Lecture 1.1
Introduction to the Course … and Computers

CS101 Autumn 2007-08

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Computer Science is...

... not just computer programming.

It is a science
It is an art
It is practical
It is impractical
It cuts across many disciplines
Computer Science is...

... not just computer programming.
... can be deeply philosophical.

Are there theorems that are true but can't be proven?
What is random?

Computer Science is...

... not just computer programming.
... can be deeply philosophical.
... as necessary as bread and water.

Computers are as common as bread.
You don't have to know how to bake it, but it can be fun to learn.
Computer Science is…

... not just computer programming.  
... can be deeply philosophical.  
... as necessary as bread and water.  
... very exciting.  

We aim to convince you of this fact during this course.

About the course…
This course aims to teach …

... useful computer skills.
... basic programming.
... how to care for your computer.
... how to use current capabilities of computers.

At the end of this course, you will be able to…

... use Office tools extensively.
... make your own multi-media web pages.
... know what is inside the computer box.

... Understand the basics of programming, and be able to write simple programs in VB
... understand about viruses and security.
... judge if CS is the right major for you.
Studying

• 1 unit = 50min lecture per week for 10 weeks + 2-3 hours of studying and homework.
• Or 2-3 hours of lab.
• This course does not assume a background or interest in computers.

Learning

• Is best done by doing.
• DO NOT let your friends help you. You WILL fail your lab if you do.
• If you help someone, NEVER take over the keyboard. Try to give the smallest of hints.
Course Structure

Weekly
- **Theory Lecture (TUE)**

- **Lab Lecture (Thu)**

Will cover
- Visual Basic programming and graphics
- Office tools
- Web page design and multimedia

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Course Structure
Weekly
• Theory Lecture (TUE)
• Lab Lecture (THU)
• Lab Session (WED)
• 100 minutes assignment to be completed in lab.
• Similar to the Lab lecture, and the related homework.

Course Structure
Weekly
• Theory Lecture (TUE)
• Lab Lecture (THU)
• Lab Session (WED)
• Topical Lecture (FRI)
• A lecture on some aspect of Computer Science.
• You will be quizzed on this during the lecture, but will not be otherwise tested.
Eligibility

• If you have taken CS in A levels you may not take this course
• If you want to skip this course, you may take CS 111: Computer Science Fundamentals or CS 192: Problem solving and Programming
• This quarter you may take some SS course.

Grading

• Homework will be assigned but not graded.
• Quizzes will be unannounced.

• Labs
  • Graded Labs 15%
  • Lab Exam 5%
• Quizzes
  • Lecture 15%
  • Topical 5%
• Midterm 25%
• Final 35%
Other Policies and Information

- **Course Website**
  http://suraj.lums.edu.pk/~cs101a07

- **Office**
  Sohaib Khan – Rm 407
  Tariq Jadoon – Rm 409
  CS101 Office – Top floor of Library Building

- **Office Hours**
  Each Instructor and TA will announce their office hours on the website within this week

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Other Policies and Information

- **Coming Late to Lectures**
  Instructors reserve the right to not allow late comers

- **Missed Quizzes, Exams, Petitions**
  Follow PCO’s petition procedure, get certificate from on-campus doctor

- **A word about Plagiarism**
  DON’T CHEAT! Consequences can be grave
  **Common Examples**
  - Not keeping your eyes on your own answer sheet during a Quiz or an Exam
  - Submitting identical homework
  - Copying a paragraph from the internet and including it in your homework under your own name
  - Taking someone else’s code, changing variable names in it and submitting it as your own
About Computers…

What is it, and what can it do?

Ask Me a Clear Yes/No Question
What can computers do, or not do?

• A computer does what it is told to do…
• You tell a computer what to do by giving it a list of **precise, unambiguous** instructions, a computer program
• Why are computer programs not written in English?
• Because languages such as English are inherently ambiguous
  
  Time flies like an arrow
• So what about the demo on the previous slide?

What is a Computer?

• [Norton] A Computer is an electronic device that processes data, converting it into information that is useful to people
• [Wikipedia] A Computer is a programmable device, usually electronic in nature, that can store, retrieve and process data
• [The American Heritage Dictionary]
  1. A device that computes... especially a programmable electronic machine that performs high-speed mathematical or logical operations or that assembles, stores, correlates, or otherwise processes information
  2. One who computes
What is a computer?

Input → Processing / Computation → Output

Is the Abacus a Computer?

Not really a computer, but rather a computing aid

The Abacus: Today a store clerk is using an abacus to settle accounts. (Top, 1997, courtesy Dover Publications)

The newest Computer Model, 16 Colours, on Haraldisk, including: Mouse......

You should wait, Your Majesty - in 6 months it exists only half......
Intricate textile patterns were prized in France in early 1800s. Jacquard’s loom (1805-6) used punched cards to allow only some rods to bring the thread into the loom on each shuttle pass.
Computers Everywhere

• Not just Desktops, Workstations, Tablet PCs, Handheld PCs (PDAs), Servers, Mainframe computers, Minicomputers
• But also…
  • Cell phones
  • Alarm Clocks
  • Microwave Ovens
  • Lighting control in a building
  • Washing Machines

Summary

• At a low (processor) level, computer are pretty dumb and have to be told exactly what to do
• However, with intelligently written computer programs, computers can behave quite intelligently
• A computer is simply a device that computes, taking some input, processing it, and producing some output
• Computers can come in all sorts of forms, and not just the types you may be familiar with