The University of Texas Rio Grande Valley
College of Engineering & Computer Science

CSCI 1101.02 Introduction to Computer Science

Instructor: Homero Benavides Ramirez

Semester: Spring 2020

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Web: TBD

Class Meeting Times: TR 12:30 pm - 1:45 pm

Room: EACSB 2.113

Office Hours: **TR** 2:00 pm - 4:00 pm and by appointment.

Office: EIEAB 2.210 (AI Research Lab)

Catalog Description:

This course presents an introduction to the breadth of the field of computer science. Topics include an introduction to computer science as a career, overviews of various computer science areas and topics, and foundations of computational problem solving.

Prerequisite: None.

Warning: This course is required for Computer Science majors or minors. Computer Engineering majors must take CMPE 1101. Other majors must take the intro courses specific for their majors.

Textbook and other Materials:

No textbook is required (recommended textbooks might be given during class)

Course Structure:

CSCI 1101 consists of lectures, assignments, quizzes, and tests. The goals for the lecture are to introduce history, terminology, concepts, applications, social and ethical aspects and technology of the computer. The goals of the assignments are to provide hands-on experience with problem solving and software supporting the concepts introduced in the course. Most assignments will be done individually but a few will be done in groups. Quizzes and Tests will test retention of the lecture material.

Course Grading:

1. Tests (2) 25%
2. Final Project 25%
3. Assignments 50%

Grading scale: A: 90-100 B: 80-89 C: 70-79 D: 60-69 F: 0-59

Course Policies:

- **Attendance.** I assume that you will attend class, be punctual, remain on task, and stay through the entire class meeting. If you miss more than 10% of the classes without a valid excuse you will be reported to the Early Warning System program. UTRGV's attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Oher acceptable excuses include (but are not limited to) the death of an immediate family member, or an illness requiring a physician's attention.
- **Completion of exams and assignments.** You must take **all** exams and turn in **all** assignments on time. Depending on the excuse provided, make-up exams may result in automatic loss of points. All exams must be taken to be able to pass the course, missing any one will result in an F as a final grade. Exams will be done on paper, and the use of computers will also result in a failure.
- **Assignment Policies.** Even if you work in teams, all assignments are assessed individually. Labs will be graded on correctness, quality, and style.
- **Scholastic integrity.** As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism, and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.
- **Course drops.** According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date (see **Important dates** below please). Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the "**3-peat rule**" and the "**6-drop**" rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

- You are responsible for saving and backing up your own assignment files. If you lose a file, you must start the assignment over again. I will give NO special consideration or extensions for lost files.

Expectations:

I am committed to quality teaching and to providing you a meaningful experience in this course, but learning is your responsibility so please do your part in order to receive the maximum benefit from the course.

For this class, **I expect you to**:

- Have your electronic devices (cell phones, notebooks, music players, etc.) OFF at all times (tests, lectures and labs).
- Attend each class, arriving on time and remaining throughout the entire class meeting. If you have a legitimate and important reason for needing to leave early, please let me know before class starts.
- Complete all assignments and submit them on time (this is very important for you!).
- Interact respectfully with me, the course assistants, and your other classmates.
- Participate in class discussions and activities.
- Remain on task and focused during class (*i.e.,* no doing homework, engaging in side conversations, web-surfing, reading e-mail, Facebooking, chatting, DMing, *etc*. during class).
- Access your Blackboard account frequently to get information on course policies, assignments, tests, etc. **All information posted on it will be assumed to be known by the student 24 hours later.**
- Do **Not** bring **food** or **drinks** into the lab please. This is a real issue around computers and robots.
- Come speak to me IN PERSON and IMMEDIATELY at the **first** sign that you are having trouble with the class or if you miss assignments so I can try to help you.

