CS1100 - Introduction to Programming July-Nov 2024

Instructors:

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<u>Theory Slots:</u> Wed. 11AM; Thur 9AM; Fri 8AM

Teaching Assistants and Lab Slots: These will be announced later on Moodle.

Course Objectives

The course aims to provide exposure to problem-solving through programming. It aims to train the student in the basic concepts of the C-programming language. This course involves a compulsory lab component designed to give students hands-on experience with the concepts.

Course Requirements

You are required to attend all the lectures. Attendance rules will be strictly enforced. If you miss any of them, you must find out what happened during the classes and collect any materials that may be handed out.

Class participation is strongly encouraged to demonstrate an appropriate understanding of the material being discussed in the class. Regular feedback from the class regarding the lectures will be very much appreciated. Anonymous feedback form links will be available on moodle.

Learning Outcomes

After the course, the students should be able to:

- Demonstrate reasonable proficiency in C
- Obtain an easier grasp of fundamental concepts (but not all) of other programming languages such as C++, Java, and Python.

Course Load and Credits

- (Student Contact Hours) Three credit hours for lectures/week, three credit hours of lab/week.
- (Offline work expected) : As per the definition of the credits in IIT norms.

• Total credits for the course: 3x3 + 3 = 12 credits

Topics to be Covered (Tentative Organization)

- Week 1 Basics of Computers and Programming Languages
- Week 2 Number representation, Introduction to C Programming
- Week 3 Data types in C, assignment statement and arithmetic expressions, I/O in C
- Week 4 Execution of programs, compilation, alternative statements
- Week 5 Repetitive statements, examples from engineering
- Week 6 Arrays -- one-dimensional
- Week 7 Strings, Multidimensional arrays
- Week 8 Arrays (contd), functions
- Week 9 Modular Programming
- Week 10 Structures
- Week 11 File I/O
- Week 12 Pointers
- Week 13 Recursion
- Week 14 Miscellaneous topics/review

<u>Textbook</u>

• C: How to program, H. M. Deitel, P. J. Deitel, 7th/8th/9th edition, Pearson Education, 2010-2014.

Reference Books

- Kernighan and Ritchie, "The C Programming Language", (2nd ed.), Prentice Hall, 1988
- A.R. Bradley, "Programming for Engineers", Springer, 2011
- R. G. Dromey, "How to Solve It By Computer", Pearson, 1982

Grading Scheme:

Quiz 1 (Aug. 30, 8am - 8.50am): 12% Quiz 2 (Oct. 11, 8am - 8.50am): 18% Final Exam Theory (Nov. 22, 9 am - 12noon): 30% Final Exam Programming (in Lab, Dates TBA): 15% Programming Assignments (weekly, in Lab): 25%

Important Information and Policies

- All class-related communications will be done in Class or Moodle (and its Forum Emails) (OR) Section-specific email groups. Please check your `smail' IDs at least once daily, if not more often.
- Attendance requirements will be strictly enforced.
- No mobile phones, laptops, or other computing items should be used during the lectures.
- All assignments must be submitted by the respective deadlines. Late submissions (esp. bunched submissions at the end of the semester) will not be considered.
- NO sharing of code between students, submission of downloaded code (from the Internet, Campus LAN, or anywhere else) is allowed.
- Students who violate the Academic Honor Code will be reported to the Senate Discipline and Welfare Committee for necessary action.
- Please protect your Moodle account password. Do not share it with ANYONE. Do not share your academic disk drive space on the Campus LAN. It is your responsibility to secure all such passwords.