CS 1401
Introduction to Computer Science

Fall 2016 Syllabus

General Information:

Lecture Sections: Lecture sessions TR 10:30-11:50 a.m.

Lab Sections: All lab sessions are scheduled on MWF in room CCSB 1.0410.

Lectures and lab sessions are linked. As a result, if you are enrolled in:

- Labs meeting MWF **8am to 8:50am**: your lecture meets in CCSB 1.0202 with instructor Martine Ceberio
- Labs meeting MWF **9:30am to 10:20am**: your lecture meets in CRBL C305 with instructor Claudia Casas
- Labs meeting MWF **11am to 11:50am**: your lecture meets in CCSB 1.0202 with instructor Martine Ceberio
- Labs meeting MWF **1pm to 1:50pm**: your lecture meets in CCSB 1.0704 with instructor Natalia Villanueva Rosales
- Labs meeting MWF **2pm to 2:50pm**: your lecture meets in CCSB 1.0704 with instructor Natalia Villanueva Rosales
- Labs meeting MWF **4pm to 4:50pm**: your lecture meets in CRBL C305 with instructor Claudia Casas

You should be enrolled in one lab section and in the corresponding lecture session. **Do not drop in on another lab section or lecture section without prior approval from your instructor.**

Instructor Contact Information:

- Claudia Casas, ccasas@utep.edu, CCSB 3.1006
- Martine Ceberio, mceberio@utep.edu, CCSB 3.0406
- Natalia Villanueva Rosales, nvillanuevarosales@utep.edu, CCSB 3.0508

Course Objectives: Students in this first course for majors in Computer Science will learn to be active learners, understand the motivations for computing, basic concepts of algorithms, basic computer organization, and impacts of computing. They will develop problem-solving skills, implement solutions to computing problems in a high-level programming language, and build team skills, critical-thinking skills, and professionalism.
Prerequisite: MATH 1508 or MATH 1411 with a grade of C or better.

Knowledge and Abilities Required Before the Students Enter the Course: Students entering the course are not required to have a background in Computer Science or programming. They should be familiar with topics from Pre-calculus, including algebraic functions, proofs, and base representations of numbers.

Learning Outcomes

Level 1: Knowledge and Comprehension. Level 1 outcomes are those in which the student has been exposed to the terms and concepts at a basic level and can supply basic definitions. On successful completion of this course, students will be able to describe, at a high level:

1. The history of computing
2. The relation between computing and society, including main social, ethical, and legal issues
3. Computing as a profession, from required knowledge and skills to major career options
4. Computer representation of simple data types and operations, including operations with binary numbers
5. Technical aspects of computing, including memory, operating systems, editors, interpreters, compilers, debuggers, and virtual machine
6. Differences among programming languages
7. The purpose and use of exceptions

Level 2: Application and Analysis. Level 2 outcomes are those in which the student can apply the material in familiar situations, e.g., can work a problem of familiar structure with minor changes in the details. Upon successful completion of this course, students will be able:

1. To analyze problems and express solution algorithms in pseudocode
2. To implement pseudocode algorithms in a high-level language, including the correct use of:
    a. Arithmetic and logical expressions
    b. Simple I/O operations
    c. User-defined subprograms, including recursive methods
    d. User-defined types
3. To use testing and debugging strategies, including black-box and white-box testing, test drivers, stubs and test suites, to identify software faults
4. Use teamwork roles and methods in the classroom

Level 3 Outcomes: Synthesis and Evaluation. Level 3 outcomes are those in which the student can apply the material in new situations. This is the highest level of mastery. On successful completion of this course, students will be able to use the syntax and semantics of a higher-level language to express solutions to programming problems, including the correct use of:

1. Basic variable types such as integer, real number, character, string, 1-D array
2. Assignment, arithmetic, and logical operations
3. Basic control structures: if-then, for-loop, while-loop

Course Specifics:

Textbook: Programming in Java, zybooks, available at zybooks.zyante.com. To subscribe to your textbook, please enter the following code:

- UTEPCS1401CeberioFall2016, for instructor Martine Ceberio
- UTEPCS1401VillanuevaRosalesFall2016, for instructor Natalia Villanueva Rosales
- UTEPCS1401CasasFall2016, for instructor Claudia Casas

Online access to information: Each of your instructor uses an online platform to manage communication, provide information, post assignments and solutions, etc. Students are expected to check their respective platforms daily during the course of the semester.

