

Computer Science 101

Introduction to Computing for Engineers and Physical Scientists

Syllabus for Fall 2013

CS 101 Course Objectives

CS101 covers fundamental principles, concepts, and methods of computing, with emphasis on applications in the physical sciences and engineering. This course includes basic problem solving and programming techniques; fundamental algorithms and data structures; use of computers in solving engineering and scientific problems. This course also introduces the student to software development environments for engineering program design. In this course, the student will acquire the software "literacy" that has become indispensable for creative work in Science and Engineering. Understanding the material in this course will enhance the students understanding of both fundamental and advanced topics in engineering software design.

Instructor

Dr. Tom Gambill
2209 Siebel Center
244-3541
gambill@illinois.edu

Web Site

All relevant class information is presented on the CS 101 web site
<http://courses.engr.illinois.edu/cs101/fa2013/> Check the web site frequently for updates.

Texts

(Recommended) A Book on C, 4th edition, Al Kelley, Ira Pohl,
ISBN: 0-201-18399-4

(Recommended) Getting Started with Matlab A Quick Introduction for Scientists and
Engineers, Rudra Pratap, Oxford,
ISBN: 978-0-19-973124-4

(Required) Course Notes, Stipes Publishing

Labs and Prelabs

Lab activities will be done in small groups typically of three students. TAs will assign students into groups in the labs. For each activity there will be one score for every student. Bring the course notes to each lab.

Every lab will have one TA to assist groups with their lab activities. A lab activity will be checked by the TA and suggestions will be given to the group if the performance on the activity is problematic.

Every group will be required to work each lab assignment until it is completed. This may require that the group work on the lab beyond the scheduled lab hours. All members of a properly functioning group will therefore receive full credit for all lab activities. Lab material will be posted on the course website on the page:

<http://courses.engr.illinois.edu/cs101/fa2013/labs/lab.htm>

A prelab consists of an online quiz (Compass GradeBook) that should be performed the individual student (**not** in a group) and completed before the corresponding lab.

Material considered in prelab and lab activities will be used on the exams.

Each lab = 12 points. All points for labs will be totaled at the end of the semester. The total of lab points cannot exceed 100 points.

Each prelab = 6 points. All points for prelabs will be totaled at the end of the semester. The total of prelab points cannot exceed 50 points.

TA Office Hours

TA's will hold weekly office hours.

See the office hours here: <http://courses.engr.illinois.edu/cs101/fa2013/staff.htm>

You may go to any TA's office hours, not just the person whose class you are registered for.

Lecture Notes

Students can review online copies of the course notes used in class from the web pages of CS101. It should be understood that these notes do not include everything that is covered in the lectures. They may be amended during the course. The material covered in the lectures will precede the material examined in the lab activity. Therefore, a student who misses lectures will not be prepared for the following lab activity.

Exams

Students must enter their answers to exam questions on the scantron (bubble sheet) provided during the exam (not after the exam has ended). Once the exam has ended proctors will collect all exams and scantrons. Failure to fill in the scantron in the allotted time (for example, by only circling answers on exam sheets) will result in a loss of 20 points for the exam.

There are two, one hour evening exams plus one two hour final exam. The final exam will not be scheduled by the University until near the end of the semester. Go ahead and buy your tickets to go home or wherever, but make sure that your ticket is for AFTER the last day of exams.

An instructor is obliged to cancel regular class for an amount of time equal to that required for the evening exam. (see http://www.uiuc.edu/admin_manual/code/index.html to determine procedures, deadlines, and your rights regarding evening exams)

The hourly exams (midterms) are scheduled for

Midterm 1:

Thursday October 3rd, 7:00-8:00pm

Location: TBA

Conflict exam: TBA (You must email your request for a conflict exam by clicking on the "Conflict Exam" link on the course website, state your reason for making the request e.g. Math 242 Section AL1 exam from 7-8pm)

Location: TBA

Midterm 2:

Thursday November 7th, 7:00-8:00pm

Location: TBA

Conflict exam: TBA (You must email your request for a conflict exam by clicking on the "Conflict Exam" link on the course website, state your reason for making the request e.g. Math 242 Section AL1 exam from 7-8pm)

Location: TBA

Conflict Exams

1. We have had so many abuses of our policy that we now will take 10 points off your test score should you notify us of your need for a conflict within 3 days of the midterm or by the last day of classes for the final exam.

