

# ESC101: Introduction to Computing

## Course Logistics

# Instructor Details

Prof. Nitin Saxena

Office: Room No. 203,  
Rajeev Motwani Building  
Dept of CSE

Email: [esc101.inst@gmail.com](mailto:esc101.inst@gmail.com)

# The Course

- The course teaches you how to solve problems using the computer.
- No prior exposure to programming is needed.

# Lectures, Tutorials

- ◆ Class is divided into 12 sections.
  - B1, B2, ..., B12
- ◆ Lectures common for all
  - Mon, Wed, Fri, 12 noon – 1 pm, L-7
- ◆ Tutorials
  - Tue, 12 noon – 1pm, Tutorial Block.
  - B3-B12 in T103-T112, B1-B2 in T203-T204.

# Tutorials

- ◆ You can ask questions and clarify doubts regarding lecture material.
- ◆ Examples illustrating lecture material will be covered.
- ◆ There can be announced or un-announced quizzes in the tutorials.
  - Lectures may also have surprise quizzes.

# Labs

## ◆ Schedule: 2-5 pm

- B1, B2, B3 : Monday
- B4, B5, B6 : Tuesday
- B10, B11, B12: Wednesday
- B7, B8, B9 : Thursday
- Others: Meet me or Email me

## ◆ Location:

- Core Labs, Room-301 (near DoAA building)

## ◆ First labs exp. 30-31Jul (Thu-Fri).

# Labs this week (30th-31st)

## ◆ Special Schedule:

- B7-B9 : Thursday 2-3:30pm
- B10-B12 : Thursday 3:30-5pm
- B1-B3 : Friday 2-3:30pm
- B4-B6 : Friday 3:30-5pm
- Others: Meet me or Email me

## ◆ Location:

- Core Labs (near DoAA building)

## ◆ Warm-up Labs!

# Labs

- ◆ Friday/Saturday/Sunday : Could be used to make up for lab days lost due to holidays.
- ◆ There will be Teaching Assistants (TAs) to help in the labs.
- ◆ In each lab, you will be given a few problems to solve.
  - Students must work on their own.
  - Discussion is allowed, but **sharing of code in any form is NOT permitted**.

# Lab Assignments

- ◆ Lab assignment will be posted on the day of the lab, at 2 PM.
  - It has to be submitted by 5 PM
  - First week lab assignment is to get used to the Lab Environment.
- ◆ In addition, there will be practice problems.
  - Can be done at your own pace.

# Weightage (Theory)

- ◆ Quizzes: 15%
  - Normal quizzes: total weight = 5%
    - ◆ Surprise quizzes!!
  - 2 Major Quizzes: each 5%.
- ◆ Midterm: 15%
- ◆ Final exam : 30%

# Weightage (Programming)

## ◆ Labs: 15%

- Weightages of later labs may be more. (First lab: 0 weight)
- Approx **80%** of the lab questions will count towards grade.
- **NO MAKEUP** lab for absentees.

## ◆ Lab exams: 25%

- Mid-term lab exam: 10%
- End-term lab exam: 15%

# Copying



- ◆ Copy at your own risk
  - in any component (lab/quiz/exams/lab exams).
- ◆ If you are caught, you get E or F.
  - Case reported to DoAA/SSAC
  - No warning or second chance
  - All parties involved in copying will be held equally responsible. Copying from internet is penalized equally.



# Copying

- ◆ Read-protect your directories so that others cannot copy from your directory.
- ◆ Do not share your CC password with friends.
- ◆ Do not leave printouts, notes etc. containing your code unattended

**Guard your code as closely as you would guard this →**



# Absentee Policy (Default)

When a student is absent from a quiz, lab or exam, and has approval for the leave from SUGC/Instructor

- ◆ Minor quizzes: No makeup. Best  $n-1$  quizzes to count.
- ◆ Major quizzes: Prorated (extrapolated) from the nearest future midterm or final exam.
- ◆ Labs: No makeup. Best 80% (approx.) labs will count.
- ◆ Mid sem: Prorated by final score.
- ◆ Mid term lab exam: Prorated by final lab exam.
- ◆ Final lab exam: Makeup, as per DOAA's schedule.
- ◆ End sem: Makeup, as per DOAA's schedule.
- ◆ **Policy may change on need basis.**

