Software Engineering

Spring 2020 – CSCE-431-{500-503}
Texas A&M University

Instructor:	Dr. Michael R. Nowak	**Office . . . . . :**	HRBB-427A
Email . . . . :	m.n@tamu.edu	**Office Hours:**	Please see
Phone . . . . :	+1 (313) 444-4467	the website.	

Meeting Times:

Lectures		
CSCE-431-{500, 501}	TR 09:35-10:50	HRBB-124
CSCE-431-{502, 503}	TR 08:00-09:15	HRBB-113
Labs		
CSCE-431-500	TR 11:35-12:25	ZACH-590
CSCE-431-501	TR 12:45-13:35	ZACH-590
CSCE-431-502	F 09:10-10:50	ZACH-584
CSCE-431-503	F 12:40-14:20	ZACH-590

Important Dates:

Comprehensive exam . . . . . : Tue, 14 Apr 2020
Project presentation (CSCE-431-{500, 501}) . . . . . : Thu, 30 Apr 2020 12:30-14:30
Project presentation (CSCE-431-{502, 503}) . . . . . : Thu, 01 May 2020 13:00-15:00

Teaching Assistant(s): TBA

Peer Teachers: See engineering.tamu.edu/cse/academics/peer-teachers/current-peer-teachers or go to HRBB-129, Peer Teacher Central. In addition to the peer teacher(s) for your section, you may also consult other peer teachers if they are not busy.

Catalog Description: Application of engineering approach to computer software design and development; life cycle models, software requirements and specification; conceptual model design; detailed design; validation and verification; design quality assurance; software design/development environments and project management.

Prerequisites: Programming Studio (CSCE 315) or approval of instructor.

Required Textbooks:

- Fox, A., Patterson, D. A., & Joseph, S. (2013). Engineering software as a service: an agile approach using cloud computing. Strawberry Canyon LLC. saasbook.info.
- Carnegie, D. (1999). How to win friends & influence people. Simon & Schuster.

Optional Textbooks:

- Pressman, R. & Maxim, B. (2019). Software Engineering: A Practitioner's Approach (9th Edition). McGraw-Hill.
- Hunt, A. & Thomas D. (2019). The Pragmatic Programmer (2nd Edition). Addison-Wesley Professional.

Topics and Goals:

- software lifecycle and software processes
- requirements elicitation and specification
- modeling software
- software design at various levels
- coding practices, interfaces, modularity, contracts
- verification and validation, testing
- managing a code base (version control, organizing releases, etc.)
- testing (unit and regression testing)
- practical designs (typical software architectures, design patterns, API designs)
- effort estimation

Students will

1. gain an understanding of the difficulties and risks of software projects, and knowledge of the commonly applied techniques and methods to mitigate those risks and to increase the likelihood of success of software projects.
2. learn new and increase existing skills related to practical software construction.
3. gain familiarity with the current research problems in software engineering.

Assignments & Grading:

Course grades will be assigned according to this scale:

% Total	>= 90.00	89.99 – 80.00	79.99 – 70.00	69.99 – 60.00	<= 59.99
Letter Grade:	A	B	C	D	F

∗ *The fractional aspect of our final weighted average calculated for you for this course will be truncated.*

Method of evaluation:

Project (team) 50%
Comprehensive exam 25%
Homework assignments 15%
Attendance and class participation 10%

Project (team)

- Project components (i.e., iterations, peer evaluations, the final report, etc.) will not be accepted after their due date.
- Failing to submit any component on time will result in a zero recorded for that component.
- All reports must be submitted as a PDF document generated using LaTeX. In addition to the PDF document, you must submit the corresponding TeX files. Resources for LaTeX can be found on the course website and on the Internet.

Comprehensive exam

- A single comprehensive exam will be given this semester.

Homework assignments

- Homework assignments will be a combination of programming assignments and written-responses to posed questions.
- Homework assignments will not be accepted after their due date.
- These assignments are to be completed individually.
- Failing to submit a homework on time will result in a zero recorded for that component.
- No collaboration is allowed on the homework assignments; if you need help, you can talk to the instructor or TA.

Attendance and class participation

- Each attendance/participation item (pop quizzes, lab quizzes, etc.) will be given a best value, essentially the "weight" of that assignment.
- Your overall grade for attendance/participation will be the sum of the individual grades over 80% the sum of the base grades; the maximum score you can receive for this category will thus be 80% the sum of the base grades.
- There will be no make ups for these items, and a zero will be recorded for all that are missing. In order to accommodate illness and other potential excused absences, we will calculate your score out of 80% the sum of the base grade.
- If you have excused absences that have prompted you to miss more than 20% of the total sum of the base grades, we will address what to do at that point; though you will be required to produce all documentation for all excused absences at that time.

Teams: Teams will be established during the second week of class. You will be responsible for forming a team comprised of 5-6 individuals (including yourself), and will work with this group throughout the semester on the project. If issues arise within your group, please contact the instructor or the teaching assistant assigned to your lab section at their onset; this will allow us to resolve the issues promptly through appropriate intervention.

Course Resources:

Course website

michaelrnowak.com/teach/sp20.csce431

The course website will be the go-to resource for all course material.

E-campus

e-campus.tamu.edu

We will be using this environment primarily for grade dissemination; some assignments may also be submitted here.

