CSCI3340.03: Software Engineering I
CYBI3331.01/90L: Software Engineering and Project Management
Syllabus
Fall 2022
Subject to any new Texas legislative mandate changes.

Course Information:
Meeting times: MW, 1230pm - 145pm
Meeting location: LHSB 1.402, Brownsville Campus
Course Modality: TR (traditional face-to-face) for CSCI3340.03 and CYBI3331.01; OSYNC (online synchronous) for CYBI3331.90L

Instructor Information:
Instructor Name: Liyu Zhang
Phone: (956) 882-6631
E-Mail: liyu.zhang@utrgv.edu
Office hours: TR 1230pm – 330pm and by appointment
Office location: SETB 1.522, Brownsville Campus

Course Description, Prerequisites & MODE OF LEARNING

Course Description (Catalog)

CSCI3340: A formal approach to the state-of-the-art techniques in software design and development. Emphasis will be on Project Planning, Requirements, Specification, and System Design and includes object design, testing, and implementation. Provides the student with the opportunity to work on large projects in a group situation.

CYBI3331: Software Engineering with Project Management to clearly understand the processes involved in how to define, schedule, implement and manage projects in a team setting with a cybersecurity emphasis.

Prerequisites

CSCI3340: Grade of C or better in: [3 advanced hours in CSCI or CMPE] and [CSCI 2380 or CMPE 2380], Credit hours: 3.000, Lecture hours 3.000

CYBI3331: "C" or better in CYBI 2322, CYBI 2324, and CYBI 2326.

Additional Course Topics As approved and required by the computer science department, the following topics in the area of software security will also be covered by CSCI3340:

- Application security failure

    o Flaws in requirements, design, and implementation processes (case study)

    o Flaws in testing plan and execution (case study)

- Authentication and Authorization

    o Security requirements: users, roles, actions, and permissions

    o Unauthorized access vulnerabilities

    o Systematic testing based on requirements and design

Mode of Learning As stated in the previous section, this course will be delivered in the traditional face-to-face way.

COVID-19 RESOURCES:
Please visit the UTRGV COVID-19 protocols web page for the most up-to-date COVID-19 campus information and resources. The COVID-19 Frequently Asked Questions (FAQs) web page offers additional guidance to specific questions. To submit a question for the FAQ, please email WelcomeBack@utrgv.edu.

UTRGV VACCINE PORTAL
UTRGV Students are eligible to receive the COVID-19 Vaccine. Students may access and complete their vaccine profile via the UTRGV Vaccine Portal. For additional information on the COVID-19 Vaccine, please visit the UTRGV Vaccine web page.

Learning Objectives/Outcomes for the Course

CSCI3340: Student learning outcomes (SLOs) for this course and program SLOs they support provided in the table below. All the SLOs will be accessed through exams and assignments including homework and programming/team projects. For team projects, students are expected to make sufficient contributions to their teams and demonstrate that they have attained a satisfactory level of relevant SLOs in a team setting. Students' team contributions will be assessed by the following course components:

- Relevant sections in the narratives of team project reports,
- Peer evaluation scores students received for each phase of their team projects, and
- Relevant questions in the exams.

Program Student Learning Outcomes	Course Student Learning Outcomes	Major Course Requirement/Major Assignment/Examination
2. An ability to design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.	• Understand the principles of software engineering. • Be able to create and use planning, requirements analysis, domain analysis and design artifacts, and testing modules. • Be able to document all phases of the software development processes	Relevant problems in homework and exams, and parts of team projects
2. An ability to communicate effectively in a variety of professional contexts.	• Understand and be fluent in the use of software engineering terminology and nomenclature	Team project presentations, documents required by all phases of team projects
2. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.	• Be knowledgeable of ethics, professionalism, and cultural diversity in the work environment. • Be able to analyze the local and global impact of any produced software	Relevant problems in homework and exams, and parts of team projects
2. An ability to function effectively as a member or leader of a team engaged in	• Be capable of intelligently communicating with most members in a software	Relevant parts and peer evaluations of team projects

activities appropriate to the program's discipline.	development organization (business and project management, analysts, architects, developers, customers, and end users)	

CYBI3331: Include all SLOs of CSCI3340 and the following additional SLO:

- Understand and be able to explain concepts in software project management.
- Be able to create a viable plan for a software project of moderate magnitude.

