

## IE 101 INDUSTRIAL ENGINEERING ORIENTATION (2 0 2) (ECTS: 3)

### Spring 2024 - Syllabus

**Catalog Description.** This course is designed to establish an overall and coherent view of industrial engineering concepts in relation to engineering profession in general and the industrial engineering curriculum.

**Course Objectives.** This course aims to:

- introduce industrial engineering,
- provide information on university life, rules and regulations to increase student engagement and adaptation.

**Learning Outcomes.** On successful completion of the course, all students will have developed/will be:

1. an awareness of basic concepts in engineering and industrial engineering discipline,
2. an understanding of the academic and university life, rules and regulations,
3. aware of ethical issues.

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Office Hour: TBA

**Teaching Assistant.** Zeynep Akkuş, Office: L-306, Email: zeynep.akkus@cankaya.edu.tr  
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**Class Meeting Times & Locations.** **(01)** Tue (13:20–15:10), L-A14    **(02)** Fri (09:20–11:10), L-A14

**Class Website.** Moodle on <http://webonline.cankaya.edu.tr>

**Textbook.** There is no specific textbook for this course. Lectures are based on outside materials, reference books and supplementary reading material.

#### **Supplementary Books.**

1. W.C. Turner, J.H. Mize, K.E. Case, and J.W. Nazametz (1993). *Introduction to Industrial & Systems Engineering*. 3rd ed. Prentice Hall. ISBN: 978-0134817897.
2. J.R. Taylor (1996). *An Introduction to Error Analysis*. 2nd ed. University Science Books. ISBN: 978-0935702750.
3. G. Salvendy (2007). *Handbook of Industrial Engineering*. 2nd ed. John Wiley & Sons, Inc. ISBN: 978-0470172339.
4. K. Zandin (2001). *Maynard's Handbook of Industrial Engineering*. 5th ed. McGraw-Hill. ISBN: 978-0070411029.
5. S.I. Gass, A.A. Assad (2006). *An Annotated Timeline of Operations Research*. Springer-Verlag US. ISBN: 978-1402081163.
6. C.E. Harris Jr., M.S. Pritchard, M.J. Rabins, R.W. James, and E.E. Englehardt (2019). *Engineering Ethics: Concepts and Cases*. 6th ed. Cengage Learning. ISBN: 978-1337554503.

**Course Requirements and Grading.** All exams will be closed books and closed notes. Midterm and final exams will be held according to the university policies. Please follow the university web page for any update/change on how exams will be held.

- **25% Homework.** There will be two homework assignments (individual/group work), each is 12.5%.
- **35% Midterm Exam.** There will be one midterm exam (individual).
- **40% Final Exam.** There will be a *comprehensive* final exam (individual).

## **Class Policies.**

- **Please come to class on time.** Remember to turn off cellular telephones, tablets or any device that beeps or disturbs the class before the class starts.
- You are responsible for all announcements made in class and on the class web page, as well as printing the lecture notes and other cited materials from the class web page and other sources.

**Attendance Requirements.** It is best if you fully attend every hour. It is your responsibility to follow the attendance which will be taken online during the classes and make sure that you are marked correctly.

**Grading Policy.** Letter grades will be *mainly* based on the standard scale (i.e., catalog grading system) described in Çankaya University regulations. However, if your collected total weighted average is close to the higher cut-off point and depending on the gaps between the totals collected, a higher letter grade *may* be considered. If you fail to take both the midterm exam (or its makeup) and final exam (or its makeup), you will receive the letter grade NA.

**Make-up Policy.** Makeup *may* only be considered for the Midterm and the Final Exams, with valid, verifiable, documented excuses ONLY.

**Honesty Policy.** Academic integrity is expected of students of Çankaya University at all times, whether in the presence or absence of the faculty. All students should declare their understanding and belief in the Honor Code for the examinations and assignments. This statement is a reminder to uphold your obligation as a student and to be honest in all work submitted and exams taken in this course and all others.

**If you conduct any dishonest act during an examination or for the completion of an assignment (i.e., cheating on an exam, using any extra material that you are not allowed to use during an exam, copying material off of someone else's homework or assignment, using solution keys from previous years, copying material from published and electronic sources without paraphrasing and/or citing appropriately), you will get a credit of zero on that particular exam or assignment. Necessary disciplinary action, as dictated by the rules of the University, will also be taken.**

**Course Topics.** A tentative outline of topics is given below and the instructors reserve the right to make changes as they see necessary.

1. A brief history of engineering and industrial engineering
2. Introduction of Çankaya University Department of Industrial Engineering
3. University life, academic requirements and expectations
4. Written and oral communication
5. Software usage in communication and calculation
6. Preparing for professional work life as an IE
7. Ethical conduct, rules and regulations
8. Introduction to error analysis, dimensions and units
9. Introduction to Work Study and Ergonomics
10. Deterministic Models in Operations Research
11. Risk, Uncertainty and Data Analysis
12. Simulation Models
13. Supply Chains and Logistics
14. Production Planning and Scheduling

**NOTE THAT EVERYTHING ON THIS SYLLABUS IS SUBJECT TO CHANGE. STUDENTS WILL BE NOTED ABOUT SIGNIFICANT CHANGES.**