2. If a conflict arises because two courses have scheduled overlapping exams, then you must take the exam for the course that announced first, and the conflict for the course that announced second. When each course announced on the first day of class (as we are doing), then you may choose which conflict exam you'll take. Often there will be only one way that this can be accomplished.

3. It is possible that you'll have a conflict, which precludes your taking any evening exam on the stipulated date. We'll make special arrangements for you. However, you still must contact us within 3 days of the exam. Examples are scheduled rehearsals or performances, regularly scheduled labs, and University-sanctioned athletic events.

If you need to take our conflict exam(s), please email now by clicking on the "Conflict Exam" link on the course website. State which of our exams is in conflict, and what exactly is the nature of the conflict (e.g. " Nephrology 101, Section Q has an exam scheduled from 7pm to 8pm with a conflict exam from 8pm to 9pm; it was announced on the first day of class.")

Identification (at an exam)

You need to bring a photo-ID with you to every exam.

You will be asked to sign an attendance list at every exam. The proctor will verify your identity with the photo ID.

You must also sign your exam.

It is your responsibility and not the proctor's to ensure that you sign the attendance list.

If we cannot find your exam and you have not signed the attendance list your exam score is ZERO.

Students must enter their netid correctly on the scantron (bubble sheet) provided during the exam. Failure to do so will result in a loss of 10 points for the exam.

Take-home programming assignments (also called Machine Problems or MPs):

There will be two (2) machine problems (MP's): assignments to be done on the computer and handed in for grade. You can expect to have to work in the lab several hours per week outside of the scheduled lab section meeting time in order to complete the MP's. We require that each individual do his or her own work on the MP's. You may **not** work in a group as in your lab activities.

Specific instructions for handing in MP's will be provided when the MP's are assigned.

Partial credit will be given for incomplete MP's handed in on time based on the results of the checker program. No hand grading of an MP will be performed by the CS101 staff. If the checker doesn't run on a students' submission then the score is a zero. A resubmission is allowed for MPs turned in on time. The resubmission due date may vary, please check the MP link on the course website for specific due dates. The resubmission can improve the final score no more than 50% of the total (i.e. 25 points for a 50 point MP). Late MP's will be accepted after the due date (but **not** after the resubmission due date), though students automatically lose 25 points and a resubmission is not permitted. The only exception to the point loss is in the case of illness or other substantial impediment beyond your control, as confirmed by the Emergency Dean.

Software

We will use matlab and the gcc (GNU ANSI C compiler). Students will learn basic Unix commands. All of the above software is available on any of the EWS lab computers.

Grading

Your course total will be computed from, the sum of all your lab activities (not to exceed 100 points), two MP's, the two mid-terms, and the final (not comprehensive), as follows:

| Assignment | Point Value |
|--------------------------------|-------------|
| MPs (2 worth 50 pts each) | 100 |
| Prelab Activities | 50 |
| Lab Activities | 100 |
| Midterm 1 (Matlab) | 125 |
| Midterm 2 (C /Unix) | 125 |
| Final (covers only C material) | 250 |
| Total | 750 |

Note: Absence from the Final Exam results in an ABS grade, even if a student has totaled more than 400 points before the Final Exam. The University will later change ABS grades to F.

