CS 201- Introduction to Computing
Summer 2022 - 2023

Instructor Information

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Office Hours: TBA

Schedule

Lectures: Thursday 11:40 - 14:30 FENS L029
          Thursday 08:40 - 11:30 FENS L029
Recitations: Monday 08:40 - 10:30 FENS L065 (A)
             Wednesday 08:40 - 10:30 FENS L065 (A)
             Monday 13:40 - 15:30 FENS L067 (B)
             Tuesday 08:40 - 10:30 FENS L067 (B)

Catalogue Data

This course is intended to introduce students to the field of computing (basic computer organization, data representation, concepts, algorithmic thinking and problem solving), as well as giving them intermediate level programming abilities in an object-oriented programming language (currently C++). Also part of the "core course" pools for the CS, BIO, MAT, ME, EL, TE, MS degree programs.

Prerequisite

The class is open to any undergraduate students, who have previously taken IF 100 – Computational Approaches to Problem Solving - and scored minimum grade of D.¹

Outline

• Introduction to Programming Languages, Data Representation (bits and bytes), basic programming structure and concepts: identifiers, literals, symbols, variables, screen input/output (cin and cout)
• Basic data types (int, double, char and, bool) and basic arithmetic operations with their precedence
• Function prototypes, parameter passing (pass by value and by reference)
• Conditional statements (if-else if-else), logical operators (such as &&, ||, !)
• String class, char data type

¹All information in this document is tentative. The instructor reserves the right to make changes in the semester.
²The students, who passed IF 100, are assumed that they know all basics which are covered in IF 100.
• Loops (while, for, do-while)
• Structs, enum, vectors/arrays and vector operations: sequential/binary search, insert/delete to a vector
• File I/O, console stream cin, input and output file streams, string streams
• Introduction to algorithm complexity analysis
• Vector of structs, Matrix
• Classes and objects: using and modifying existing classes (such as Dice, RandGen, Date)
• Recursion
• Pointers, linked list

Textbook
A Computer Science Tapestry, 2nd Edition, Owen L. Astrachan (NOT available in the bookstore anymore but available at the library and online. We may not stick to the textbook all the time, you are responsible for all material covered in class.)

Exam Dates
Midterm: TBA (possibly 4th or 5th week of the term)
Final: will be scheduled by SR

Grading
• Midterm Exam 35%
• Final Exam 45%
• Take-home exams (Total 4(±1)) 20%2

The instructor has the right to have an oral interview for any grading item given in the syllabus.
• Students who will have the oral interview may be selected randomly or according to a suspicious situation observed by TAs or the instructor.
• Performance of the student in an oral examination will affect their grades of the grading item they have been called upon.
• If a student fails to show up at an oral exam, (s)he will automatically get 0 (zero).

2The highest grade you can get from an individual take-home exam is 1.6 times of your weighted exam average. For example, if your weighted exam average is 40%, then maximum of each take-home exam grade is 64% even if you get more than that.
In order to pass the course, the Final Exam grade, the weighted exam average (given below), and the overall grade of the students must be at least 25, 35 and 35, respectively. The other letter grade boundaries will be determined by the instructor at the end of the term.

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\text{WeightedExamAverage} = \frac{(\text{MidtermExamGrade} \times 0.35) + (\text{FinalExamGrade} \times 0.45)}{0.8}
\]

**Make-up Policy**

- There will be no make-up for take-home exams. Students automatically get 0 (zero) from the respective assignment grade if any of them is missed.
- Make-up is only allowed for the midterm and final examinations to those with an official report and to those with an official permission notice from the university on the date of the exam in question.
- Make-up examinations may be written and/or oral.

**Plagiarism Policy (Academic Integrity)**

Plagiarism means presenting someone else’s work as yours. This is a very serious and ethical problem. A plagiarized work may or may not be a verbatim copy of another submission. Verbatim copies are of course plagiarized ones. However, if a submission is derived from another one by partially changing some parts, this action is also plagiarism. When a plagiarism case is detected, sanctions are applied to all parties regardless of the actual source of the submission. These sanctions are as follows:

- For the midterm/final examinations,
  - students directly fail the course, even in the first offense.\(^3\)
- For the take-home exams,
  - for the first time, all plagiarized submission owners receive 0,
  - the second time, the student fails the course automatically. \(^4\)

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\(^3\) Additionally, the case will be referred to the Dean’s Office for disciplinary action. This course does not tolerate any breach of academic integrity (more info on [https://www.sabanciuniv.edu/en/academic-integrity-statement](https://www.sabanciuniv.edu/en/academic-integrity-statement))

\(^4\) See footnote 3