- Dr. Ceberio uses piazza.com and the course's address is: piazza.com/utep/fall2016/cs1401/home. By now, you should all have received an invitation email. If not, please follow this link anyway. Any problem, please let me know.
- Dr. Villanueva Rosales uses Blackboard for all class activities. You will be automatically enrolled in the Blackboard section named Intro to Computer Science. We will verify you have access to it during the first lab.
- Claudia Casas uses Blackboard. You will be automatically enrolled in the course named "CS_1401_16484.201710: Intro to Computer Science" .

Software: Software used in this course will be available on the Windows computers in the main computer lab and in the two instructional labs on the first floor. For those who wish to use the course software on your home or laptop computer, instructions will be given in the labs and available online on your instructor's course page (see above for more details).

Grading: Grades are turned in to students in a timely manner. It is the students' responsibility to keep track of their grades by compiling the grades they receive. Your semester grade will be based on a combination of homework and lab assignments, weekly quizzes, lab attendance, exams, and a final exam.

Grade for 1401: The approximate percentages are as follows:

- 30% lab assignments
- 10% Class and lab participation (includes quizzes for attendance and survey purposes)
- 15% Quizzes and homework
- 5% Student engagement participation
- 21% Exams (3 mid-term exams)
- 19% Final exam

The nominal percentage-score-to-letter-grade conversion for CS 1301 and CS 1101 is as follows:

- 90% or higher is an A
- 80-89% is a B
- 70-79% is a C
- 60-69% is a D
- below 60% is an F

You must earn a C or better to continue to the next course in this sequence CS2401.

Class and Lab Participation: Attendance at and participation in all class and lab sessions are critical components of this course. Students should be on time for all scheduled sessions and attend the entire session. Students should notify the instructor prior to missing a session if at all possible, and certainly right after if earlier was not possible. The instructor will allow two unexcused absences per semester before having the option to deduct points from the final grade (5 points per subsequent unexcused absence). Any assignments due on the date of the absence will be considered late if not turned in as specified by the assignment guidelines, unless the instructor has previously granted an exception. Points lost due to an unexcused absence may not be made up. Any points lost due to an excused absence will need to be made up by arrangement with the instructor. It is the student's responsibility to obtain the content covered during missed class(es). Participation points also include completing post-lecture and post-labs online quizzes that are administered as surveys to monitor students' overall progress and potential challenges.

Lab Assignments: Lab assignments are designed to allow you to practice using the concepts presented in lecture and in your reading. Lab assignments may include written problems, tutorial exercises, and programming problems. Deadlines for lab assignments will be clearly specified in the description of each assignment. Assignments turned in up to three days late will have scores reduced by 15% for each day of lateness. Assignments turned in more than three days late will not be graded. Lab assignments will be of two types: **minilabs** and **challenge labs**. You will typically have about one minilab assignment per week for 3 to 4 weeks and then one challenge lab due the week after these 3 or 4 weeks, and then the same cycle again. The grade of each minilab will consist of the following:

Grade of the programming assignment (MLP) + Grade of in-lab probing questions (MLQ)

Probing questions will be about the topics covered in the minilab, and will be asked regardless of whether you completed the minilab or not. This allows you flexibility, in case something happened and you were not able to complete a minilab.

Per cycle (of 4 to 5 weeks), your grade will be as follows:

(70 * Max ((MLP1 + … + MLP4)/4, ChallengeLab) + 30 * (MLQ1 + … + MLQ4)/4) / 100

Quizzes and Homework: The purpose of each **quiz** is to ensure that you are staying current with the weekly reading assignments and video lectures and to verify that you have mastered the skills developed in class. Quizzes usually will be on-line (sometimes) take-home quizzes on socrative.com. There will be no make-up on missed quizzes. **Reading and homework assignments** will be handed out, announced in class and in labs, and/or posted on the class Web site (see above for more details about your own instructor's platform: piazza or blackboard). If you miss a class or lab session, it is your responsibility to find out what you missed. You should expect to spend at least ten hours per week outside of class and lab on reading and homework.