# Course Websites

- ◆ Course web site

- <http://canvas.cse.iitk.ac.in/>

- Login instructions already sent by email

- ◆ Lab web site

- <http://esc101.cse.iitk.ac.in>

- Login: your full iitk email address  
[xyz@iitk.ac.in](mailto:xyz@iitk.ac.in)

- Password: Same as that for your iitk email

- ◆ **Sites available only from within IITK**

# Course Materials

- ◆ All course materials, including lectures, exam solutions, quiz solutions etc., will be posted on course web sites.
- ◆ Use canvas for interaction
  - Allows instructor, tutors and your classmates to answer any issues

# Textbooks

- ◆ There are many books on C.
  - Schaum's Outline of Programming with C by Byron Gottfried, McGraw-Hill India.
  - Programming in ANSI C by Balaguruswamy.
  - The C Programming Language by Kernighan and Ritchie, Prentice-Hall India. (This is a standard reference to C. Slightly advanced though.)
  - Any other standard book on C would also be good.
- ◆ It is recommended that you have a book and refer to it throughout the semester and beyond.
  - You are encouraged to bring book to the lab.

# Other Information

- ◆ DoAA has scheduled **Extra Classes**
  - Saturday, Aug 22<sup>nd</sup> : **12 – 1 PM**
  - Saturday, Aug 29<sup>th</sup> : **12 – 1 PM**
- ◆ For Major Quizzes & Lab Exams  
check canvas-site.

29Jul	Introduction to the system
03Aug	Simple Expressions, printf, scanf
12Aug	Conditionals
17Aug	Loops
22Aug	Functions
28Aug	Arrays
07Sep	Strings
18Sep	(* Mid semester Exams, No Lab *)
21Sep	Matrices/ Multi-dimensional Arrays
28Sep	Recursion
05Oct	Pointers
14Oct	Sorting
19Oct	(* Mid semester Break, No Lab *)
26Oct	Structures
02Nov	Data Structures/ Algorithms
09Nov	File I/O, advanced topics

# Mailing...

- ❖ Please make sure you mention your roll number and section in the emails
  - Prefer using discussion feature of canvas

# Lecture mode?

- ❖ Slides?
- ❖ Blackboard?

# **ESC101**

# **Introduction to Computing**

# **WELCOME**

Nitin Saxena  
Dept. of CSE  
IIT Kanpur

# ACKNOWLEDGEMENTS

➤ All previous instructors  
of Esc101 at IIT Kanpur.  
(esp. Dr.Ganguly & Dr.Karkare)

