

Midwestern State University  
Department of Computer Science  
Spring 2020

### Course Information

Course syllabus: Software Engineering

Course number: CMPS 4113.

Course Section: 201.

Class hours: 12:30 pm to 1:50 pm, Tuesday, Thursdays.

Class room: Bolin 312.

### Instructor Information

Instructor's Name: Doctor Eduardo Colmenares.

Instructor's office: Bolin Hall, office 126C.

Instructor's email: [eduardo.colmenares@msutexas.edu](mailto:eduardo.colmenares@msutexas.edu)

### Course Description

Introduces theory and practice for software engineering. Topics include software life cycle, requirements, specification and analysis, software architecture and detailed design, and testing. (Writing intensive, Theory Intensive and Coding Intensive)

### Textbook (required)

Object-Oriented Software Engineering, An Agile Unified Methodology, David C. Kung.  
McGraw-Hill, 2014, ISBN: 978-0-07-3376257.

### Additional References

- [draw.io](http://draw.io)
- [UML diagrams](#)
- [More UML diagrams](#)

### Course Objectives

The purpose of this course is to introduce theories, methods, and tools in software engineering for developing software systems. Students who succeed in this course will:

- Understand basic principles of Software Engineering
- Be able to practice software engineering techniques
- Be able to model with the Unified Modeling Language (UML)
- Enforce the use and adoption of a Multi User Task Management Tool
- Enforce the use and adoption of a Software Version Control tool

### Key Topics

- Software Development Lifecycle
- Requirements Elicitation
- Requirements Analysis
- Architectural Design
- Design Patterns
- Detailed Design
- Introduction to Verification and Validation

## Course Prerequisites

Object-Oriented Programming or Data Structures, Mathematical Statistics for Engineers and Scientists, or equivalent.

## Expected prior knowledge and skills

The successful student should have competent skills in procedural and object-oriented programming, knowledge of data structures and algorithm analysis, and knowledge of statistical and probabilistic mathematics.

## Learning Outcomes & Assessment Methods

Objective	Assessment Methods
Ability to elicit and analyze customer requirements	Exams and Project
Ability to design software systems using modeling techniques	Exams and Project
Understanding of verification and validation techniques	Exams and Project
Professionalism and ethics	Exams and Project
Understanding the use of software engineering tools, templates, and references	Exams and Project

## Evaluation Process

The final grade for this course will be based on participation, projects and exams. A description is provided next

Category	Percentage
Midterm	20%
Final Exam	20%
Attendance	5%
Participation (Quizzes)	5%
Project (4 iterations)	40%
Presentation	10%

## Grading Policy

89 to 100 points is an A.

79 to 88.99 points is a B.

69 to 78.99 points is a C.

59 to 68.99 points is a D.

0 to 58.99 points is an F.

## Late Policy & Deadlines

- Submitted work is due when specified, as specified (format) by the instructor. It is in the student's best interest to keep track of all deadlines.
- The instructor is not required to remind students of ANY date and/or deadline associated with tests, homework, reports, project assignment, etc.

- Assignments submitted to the instructor's email will be considered invalid, even if submitted before the deadline. Assignments MUST be submitted to the corresponding dropbox via D2L.
- Late assignments will not be accepted.
- Very Important: Before you submit any file, take your time and double OR triple check that
  - a. You are uploading the correct and ALL necessary files
  - b. Your work is correct at the best of your abilities
  - c. Failure to fulfill (1) and (2) ON TIME, WILL NOT excuse you from a bad grade.

## **Attendance**

Attendance is a component of the course grade (five percent). Each student will have one unexcused absence. Each student will begin with 100 points for their attendance grade. For each additional unexcused absence, 25 points will be subtracted from the attendance grade. Please let your instructor know if you are going to miss a class for academically related extracurricular activities. If this is the case you must present the sponsoring university member's written justification before your absence occurs. Very early during the class your professor will go over the class roster, if you are not in the classroom when your name is called you will receive an absence. The Attendance grade is 100% under the student's control.

