CS 2810: Object Oriented Algorithms Implementation and Analysis Lab

Jan-May Semester 2023
CS25 & DCF+Systems Lab
Lab 'Q' Slot: Tue 2 – 4:40 pm.
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Updated on January 13, 2023

Note: Course related communications will be on IITM Moodle site (`https://coursesnew.iitm.ac.in/course/view.php?id=1260`); please regularly check the email that is linked to your moodle account.

1 Course objectives

Learning the fundamentals of object-oriented concepts and programming. Implementing algorithms and data structures using object-oriented concepts to solve problems.

2 Learning Outcomes

After the successful completion of the course, the student will be able to :

- Analyze a given problem and model it using objects.
- Use existing algorithms and develop methods to solve the problem.

3 Course prerequisite(s)

CS2700 (Programming and Data Structures); CS2710 (PDS Lab); CS1200 (Discrete Mathematics) and MA2130 (Graph Theory).

4 Learning Mode

Each lab will involve a lecture by the instructor explaining various OO concepts. Following this, there will be in-person lab sessions, with programming and submissions on `Hackerrank`. There can be both in-lab and take-home assignments (with deadline at the end of the week).

5 Textbook

- Introduction to Algorithms, by Cormen, Leiserson, Rivest, and Stein, MIT Press, Third Edition, 2009

6 Reference Books

- Robert Lafore. Object-oriented programming in C++. Pearson Education, 1997.
- Data Structures and Algorithm Analysis in C++, by Mark Allen Weiss (Pearson 2007).

7 Course Requirements

Attendance requirement are as per institute norms (85%). This translates to 9 out of 11 lab sessions. Regular feedback regarding the course will be very much appreciated.

8 Grading Policy

The following grading policy is tentative. It may change during the semester.

Lab Assignments (total 11, each 7%): 77%
Midsem Exam (Mar 7): 11%
Endsem Exam (Apr 25): 12%

9 Late Submission Policy

To help students cope with unexpected emergencies, there will be a total of **5 grace days** during which students can submit their solutions to assignments without any penalties. Note that these grace days must be utilized across the entire semester, and are only applicable for assignments. Once a student has exhausted all their grace days, any late submission will not be evaluated.

10 Academic Honesty

The course expects highest level of academic honesty from the students. Any sort of malpractice including plagiarism will be dealt with seriously and will be referred to the IITM Discipline and Welfare of Students Committee (previously known as DisCo).

The first violation instance will result in ZERO marks for the corresponding component of the Course Grade and a drop of one- penalty in overall course grade. The second violation instance will result in a 'U' Course Grade. The DWC Committee can also impose additional penalties.

Understanding Plagiarism: It is important to understand the fine line between copying programs and discussing programming ideas. The latter is encouraged and you should maintain high academic honesty standards by mentioning the name of your fellow classmate with whom you discussed in your code itself, as a comment.

However, the course expects that each student shows individually that they have met the learning requirements of the course. If students work very closely with each other or refer to Internet in such a way that their final submissions turns out to be identical or near-identical, this will be classified as a case of plagiarism. We suggest that even if you discuss programming ideas, you should **totally** avoid looking into each others actual programs.