MERCY COLLEGE – SHANGHAI JIAN QIAO UNIVERSITY
Department of Mathematics and Computer Sciences – Mercy College

CISC 575: Software Assurance

September-December 2022

Instructor: Dr. Narasim Banavara
Zoom Instruction
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Course Description (as listed in the catalog):
Students will learn software assurance principles, practices, tools and methods required throughout the Software Development Life Cycle process. Students will explore common programming errors in software development, evaluate common software testing tools, and develop an understanding of software quality assurance and approaches to ensure quality software. 3 sem. hrs., 3 crs.

Meetings:
September 19, 2022 to December 9, 2022 (12 weeks)
B19-1: Mondays 10:05 am to 11:35 am and Wednesdays 8:20 am to 9:50 am
B19-2: Mondays 8:20 am to 9:50 am and Wednesdays 10:05 am to 11:35 am

Zoom Link:
Join Zoom Meeting
https://mercy.zoom.us/j/95047102145?pwd=UVI2Zjd6VTV4b2w1KzdvV1ZhdW5kdz09

Meeting ID: 950 4710 2145
Passcode: 689838

Program Student Learning Outcomes (applicable to this course):
At the completion of the MS in CS program, students should be able to:

PLO4. design, develop and test advanced and complex programs

Course Student Learning Outcomes:
At the completion of the course, students should be able to:

- identify and evaluate software design practices for creating secure software
- identify, evaluate and demonstrate how software assurance tools are used to manage secure software
- detect and fix common programming errors affecting security in developed software
- solve scenarios involving ethical dilemmas in software development and assurance

Program Student Learning Outcome	Assessment Artifact(s)
design, develop and test advanced and complex programs	Software assurance plan and report; design document; testing plan

Readings:
Laporte, Claude and April, Alain. 2018. *Software Quality Assurance.* IEEE Computer Society. Wiley.
All chapter readings, research papers, and reading materials will be given out as needed.

Format of the Course:
The class will primarily be a lecture- and discussion-oriented course. Students are required to come prepared to discuss relevant chapter material, other related articles, and project material. Attendance and discussions will account for 10% of the final grade.

Assignments:
Homework assignments will be assigned regularly in the course. Assignments will account for 20% of the final grade.

Exam:
We will have one (1) exam in the term. The exam will be 30% of the final grade. All students are expected to do the exam on the given date. There is no make-up exam.

Software Assurance Project:
There will be one software development and software assurance project in the semester. Students will work in teams to conduct this project. The project guidelines will be given separately. The project will account for 40% of the final grade.

Logging on to Blackboard:
Students are expected to log on to Blackboard periodically, at least once a day, to check on announcements, discussion postings and new course material.

Evaluation:
One Exam – 30%   Project – 40%
Discussions – 10%   Assignments – 20%

Topics (tentative):

Topic	Readings
Software Quality Fundamentals	Ch. 1
Quality Culture	Ch. 2
Software Quality Requirements	Ch. 3
Software Engineering Standards and Models	Ch. 4

Reviews	Ch. 5
Software Audits	Ch. 6
Verification and Validation	Ch. 7
Risk Management	Ch. 11
Software Quality Assurance Plan	Ch. 13
Project Presentations	
Final Exam	

Grading and Assessment: (changes are subject to approval by the Department Chairperson)

Letter Grade	Numerical Range	Quality Point Value	Description
A	93-100	4.00	Excellent
A-	90-92	3.67	Good
B+	87-89	3.33	Good
B	83-86	3.00	Good
B-	80-82	2.67	Passing but Unsatisfactory
C+	77-79	2.33	Passing but Unsatisfactory
C	73-76	2.00	Passing but Unsatisfactory
F	0-59	0.00	Failure
FW	0-59	0.00	Failure due to unofficial withdrawal

Academic Integrity Policy

Academic integrity is the pursuit of scholarly activity in an honest, truthful and responsible manner. Students are required, to be honest, and ethical in carrying out all aspects of their academic work and responsibilities.

Dishonest acts in a student's academic pursuits will not be tolerated. Academic dishonesty undermines the College's educational mission as well as the student's personal and intellectual growth. In cases where academic dishonesty is uncovered, the College imposes sanctions that range from failure of an assignment to suspension and expulsion from the College, depending on the severity and reoccurrence of the case(s).

Examples of academic dishonesty include, but are not limited to, cheating, plagiarism, obtaining an unfair advantage, and falsification of records and official documents.

