

IT 110 Information Technology Problem Solving (a new course)

Welcome to IT 110. This course will give students hands on experience in a wide range of modern information technology. By the end of the semester students will have worked on a number of projects that will give perspectives on the wide range of aspects of information technology.

Course Description

Several IT concepts are introduced including programming, databases, networking, web servers and how they work together in a modern system. Students work in groups to implement examples of these systems. The course examines the importance of key issues such as security, privacy, and ethics. Students should leave the course with an understanding of the components of modern systems and the scope of knowledge needed to become an IT professional.

Goals

The major goal of the course is for students to acquire a technical overview of modern information technology. Students who successfully complete IT 110 should be able to:

- Understand many aspects of Information Technology and their role in modern Information Technology implementations.
- Work in teams to produce solutions.
- Research and learn about technology.
- Use spreadsheets for data analysis and presentations.
- Present solutions in writing and spoken presentations.

Textbooks

There is no textbook for IT 110. Students will be expected to use the library and electronic resources.

Projects

Projects are the main focus of all IT 110 activities, including lectures and labs. There will be 8-10 projects during the semester. Projects will be selected from the categories listed below. There will be at least one project selected from each category. Of the projects, approximately 4 will be team-based projects. The rest will be individual projects.

A typical IT 110 project will include:

- A first lecture that introduces a problem, and some tutorial on how to approach this sort of problem.
- A second lecture where students work on the problem (having started on their own).
- A wrap-up lecture where students discuss their own and each others' solutions.

These lectures may or may not line up exactly with class periods. A project will take roughly a week and a half.

Project Categories

What follows is a list of project categories and sample projects. These projects are meant to be samples of the possible projects. Most semesters, students will work on one project from each category.

Personal

- Improving the security of your own computer

Security

- Retrieving deleted files
- Examining cookies and caches to discover usage
- Packet sniffing

Network / System Administration

- Installing and patching software packages
- Adding and maintaining user profiles.

Data Analysis and Presentation

- Using spreadsheets to analyze and present hits on a web site, utilization data, login times, etc.

Web and Web Site Design

- Designing a web site
- Using a web service in an application

Research

- Using the library to research and report on the implications of a technology (e.g. web 2.0, VOIP, etc.)

Business Intelligence

- Organizing and synthesizing data collected from public and proprietary databases.

General

- Programming Google Earth to show all of the places you have lived (or visited, for sedentary types).

Grading

The deliverable for each project will be a *narrative*, a written report stating:

- the original problem statement,
- how the individual, or the team for team projects, approached the problem,
- the solution options or choices available,
- why certain options were chosen or discarded,
- how the solution was implemented (a detailed description of the solution), and

- how the solution was tested.

Each student will submit an individual narrative, even for team projects. A narrative runs from five to ten pages.

Every student will get a chance to make at least one brief presentation of a solution to the rest of the class.

The breakdown of one's grade will be as follows:

The written narratives: 80%

Presentation: 10%

Class participation (on-line forums included): 10%

Honesty

All students are expected to follow the [University's Code of Student Conduct](#). If you are caught cheating, we will follow the guidelines for punishment outlined in the code.

When you turn in work that you have discussed with someone, or which contains ideas that you found in a book, *you must indicate that fact*. We expect you to talk to each other and to read materials other than those assigned. We also expect to see in your work evidence that you have done so. Learning to acknowledge intellectual debts is part of learning. You should be reading, talking to each other, and telling the world that you have done so. When group work is called for the group solution should note whenever a part of the project was done by only a part of the group.

Some kinds of sharing, however, are unacceptable. You may not use the computer to copy someone's work and submit it as your own -- even if you acknowledge that theft!

You may not have your friends do your work for you. Versions of some of the assignments in this course may have been given in previous years. You may not use answers to those assignments.

Accommodations

Section 504 of the Americans with Disabilities Act of 1990 offers guidelines for curriculum modifications and adaptations for students with documented disabilities. If applicable, students may obtain adaptation recommendations from the Ross Center for Disability Services, Campus Center 2nd Floor, 2100 Street, Room 2010, 617-287-7430. The student must present these recommendations and discuss them with each professor within a reasonable period, preferably by the end of Drop/Add period.