Final grades will be based on a flat scale. **There is no curve!**

| Points | Grade |
|---------|-------|
| 725-750 | A+ |
| 700-724 | A |
| 675-699 | A- |
| 650-674 | B+ |
| 625-649 | B |
| 600-624 | B- |
| 575-599 | C+ |
| 550-574 | C |
| 525-549 | C- |
| 500-524 | D+ |
| 475-499 | D |
| 450-474 | D- |
| 0-449 | F |

Re-grades

Students have two weeks (from the date handed back) to request a re-grade or appeal any grade recorded in the Compass GradeBook, for an exam/mp/lab/extra credit activity. A re-grade will be performed on the entire lab/mp/exam and can lower the score!

In any appeal procedure it is the student's responsibility to keep possession of his/her lab/mp/exam. In the process of a re-grade a student has to arrange for a TA to modify the grade in the presence of the student. A student should not hand over any material to the TA for keeping. Therefore, a lost or missing lab/mp/exam is no reason for a modification of a grade.

Absence

Should you miss an hourly exam/lab/MP for a legitimate reason such as severe illness you will need to provide a verification letter from the Emergency Dean,

300 Turner Student Services Building
610 East John Street
Champaign, IL 61820
(217) 333-0050
<http://www.odos.uiuc.edu/deanonduty/>

Please make sure to mention that you missed a graded assignment since notes will not be provided for absence from lecture.

The letter must state that you have shown proof of your absence--do not go to the Emergency Dean without valid documentation of your absence. For example, an appointment slip from McKinley is not proper documentation because it shows only that you made an appointment.

If you miss an exam or other assignment worth points for the course then we assume that you will take the makeup exam or turn in the assignment on the first week-day (Monday – Friday) you are back to school as indicated in your note from the Emergency Dean unless we specifically grant you an extension. Any extension given by CS101 staff must be given via email (no verbal approvals for extensions).

Cheating

Don't do it. We'll catch you, and we'll punish you as outlined in the Code ([Academic Integrity](#)). Specifically, we will give a zero score for an assignment and deduct 20 points from your course point total. A flagrant form of cheating or a second occurrence of cheating will mean an automatic grade of F in the course and notification of a Dean in the students' college.

PENALTIES ARE APPLIED FOR THE FOLLOWING:

- both actively sharing (or copying) all or parts of someone else's code/answers on MPs/Exams or
- passively allowing the sharing (or copying) of your own code/answers on MPs/Exams

What is cheating?

On MPs: allowing others to copy your code or reading someone else's source code constitutes cheating. Students should protect their own work so that another student cannot copy any part of their code. Therefore, if copying has been detected, it will be assumed that cheating has occurred by all parties involved.

On Exams: allowing others to view your answers or reading someone else's answer constitutes cheating.

In case of a charge of academic irregularity against a student, the student has two weeks after the date of the charge to appeal the allegation. To make an appeal the student should first contact Dr. Gambill. A charge of academic irregularity can be made known to the student by:

- an announcement on the course website combined with a change of grade in the GradeBook
- by letter

Proficiency

Some of you have already mastered the subject matter of CS101. If you would like to "proficiency out" of CS101, here's what you need to do:

A proficiency exam will be schedule sometime during either the first or second week of the semester. See the Proficiency link on the course website for the date of the proficiency exam. You cannot take a proficiency exam at other times during the semester.

Proficiency or attempting to proficiency a course doesn't affect your tuition or GPA. There is no charge (in the CS Department) for a proficiency exam, and it is ignored by tuition. If you are successful, the credit goes on your transcript as a grade of "Pass", so there is nothing to compute into your GPA.(It doesn't count in your semester workload, either.)

Proficiency credit counts in every way except GPA (since there's no letter grade to average). It counts as hours earned, as well as fulfillment of a degree requirement. The student DOES get the credit hours.

Extra Opportunities with CS101 Honors(James Scholar)

You can take CS101 for Honors (James Scholar)

James Scholar students will be assigned a programming assignment beyond the two MPs assigned in CS101. See the Honors link on the course website for more information about the assignment and the due date to register and submit the Honors assignment. Naturally this programming assignment might be somewhat time-consuming, so you might want to think about taking on the extra work.

CS196

CS196 will NOT be available this semester.