Textbook, TECHNOLOGY, and/or Resource Material

The following textbook is required for this course:

R. Pressman and B. Maxim, *Software Engineering: A Practitioner's Approach, 9e*, McGraw Hill, 2019, ISBN-13: 978- 1259872976.

Currently, the book can be rented at $79.64 for a hard copy from Amazon or purchased at $77.00 for a Kindle version.

To succeed in this course, you need to be able to participate in class sessions and activities. This will require:

- A place to work and a reliable computer (laptop or desktop)
  - A tablet would be very difficult for this class, and insufficient for the major
  - Any standard computer will work. The most important considerations to compare against cost are:
    - Reliability, warranty, repair options
    - Portability, size, battery life
      - Desktops are more powerful and cheaper, but portability is a high value for most students. We have good open CS labs on campus, but that is not the same as having your own machine with you anywhere.
    - Windows is most common, and thus best supported. macOS and linux work, but you will need to have the IT knowledge and skills to adapt things (not in this class).
    - Specs:
      - Minimum: 8 GB RAM, i5 processor, 256 GB storage
      - Recommended: 16 GB RAM, i7 processor, 512 GB storage
      - SSD is very nice, but is also an easier cut to reduce cost
      - 2-in-1, touchscreen, pen digitizer are all great, but they are luxuries
      - You pay a premium for a mac or a surface, you can get equivalent hardware for a lot less
      - Big GPU power only matters if you are gaming or doing heavy 3d work. A secondary desktop later on may be a better investment.
    - Packages and deals are available at the UTRGV bookstore (https://link.utrgv.edu/campusstores-tech/).
- **Daily access to online Blackboard** We will use UTRGV online Blackboard as the place for making announcements and posting course materials/information such as course calendar, lecture notes, assignments and grades etc. So please check Blackboard regularly and at least once every 24 hours. It is YOUR responsibility to keep updated with class through online Blackboard.

Grading Policies

Attendance   10%
Assignments (Homework and Projects)   40%
Exams (Midterm and Final)   50%

Grading scale: 100% >= A >= 90% > B >= 80% > C >= 70% > D >= 60% > F

Re-grading If you have a question about the grading of any piece of work, you should consult with the instructor of the course within one week of the date that the work was returned. In other words, if you do not pick up your work in a timely fashion, you may forfeit your right to question the grading of your work.

EXAMS AND ASSIGNMENTS

As noted in Section "Learning Objectives/Outcomes for the Course", relevant problems and parts in exams and assignments in this course will be used to assess both course and program SLOs. They are also essential course components that help you learn and reinforce knowledge and skills you are expected to obtain from the course. Logistic information and more detailed requirements about the exams and assignments are described below.

There is one midterm exam during the semester, which will be held in regular lecture time on **Wednesday, October 26th, 2022**. There is also a final exam at the end of the semester at the time and location as scheduled by UTRGV. Both exams will be based on materials covered in lectures and assignments. Please do not plan to travel at the end of semester until the final exam is over.

All students must study the material assigned by the instructor and complete assignments. There will be two types of assignments in this course: homework and projects. Homework assignments are short-answer and essay problems that will help you understand and learn important concepts and methodologies in software engineering while project assignments will help you practice and apply learned concepts and methodologies in SE on actual problems. It is very important for you to do each assignment of both types seriously in order to achieve all the SLOs. In particular, every student is required to complete a substantial portion of all phases of the team project, which include requirement analysis, design, implementation, security engineering, and testing of the software application developed through the project. Homework assignments will be given on a weekly basis throughout the semester and project assignments will be given less frequently. You will submit both types of assignments through provided submission links in Blackboard. Please note the following assignment submission requirements:

- Homework assignments: Typed submissions are recommended although scanned handwritten solutions are acceptable as long as they're written clearly and completely readable. The instructor cannot grade your solutions if they're unreadable. You must write/type clearly your name, student ID number and due date on the first page of your solution.