## **Participation:**

- ICA or In Class Activities. These will be Unannounced in nature.
- Quizzes: No pop-up quizzes. All will be announced in class and will be used to assess students understanding of the course material. Quizzes will be administered at the beginning or end of class, to cover the reading assignment for the lesson, homework and/or previous lessons.
- NO MAKE UP participation for ICA, or quizzes are given.

## **Tests**

Tests are comprehensive in nature. No make-up exams will be given, except for the following cases:

1. Surgery, Medical Emergency, Death in the family, Presentation at a Conference, some others as determined by the instructor.
  - a. If you miss an exam, you will receive a permanent zero unless you notify the instructor and demonstrate with the proper official documentation that an emergency that you could not circumvent existed. This documentation must be presented not later than 24 hours after the test.
  - b. Students who miss an exam due to University business should notify the instructor in advance, and present the sponsoring university member's written justification.

If you do miss an exam and you fall in one of the categories above, this means that you have a properly documented case. Your instructor will proceed to assign a temporary grade of zero which will be substituted for your excused test grade (Final Exam). However, this substitution can only be performed once during the semester. Exams are uniquely composed for each term.

## **Final Exam**

There is no make-up final exam. The final exam will take place in our regular classroom. It is the student's responsibility to keep track of the designated date, time. A complete list of all

MSU exams (by time) can be found at the [Final Exam Schedule](#). However, in class we will have further discussion about the current final exam date.

### **Additional Grade Policy**

Once the grades, have been either returned to the students, or published via D2L, the student will have one week to examine them, and check for inconsistencies, errors, etc. After the 1-week window of opportunity all grades will become PERMANENT and WILL NOT change. It is not only the student's responsibility to check the accuracy of his/her grades, but also in his/her best interest to do it.

This rule DOES NOT apply to the final exam because the final is exam triple checked by the instructor before publishing the grade.

### **Important Information about our grading policy**

The instructor reserves the right to adjust the grade distributions for the whole class. What does it mean? It means that grade distributions will not be adjusted on an individual basis.

### **Departmental Cheating Policy and Ethical Conduct**

#### Policy on Academic Honesty

The Department of Computer Science had adopted the following policy related to cheating (academic misconduct). The policy will be applied to all instances of cheating on assignments and exams as determined by the instructor of the course. (See below for link to MSU definitions.)

- 1st instance of cheating in a course: The student will be assigned a non-replaceable grade of zero for the assignment, project or exam. In addition, the student will receive a one letter grade reduction in course.
- 2nd instance of cheating in a course: The student will receive a grade of F in course & immediately be removed from course.
- All instances of cheating will be reported to the Department Chair and, in the case of graduate students, to the Department Graduate Coordinator.

### **Policy on Testing Process**

The Department of Computer Science has adopted the following policy related to testing.

1. All bags, purses, electronics (turned off), books, etc. will be placed in the front of the room during exams, or in an area designated by the instructor.
2. Unless otherwise announced by the instructor, nothing is allowed on the desk but pen/pencil/eraser and test papers.
3. No student is allowed to leave the room during an exam and return. Be prepared to remain in the classroom for the entire duration of the test.

### **Classroom Civility**

All violations of classroom civility will be reported to the Dean of Students.

Students are expected to assist in maintaining a classroom environment that is conducive to learning." In order to ensure that all students gain from time spent in class, students are prohibited from engaging in any form of distraction, e.g. leaving the room for extended periods of time, reading newspapers (or other articles), working on other courses, and using cell-phones or laptops for calls or messages. If you indulge in any such inappropriate behavior

(without explicit consent of the instructor), you will (at the very least) be asked to leave the classroom. [MSU Dean of Students Website](#).

### **Student with Disabilities**

Any student who, because of a disability, may require special arrangements in order to meet the course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from disability support office during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Disability Support Office has been provided. For additional information you may contact the Disability Support Office in Clark Student Center 168 - Phone: (940) 397-4140.

