

CS12 Lecture Syllabus

For the lab syllabus go here: <http://eniac.cs.qc.cuny.edu/cs12>

The following is a “topical” lecture syllabus:

CS12 Topical Syllabus

Why “topical?” Why not a day by day list? Because ...the exact coverage will change from semester to semester depending on the particular background of a given class. For that reason, a session by session syllabus for the lecture can not be provided. The following topical breakdown, however, is fairly typical and each segment is usually one third of the semester.

Segment 1 - Operating Systems and Microsoft Word

Lecture

Introduction: Some background, history and societal implications.

Overview of hardware: The goal here is to give you a basic understanding of the various hardware components of a typical microcomputer system and how they work together. At the end of this segment you should be able to understand a typical computer ad in a newspaper, to intelligently compare and contrast different hardware configurations and decide the factors involved in configuring a computer system to meet specific end-user needs..

Introduction to Software: General concepts, different types of software systems software, programming languages and systems, end-user software, Overview of operating systems, shells and interfaces. Binary numbers, Introduction to the XP command line tools (the DOS emulator – cmd.exe), and UNIX. Here we cover the UNIX file system, the creation and deletion of directories, file management and file protections. We will also cover basic issues of security on the web. The point of this is to introduce you to a simple command driven interface for an operating system. We will be using UNIX to set up our web pages during the last segment of the course.

Various assignments will be announced during the lectures. If you don't come, make sure you find out what they are You are responsible for handing these in whether or not you were in class when they were announced.

In the Lab (Using the Grauer Series from Prentice Hall - high level, fast paced)

One week on the organization and use of Windows - including working with directories and files, 3 1/2 weeks on Word.

Segment 2 - Excel

Lecture and Lab

Excel segment will focus on learning how to think with the tool rather than just learn to use it as in Word. This is sometimes a bit difficult the first time that you are exposed to it. Consequently both the lecture and lab focus on working out many problems and examples.

Topics include structure of a worksheet and workbook, spreadsheet navigation, absolute and relative cell addressing, formulas and built in functions, if function and nested ifs, lookup functions, sorting and database functions, charts, goal seek, solver ("non-procedural programming" in Excel) and macros ("procedural programming" in Excel) and the construction and use of pivot tables and pivot charts.

Worked examples include automated "grading sheet", mortgage analysis, invoice - including if and lookup functions, break-even analysis, profit margin, distribution problems (with linear constraints) using solver, and mathematical function minimization.

The focus is on using Excel to formulate, analyze, set up and solve numerically based problems.

Segment 3 - HTML and Web Pages (lecture), Access (lab).

In Lecture

The first few lectures present a short history of the internet and then covers its structure including (in simplified terms) the hardware, software and protocols needed to make it work. Basic HTML and the design of a multi-page web site which include text, graphics, sound and (occasionally) simple forms. This is done directly in HTML so you get an understanding for what is happening "under the hood." You will be graded on Web pages that you create.

In Lab

The lab follows Grauer's development of Access. The first few lectures provide the conceptual background for the lab work on Access. We discuss tables, and databases and relational databases, design issues including normalization and relationships. You will learn to formulate single and multi-table queries and to express simple select queries using SQL. If time permits we cover forms and reports.

Additional Material

- You will be assigned readings based extending and expanding upon the material discussed in lecture and lab.
- You will be asked to download and listen to audio/video files
- Independent study of PowerPoint, blogging and using an animation package. There will be graded assignments based on all of the above.