Piazza

piazza.com/class/k4rdrwsyr2k449

All questions will be fielded through Piazza. The primary benefit of using Piazza is that, for many questions, everyone can see the answer and other students can answer as well. We will endorse good student responses. You will need to register (through the link above) using your tamu email.

Gradescope

gradescope.com

You will submit some of the course assignments to Gradescope; we will create accounts for you, and you will receive email instructions from us on connecting.

Course Policy:

- All assignments will be posted on the course website; it is your responsibility to ensure that you complete these assignments on time.
- Students are responsible for all missed work, regardless of the reason for absence.
- Regular attendance in both the lecture and lab sections is essential and expected (ref: student-rules.tamu.edu/rule07).
- Missed exams will be rescheduled without penalty for an excused absence, or with a 40% penalty if the absence is not excused. In cases where the advance notification of absence is not feasible (e.g., accident, emergency, etc.) the student must provide information by the end of the second working day after the absence.
  - In accordance with Student Rule 7, Attendance, specifically section 7.1.6-Illness or Injury that is too severe or contagious for the student to attend class, I require documentation in the form of a medical confirmation note from the *medical doctor (M.D. or D.O.)* overseeing your care.
  - Kindly note that section 7.1.6.2 specifies that it is within the purview of, and at the sole discretion of, the instructor whether an absence is excused for short-term illness or injury.
- Regrade requests and/or challenges must be submitted within one week from the date that the respective student work is handed back (electronically released or otherwise).
- We reserve the right to audit the grades for any assignments submitted to this course; during the audit process, we can decrease or increase your score. Examples when this might occur include (but are not limited to): (1) a mistake made by the auto-grader; (2) student circumvention of a test case by some means; (3) student failing to follow an assignment requirement.
- You can be given weekly attendance/participation item(s) (pop quizzes, lab quizzes, etc. based on assigned readings and/or previous lecture content).
- There will be no make-ups for missed attendance/participation items; late assignments will never be accepted.
- Nearly perfect solutions may be considered as an official solution of that homework and will be uploaded to the course website, and the student gets a bonus mark.
- You must write up your homework independently. You are not allowed to search the Internet for solutions; we will use a software plagiarism detector to ensure academic integrity.
- If solutions have been discussed or handed out for a respective assignment, submission of that assignment will not be accepted for grading.
- All exams are closed book, and you are not allowed to use any electronic devices such as calculators, mobiles, tablets, etc.
- In class/lab, be courteous when using mobile devices. Make sure your cell phone is turned fully off, or completely silent.
- If you must use a laptop in class/lab, then turn off the sound and do type quietly on your laptop keyboards.

- The policy outlined in the 'Assignments & Grading', 'Copyright statement ', and 'Recording statement ' sections of this document are acknowledged and affirmed as course policy by this statement.

Copyright statement: The course materials used in this course are copyrighted. All material prepared for this class is copyrighted; this includes the syllabus, lecture slides and notes, exams, homeworks, etc. Given that all course material is a copyrighted work, you do not have the rights to copy or distribute the course material, unless the author expressly grants such permission.

Recording statement: Students may not record audio or video of any course activity unless the student has an approved accommodation from Disability Services permitting the recording of lectures and/or laboratory sessions. This accommodation letter must be presented to the instructor in advance of any recording being done. Students who are allowed to record classes are not permitted to redistribute audio or video recordings of statements or comments from the course to other individuals without the express permission of the faculty member and of any students who are recorded.

Academic Integrity:

Academic Dishonesty

Academic dishonesty will not be tolerated. For homework assignments, each student is expected to write his or her own programs from beginning to end.

If it is determined to the satisfaction of the instructor that any student's submission (unless it is a group/team submission for a group/team activity) is not the product of the individual, all students involved are subject to the Texas A&M University Honor System Rules, including a course grade of F* (with the '*' denoting academic dishonesty). Additional penalties as determined by the Aggie Honor System Office may be applied if this is not the first offense.

It is imperative that each student clearly understand those rules and the severe consequences that can result from the adjudication of an Honor Code Violation.

In particular, every student should understand that complicity – helping or attempting to help another student commit an act of academic dishonesty – also constitutes academic dishonesty and carries the same punishment as cheating.

In other words, **if you provide your solution to another student, even if that student does not turn it in for credit, you have committed an act of academic dishonesty and will both be subject to the same consequences, such as a course grade of F***.

Plagiarism

Plagiarism is the presentation of the work of someone else without giving him or her due credit. You can copy the words of others as long as you identify them as such. In fact, documented use of program libraries is encouraged. Submitted work will be examined for plagiarism using computer software designed for that purpose. Examinations are meant to measure the knowledge or skill of each individual, so giving or receiving unauthorized assistance during tests and quizzes is cheating. It is assumed that college students know what is honest and what is not.

Aggie Honor Code

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code: *"An Aggie does not lie, cheat, or steal or tolerate those who do."*. To accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System.

By submitting anything to this course, electronically or otherwise, you are asserting the following: "On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work. In particular, I certify that I have listed above all the sources that I consulted regarding this assignment, and that I have not received or given any assistance that is contrary to the letter or the spirit of the collaboration guidelines for this assignment."

For additional information about the Honor Code, please visit aggiehonor.tamu.edu.

Americans with Disabilities Act Statement: The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit disability.tamu.edu.