

Sections	Lecture	Room	Lab Time	Room
1	T 12:30 pm	Bliss 205	T 2:00– 4:00	TBA
2	T 12:30 pm	Bliss 205	T 4:00 – 6:00	TBA
3	R 12:30 pm	Bliss 205	R 2:00 – 4:00	TBA
4	R 12:30 pm	Bliss 205	R 4:00 – 6:00	TBA
5	T 02:00 pm	Bliss 205	T 3:00 – 5:00	TBA
6	T 02:00 pm	Bliss 205	T 5:00 – 7:00	TBA

	Instructor	Teaching Assistants	
Name	Mr Antoine El Hokayem	Mr Ayman Al Zaatari	Mr Anthony Sahyoun
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E-Mail	ape00@mail.aub.edu	abz02@mail.aub.edu	ajs13@mail.aub.edu
Office Hours	T 11:00 am - 12:00 pm	F 02:00-03:00 pm	M 01:00 - 02:00 pm

Course Description

This course provides a broad introduction to computer science. It is meant to expose students to computer science in general and its subfields. The primary goal of the course is to teach students effective ways to think about problems and approach them in a well-organized process (Computational Thinking). The secondary goals focus on familiarizing students with computing systems, including the components of computers and network systems. And finally students will learn about the processes that surround these systems, and both the security and ethical concerns of using them.

The course offers students an opportunity to apply skills in a laboratory environment. Assignments reflect a wide variety of applications. Students will learn and demonstrate proficiency in topics covered in the course or in the reading assignments. This course is intended for first year computer science students.

Course Structure

Class sessions will be conducted in the form of one lecture and one supervised lab session per week. Each lecture is 50 minutes long while each lab session is 120 minutes long. Handouts will be provided for students to refer to. The lab sessions will comprise either hands on assignments under the supervision of a lab instructor or various talks that extend or support the material learned in class. The assignments will require prior preparation of the material covered in the lectures. Material from the talks will be required for the exams. Handouts and slides will be supplied to aid in reviewing.

Course Learning Outcomes

By the end of this course, the student should be able to:

1. Realize that computer science is not simply about programming but generally about thinking about problems.
2. Apply problem-solving skills not just in the fields of computer science, but in everyday tasks.
3. Understand how computers work generally.
 - a. Describe the different devices they commonly use.
 - b. Distinguish between application software and operating systems.
4. Understand the basics of computer networks.
 - a. Describe how computers are interconnected by an ISP and by a LAN
 - b. Explain the roles of Internet addresses, domain names, and DNS servers in networking
 - c. Create and interpret web pages that include basic HTML tags
5. Understand very broadly different fields of Computer Science.
6. Realize that solving problems is not just about writing programs
 - a. Realize that programs are part of a larger ecosystem (enterprise applications).
 - b. Describe the process that governs making large-scale programs (basics of system analysis and design).
 - c. Distinguish numerous ethical problems that arise from using computing systems.
 - d. Distinguish numerous security problems that arise from using computing systems.

Reference Textbook

Laberta, C. (2011). *Computers are your Future, Complete, 11th ed.* Upper Saddle River, NJ: Prentice Hall.

Grading Criteria

Lab Participation, Class Participation, Attendance	10 %
Assignments (4)	15 %
Midterm	35 %
Final	40 %

Course Policies

General Policies

Students are expected to follow the AUB policy on Student Code of Conduct (SCC). Failure to do so will result in appropriate sanctions. The SCC is found online at:

<http://www.aub.edu.lb/sao/activities/policy/Documents/student-code-of-conduct.pdf>

The use of communication devices such as mobiles, hand held PCs, laptops, or blackberries, is discouraged during lectures and strictly forbidden during exams. Usage of electronic devices during lectures should not in any way disrupt other students.

Missed Exams

Makeup exams will only be given to students who present a **documented valid excuse within one week** from the exam date. Students who fail to do so will get a zero on the missed exam. The University policy regarding incomplete work will be followed. Check university catalogue for details.

Grading Policies

Percentages are not shifted in lieu of missing any grading component.

Remaining without a grade in any of the above mentioned grading components and/or attaining a grade of zero on any of them might result in failing the course regardless of your scores in all of the other components.

Academic Dishonesty

Any violation of the University policies regarding individual academic integrity (cheating, plagiarism, class disruption, dishonesty...) will be reported and the appropriate action will be taken.