- Project assignments: You should compress all files in your project submission into one file (i.e., .zip, .rar, etc) and submit the compressed file through the submission link for the project provided in Blackboard.

No more than two assignment submissions that are late or do not meet other submission requirements as described above will be accepted for each student. In addition, no assignment submissions will be accepted regardless if the solutions to those assignments have been already posted or given in class, or if a majority of the submitted solutions have been graded and returned to students. All submitted assignments, homework and project, are subject to oral defenses, where students are required to explain to the instructor key steps and details of the submitted assignment solutions satisfactorily and demonstrate complete understanding of the submitted work. Unsatisfactory assignment defenses might lead to grades of relevant assignment problems or whole assignments voided at the instructor's discretion.

Attendance Students are expected to attend all scheduled Collaborate sessions for lectures and may be dropped from the course for excessive absences. UTRGV's attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics;ss have been provided such an accommodation by Student Accessibility Services (SAS); for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

Attendance of lectures is taken when you attend lectures in person, join and stay through the whole duration of the Collaborate Ultra sessions for lectures, or watch the lecture recordings by the end of the week (1159pm, Saturday) the recordings are available. Attendance counts towards your final grade for this course by default. No excuse other than officially documented cases allowable by the university policies, which are usually only for family or extreme health emergencies, will be accepted for absences. You are not required to attend class on days listed in the university calendar as major religious holy days (although I assume that you practice at most one religion). In addition, you're allowed two absences without excuses or grade penalties. Students have the option to be exempted from attendance of lectures, in which case the percentage weight of attendance will be distributed proportionally among other grading components. To activate this option, however, students must notify the instructor no later than **Friday, September 16th, 2022.**

MAKEUP POLICIES

I generally don't give makeup assignments except officially documented cases allowable by the university policies, which are usually only for family or extreme health emergencies. If you need a makeup work you must notify me ahead of time, or as soon as reasonably possible.

Blackboard Support

If you need assistance with course technology at any time, please contact the Center for Online Learning and Teaching Technology (COLTT).

Campus:	Brownsville	Edinburg
Location:	Casa Bella (BCASA) 613	Education Complex (EEDUC) 2.202
Phone:	956-882-6792	956-665-5327

Toll Free: 1-866-654-4555

Office Hours: Monday - Friday, 7:30 a.m. - 6:00 p.m.

Support Tickets Submit a Support Case via our Ask COLTT Portal

24/7 Blackboard Support

Need Blackboard assistance after hours? You can call our main office numbers, 956-882-6792 or 956-665-5327, to speak with a support representative.

USE OF LECTURE RECORDINGS

*The instructor will record all lectures and make them available to all students in this course. This will enable you to have access to class lectures, group discussions, etc. in the event you have to miss a synchronous class meeting due to illness or other extenuating circumstance. Our use of such technology is governed by the Federal Educational Rights and Privacy Act (FERPA), UTRGV's acceptable-use policy, and UTRGV HOP Policy STU 02-100 Student Conduct and Discipline. A recording of class sessions will be kept and stored by UTRGV, in accordance with FERPA and UTRGV policies. Your instructor will not share the recordings of your class activities outside of course participants, which include your fellow students, teaching assistants, or graduate assistants, and any guest faculty or community-based learning partners with whom we may engage during a class session. **You may not share recordings outside of this course.** Doing so may result in disciplinary action under UTRGV HOP Policy STU 02-100 Student Conduct and Discipline.*

ACADEMIC INTEGRITY

Members of the UTRGV community uphold the Vaquero Honor Code's shared values of honesty, integrity and mutual respect in our interactions and relationships. In this regard, academic integrity is fundamental in our actions, as any act of dishonesty conflicts as much with academic achievement as with the values of honesty and integrity. Violations of academic integrity include, but are not limited to: cheating, plagiarism (including self-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 (Board of Regents Rules and Regulations, STU 02-100, and UTRGV Academic Integrity Guidelines). **All violations of Academic Integrity will be reported to Student Rights and Responsibilities through Vaqueros Report It.**

Specifically for this course, a grade of 0 will be given to the cheated work if a cheating is caught for the first time for the involved student, and an F grade will be given for the whole course to any student who is caught for cheating for the second time. In the latter case the incident will be forwarded to the department chair and beyond if necessary.

