CIS 2107 Computer Systems and Low-Level Programming
Section 04

Catalog Description

This course introduces computer systems architecture at the level required to understand low-level systems programming. It examines issues of information representation, the form of machine instructions and addressing, the implementation of programming language constructs in terms of machine instructions, the interfaces to peripheral devices. Programming is done in C and assembly language.

Goals

The primary goals of the course are: to understand how modern computers run the programs that you write, how data and instructions are represented inside a computer, to become proficient in the C Programming Language and the standard programming tools that every programmer should master, and to understand how compilers translate higher-level language constructs into primitive operations that standard processors understand.

Professor Information

- Professor: Dr. Ola Ajaj
- Office: SERC 315
- Email: ajaj@temple.edu
- Phone: (215) 204-6907
- Office Hours: Virtual   By appointment @ Zoomland.
                                 Once your appointment confirmed, I will send you the Zoom info.
- Lecture Time: Mon and Wed   02:00-03:20 @ TTLMAN 401B

TA Information

- Assistant: Marija Stanojevic
- Office: SERC 334
- Email: marija.stanojevic@temple.edu
- Zoom info: https://temple.zoom.us/my/ta.marija
- Office Hours: Thr   11:00-01:00 @ SERC 334 and Zoom
- Lab Time: Tue   11:00-12:50 @ SERC 206

Textbook(s) (Optional)

- *Computer Systems: A Programmer's Perspective*, 3rd Edition
- Bryant and O'Hallaron.
- Prentice Hall. 2015.
- ISBN-13: 978-0134092669

- *The C Programming Language,* 2nd Edition
- Kernighan and Ritchie.
- Prentice Hall. 1988

Class Material

In-Class notes, slides presentations and code examples posted in Canvas.

Quizzes

To be announced in advance, and are based on the material covered in class. I will tell you which material to study for which quiz.

Exams

There will be one midterm and a final. For both, we will run an exam review.

Labs:
You will be given several Labs, upon which weekly quizzes will be based. These should be submitted through Canvas in a timely fashion. Unless otherwise specified, homework may *not* be done in groups.

Labs must be submitted on or before midnight on the due date. *Late homework will not be accepted.*

Blanket extensions to the above policy may be granted at the professor's discretion in unusual circumstances such as unclear directions, equipment problems with the computer lab as a whole, inclement weather, or cancellation of TA or professor office hours. However, individual exceptions will only be granted in the rarest of circumstances. Appeals to accept late homework should be directed by email to the professor, and should typically be accompanied by appropriate documentation (*e.g.* doctor's note).

There is enough homework throughout the semester that disastrous performance on one or two will not prevent you from achieving a good grade in the course. However, habitually missing the labs will guarantee a poor grade or failure.

Makeup policy:
There is no makeup policy. In case of an emergency, students contact the professor. A decision will be made after.

Attendance/Participation Policy:
Required. Students are responsible for the material being covered in class. Students are encouraged to participate and discuss class material. Students are expected to read all class materials and complete all assignments on time. If you are experiencing major issues such as serious illnesses, absences due to academic duties, or religious observations, you should contact the professor immediately.

Read Student Health Services note regrading illness.

Leaving the Course
According to Temple Calendar.
The last day to drop the course with no "W" and no financial aid obligations is **Mon, Jan 24**.
The last day to withdraw with "W" and financial aid obligations is **Mon, Apr 25**. These are strict deadlines.

Incompletes will only be given in the rarest of circumstances. Please note that students who have previously withdrawn from this course, or who have already with-drawn from 5 courses since September 2003 may not withdraw

Academic Freedom
Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has adopted a policy on Student and Faculty Academic Rights and Responsibilities (Policy 03.70.02) which can be accessed here.

Phone/Laptop policy
Use of laptops in class is allowed if been used to take notes and do activities related to class material.

Use of cell phones in class is prohibited. If you wish to leave your cell phone on in "Silent" mode because of an ongoing emergency that you may need to respond to, please speak to me at the start of class to let me know.

Classroom Decorum:
In order to show proper respect for the instructor and for your fellow students, please observe the following:

- *Be on time!* Class will begin promptly at the scheduled time. Allow yourself enough time to park and get to class, ready to learn, before the period begins. Quizzes will be given at the start of the class so if you are late you may miss a quiz.
- *No food in class.* It's very distracting, especially when other students are hungry too!
- *Do* your best to remain in the room during the period. Exiting and entering during the period breaks the concentration of your fellow students and makes it hard for you to get the full value of the class.
- *Turn off* or *put on "silent"* all cell phones, pagers, and anything else that would cause a distraction to yourself or others around you.

Code of Academic Integrity
See Academic Honesty Policy posted on Canvas.
Please review Temple's page on academic honesty and other student responsibilities in the undergraduate bulletin:
here.

Special Needs
Any student who has a need for accommodation based on the impact of a disability should contact me privately to discuss the specific situation as soon as possible. Contact Disability Resources and Services at (215) 204-1280 in 100 Ritter Annex to coordinate reasonable accommodations for students with documented disabilities.

Grades
- Are updated instantaneously on Canvas. Keep an eye on it as it tells you where you at so far in class.
- There is no rounding. (92.99 is A-, 93.00 is A).
- Fight for every point and collect as many bonus points as possible.

Activity	Time	Weight
Attendance (28)	Every lecture	05%
Quizzes (7)	TBA	20%
Labs (7)	TBA	25%
Midterm (1)	TBA	25%
Final (Examination Schedule)	Apr 29 (Fri) (01:00-03:00)	25%
Total		**100%**

Total	Grade
93 and up to 100	A
90 and less than 93	A-
87 and less than 90	B+
83 and less than 87	B
80 and less than 83	B-
77 and less than 80	C+
73 and less than 77	C
70 and less than 73	C-
67 and less than 70	D+
63 and less than 67	D
60 and less than 63	D-
Below %60	F

Topics (tentative**)**

Topic	Reading
UNIX	Slides provided
Course introduction	Bryant and O'Hallaron, Ch. 1
Introduction to C	Slides and Code Examples
Data representation	Bryant and O'Hallaron, Ch. 2
Assembly	Bryant and O'Hallaron Ch. 3
Memory allocation	Bryant and O'Hallaron, Ch. 9.9-9.11
Storage	Bryant and O'Hallaron, Ch. 6
Linkers	Bryant and O'Hallaron, Ch. 7