

CS 101: Course Overview

Course Instructor: Ajit Rajwade

CS 101: Computer Programming and Utilization; Fall 2022

- Introductory course on computer programming
- For all branches at undergraduate level (first year
- Programming language to be learned: C++
- Course website: https://www.cse.iitb.ac.in/~ajitvr/CS101_Fall2022

Course Timings

- Lectures: slots 6 and 10
 - In two batches
 - Section D4: Tuesday and Friday 2 to 3:25 pm (location: LA 202)
 - Section D3: Wednesday and Friday 11:05 am to 12:30 pm (location: LA202)
- Labs
 - In two batches
 - Section D4: Wednesday 8:30 to 10:30 pm
 - Section D3: Friday 8:30 to 10:30 pm
 - Location of Labs (all in CC Building):
 - ◆ Rooms SL1, SL2, SL3, Basement Lab
 - ◆ Bits Lab
 - ◆ Bytes Lab
 - ◆ Classroom CC 105
 - Students will be divided into groups
 - Students without their own laptops recommended to go to Bits and Bytes Labs

Grading Scheme

- Four quizzes - one during midsem, one during endsem and two at the midpoint of each half-semester
- Four lab exams - similar to the above
- Total for lab exams and quizzes: 90 percent (11.25% each)
- 10% for attending labs and submitting sensible attempts online
- 100% attendance expected in lectures and labs
- Possible negative marking if your attendance in lectures falls below 90%
- All exams are cumulative - the syllabus for the any given lab/quiz will count towards that of every **later** lab/quiz.
- This marking scheme may change slightly due to unavoidable circumstances.

Tools to be used in the course

- g++ compiler
- Simplecpp: <https://www.cse.iitb.ac.in/~ranade/simplecpp/> for first few weeks
- Bodhitree to submit work, see grades and for discussion forums:
<https://cs101.bodhi.cse.iitb.ac.in/courseware/course/73/>
- For attendance, SAFE app on your mobile phone: <http://safe.cse.iitb.ac.in/>
- MSTeams for quick, regular communication with instructor and TAs
- Don't worry, in Lab 1, we will familiarize you with all tools :-)

People involved

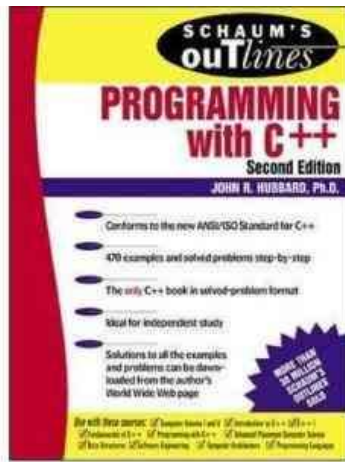
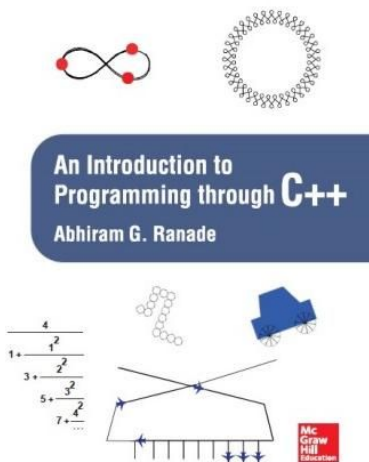
- ~800 students (the most important ones :-))
- Instructor
- Course managers: Firuza Karmali and Nagesh Karmali
- 80+ TAs
- PhD TAs (Head TAs)
- MTech TAs
- UG TAs from CSE, EE, Mechanical, Chemical and Chemistry

What will we learn?

- What is a computer?
- How do we use a computer?
- Basics of programming in C++
- Syntax of C++
- How to **think** logically and computationally
- Programs of different types:
 - Very basic ones to get started
 - **Numerical/mathematical/matrix** computations
 - Very basic **databases**
 - Very basic **graphics**
 - Programs to arrange numbers in ascending/descending order (called **sorting**)
 - Programs to efficiently search for a number in a given list of numbers (**searching**)

Course textbooks and other materials

- “*Introduction to Programming Through C++*” by Prof. Abhiram Ranade, Tata McGraw Hill 2014
- Schaum’s Outline Series: “*Programming with C++*” (special Indian series)
- Lecture slides
- Previous offerings: <https://www.cse.iitb.ac.in/~cs101/offerings.html>



What is a computer?