Incompletes and Course Withdrawal I will not give incomplete grades except for the rare cases dictated by the University and Department policy. It is the student's responsibility, not the instructor's, to withdraw from the course in a timely manner if doing poorly. No incomplete grades will be granted because of a wrong withdrawal process. Please obtain due dates to withdraw from the course and also please read and be aware of the formal procedures to withdraw. This information is available in the course schedule and the student affairs office.

Special Requirements for Online Students (section 90L)

Online students enrolled in this course (CYBI3331.90L section) are required to be equipped with a steadily working computer with reliable high-speed internet connection to participate all course activities including joining live online lecture sessions or watching lecture recordings, and submitting assignments and exams. In addition, online students are required to take the exams at the same times and dates as face-to-face students, either in the same class rooms or at remote locations while being proctored through online Zoom sessions. In the latter case, each student must be equipped with two web cameras, providing both front and side views of the student taking the exam.

UTRGV Policy Statements

STUDENTS WITH DISABILITIES:

Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive reasonable academic accommodations should contact **Student Accessibility Services (SAS)** for additional information. In order for accommodation requests to be considered for approval, the student must apply using the *mySAS* portal located at www.utrgv.edu/mySAS and is responsible for providing sufficient documentation of the disability to SAS. Students are required to participate in an interactive discussion, or an intake appointment, with SAS staff. Accommodations may be requested at any time but are not retroactive, meaning they are valid once approved by SAS. Please contact SAS early in the semester/module for guidance. Students who experience a broken bone, severe injury, or undergo surgery may also be eligible for temporary accommodations.

Pregnancy, Pregnancy-related, and Parenting Accommodations

Title IX of the Education Amendments of 1972 prohibits sex discrimination, which includes discrimination based on pregnancy, marital status, or parental status. Students seeking accommodations related to pregnancy, pregnancy-related condition, or parenting (reasonably immediate postpartum period) are encouraged to apply to **Student Accessibility Services** using the following link: Pregnancy Accommodations Request Form https://www.utrgv.edu/pregnancy

Student Accessibility Services:
Brownsville Campus: Student Accessibility Services is located in 1.107 in the Music and Learning Center building (BMSLC) and can be contacted by phone at (956) 882-7374 or via email at ability@utrgv.edu.

Edinburg Campus: Student Accessibility Services is located in 108 University Center (EUCTR) and can be contacted by phone at (956) 665-7005 or via email at ability@utrgv.edu.

MANDATORY COURSE EVALUATION PERIOD
Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV asccount (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. Online evaluations will be available on or about:

Fall Module 1 (7 weeks)   October 12 – 18, 2022
Fall Regular Term 2022   November 18 – December 7, 2022
Fall Module 2 (7 weeks)   December 7 – 13, 2022

SEXUAL MISCONDUCT and MANDATORY REPORTING:
In accordance with UT System regulations, your instructor is a "Responsible Employee" for reporting purposes under Title IX regulations and so must report to the Office of Institutional Equity & Diversity (OIED@utrgv.edu) any instance, occurring during a student's time in college, of sexual misconduct, which includes sexual assault, stalking, dating violence, domestic violence, and 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 that is free from sexual misconduct, discrimination, and all forms of violence. If students, faculty, or staff would like confidential assistance, or have questions, they can contact OVAVP (Office for Victim Advocacy & Violence Prevention) at (956) 665-8287, (956) 882-8282, or OVAVP@utrgv.edu.

