

University of Texas at El Paso
Department of Computer Science
CS 1301 Introduction to Computer Science - Fall 2018

Course Objectives: Students 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 highlevel 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 Entering 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.

Logistics

Lecture sessions: Tuesdays and Thursdays, 10:30- 11:50am at CCSB 1.0704.

Instructor: Natalia Villanueva Rosales, e-mail: nvillanuevarosales@utep.edu, office: CCSB Room 3.0508, phone: (915) 747-8643.

Office hours: Tuesdays and Thursdays, 9:30-10:30am and 1:30-2:30pm and by appointment outside this time. Please use email to contact instructor.

Teaching Assistant: Adriana Camacho, accamacho@miners.utep.edu

TA Office hours: MW 10:30am-12:00pm, Tu 2:00pm-3:00pm

NOTE: When contacting the instructor or TA by email, please use in the subject the prefix [CS1301].

Textbook: Programming in Java, by Zybooks.

Available at zybooks.zyante.com. To subscribe to your textbook, please enter the following code: **UTEPCS1301VillanuevaRosalesFall2018**

Online platform: Blackboard

Software: Software used in this course is available on the desktop computers in the main computer lab and in the two instructional labs on the first floor. To use the course software on your home or laptop computer, instructions will be given in the labs and available online on our piazza page.

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 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. Differences among programming languages
6. Pseudocode of the use of Multi-D arrays
7. Pseudocode of the use of Linked lists

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, including a correct use of:
 - a. Arithmetic and logical expressions
 - b. Simple I/O operations
 - c. User-defined subprograms, including recursive methods
 - d. User-defined types
2. To use testing and debugging strategies, including black-box and white-box testing, test drivers, stubs and test suites, to identify software faults
3. 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 pseudocode 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

Grading

Grades are communicated 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 assignments, quizzes, class participation, 3 mid-term exams, CS engagement, and a final exam.

The **approximate** percentages are as follows:

- 20% Homework
- 15% Quizzes
- 50% Exams (3 mid-term exams and 1 final exam)
- 5% Student Engagement in Computer Science
- 10% Class participation (includes on-time lecture attendance, active participation in class, completion of any quizzes for attendance and survey purposes)

The nominal percentage-score-to-letter-grade conversion for CS 1301 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

NOTE: You must earn a C or better in each of these two courses, CS1301 and CS1101, to continue to the next course in this sequence, which is CS2401.

Expectations

Class Participation: Attendance and participation in all lecture sessions are critical factors of your success in this course. Students should be **on time** for all scheduled sessions and **attend the entire session**. Attendance will be taken at every session and will count towards your class participation grade. 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. 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 (when requested) that are administered as surveys to monitor students' overall progress and potential struggles.

Quizzes: 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 acquired the skills developed in class. Quizzes will usually be on-line. There will be **no makeup** on non-justified missed quizzes.

Homework: Reading and homework assignments will be announced in class and/or posted on Blackboard. If you miss a lecture session, it is your responsibility to find out what you missed. You should expect to spend **at least four hours per week outside of lecture** on reading and homework. Most of your homework will be work assigned on your online Zybook: completing the assigned activities on time will be crucial to your success

in the class (since these activities prepare you for classwork) and to getting a good grade (since late completion will be penalized).

Exams: There will be 3 midterm exams and one final exam. All four exams together will weigh 50% 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 let me know as soon as possible and/or request appropriate accommodation from UTEP's Center for Accommodation and Students' Services. The purpose of the **midterm exams** is to allow you to demonstrate mastery of course concepts covered thus far during the semester. Mid-term exams will take place during the regular lecture session and are tentatively scheduled to be held around week 6, week 10, and week 14. 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 65% 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 lecture section that you normally attend. Do not "drop in" to another 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.

Student Engagement in Computer Science: During the course of the semester, you must engage as a computer scientist in activities as shown below, in a way that you cumulate at least 7 points (towards your final grade).

Possible activities (along with the number of points each yields) include (but are not limited to):

2 points for each of the following:

- Send a video to Dr. Villanueva Rosales about a CS topic of your preference and how it impacts our everyday life to be presented to the class;
- Write a summary of a seminar you attended (proof of attendance needs to be provided as well);
- Attend 6 workshops provided by undergraduate TAs;
- Participate in a research project as a research human subject;
- Participate in a Department's outreach as a volunteer student;
- Design a video or a presentation about a specific career in Computer Science;

3 points for each of the following:

- Be an active participant in Google IgniteCS program (or equivalent);
- Be an active undergraduate researcher in one of the Computer Science Research labs and present to the class your work.

Resources

Special Accommodations: If you have a disability and need classroom accommodations, please contact the Center for Accommodations and Support Services (CASS) at 747-5148 or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass. CASS' staff are the only individuals who can validate and if need be, authorize accommodations for students with disabilities.

Scholastic Dishonesty: Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but not limited to cheating, plagiarism, collusion, submission for credit of any work or materials that are attributable to another person. **Cheating** is copying from the test paper of another student. Communicating with another student during a test to be taken individually. Giving or seeking aid from another student during a test to be taken individually. Possession and/or use of unauthorized materials during tests (i.e. crib notes, class notes, books, etc.). Substituting for another person to take a test. Falsifying research data, reports, academic work offered for credit. **Plagiarism** is using someone's work in your assignments without the proper citations. Submitting the same paper or assignment from a different course, without direct permission of instructors. To avoid plagiarism, see: <http://sa.utep.edu/osccr/wp-content/uploads/sites/8/2012/09/AvoidingPlagiarism.pdf>. **Collusion** is unauthorized collaboration with another person in preparing academic assignments

NOTE: When in doubt on any of the above, please contact your instructor to check if you are following authorized procedure.