Cheating is the unauthorized use or attempted use of material, information, notes, study aids, devices, or communication during an academic exercise. Examples of cheating include, but are not limited to:

- Copying from another student during an examination or allowing another to copy your work
- Providing assistance to acts of academic misconduct
- Unauthorized collaboration on a take-home assignment or examination
- Using notes during a closed book examination
- Submitting another's work as your own
- Unauthorized use during an examination of any electronic device, such as cell phones, computers, or internet access to retrieve or send information
- Allowing others to research or write assigned papers for you or to complete your assigned projects

Plagiarism is the act of presenting another person's idea, research or writings as your own. Examples of plagiarism include, but are not limited to:
- Copying another person's actual words or images without the use of quotation marks and citations attributing the words to their source
- Presenting another person's ideas or theories in your own words without acknowledging the source
- Engaging in plagiarism, via the Internet or other web-based or electronic sources, which includes (but is not limited to) downloading term papers or other assignments and then submitting that work as one's own, or copying or extracting information and then pasting that information into an assignment without citing the source, or without providing proper attribution.

Obtaining unfair advantage is any action taken by a student that gives that student an unfair advantage, or through which the student attempts to gain an unfair advantage in his/her academic work over another student. Examples of obtaining an unfair advantage include, but are not limited to:
- Gaining advance access to examination materials by stealing or reproducing those materials
- Retaining or using examination materials which clearly indicate the need to return such materials at the end of the examination
- Intentionally obstructing or interfering with another student's work

Falsification of Records and Official Documents include, but are not limited to, acts of forging authorized signatures or falsifying information on an official academic record.

Consequences for Policy Violation
A student who is found to be dishonest in submission of his or her academic assignments or other work, or in carrying out his or her academic responsibilities may, at minimum, receive a zero for the submitted assignment, may receive a failing grade for the course, or may be subject to further suspension or expulsion from the College depending on the severity of the offense(s). Regardless, all incidents of academic dishonesty will be reported to the Academic Unit Head and School Dean and may be retained by the College in the student's records.

Reporting

A faculty member who suspects that a student has committed a violation of the Academic Integrity Policy shall review with the student the facts and circumstances of the suspected violation whenever feasible. Thereafter, a faculty member who concludes that there has been an incident of academic dishonesty sufficient to affect the student's final course grade shall report such incident on the Student Violation of the Academic Integrity Policy Form (located on Mercy Connect under the faculty tab) and submit it to the Dean of the appropriate School. The Dean shall update the Student Violation of the Academic Integrity Policy Form after a suspected incident has been resolved to reflect that resolution. Unless the resolution exonerates the student, the Student Violation of the Academic Integrity Policy Form shall be placed in a confidential academic integrity file created for the purposes of identifying repeat violations, gathering data, and assessing and reviewing policies.

Academic Sanctions

If a faculty member believes that the appropriate sanction is academic in nature (e.g., a reduced grade) and the student does not contest either his/her guilt or the particular reduced grade that the faculty member has chosen, then the student shall be given the reduced grade, unless the Dean decides to seek a disciplinary sanction. The reduced grade may apply to the particular assignment where the violation occurred or to the course grade, at the faculty member's discretion. A reduced grade may be an "F", or another grade that is lower than the grade that the student would have earned but for the violation. If a faculty member determines that a student has committed an act of cheating or plagiarism, and the student withdraws from the course, that student will receive an "FW" for the course regardless of the time of withdrawal. The faculty member shall inform the Dean of the resolution via email and the Dean shall update the applicable Student Violation of the Academic Integrity Policy Form to reflect that resolution.

In a case where a student admits to the alleged academic dishonesty but contests the academic sanction imposed by the faculty member, or in a case where a student denies the academic dishonesty, the student may appeal to the College's Academic Appeals Committee.

Judicial Sanctions

In a case where the allegation of cheating or plagiarism is severe, or where the student has a history of violations of the Academic Integrity Policy which conduct warrants suspension or expulsion from the College, the school Dean shall impose a sanction in addition to or in lieu of academic sanctions, as he/she deems is warranted under the circumstances. If the student contests the judicial sanction imposed, he/she may appeal to the Undergraduate Academic Appeals Committee.

Appeals

Appeals to the Undergraduate Academic Appeals Committee shall be made within 7 business days of receipt of notice of the academic or judicial sanction. All parties will be permitted to participate and are permitted to submit any documentation they believe is necessary including written statements and documentary evidence. The Undergradate Academic Appeals Committee shall convene within two weeks of the filing of the appeal submission. The Undergraduate

Academic Appeals Committee shall issue a written decision of its finding within 7 business days of convening and shall send copies of its decision to the accused student, the faculty member and the appropriate Dean for archiving in the student's confidential academic integrity file.

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