses (6 credits):**

1. ITM 604 Data Communications, Computer Networking and Computer Security (3) OR ITM 644 Introduction to Information & Cyber Security (3)
2. ITM 640 Information Security Risk Assessment (3)

**Take 6-9 Credits of Specialization Courses**

1. ITM 641 Information Security Policies (3)
2. ITM 642 Computer Forensics OR ACC 553 Digital Forensics (3)
3. ITM 643 Incident Handling (3)
4. ITM 647 Security Implementation (3)

**Supplement with 0-3 Credits (If Necessary) out of the Following Courses:**

1. ITM 645 Psychology & Information Security (3)
2. ITM 646 Mathematical Models for Information Security (3)
3. ITM 691 Field Study in Information Technology Management (3) OR ITM 695 Independent Study in Information Systems or Information Technology (3)
4. ACC 522 Statistical Methods for Forensic Accounting and Assurance (3)
5. ACC 581 Internal Controls and Financial Information Systems (3)
6. ACC 661 Auditing of Advanced Accounting Systems (3)

### Description:

We had developed the “Graduate Certificate in Information Security” one year ago. The certificate is designed to train students on different aspects of information security. Through the program understand the genesis of vulnerabilities in information systems that stem from weaknesses in computers and networks. The students learn how these weaknesses are exploited to perpetrate attacks on computers and networks. Students also learn how to analyze weakness in systems, how to respond when incidents occur, and how to design systems to prevent them. Students also learn to manage information security risks. The core courses are designed to ensure that students have a sufficient background in both managing risks and analyzing security incidents.

Our initial focus was on training security officers who are responsible for managing security of organizations (both public and private). Over the last year through grants from Department of...
Education and partnerships with other universities, we have been able to expand our portfolio of courses to include courses in the area of digital forensics and security implementation. Now we are in a position to offer training in multiple security sub-specializations. The certificate program requires 5 courses however we have been able to add eight new courses to the program. This allows us to make the offer flexibility based on the objectives of the students. The field of information security is broad and getting even broader hence subspecializations are necessary to train students in depth in a specific subarea.

ITM 604/ITM 644 are a prerequisite to all the other security courses. ITM 604 was mentioned as a prerequisite in the previous version of the program that was approved. Since all students had to take ITM 604 as a prerequisite making it a part of the certificate was fairer to students. ITM 644 is a fundamental course on security with some overlap with ITM 604 (covers communication as well) that covers the basic knowledge on security and networking and was introduced as a part of our grant requirements and can be taken in lieu of ITM 644.

ITM 640 (risk analysis) is also a part of the foundation courses that complements the essential body of knowledge required for all security professionals hence it was made a part of the core. The courses ITM 641 / 642 / 643 / 647 will allow a student to tailor the certificate to their own area of interest. We expect students to take 2 – 3 courses from the specialization courses. For instance, students interested in security management will be able to take ITM 641 and ITM 643; students interested in forensic aspects will be able to take ITM 642 and ITM 643; and system/security administrators will be able to take ITM 641 and ITM 643.

The new proposed program, is improved as it allows for greater freedom of choice from among the different courses. It is a more flexible program that allows students to select courses in an area of interest. The total number of credits (15) has not changed.