

Course number and name	END 4901 / Industrial Engineering Design I
Credits, contact hours, categorization of credits	4 credits / 56 hours / Engineering topic
Instructor or course coordinator	Çiğdem KADAİFÇİ YANMAZ, Ayşe Elvan BAYRAKTAROĞLU
Text book and other supplemental materials	-

Course information	
Content	To increase the ability of a student to make a comprehensive literature review about a topic, to make a student have a deeper understanding of a topic, to prepare a student to his/her Graduation Thesis.
Prerequisites	(END 421 MIN DD or END 421E MIN DD or END 322 MIN DD or END 322E MIN DD) and (END 332 MIN DD or END 332E MIN DD or END 305 MIN DD or END 305E MIN DD) and (FIZ 101 MIN DD or FIZ 101E MIN DD) and FIZ 101EL MIN DD and (MAT 103 MIN DD or MAT 103E MIN DD) and (FIZ 102 MIN DD or FIZ 102E MIN DD) and FIZ 102EL MIN DD and (KIM 101 MIN DD or KIM 101E MIN DD) and KIM 101EL MIN DD and (MAT 104 MIN DD or MAT 104E MIN DD) and (END 210 MIN DD or END 210E MIN DD or MAT 210 MIN DD or MAT 210E MIN DD); 4 th class student.
Type	Required

Course learning outcomes
Students who pass the course will be able: I. Identify and formulate a problem II. Carry out a comprehensive literature review III. Compile and classify the literature on a topic IV. Draw a conclusion based on the compilations and classifications V. Acquire detailed knowledge about a topic VI. Prepare and present a report

Student outcomes	Level of contribution
SO1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.	High
SO2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.	Partial
SO3. An ability to communicate effectively with a range of audiences.	Little
SO4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	Partial
SO5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.	Not applicable
SO6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	High
SO7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.	High

Week	Topics	Learning outcome(s)
1	Defining a problem situation, and gathering background information	I
2	Defining a problem situation, and gathering background information	I
3	Definition of the objective (to-be situation or a guiding concept) of the problem situation	I
4	Definition of the objective (to-be situation or a guiding concept) of the problem situation	I
5	Review of the relevant literature	II, V
6	Review of the relevant literature	II, V
7	Review of the relevant literature	II, V
8	Synthesis and evaluation of the literature according to the objective (or the guiding concept)	III, V
9	Synthesis and evaluation of the literature according to the objective (or the guiding concept)	III, V
10	Synthesis and evaluation of the literature according to the objective (or the guiding concept)	III, V
11	Formulation of a research question or a model that will guide further research.	IV
12	Formulation of a research question or a model that will guide further research.	IV
13	Formulation of a research question or a model that will guide further research.	IV
14	Reporting	VI