Communication:

Whether you send a message in Blackboard or an e-mail through your UTRGV account, please ensure that all your messages have the following:

- Descriptive subject line.
- Your name, course number and section (if e-mailing from your UTRGV account), and a clear statement of your question or problem. If you send an attachment, please explain it.
- An e-mail is a relatively formal communication, so please ensure your language reflects that fact (be polite, avoid acronyms, use punctuation marks, capitalize, etc.).

Special Problems/Note to students with disabilities:

If you have a documented disability (physical, psychological, learning, or other disability which affects your academic performance) and would like to receive academic accommodations, please inform your instructor and contact Student Accessibility Services to schedule an appointment to initiate services. It is recommended that you schedule an appointment with Student Accessibility Services before classes start. However, accommodations can be provided at any time. **Brownsville Campus**: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at ability@utrgv.edu. **Edinburg Campus:** Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at ability@utrgv.edu.

SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE:

In accordance with UT System regulations, your instructor is a "responsible employee" for reporting purposes under Title IX regulations and so must report any instance, occurring during a student's time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect in an environment free from sexual misconduct and discrimination.

Course Learning Outcomes:

ABET Learning Outcomes:

(a) An ability to apply knowledge of computing and mathematics appropriate to the discipline.
(b) An ability to analyze a problem and identify and define the computing requirements appropriate to its solution.
(c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
(e) An understanding of professional, ethical, legal, security and social issues and responsibilities.

Detailed learning outcomes:

History of Computing

1. List the contributions of several pioneers in the computing field.
2. Identify significant continuing trends in the history of the computing field.

Machine level representation of data

1. Explain the reasons for using different formats to represent numerical data.
2. Explain how negative integers are stored in twos-complement representation.
3. Describe Boolean Operations, gates, and flip-flops.
4. Describe numeric data representation and number bases and convert numbers between bases. Convert numerical data from one format to another.
5. Understand binary logic circuits and Boolean algebra. Prove properties using truth tables.
6. Discuss how fixed-length number representations affect accuracy and precision.
7. Describe the internal representation of nonnumeric data.

Algorithms and problem-solving, fundamental data structures

1. Discuss the importance of algorithms in the problem-solving process.
2. Understand the difference between an algorithm and a computer program.
3. Identify the necessary properties of good algorithms.
4. Understand algorithms for repetition, selection, input/output, assignment, and modulus.

Mandatory Course Evaluation Period:

Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades.

Tentative Schedule:

The specific topics covered in this course are those listed in the detailed class schedule shown below

Week	Tuesday	Thursday
14/16-Jan	Course Introduction	History / What is Computer Science
21/23-Jan	Number Systems	Computer Components
28/30-Jan	Binary Arithmetic	Binary Arithmetic
4/6-Feb	Boolean Algebra	Gates and Circuits
11/13-Feb	**Test 1**	Algorithms
18/20-Feb	Introduction to Programming	Introduction to Programming
25/27-Feb	Algorithms: Decisions	Algorithms: Decisions
3/5-Mar	Algorithms: Repetition	Algorithms: Repetition
10/12-Mar	**Spring Break**	**Spring Break**
17/19-Mar	Programming: Functions	Programming: Functions
24/26-Mar	Programming: Libraries	**Test 2**
31/2-Mar/Apr	Data Structure: Lists	Data Structure: Lists
7/9-Apr	Algorithms: Searching	Algorithms: Searching
14/16-Apr	Programming Environments	Programming Environments
21/23-Apr	Python Graphics	Python Graphics
28/30-Apr	Final Project: Work Session	**Study Day**
5-May	**Final Exam (Project Demonstrations)**	----------

Important dates:

January 13	First day of classes
January 16	Last day to add or register for Spring classes
January 20	Martin Luther King Jr. Holiday (No classes)
January 29	Last day to drop a course without it appearing on the transcript
March 9-14	Spring Break (No classes)
April 9	Last day to drop a course and receive a DR grade
April 10-11	Easter Holiday (No classes)
April 30	Study Day (No classes)
May 1-7	Final Exams (For this course: Tuesday, May 5th)