

CS 425 Midterm Exam Review

Tuesday, October 17, 2024

Open book (“take home”), timed, online, individual, synchronous
(everybody starts at the same time), type of exam

CS 425 Midterm Exam, Tuesday, October 22nd

- You have **60 minutes** to take the exam. This exam is **open book** and should be taken **online, electronically** through web campus (Canvas). Please note the following:
 - The exam **will start for all exactly at 10:30 am on Tuesday October 22, 2024 (except if approved otherwise by the UNR Disability Research Center).**
 - You may start few minutes late (like max 10 minutes without losing exam time) **but the exam will be closed automatically on Canvas at 11:45 am or after 60 minutes from your start, whichever comes first.**
 - During the test there will be a **Zoom link available to you to report only special, unexpected situations (but not to ask questions), however you do not have to log on Zoom for the exam.** In fact, **try to not use Zoom during the test – instead, login in on Canvas to take the midterm exam there.**
 - Please take the exam from home or any other quiet environment (e.g., a library room). The instructors will not be present in WPEB 130 during the test -- they will monitor the exam online.

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[continued]

- We will make this mid-term as clear and straightforward as possible. We would not answer any questions about it during the exam as this would be unfair or disruptive to other students. If strictly needed, make a reasonable assumption about the question you have doubts about and state it in your answer/comments to submission.
- Please note that even though it is open book, if you do not study ahead of the exam it will be difficult to answer all the questions within the 60-minute time frame. So, please study for the test before the exam. During the test make sure you pace yourself well, to allow you to answer all the questions.

Other Information About the Exam

- You will only be able to answer 1 question at a time and you will NOT be able to go back to a previous question
- Questions will be shuffled so the exams will have similar but somewhat different contents
- You need 50% or higher in exams (midterm plus final) to pass the class
- Midterm is 13% of your course grade; the final will likely be 22%
- While the exam is open book, you cannot consult with anyone else while taking the exam. The exam is strictly individual and it would be cheating if you communicate with anyone during the exam.
- When the teaching team will grade the test, the essay answers will be cross-checked across the class. **Please do not cheat in any way, shape or form!** Take pride on getting a grade based solely on your own work and effort!

Midterm Questions

- Two types
 - **Multiple Choice Questions (MCQs)**
 - 20 to 25 questions
 - For each MCQ there will be 4 possible answers, with only one correct. You will be able/allowed to select a single answer
 - **Essay or Short Answer Questions (EQs)**
 - 2 or 3 Essay Questions
 - You will need to elaborate your written answers on each of them
 - **Use as much as possible your own words** (do not “cut and paste” from the book or any other source). You will be deducted points if your text is too close to the text in the book.

Study Required for the Midterm Exam

- **Chapters required** from the textbook Ian Sommerville, Software Engineering, **10th Edition**, 2015.
 - Chapter 1 INTRODUCTION
 - Chapter 2 SOFTWARE PROCESSES
 - Chapter 3 AGILE SOFTWARE DEVELOPMENT
 - Chapter 4 REQUIREMENTS ENGINEERING
 - Chapter 5 SYSTEM MODELING
- Sections **1.3 Case Studies; 2.4 Process Improvement; and 5.5 Model-Driven Architecture** are **not required**. Similarly, subsections 3.4.3 Agile Methods for Large Systems and 3.4.4 Agile Methods across Organizations are **NOT** required.
- In addition, you should know well your **Project Concept (P1)**; related essay questions (EQs) will most likely be included in the midterm test.

Sample questions - MCQs

1. Which of the following *process models* is best suited for the development of systems whose requirements are well known and less likely to change?

- a. Integration and configuration (reuse)
- b. Incremental development
- c. Waterfall
- d. Incremental delivery

Sample questions - MCQs

2. Which of the following is a not a *metric for non-functional requirements*

- a. Mbytes
- b. Number of UML use cases
- c. Training time
- d. Number of target operating systems

Sample questions - MCQs

3. Which of the following *group* consists of 3 *principles or practices in Extreme Programming (XP)*?
- a. On site customer, small releases, scrum meetings
 - b. Refactoring, test-first development, extended timelines
 - c. Comprehensive documentation, sustainable pace, pair programming
 - d. Pair programming, sustainable pace, collective ownership

Sample questions - MCQs

4. Which of the following are shown in *class diagrams*?
- a. Classes
 - b. Generalization relationships
 - c. Aggregation relationships
 - d. All of the above

Sample questions - EQs

5. Describe the *waterfall software development process model*. Also, indicate its advantages, disadvantages, and applicability.
6. Briefly explain what is meant by *software prototyping* and describe its benefits. Also, indicate in what phases of the software process it can be used.
7. Briefly describe your team's *project topic* in CS 425, indicate its main goals, and explain why it is worthwhile pursuing. Consider its development in a professional environment (by a software company) and discuss how useful would be to apply the *reuse-oriented software engineering process* to its development.