- An electronic device that can do **specified** work
- This specification must usually be done by a human, by means of a **computer program**
- The computer **computes** - it performs **logical, mathematical** and **input/output** operations in a specified **sequence**
- **Input:** a signal given to the computer from a user - by means of a keyboard, mouse or a file on the hard disk
- **Output:** printing of information on computer screen, or a file produced on the hard disk, sometimes contents are printed on paper

<https://www.merriam-webster.com/dictionary/computer>

computer noun, often attributive



Save Word

com·put·er | \ kəm-ˈpyü-tər \

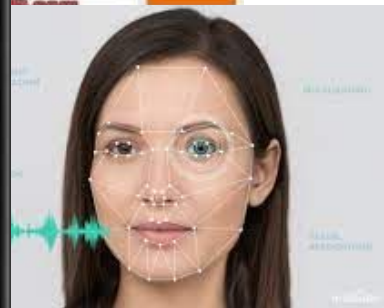
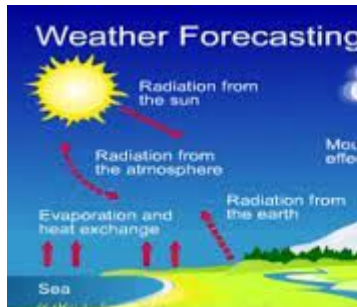
Definition of *computer*

: one that computes

specifically : a programmable usually electronic device that can store, retrieve, and process data

// using a *computer* to design 3-D models

Examples: What can a computer do?



Computers in Everyday Use



CS 101 aims to change you
from a user to a programmer!

Course policies and recommendations

- **100% attendance** is expected in lectures and labs
- You may get negative marks if your attendance in lectures falls below 90%
- Please be **honest** in all exams and quizzes - violation of this rule may result in lowering of at least 2 letter grades
- Please ask questions in class - I like inquisitive students! :-)
- Please report difficulties of any kind to me or the TAs
- Each student will be assigned to some TA, for help during the labs
- TA list and email addresses: on [class website](#)
- Check bodhitree and class website once every day.
- If you need to email me, send an email to ajitvr@cse.iitb.ac.in from your iitb email id (no personal email IDs), and the subject should contain “CS 101”.
- Follow **all instructions meticulously** from time to time.

Diversity: Language

- If you have difficulties with English, please contact us immediately.
- यदि आपको अंग्रेजी में कठिनाई है, तो कृपया हमसे तुरंत संपर्क करें।
- तुम्हाला इंग्रजीमध्ये अडचण येत असल्यास, कृपया आमच्याशी त्वरित संपर्क साधा.
- જો તમને અંગ્રેજીમાં મુશ્કેલી હોય, તો કૃપા કરીને તરત જ અમારો સંપર્ક કરો.
- আপনার যদি ইংরেজিতে সমস্যা হয়, অনুগ্রহ করে অবিলম্বে আমাদের সাথে যোগাযোগ করুন।
- ইংবাজীত অসুবিধা হ'লে তৎক্ষণাত যোগাযোগ করুন।
- ଯଦି ଆପଣଙ୍କର ଇଂରାଜୀ ସହିତ ଅସୁବିଧା ଅଛି, ଦୟାକରି ତୁରନ୍ତ ଆମ ସହିତ ଯୋଗାଯୋଗ କରନ୍ତୁ ।
- உங்களுக்கு ஆங்கிலத்தில் சிரமம் இருந்தால், உடனடியாக எங்களை தொடர்பு கொள்ளவும்.
- మీకు ఆంగ్లంలో ఇబ్బందులు ఉంటే, దయచేసి వెంటనే మమ్మల్ని సంప్రదించండి.
- निमಗೆ इंग्लिष्‌नली त्ठोदरंरगळिद्वरं, दयचिड्डु त्ठ्ठ्ठ नम्यन्नु संपर्कसि.
- നിങ്ങൾക്ക് ഇംഗ്ലീഷ് ഭാഷയിൽ ബുദ്ധിമുട്ടുകൾ ഉണ്ടെങ്കിൽ, ദയവായി ഞങ്ങളെ ഉടൻ ബന്ധപ്പെടുക.
- اگر آپ کو انگریزی میں مشکلات ہیں تو براہ کرم ہم سے فوری رابطہ کریں۔
- इंग्लीशींत अडचणी आयल्यार बेगोबेग आमकां संपर्क सादचो.

Diversity: different departments

- We have students from
 - CSE
 - Civil Engg.
 - Mathematics
 - Aerospace
 - Chemical Engineering
 - Chemistry
 - Energy Engineering
- We are here to help **all** students.
- Please approach us for doubts and difficulties.
- We are your friends! :-)

Important google form

Please fill up

<https://docs.google.com/forms/d/1sh0Ju3nof6WMNqZHxQmkBwGKZ8j8ngQShTri6naNzt8/edit> asap if you haven't already.

Accessible via SSO:

- Open an incognito window and go to drive.google.com
- Sign in with your LDAPID@iitb.ac.in account and password
- Enter the OTP from the authenticator app on your mobile phone
- Copy and paste the above form link into the same browser window.