➤ MS Office clip art,  
various websites and  
images

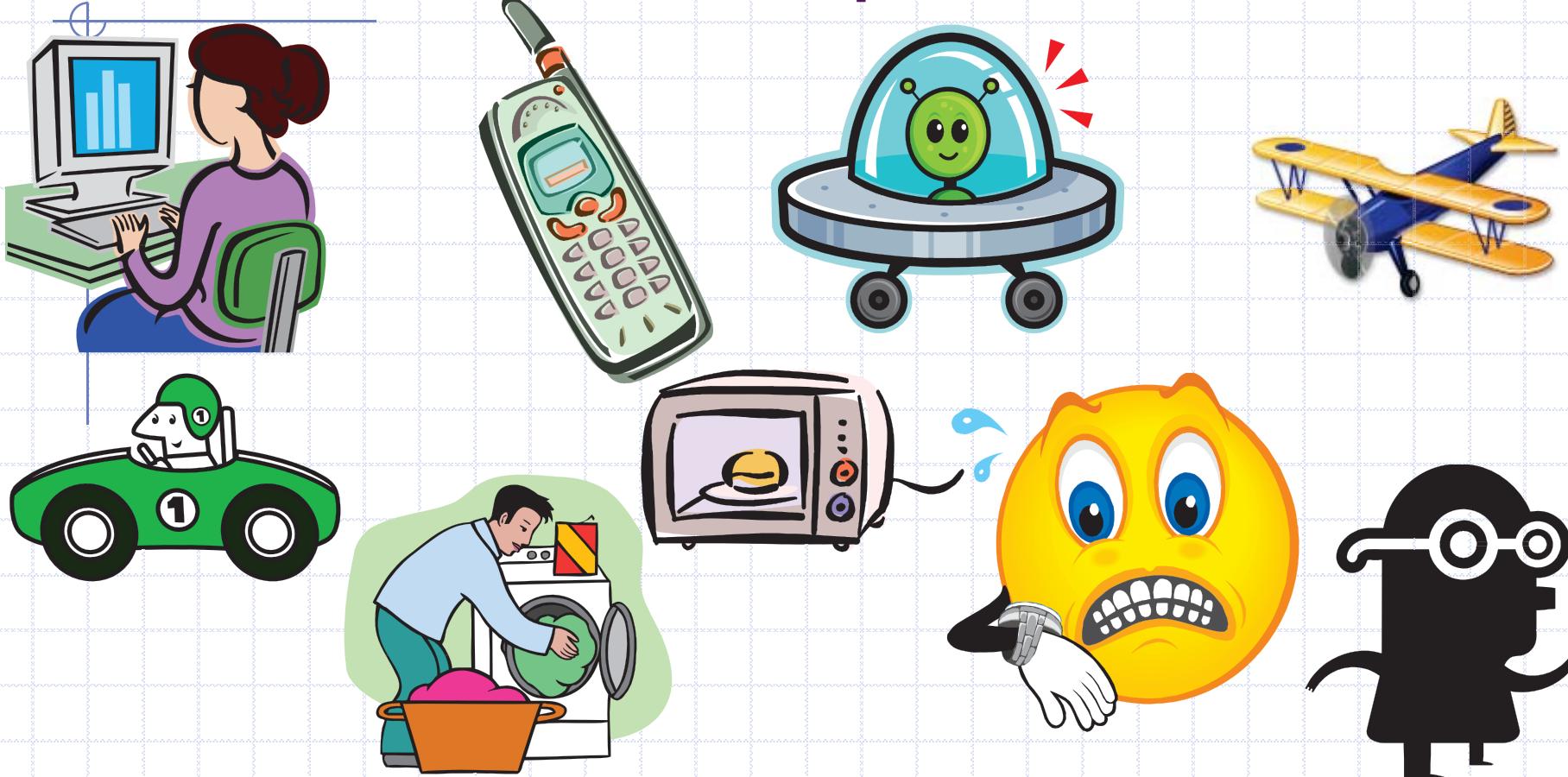
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# The Course

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- No prior exposure to programming is needed.