Student Engagement in Computer Science: During the course of the semester, you must engage as a computer scientist in one or more of the following activities: participate as a subject in one Computer Science experiments or research project, write one short (1-2 pages) paper describing some aspect of the research going on within the Computer Science Department (this could be from interviewing one of our CS professors, or writing a meaningful summary of a CS seminar presentation for instance), shadow a team of senior CS students conducting software engineering work, actively participate in a CS research group. The purpose of this requirement is to make you aware of the research going on within this department (or elsewhere) and/or to allow you to participate in an authentic research experience and/or to empower you to engage in activities that computer scientists typically do. Students are encouraged to propose other activities as they see fit: instructors will then decide whether they qualify as Student Engagement in CS.

Exams: There will be 3 midterm exams and one final exam. All four exams together will weigh 40% of your overall final grade for CS1301. Because the exams contribute so heavily to your total grade, it is vital that you do well on them. If you have test-taking difficulties in general, or if you have difficulties with our tests in particular, please come let me know as soon as possible

The purpose of the **midterm exams** is to allow you to demonstrate mastery of course concepts. Mid-term exams will take place during the regular class session and are tentatively scheduled to be held around week 6, week 10, and week 14, but are likely to differ from one lecture section to the other. Make-up exams will be given only in extremely unusual circumstances. If you must miss an exam, please meet with an instructor, BEFORE the exam.

The **final exam** will be comprehensive. You must score 70% or better on the final exam to pass this course. You must take the final exam during the time shown in the schedule for the class section that you are formally enrolled in. Do not simply "drop in" to the other section; there will not be a copy of the exam for you. This is University policy. If you have a scheduling conflict (e.g., if you are taking a final at EPCC) or if you are scheduled for three final exams in one day, see your instructor in advance for accommodation.

Extra Credit: Extra credit opportunities will be offered throughout the semester. For instance, students will be able to earn extra credit toward their lab grade by either (a) completing extra "challenge" assignments or (b) by attending sessions of the course's Problem-Solving Club. Please watch out for extra-credit announcements on piazza. Important note: **No extra credit assignment will be offered past week 13 of the semester though**.

Use of Unauthorized Electronic Devices during Class Sessions: Any use of unauthorized electronic devices that disrupts the learning environment (e.g., surfing the Web, listening to music, checking Facebook, Twittering, playing Angry Birds Rio, or playing online Scrabble while class is in session) will not be tolerated. Electronic devices should serve as tools for learning and are limited to course-related work only; any other use is considered inappropriate. Inappropriate use of electronic devices will be considered a disruption of the classroom and may be reported to the Dean's office. All unauthorized electronic devices should be silenced or shut off upon entering the classroom. In the event of an emergency or other urgent situation, the student should step outside of the classroom beyond hearing range or text silently. It is the student's responsibility to ensure that all electronic devices are managed within the guidelines. The instructor reserves the right to disallow use of any electronic equipment during class sessions.

Disabilities: If you feel that you may have a disability that requires accommodation, contact the Center for Accommodations and Support Services at 747-5184, go to Room 106E Union, or email cass@utep.edu.

Standards of Conduct: You are expected to conduct yourself in a professional and courteous manner, as prescribed by the UTEP Standards of Conduct.

Academic Integrity: All graded assignments must be entirely the work of the individual student. "Plagiarism" means the appropriation, buying, receiving as a gift, or obtaining by any means another's work and the unacknowledged submission or incorporation of it in one's own academic work offered for credit, or using work in a paper or assignment for which the student had received credit in another course without direct permission of all involved instructors. Plagiarism is a serious violation of university policy and will not be tolerated. All cases of suspected plagiarism will be reported to the Dean of Student for further review. The Handbook of Operating Procedures: Student Conduct and Discipline can be accessed at the following link: http://admin.utep.edu/Default.aspx?tabid=73922.

Scholastic Dishonesty: In all matters of intellectual pursuit, UTEP faculty and students must strive to achieve excellence based on the quality of work produced by the individual. In the classroom and in all academic activities, students are expected to uphold the highest standards of academic integrity. Any form of scholastic dishonesty is an affront to the pursuit of knowledge and jeopardizes the quality of the degree awarded to all graduates of UTEP.

Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, the submission for credit of any work or any materials that are attributable in whole or in part to another person, taking an examination for another person, an act designed to give unfair advantage to a student or the attempt to commit such acts. Proven violations of the detailed regulations, as printed in the Handbook of Operating Procedures may result in sanctions ranging from disciplinary probation to a failing grade in the course, to suspension or dismissal, among others. The Handbook of Operating Procedures: Student Conduct and Discipline can be accessed at the following link: http://admin.utep.edu/Default.aspx?tabid=73922.