

Course Name

MKT 4828 - Process Control

Course and Office Hours

Class Hours: Monday 16:00-18:50 Classroom: A-211 Office Hours: Mon. 15:00-16:00

InstructorDr. Salih Obut, (Office E2-213), sobut@yildiz.edu.tr, <http://avesis.yildiz.edu.tr/sobut>**Teaching Assistant**Res. Assist. Talha Burak Akça, tbakca@yildiz.edu.tr**Attendance**

Minimum 70% of class attendance is required. Otherwise, student will take F0.

Course Objectives

The aim of the course is to familiarize the students about the dynamics, control and instrumentation of the processes employed in industry.

Course Content

Introduction to process control, Piping and Instrumentation Diagrams (P&ID), concepts of automatic control and digital control systems, single and multi-variable process control, common process control elements: mixing tank, heat exchanger, distillation columns, frequency domain analysis, PID control systems, and illustration process control applications.

Recommended or Required ReadingSmith, Carlos A. / Corripio, Armando B. Principles and Practices of Automatic Process Control 3rd Edition (or 2nd Edition) August 2005 580 Pages, Hardcover ISBN 978-0-471-43190-9 - John Wiley**Grading Policy**

The evaluation will be based on the Activities listed below.

| ACTIVITIES | PERCENTAGES |
|---------------------------|-------------|
| Mid-term (face to face) | 40% |
| Homework and/or project | 20% |
| Final Exam (face to face) | 40% |

Additional ToolsMATLAB/Simulink (campus license available) **may** be used as an additional tool during the course. Students should have basic proficiency with MATLAB**Course Slides and Materials****All course materials, assignments will be accessed via <https://online.yildiz.edu.tr> infrastructure. Announcements will be available on <http://avesis.yildiz.edu.tr/sobut/dokumanlar>.**It is the responsibility of students registered for the course to follow the announcement page for course-related announcements.**

Calendar**

| Week | Date | Subjects | Related Preparation from textbook |
|------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| 1 | 2024/02/19 | Introduction and P&ID diagrams | Ch. 01 |
| 2 | 2024/02/26 | Mathematical tools for control systems analysis | Ch. 02 |
| 3 | 2024/03/04 | Sensors, transmitters, and control valves | Appendix C |
| 4 | 2024/03/11 | Basic components of control systems | Ch. 05 |
| 5 | 2024/03/18 | Design of single-loop feedback control systems | Ch. 06 |
| 6 | 2024/03/25 | Tuning feedback controllers | Ch. 07 |
| 7 | 2024/04/01 | Cascade and successive loop control | Ch. 10 |
| 8 | 2024/04/08 | Public Holiday, See Academic Calendar | |
| 9 | 2024/04/15-... | Midterm week 1 | |
| 10 | 2024/04/22 | Midterm week 2, There will be no lecture on Frequency domain analysis (Video link can be found on http://avesis.yildiz.edu.tr/sobut/dokumanlar). | Ch. 08-09 |
| 11 | 2024/04/29 | Compensators | Ch. 12 |
| 12 | 2024/05/06 | Multivariable process control | Ch. 13 |
| 13 | 2024/05/13 | Mathematical tools for digital control systems | Ch. 14 |
| 14 | 2024/05/20 | Design of digital control systems | Ch. 15 |
| 15 | 2024/05/27 -... | Final Exam | |

Letter Grades

Letter grades are defined as follows:

| Percentage Points | Letter Grade |
|-------------------|--------------|
| 90-100 | AA |
| 80-89.99 | BA |
| 70-79.99 | BB |
| 60-69.99 | CB |
| 50-59.99 | CC |
| 40-49.99 | DC |
| 25-39.99 | DD |
| 10-24.99 | FD |
| 0-9.99 | FF |
| NA | F0 |

Code of ethics

Academic Ethics (<http://www.aek.yildiz.edu.tr/frameset1.htm>)

Make-up exams

Students should act according to the [directives of YTU](#). Applications for the make-up exam are made to the [department secretariat](#) NOT to instructor.

** Course topics may change due to announcements by our University Senate or due to Public Holidays.