Syllabus

IT-S549 / ITMS549: Cyber Security Technologies: 
Projects and Advanced Methods

W. P. Lidinsky, Spring 2014

Faculty Data
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Course Description
Prepares students for a role as a network security analyst and developer and gives the student experience in developing a production security system. Topics may include computer and network forensics, advances in cryptography and security protocols and systems; operating system security, analysis of recent security attacks, vulnerability and intrusion detection, incident analysis and design and development of secure networks. This course consists of a significant real world team project that results in an fully operational security system. Students should have previous experience with object-oriented and/or scripting languages.

Prerequisites
ITMS448 OR ITMS548 OR IT-S448, in the Fall 2013 semester.

Credit
3 credit hours

Lecture and Lab Location, Date and Time
Location: IIT Rice campus, Forensics and Security Laboratory (ForSec Lab), Rooms 250
Date & Time: Wednesdays from 1:50pm to 5:20pm
But much work will be done outside of this class time

Schedule of Topics
Since this course focuses almost entirely on the continuation of a team project begun (usually the previous semester, the course schedule is dependent upon the progress of the team projects. However, there are scheduled presentations and reports. More detail is shown in the table and documentation.
Course Objectives and Outcomes
Students teams must:

- Create a paper clearly describing their project, it's background and it's results.
- Demonstrate their project in an understandable manner.
- If appropriate, create a user manual so that others can demonstrate
- The technical paper and user manual must be sufficient to allow a knowledgeable person to reproduce the team's work.
- Create a clear presentation of their work for presentation at a professional conference.
- Present and demonstrate the team's project at the ForenSecure'14 conference in April 2014.

Students satisfactorily completing this course should be close to experts in the main topic of their team project, which will vary depending upon the topic. Students should also be knowledgeable in topics related to the main topic.

Example
For instance, if the project was to investigate, implement and demonstrate the several ways that information can be hidden in JPEG files, then students should be close to expert in the hiding techniques and knowledgeable in JPEG file formats and discrete cosine transforms.

Texts
This course has no explicit texts; material will differ for each team project. Moreover the research material needed for the student projects for the most part has already been defined in the prior IT-S448 course.

Assignments
Assignments will correspond to the project deliverables identified in the course schedule included in this syllabus. They consist of technical documents, user manuals, presentations and demonstrations in various stages of development throughout the semester. Also a professional demonstration and presentation at ForenSecure14 conference on Thursday 17 April 2014.

Lab Resources
The ForSec Lab at IIT-Rice is available for use by student teams in implementing their team projects. Included are computers, software, remote access, network devices and other items needed for the projects. These are very project specific.

Grading
There will be no exams in this course.
Grading will be as follows:
- ProjAssign01 - ProjAssign07, 35%
- ForenSecure Pres & DemoVideo, 30%
- (improved versions of Pres5 & DemoVideo3)
- ProjAssign08 (final submissions), 35%

ForenSecure14 (17 and 18 April 2014)
Teams will give their presentations in the morning sessions in the Rice auditorium (room 166). I don't have the allocated time for each presentation yet, but based upon past conferences, each team will have about 20 minutes including Q&A. It would be desirable to include your video in this 20 minute time, but that would mean you would have perhaps 12 minutes for your slide presentation exclusive of the video and Q&A; perhaps 7-9 slides with content. I'll see if we can allocate more time, but it probably won't happen.

A reason for rehearsing is to streamline your presentation so that you can fit it into the allotted time.

You will also prepare posters and set up a live demonstration in either room 249 or on tables in the hall outside of the ForSec Lab. The idea is for conference attendees to talk to you one-to-one about your work. If you haven't done this already, this is an excellent time to network.

The lunch break will be 1.5 hours. During the last 45 minutes of the lunch break, you will be at your demo to meet with conference attendees.
### Schedule of Topics for Spring 2014

#### Cyber Security Technologies: Projects

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