[Disability Support Services](#).

### **Dean of Students**

The Dean of Students can assist in notifying the campus community of student illnesses, immediate family deaths and/or student death. Generally, in cases of student illness or immediate family deaths, the notification to the appropriate campus community members occur when a student is absent from class for four consecutive days with appropriate verification. It is the student's responsibility for missed class assignments and/or course work during their absence. [MSU Dean of Students Website](#).

### **University's Campus Carry**

Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the University's webpage at [Campus Carry](#).

### **Research and Creative Activity Opportunities at MSU**

Enhancing Undergraduate Research Endeavors and Creative Activities (EURECA) is a program that provides opportunities for undergraduates to engage in high-quality research and creative activities with faculty. EURECA provides incentives and funding through a system that supports faculty and students engaged in collaborative research and creative works. For more information contact the Office of Undergraduate Research at (940) 397-6274 or by email at [eureca@mwsu.edu](mailto:eureca@mwsu.edu) or better yet, stop by the UGR office located in the atrium of the Clark Student Center, room 161. Information and resources are also available at [Eureca's website](#)

### **Undergraduate Research Opportunities and Summer Workshop (UGROW)**

Like EURECA, UGROW provides opportunities for students to conduct research with faculty. However, the research occurs in the summer. For five weeks UGROW students experience the authenticity of scientific research as well as research and creative activities in art, music, theater education, business, health and social sciences, English, history, etc. in a highly interdisciplinary environment. Students work on projects of their choice and present their findings at the end of program and the MSU Undergraduate Research and Creative Activity Forum. Faculty members will introduce their research ideas February 13th, 2019, at 5:00 p.m., Comanche Suites, Clark Student Center. A break-out session with individual faculty members will follow. If you have any questions, contact the Office of Undergraduate Research at (940) 397-6274 or by email at [eureca@mwsu.edu](mailto:eureca@mwsu.edu). More information and resources are available at [ugrow's website](#)

## **Council on Undergraduate Research**

To support undergraduate research and creative activities, Northwestern State University holds an enhanced institutional membership with the Council on Undergraduate Research (CUR). This institutional membership includes unlimited memberships for any interested faculty, staff, and students. Students find information on benefits and resources at [the council for undergraduate research website](#) and sign up at no cost at [this website](#).

I would like to personally invite you to become a member of CUR so that you benefit from all the opportunities CUR offers to you.

CUR Undergraduate Resources Webpage contains:

- Research Opportunities;
- Presentation Opportunities;
- Undergraduate Research Journals;
- CUR-Sponsored Student Events;
- The Registry of Undergraduate Researchers;
- And more!

## **ScholarBridge**

Northern State University is excited to announce a new resource designed to address a commonly expressed student need—the creation of a centralized searchable database of faculty research interests and opportunities. We have entered into a partnership with [ScholarBridge](#), is a website designed to help students participate in undergraduate research and creative activities. I strongly encourage you to join ScholarBridge at your earliest convenience.

## **Tentative Agenda**

The instructor reserves the right to add, remove, reorder topics as he considered convenient towards the benefit of the class. By the end of the semester you will have a very good understanding of the following categories and multiple non mentioned subcategories.

- Chapter 1 (Introduction)
- Chapter 4 (Software Requirements Elicitation)
- Chapter 5 (Domain Modeling)
- Chapter 6 (Architectural Design)
- Chapter 7 (Deriving use cases from requirements)
- Chapter 8 (Actor-Systems Interaction Modeling)
- Chapter 9 (Object Oriented Modeling)
- Chapter 10 (Applying Responsibility-Assignment Patterns)
- Chapter 20 (Software Testing)
- Chapter 11(Deriving a Design Class Diagram)
- Chapter 12(User Interface Design)
- Chapter 2 (Software Processing and Methodology)
- A Multi User Task Management Tool
- A Software Version Control tool