System & Network Security Course Introduction

ITMS-548-02

ITMS-448-02

IT-S 448-02

448/548 Course Content
(Broadly Stated)

This is a course in security **technology**

It provides:

Treatment of many of the topics

Hands-on laboratories related to lectures

Hands-on course project

448/548 Course Organization
(Broadly Stated)

Lectures, labs, readings, and homework

Hands-on examples & experiments related to lectures and homework

Exams

- ***Midterm*** *and* ***Final***

A significant team project

- *Implementation, demonstration, presentation and documents*
- *More on all this later*

Course Requirements

Midterm and final exams

Homework: Reading and assignments to be submitted

Team project and its deliverables

Deliverables are: ***tecDoc***, ***usrMan***, ***PPT presentation, implementation*** *and* ***demonstration***

Project reviews and evaluations

Each student will also act as a reviewer and evaluator of another team's project

Team Project Duration

In the opinion of industry, the most worthwhile projects are two semester projects that continue in the spring 2014 in follow-on courses to this course

However projects can end at the end of this semester for those students that **cannot** continue in the spring 2014

Either the project can end if all the students on the project team will not take one of the follow-on courses

Alternately for projects with 3 members of the project team, one student can drop out at the end of this semester, with the approval of the team members and me

I will discuss the follow-on courses later in this class session

Blackboard

Students should be able to

Access all project information created by other students

Do this via Blackboard board Forums

Instructor Team

This course will be conducted by a team of myself plus two very qualified student as TAs

Yalinne Castelan

Dawid Broda

We will facilitate in the labs and projects

I will do the lectures

Yelinne and Dawid will

Provide lab support and do some of the assignment grading

Help keep the course on track

Help evaluate the projects and their progress

Your Instructor Team

Yalinne Castelan
ycastela@hawk.iit.edu
Office hours at Rice
Times by appointment

Dawid Broda
dbroda@hawk.iit.edu
Office hours at Rice
Times by appointment

Bill Lidinsky
lidinsky@iit.edu
630-682-6028 (x26028)
Room 225, Rice campus
Office hours at Rice
Mon noon - 1:00pm
Additional times TBD
Other times by appointment

More on Projects

This course is designed to be the 1st part of a two-course sequence

The following are the possible ***two-course*** sequences:

For students doing **stego** *security projects the course sequences are:*

IT-S448-02 (fall 2014) followed by IT-S539 (spring 2015)
ITMS448-02 (fall 2014) followed by ITMS539 (spring 2015)
ITMS548-02 (fall 2014) followed by ITMS539 (spring 2015)

For students doing non-stego security projects the course sequences are:

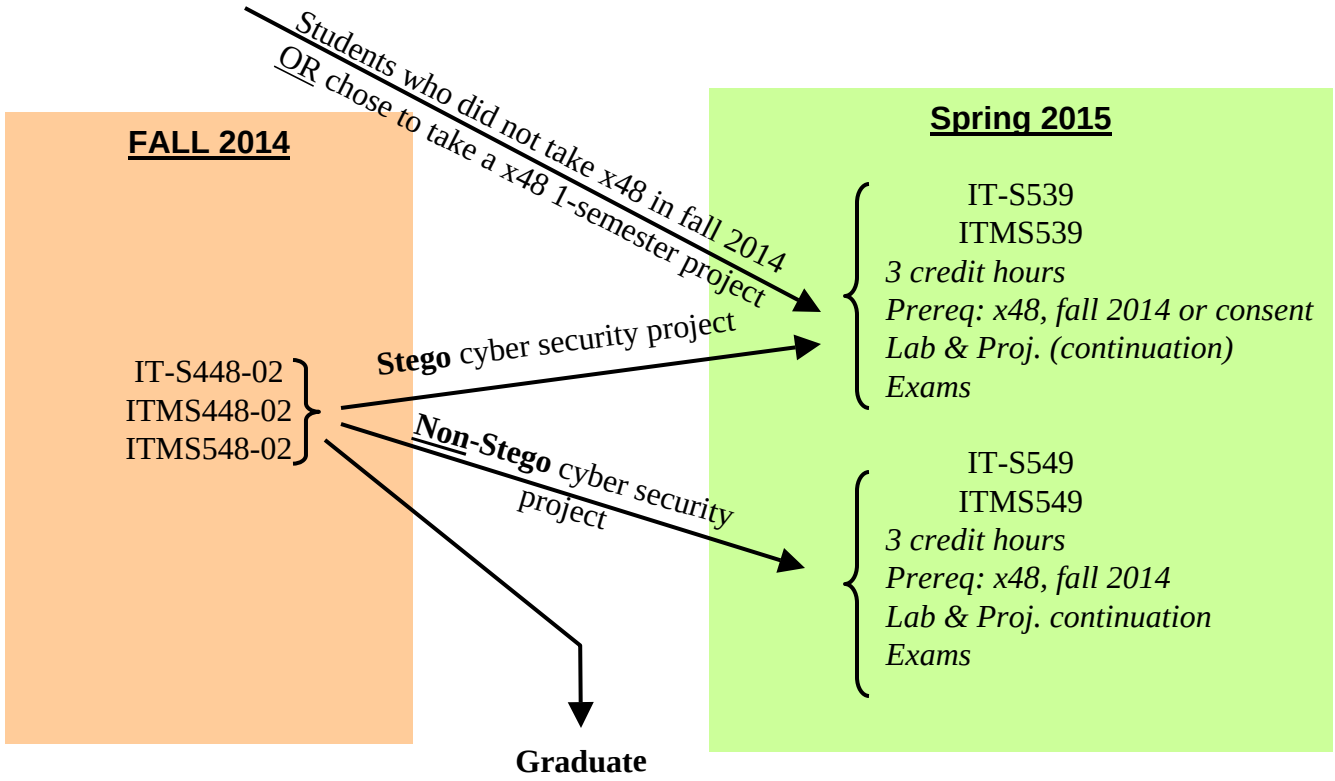
IT-S448-02 (fall 2014) followed by IT-S549 (spring 2015)
ITMS448-02 (fall 2014) followed by ITMS549 (spring 2015)
ITMS548-02 (fall 2014) followed by ITMS549 (spring 2015)

More on Projects

But there may be students who are graduating in December or who can take only x48 (x=4,5)

These students will not take a follow-on course in the spring 2015 semester

Graphic View



1. x48 Fall 2014 students who do a 2-semester non-stego project must take 549 in spring 2015
   Continue on project started in x48 in fall 2014
   Exams cover all projects
2. x48 Fall 2014 students who do a 2-semester stego project must take 539 in spring 2015
   Continue on stego project started in x48 in fall 2014
   Exams cover stego lectures and labs
3. x48 Fall 2014 students who chose a 1-semester project and who choose to take 539 in spring 2014
   Start a new 1-semester stego project in 539
   Exams cover stego lectures and labs
   This option is included for completeness. It really doesn't make sense to do this because it is more work than option 2 and gains nothing in most cases.

T1 or T2?

Students who ***definitely will*** take a follow-on course in spring 2015

*Will be members of type **T2** teams (2 semesters)*

***T2** teams will do projects that will conclude in April 2015*

T2S# for teams doing stego project number #

T2!S# for teams doing non-stego project number #

Students who will ***not*** take a follow-on course in spring 2015

*Will be members of type **T1** teams or*

Will be the single member of a 3-person T2 team

But only with approval of team members and me

***T1** teams will do projects that will completely terminate in Dec. 2015*

T1S# for stego projects and ***T1!S#*** for non-stego projects

Survey & Assign00

Last week you were asked to do Assign00

1. *Carefully read the* **Syllabus**

   Submit any questions that you have as part of *Assign00*.

2. *Carefully read the* **Descriptions of Suggested Projects** *document*

   Submit any questions that you have as part of *Assign00*.