# What is a Computer?



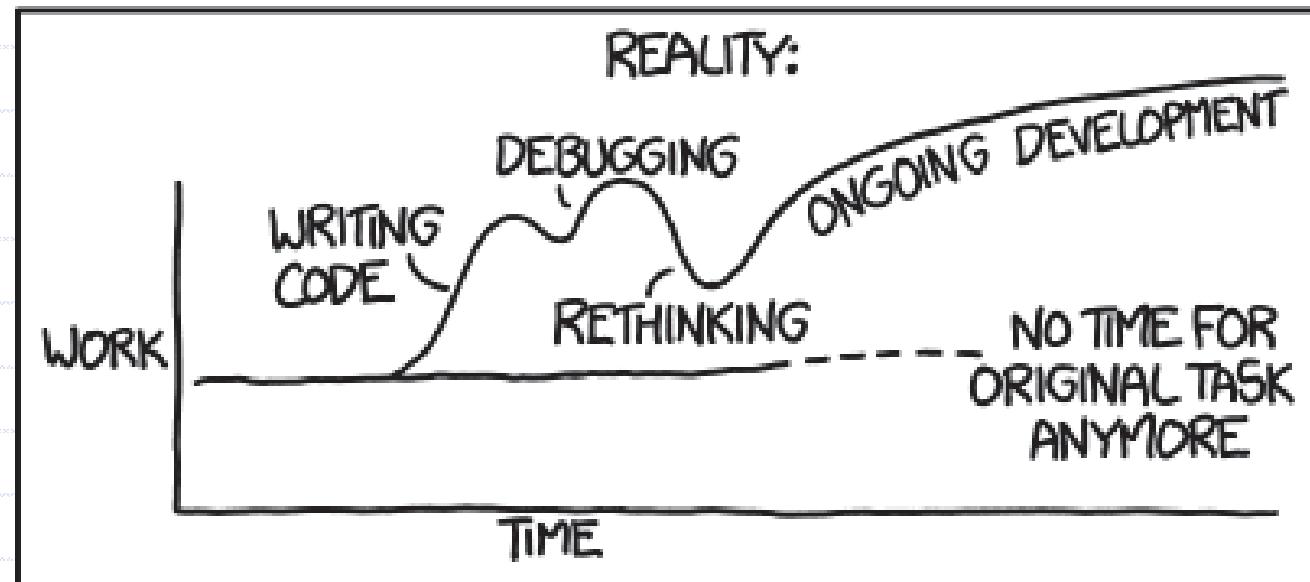
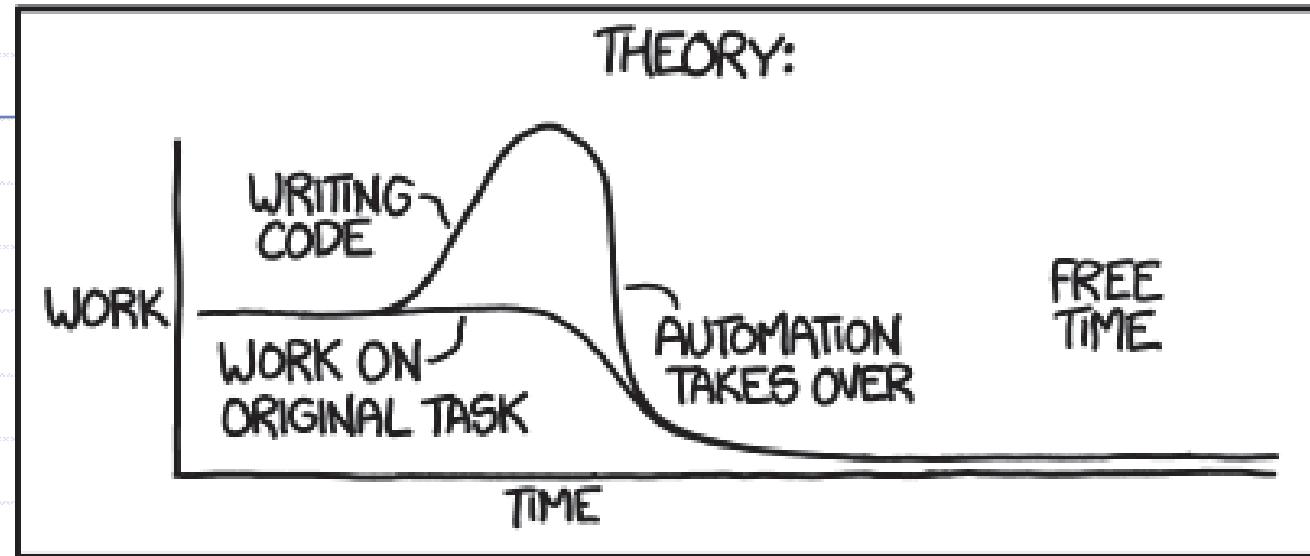
Almost all electronic gadgets today are Computers.  
They are everywhere!

# Why am I doing this course?

- ◆ Every discipline uses computing:  
All branches of engineering,  
sciences, design and arts.
- ◆ Understand how computers work
- ◆ Write your own programs
  - Automate boring repetitive stuff!



"I SPEND A LOT OF TIME ON THIS TASK.  
I SHOULD WRITE A PROGRAM AUTOMATING IT!"