TENTATIVE Calendar of Activities:

Week of	Topic	Assessments
8/29/2022	Syllabus, Introduction to SE, and SE Process Models (chapters 1 and 2)	Homework 1, Team Project Stage 0, Midterm Exam
9/5/2022	Software Process Agility (Chapter 3)	Homework 2, Midterm Exam
9/12/2022	Recommended Software Process Model and Human Aspects of SE (chapters 4 and 5)	Homework 3 Midterm Exam
9/19/2022	Software Modeling Principles (Chapter 6)	Homework 4 Team Project Stage 1, Midterm Exam
9/26/2022	Software Requirement Modeling (chapters 7 and 8)	Homework 5 Team Project Stage 1, Midterm Exam
10/3/2022	Software Design Concepts and Architectural Design (chapters 9 and 10)	Homework 6 Team Project Stage 2, Midterm Exam
10/10/22	Software Design: Component Level and User Experience (chapters 11 and 12)	Homework 7, Team Project Stage 2, Midterm Exam
10/17/2022	Software Implementation (TBA)	Homework 8, Team Project Stage 3, Final Exam
10/24/2022	Midterm Review	Midterm Exam
10/31/2022	Software Security Engineering (Chapter 18)	Homework 9, Team Project Stage 4, Midterm Exam
11/7/2022	Software Testing – Component Level (Chapter 19)	Homework 10, Team Project Stage 5, Final Exam
11/14/2022	Software Testing – Integration Level (Chapter 20)	Homework 11, Team Project Stage 5, Final Exam
11/21/2022	Software Quality Concepts (Chapter 15)	Homework 12, Team Project Stage 5, Final Exam
11/28/2022	Software Review and Quality Assurance (chapters 16 and 17)	Homework 13, Team Project Stage 5, Final Exam
12/5/2022	Managing Software Projects (chapters 24 and 25)	Homework 14, Team Project Stage 5, Final Exam
12/12/2022	Final Review	Final Exam

IMPORTANT DATES

Please note the following important dates according to the academic calendar of UTRGV, which can be found at https://my.utrgv.edu/home at the bottom of the screen, *prior to login*.

Fall Module 1
August 31   *First day of classes.*
August 31   *Last day to add a class or register for Fall Module I classes.*
October 11   *Last day to drop a class or withdraw.*
October 19   *Final Exams (Term Ends)*
October 21   *Grades Due at 3 p.m.*

Fall Regular Term
August 29   *First day of classes.*
September 4   *Last day to add a class or register for Fall classes.*
September 7   *Last day to submit an honors-by-contract form.*
November 10   *Last day to drop a class or withdraw.*
December 8   *Study Day – NO classes*
December 9-15   *Final Exams*
December 15   *Fall classes end; Official last day of the term*
December 19   *Grades Due at 3 p.m.*

Fall Module 2
October 26   *First day of classes.*
October 26   *Last day to add a class or register for Fall Module 2 classes.*
December 6   *Last day to drop a class or withdraw.*
December 14   *Final Exams (Term Ends)*
December 16   *Grades Due at 3 p.m.*

DEAN OF STUDENTS RESOURCES:

The Dean of Students office assists students when they experience a challenge with an administrative process, unexpected situation such as an illness, accident, or family situation, and aids in resolving complaints. Additionally, the office helps to advocate on behalf of students and inform students about their rights and responsibilities as well as serving as a resource and support for faculty and campus departments.

Vaqueros Report It allows students, staff and faculty a way to report concern about the well-being of a student, seek assistance in resolving a complaint, or report allegations of behaviors contrary to community standards or campus policies.

The Dean of Students can also be reached by emailing dos@utrgv.edu or visiting Virtual Office hours in which a representative is available Monday-Friday 9:00-11:00 a.m. and 1:00-4:00 p.m.

Disclaimer This syllabus does not contain all regulations that relate to students. Contents in the syllabus may be changed by the instructor with advanced notice and/or agreement with the students. Any change will be kept to a minimum.