FIZ 434E Microprocessors CRN 20349

2019-2020 Spring

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Lecture   **:** *Monday 13:30 – 15:30 (FEB Physics Seminar Room)*
Laboratory **:** *Monday 15:30 – 17:30 (FEB Microprocessors Lab.)*
Office Hours **:** *Monday 15:30 – 16:30*
Textbook:

Beginners Introduction to the Assembly Language of ATMEL-AVR-Microprocessors

Atmel AVR Microcontroller Primer: Programming and Interfacing, ISBN: 9781598295429
Atmel AVR (ATtiny2313) Programlama, Abdurrahman Taşbaşı ISBN 9789758834242
AVR An Introductory Course, John Morton, ISBN: 0 7506 56352
Mikroişlemciler, mikrobilgisayarlar, Eşref Adalı, Birsen Yayınevi

Course Outline

Week		Topic
1	10 February 2020	Microcontroller Basics and Programming Concepts
2	17 February 2020	Microcontroller Instruction Sets and Assembler
3	24 February 2020	Hardware and Software setup and Assembler Coding - Memory and Registers
4	2 March 2020	Assembler Coding (2) – Stack and Sub Functions, I/O Ports
5	9 March 2020	Assembler Coding (3) – Bit Manipulating, Loop Cycle Calculation and Timer Execution
6	6 April 2020	I/O and 1602 LCD
7	13 April 2020	Sequence control and Step Motor
8	20 April 2020	Timer and PWM (Pulse width Modulation) and Servo Motor
9	27 April 2020	Serial Communication (USART)
10	4 May 2020	Serial Communication (SPI, I2C, 1-wire)
11	11 May 2020	Advanced coding – Mixing C and asm
12	18 May 2020	Introduction to PID Control

~~**Quizzes:** Biweekly during class or laboratory session.~~
~~**Assignments:** Assignments can be given before or after the lab to consolidate the experiments.~~
~~**Laboratory:** Consist of 10 project which may be varied or extended during the laboratory session.~~

Dates
~~1. Midterm   : March 16, 2020~~
~~2. Midterm   : May 4, 2020~~
~~Final Exam   : May 28 –June 14, 2020 (Exact date and time will be announced by the Student Administration Office.)~~

Grading:
~~Midterms   : 20% + 20%~~
~~Laboratory   : 20%~~
~~Quizzes   : 10%~~
Final Exam   : 100%
~~In order to take the final exam, you have to take at least a total 14.0 points over 40.0 from the midterms.~~

Academic Integrity

Students who cheat during an exam or on laboratory session will receive a grade of FF in the course.