3. *Out of the suggested projects, choose three that you would like to do. Rank order them 1, 2 and 3.*

   Submit your ordered choices as part of your *Assign00*.

Survey & Assign00

Most of you have completed the course survey.

If you didn't, you were asked to complete the survey and email it to me by Sun 24 August 2014.

Important??

So why is all this important?

You need to get started on projects this week (preferably tonight)

To get started on projects, you need to form teams this week (preferably tonight)

Why It's Important

Students must decide and notify us tentatively tonight of the following:

Your project choice

T1 or T2 project

Team members

1 or 2 semester student

We will do some of this and self-organize tonight

Why It's Important

By Tuesday 02 Sept 2014, as part of Assign01 submit

Your definite project choice

T1 or T2 project, definitely

Team members, definitely

1 or 2 semester student, definitely

Definite choice of follow-on course (ITMS539 or ITMS549)

Comments About Two vs. One Semester Projects

Note that students doing 2-semester projects have, in the past, had a significant advantage in improving their chances of employment.

I have found that employers are impressed by the real-world and in-depth nature of 2-semester projects.

By comparison 1-semester projects are often considered by employers as the usual college “toy” projects.

The word “toy” is the employers, not mine.

Decisions! Decisions!

We must know by Tuesday 02 September 2014 your decisions

We need to know this so we can organize the project teams properly

We already provided a list of possible follow-on courses

This will require you to do significant research between now and 02 september

But later lectures tonight may help you get started.

Prerequisites for This Course

IT440 or ITM440 or ITM540

Studies the lower 4 layers of the Internet architecture

ITM 301 or 302 or IT A+ course

Windows or Unix/Linux operating system

Scripting

Equivalent knowledge of the above two topics

Equivalent courses in IIT's CS or ECE Dept or

Equivalent courses at another school

Ability to program in a modern programming or scripting language is highly desirable for the project part of this course

e.g., C, Java, Python, Ruby

Prerequisite Knowledge

It is important for your success in this course that you enter the course with a good working knowledge of:

- *The internal operation and use of the Internet*
- *Windows and/or Unix operating systems and their internal operation and administration*
- *Some ability to write code or scripts*

Lack of such knowledge

- *Will put you at a disadvantage*
- *May shortchange your fellow students*

Texts

W. Stallings, L. Brown, *Computer Security: Principles and Practice, 2nd edition*

Prentice Hall, ISBN-10: 0132775069

ISBN-13: 978-0132775069

Homework Process
slide 1 of 8

Homework will usually be due on Bb on or before 11:55 pm on the second Sunday after the class when it was assigned unless otherwise specified

There will be some exceptions to this due date. E.g.

Assign01

The homework before an exam or at the end of the semester

Homework Process
slide 2 of 8

This due date scheme

Gives students ≥ 11 days including 2 weekends to do assignments

Affords students the opportunity to try the assignment before the next class session and get help if needed

Also allows students to be busy or away for an entire week and still be able to submit assignments on time

Because of this, **late homework will not be accepted**

Bb will be configured to not accept homework submissions after the specified date and time

Student strategy:

Do the assignment during the 1st 5 days after it is assigned

Get help if needed by next class session

Homework Process
slide 3 of 8

Homework will include

- *Problem assignment submissions done in the conventional manner*
- *Lab assignment submissions that you will do using your computer and your access to the Internet*
  - Lab assignment submissions will often consist of brief written reports containing screen shots of your results

Each problem in your homework must have the following 3 items:

1. *The problem number*
2. *The statement of the problem as it was presented*
3. *The execution or working of the problem*

Homework Process
slide 4 of 8

All homework must be submitted in ***.doc*** format

Screen shots will be copied from your screen and pasted into the document

Paste windows from your desktop; not whole desktop screens

Make sure that your screen shots and other pasted-in figures fit within the boundaries of your homework document when it is in one of the above formats

In the past students have pasted in screen shots or other figures that extend way outside the viewing area

