CMSE 491 Selected Topics in Software Engineering I

Department: Computer Engineering

Instructor Information

Name: Assoc. Prof. Dr. Zeki Bayram
E-mail: zeki.bayram@emu.edu.tr
Office: CMPE 216
Office Tel: 0 392 630 2840

Assistant Information
Name: TBA
E-mail: TBA
Office: TBA
Office Tel: TBA

Meeting times and places
Monday 8:30, Friday 14:30
Thursday 16:30 Tutorial

Program Name: Software Engineering	**Program Code:** 29

Course Code CMSE 491	**Credits** 4	**Year/Semester** 2021-2022 Fall

☐ Required Course ☒ Elective Course

Prerequisite(s):
None.

Catalog Description
This course is to be arranged as seminar course. Students and faculty members participate in studying recent articles published on the research interests of the department. (4'th year standing) (Pre-requisite: none)

Aims & Objectives
This course aims to provide the student with an understanding of formal software specification using the Z language.

Course Web Page
https://staff.emu.edu.tr/zekibayram/en/teaching/cmse491

Textbook:
The essence of Z, by Ed Curry. Prentice Hall, 1999.

Recommended books:
Using Z Specification, Refinement, and Proof, by Jim Woodcock (Author), J. C. P. Woodcock (Contributor), Jim Davies (Contributor). Prentice Hall, 1996. Available as pdf.

Formal Specification and Documentation using Z: A Case Study Approach, by Jonathan Bowen. Intl Thomson Computer, 1996.

The Z Notation: A Reference Manual. Second Edition, by J. M. Spivey, Prentice Hall, 1992. Also J. M. Spivey, 1998, available as pdf.

Indicative Basic Reading List:
—

Topics Covered

- Introduction
- Logic
- Sets and types
- The structure of a Z specification
- Specification: the student badminton club
- Relations
- Functions
- Specification: video shop
- Sequences
- Specification: project allocation
- Specification (outline): timetabling system
- Specification (outline): Genealogical database

Lab Schedule
None

Course Learning Outcomes:

- List reasons for formal specification
- Determine the truth of propositional formulas
- Use first order logic statements in preconditions and postconditions
- Use set operations on sets
- Define system state in Z
- Define operations in Z
- Use relations in Z specifications
- Use functions in Z specifications
- Use sequences in Z specifications

	Method	No	Percentage
Assessment	Midterm Exam	1	40 %
	Final Examination (comprehensive)	1	50 %
	Assignment	1	10
	Attendance	-	0 %
	Tutorials		0 %

Policy on makeups: For eligibility to take a makeup exam, the student should bring a doctor's report within 3 working days of the missed exam.

Policy on the NG grade: If you miss two exams with no valid excuse, you will be given the NG grade.

Policy on missed tutorials: Tutorials are optional.

Relationship of the course to Program Outcomes

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

Prepared by: Assoc. Prof. Dr. Zeki Bayram	30/09/2021