The course includes several homework and programming assignments. You are free to discuss these assignments with others. However, the programs and homework solutions you submit are to be **developed by you**. Cheating is a very serious offense and will not be tolerated. Supplying others with material is also against this rule. **The policy is that both the supplier and receiver of information will be punished. As a minimum both will get a zero** on the assignment in question. The case will also be referred to the Dean's office and could result in a failing grade for the course and suspension or expulsion from the University.

Course Learning Tools

All the course material (lecture notes, assignments, practice sheets, sample exams) will be provided through Moodle.

It is the responsibility of the student to login regularly to Moodle and check for all course updates and requirements.

In case a student has any learning disability, the student should provide the course instructor with medical proof at the beginning of the semester so that necessary facilities and/or arrangements can be made.

Lab Work

Lab assignments will be posted on the course website every Friday.

Students are expected to **download, read, and prepare the material**_needed to solve the assignment **before** going to the lab session.

Students should solve the assignment during the lab session.

It is the responsibility of the student to ensure that the activity due (assignment, lab quiz ...) is submitted correctly on Moodle. **Any mistake in submission is the sole responsibility of the student (this includes corrupted files)**. Hence the grade will reflect the submitted work. No resubmissions are allowed.

To help others resist the temptation of using your work, you should maintain proper security on your computer account. Especially, keep your password from others and do not alter the protection on any of your files. **To give others access to your account, files, or program listings is the same as giving them the information directly** (i.e. cheating) and will be dealt with accordingly.

Students can use the computers in the lab during their assigned lab session and whenever the lab is free. The schedule for each computer lab is usually posted on its door.

Students should not disturb other lab sessions while in progress.

Attendance

Attendance will be regularly noted in both lectures and labs.

Coming in late is disruptive to the class. The instructor reserves the right of not allowing late students to attend the lecture/lab. Students are advised to be in class on time.

Students are responsible for all class work, lab work, programming assignments, and announcements made in class even when absent.

Course withdrawal is the responsibility of the student.

Any student who misses **more than three lab sessions** will get an automatic grade of **zero on the lab** component.

Need for Assistance

Students are encouraged to communicate with their instructor through emails and visit both the instructor and teaching assistant during office hours.

Tentative Schedule

Week	Date	Lecture	Lab / Talk
Part 1 - What is computer science?			
1	27/01 29/01	Introduction to problem solving + Syllabus overview	-
2	03/02 05/02	Building blocks for solving problems (Instructions, Branching, Repetition)	Solving puzzles by writing instructions
3	10/02 12/02	Different solutions to one problem. Metrics to assess solutions.	Talk: What happens when we solve problems wrong?
A1	Find an everyday problem and submit a report describing it and its solutions		
4	17/02 19/02	Dividing problems to smaller ones. An introduction to problem decomposition.	Experimenting with specific search and minimum find problems
Part 2- The Tools We Use			
5	24/02 26/02	Computer Fundamentals CPU Cycle, Input/output and Storage devices	Case Study : Choosing components and building a computer
A2	Build different computers for different tasks/professions		
6	03/03 05/03	Computer Fundamentals (Cont'd) Basic Architecture/Data Representation	Discussion Session: Previous assignments and more examples.
7	10/03 12/03	Operating Systems: Distinguish between OS and User Applications	Experiment with basic tasks on a GNU/Linux OS
8	17/03 19/03	Broad overview of Programming Languages How are programs written?	Experiment with a simple programming language
March 21	Midterm Exam		
Part 3 - More Problems and Applications			
9	24/03 26/03	Networks Wired/Wireless, LAN/WAN/MAN	Talk: Interesting applications in computer networks.
10	31/03 02/04	Networks Client/Server	Building a very simple website Basic HTML - FTP
A3	Build a very small website		
11	07/04 09/04	[AI] What does it mean to be rational? Using approximations to solve puzzles Scoring solutions	Talk: Problems in other fields (Bioinformatics, Literature, NLP) [Depends on speaker]
12	14/04 16/04	Database Fundamentals Organizing data	Think of ways to organize music/books/images
Part 4 - Supporting Concepts			
13	21/04 23/04	System Analysis and Design Basics Software Development Process	Gather requirements from other students/faculties on campus
A4	Write a simple document describing a system's requirements		
14	28/04 30/04	Ethics and Security	Talk: Talk about security chosen by guest speaker
15	05/05 07/05	Privacy	Case Study on privacy.
TBA Registrar	Final Exam		