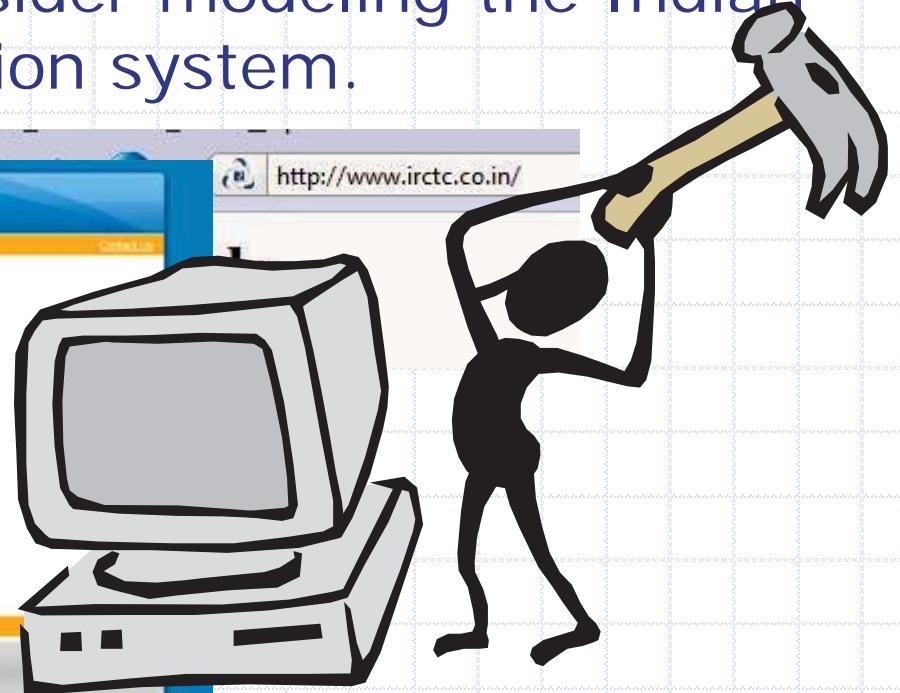
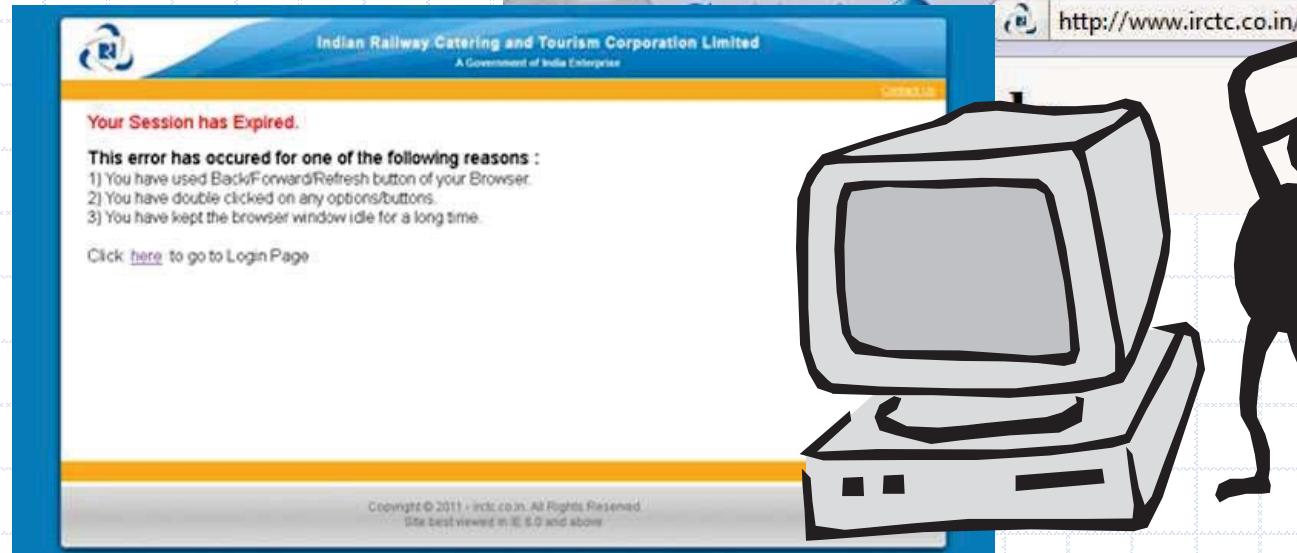


Source: <http://xkcd.com/1319>

# Process of Programming:

## Step 1

- Define and model the problem. In real-life this is important and complicated.
  - For example, consider modeling the Indian Railways reservation system.



# Process of Programming

➤ In this course, all problems will be defined precisely and will be simple

