

What to expect on the Midterm Exam

- The Midterm Exam **WILL** cover materials from the first seven lectures **AND** from the required readings for those Lectures:
 - Lecture #1. Resilience Concepts in Various Domains
 - Lecture #2. Resilient System Concepts & General Approaches for Hardware, Software, and Networks
 - Lecture #3. Resilient System-of-Systems Concepts and General Approaches
 - Lecture #4. Affordably Adaptable and Effective Systems
 - Lecture #5. Complexities Posed by Adaptable Systems
 - Lecture #6. Model-based Approach for Engineering Resilient System-of-Systems
 - Lecture #7. Flexible Contracts Approach to System Resiliency
- The Midterm Exam **WILL NOT** cover any of the Domain Case Studies, nor their readings

What to expect on the Midterm Exam

- The on-line exam will be open book over a 4 day period
 - Once you start the exam, you will have 2 hours and 40 minutes to finish it– there is no option for pausing and resuming it!
 - Make sure that you have a good Internet connection and that you save your exam answers frequently!
 - You are **not** allowed to collaborate on the exams
 - You are **not** allowed to copy-and-paste from the readings, publications, any other Internet sources, or the course materials
 - All exam answers must be ***in your own words***
 - The default punishment for unauthorized collaboration, cheating, and plagiarism on the exam is a grade of F for the course
- The exam will be available any time between **Saturday October 13, 2018 at 6:00 AM Pacific Time and Tuesday October 16, 2018 at Midnight Pacific Time**
 - It will be available under the “My Tools” then “Quizzes” link in D2L
 - Do not wait until the last minute to start the exam!

What to expect on the Midterm Exam

- The exam will consist of multiple questions that will test students' knowledge about the fundamentals of Engineered Resilient Systems and System-of-Systems
- Straightforward to answer!
 - About one paragraph of text for each answer
 - Answers must be typed in to the online exam
 - ALL exam answers must be in your own words!
 - Exam questions answered with a significant amount of text in quotation marks, even with proper citation, will reduce your score
- Questions draw from a combination of:
 - class lectures
 - class lecture slides
 - assigned readings

What to expect on the Midterm Exam

- When answering the exam remember that this is a *Systems Architecting & Engineering* class, not a system design class!
- Your answers must demonstrate that:
 - (1) you understand the question
 - (2) you understand the appropriate **Resilience Engineering** concepts as covered in the class
 - (3) you can apply the appropriate Resilience Engineering concepts to answer the questions *in your own words*
- The ***content*** and ***clarity*** of your answers are ***far more important*** than the length of your answers!

Example: Question & Complete Answer

QUESTION: How could a Technology Disruption potentially interfere with Expected Emergent Behavior? Give an Example and Characterize completely.

A team of people is working on a time-critical project. The technical Team Leader experiences an breakdown while driving to the meeting due to accidentally running over a nail which punctured a tire on their automobile. This disturbing low-probability random event, although from a known cause (as evident from the nail in the sidewall of one tire), is an unexpected one-time event external to the team environment. With the absence of the Team Leader and their critical contribution of unique hands-on technical skills, the remaining team is unable to successfully reorganize and complete their task on time (temporary failure to achieve Principle of Emergence #4: Emergent Behavior is Self-Organized.)

What to expect on the Midterm Exam

- The Maximum Possible Score is 40 points
 - 2 or 3 points per question
 - You may not have enough time to completely answer every question to your satisfaction—consider prioritizing your choice of questions to answer, and the depth of your answers
 - Partial answers receive partial credit, which is better than NO credit!
- Terminology in the Questions
 - The term “briefly describe” means to answer each question in few (4-5) sentences of text (no graphics or figures)
 - The term “completely” means all components in that subject, as per the Lectures
 - The term “operational domain of your choice” means aerospace, military, health care, energy management, automotive or rail or sea transportation, disaster response, logistics supply chain, or similar major aspects of a national (or even global) economy

Questions regarding the Midterm Exam?

- If you have any question regarding the exam **BEFORE** the exam period:
 - DO NOT call or e-mail questions!
 - Please use the Midterm Exam Discussion Board **BEFORE** the exam period
 - Remember that all questions and all answers will be visible to all students, so please be sure to review the Midterm Discussion Board before starting the exam!
- If you have any questions regarding the exam **DURING** the exam period:
 - DO NOT call or e-mail questions!
 - Please use the Midterm Exam Discussion Board
 - We will attempt to answer questions in a timely manner but you will likely **NOT** receive a quick answer!