

CS 4365 / 5354 Topics in Soft Computing: Problem Solving & Algorithms

Summer 2016 Syllabus

Sections: Lecture sessions MTWRF 7:00-9:10 a.m., in CCSB 1.0204, from June 6 to June 30.

Instructor Contact Information: Martine Ceberio, mceberio@utep.edu, CCSB 3.0406

Course Objectives: This course is intended to enhance students' problem solving abilities. Through problem solving, they will learn an array of general strategies for algorithm design, they will practice performance analysis and develop critical thinking skills. They will review and apply in context notions of data structures, algorithms, discrete math, and logical foundations of computer science.

In this class, you are going to develop / enhance your problem-solving skills and increase your knowledge of fundamentals of computer science. However, doing so might not feel very comfortable. For instance, you will be challenged in class to identify solutions to problems. You will be requested to convey your solutions to the whole class (in a manner that is clearly understandable). While doing this, you will review fundamental topics of computer science: algorithmic strategies and algorithm analysis for instance.

You are more than ever required to come to class prepared (having completed your reading assignment) to ensure that the class activities can be as rich as possible.

Textbook:

For students taking **CS4365:** Problem Solving Through Recreational Mathematics, by Averbach & Chein. Dover.

For students taking **CS5354:** Problem Solving Through Recreational Mathematics, by Averbach & Chein. Dover, and The Power of Algorithms: Inspiration and Examples in Everyday Life, by Giorgio Ausiello and Rossella Petreschi, Springer.

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 assignments and quizzes (unannounced), class participation, mid-term exam (1), and a final exam. The approximate percentages for students taking CS4365 are as follows:

- 30% Class participation (includes quizzes for attendance and survey purposes)
- 30% Quizzes and homework
- 25% Mid-term exam
- 15% Final exam

The approximate percentages for students taking CS5354 are as follows:

- 20% Class participation (includes quizzes for attendance and survey purposes)
- 25% Quizzes and homework
- 25% Project
- 15% Mid-term exam
- 15% Final exam

The nominal percentage-score-to-letter-grade conversion 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

Attendance and active class participation: Attendance at and participation in all class sessions are critical components of this course, hence the high percentage for attendance and participation in your overall grade. Participation includes contributing to the class sessions, showing that reading has been completed (even if not fully understood – the purpose of the class is to clear doubts and to go deeper), presenting solutions to problems, discussing and contrasting different approaches.

Students should attempt to 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 unexcused absence will be considered late if not turned in as specified by the assignment guidelines, unless an exception has been previously granted by the instructor. Points lost due to an unexcused absence may not be made up. It is the student's responsibility to obtain the content covered during missed class(es). Regularly during the semester, you will also be expected to take online quizzes, whose aim is to better understand where you are at to best help you. Taking these quizzes is critical to your success and therefore will be taken into account for your grade.

Assignments: Reading and homework assignments will be handed out or announced in class, and/or posted on the class Website, which is hosted on piazza.com. Most homework will be “on the paper” but some will be programming assignments because it is important to understand how computers can affect / inflect our problem-solving approaches. Homework assignments are due by the beginning of the class on the due date, unless specified otherwise. If you miss a class, it is your responsibility to find out what you missed. You should expect to spend at least twenty hours per week outside of class on reading and homework.

Quizzes: The purpose of each quiz is to ensure that you are staying current with the weekly reading assignments and to verify that you have mastered the skills developed in class. Quizzes usually will be on-line take-home quizzes on socrative.com. There will be no make-up for missed quizzes.

Projects: Students taking CS5354 will have to pick a project and present it during the semester. Project options as well as presentation dates will be specified during the first week of classes.

Exams: The purpose of exams is to allow you to demonstrate mastery of course concepts. Because of the nature of this course, exams will be take-home exams to allow you more time to think and answer questions. There will be one mid-term exam and one final exam.

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

Graded work (for example, homework or exams), is to be completed independently and should be unmistakably your own work (or, in the case of pair work, your pair's work). You may not represent as your own work material that is transcribed or copied from another person, book, or any other source, such as a web page. Professors are required to—and will—report academic dishonesty and any other violation of the Standards of Conduct to the Dean of Students.

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 106 E. Union, or email cass@utep.edu.