We will take 2% off your grade for each occurrence

Homework Process
slide 5 of 8

Before you submit your assignment, view it in ***.doc*** format

This is to make sure that your submission is properly formatted

Homework Process
slide 6 of 8

Explanatory words **must** accompany each figure, table or screen shot in your homework submission

Adequate words must be put into the homework document explaining each screen shot or other figure

Sentences such as "*This is a event log table*." are definitely not adequate

A homework submission containing screen shots or figures without adequate accompanying explanatory words will have its grade reduced by 5% for each and every such occurrence

Homework Process Example
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1. Problem Number
2. Statement of Problem
3. Working of the problem

Problem 12a-3: *Determine the TCP and UDP ports that are open and provide an overall explanation of the columns and what is going on.*

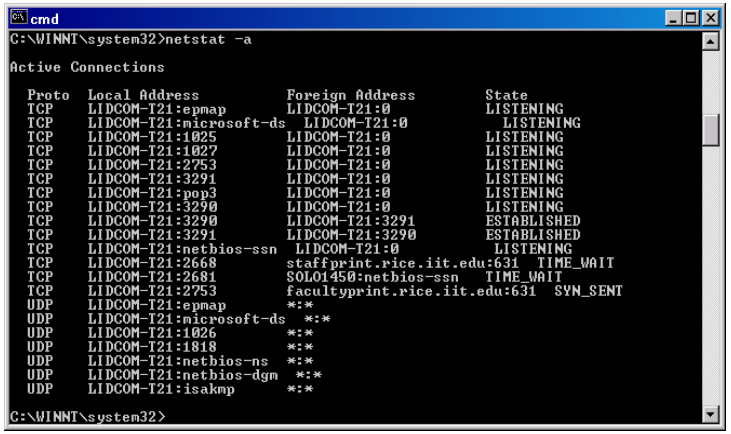

Figure 15: Screen Shot of `netstat -a` for Lidinsky's Notebook Computer

The above screen shot shows that a number of high numbered (>1024) TCP ports are open and in a listening state. This state means that**...** Note that both the local and foreign addresses are the same. The reason for this is**...**

Screen Shot figure

Explanation of figure

Homework Process
slide 8 of 8

Procedure to copy and paste a window in Win8, Win7, Vista, XP, Win2K

Activate the window to be copied

Press **<Alt>PrtScn** *or* **<Fn><Alt> PrtScn** *on keyboard*

Paste into MSWord document at cursor location

Adjust size or crop after pasting

Note: There's also a snapshot tool in Win7 and Win8

Also

Keep entire homework within document margins

Format your homework so that we can follow it

We expect homework presented in a reasonable form so that we don't have to struggle to understand it

You will lose points if your homework is unclear and unorganized

Grading

Midterm Exam	20%
Final Exam	25%
Homework	20%
Team Project Interim Submissions & evaluations of other projects	15%
Team Project Final	e0%

Final TecDoc, UsrMan, Pres and Demo

This applies to both T1 and T2 teams

T2 teams will need to plan their project to have a project midpoint that accommodates this

Grading

You must meet Interim team project submission dates

Your late submissions grade will be reduced by 50%.

Literature search submission

3 papers of significance to your project that team has read

Submit the actual electronic versions of the papers in a commonly readable format

e.g., PDF, .rtf, .doc, .docx, .odt

Also include information about where you got them

1st and 2nd presentations must include a project plan & brief Gantt chart

Assign01

Project Part of Assign01:

Research the projects provided in the file
ProjDescX48-02au2014-v4.pdf
Decide on team project, team members and T1 or T2
Decide if you personally are a 1 or 2 semester student
Based upon the above, submit the completed form
TeamAndProjInfo-au2014.doc

ForSec Lab Part of Assogn01:

Verify that you can adequately access ForSec Lab and RADISH from home

Due on Blackboard: *Before 11:55pm on Tuesday 02 September 2014*

Each student must separately submit an *Assign01*. All members of the same team must submit the same *Assign01*.