



**2022-2023 Academic Year**  
**List of Courses Offered in Foreign Language**

**Institute of Science**  
**Fen Bilimleri Enstitüsü**

	Department <i>Bölüm</i>	Course Code <i>Ders Kodu</i>	ECTS <i>AKTS</i>	Course Title <i>Dersin Adı</i>	Semester <i>Dönem</i>	Course Content <i>Dersin İçeriği</i>	Academic Staff <i>Dersi Veren Öğretim Elemanı</i>	Online Available <i>Çevrimiçi</i>
1	Food Engineering <i>Gıda Mühendisliği</i>	FE 421	5	Food Processing	Winter and Spring	This course covers the processing schemes applied for the production of various foods. Among these foods are staple foods such as coffee, sugar, glucose and high fructose syrup, as well as some traditional Turkish foods such as lokum, tahin, helva and leblebi	Assoc. Prof. Dr. Barçın Karakaş Budak	No
2	Food Engineering <i>Gıda Mühendisliği</i>	FE 316	5	Novel Food Manufacturing Technology	Winter and Spring	The aim of this course is to provide students with the basic principles of some of the more recently developed technologies applied in food processing. Specific subjects covered are irradiation, microwave heating, sonication, UV and IR applications, pulsed light, electrolyzed water and ozone applications.	Assoc. Prof. Dr. Barçın Karakaş Budak	No
3	Food Engineering <i>Gıda Mühendisliği</i>	FE 422	5	Technology of Fermented Foods	Winter and Spring	This course covers the processing schemes applied for the production of various fermented foods. Among these foods are beer, wine, fermented olives, fermented vegetables, vinegar and fermented oriental foods.	Assoc. Prof. Dr. Barçın Karakaş Budak	No
4	Food Engineering <i>Gıda Mühendisliği</i>	FE 666	5	Food Hydrocolloids	Winter and Spring	In this course following an introduction to the food hydrocolloids; definition, sources, their functional properties, their use in foods, manufacture, health properties, regulatory status, specific lectures are presented to students on food hydrocolloid groups (eg. agar, xanthan gum, galactomannans, starch, gum arabic, celluloses, glucans, inulin)	Assoc. Prof. Dr. Barçın Karakaş Budak	No
5	Food Engineering <i>Gıda Mühendisliği</i>	FE 460	5	General Microbiology	Winter and Spring	The aim of this course is to provide students with the basic principles of microbiology. Specific subjects covered are microbial classification microbial growth factors, bacterial cell structure and basics of molecular biology.	Assist. Prof. Dr. Reha Onur Azizoglu	No
6	Food Engineering <i>Gıda Mühendisliği</i>	FD 467	5	Introduction to Industrial Microbiology	Winter and Spring	This course intended to be an introduction to industrial microbiology. Its aim is to provide sufficient, albeit brief, overview of microbial structure, physiology and biochemistry to enable the student fully appreciate the diversity of microorganisms and their metabolic capabilities. To recognize the versatility of microorganisms, their ability to grow on a wide range of substrates and to produce an extensive array of products. It covers commercial fermentation operations and requirements for large scale cultivation of microorganisms. The object of any industrial fermentation is then optimize to either growth of the organisms or the production of a target microbial products. The design and operation steps of target products such as microbial enzymes, fuels and industrial chemicals, health care products, microbial biomass production, food and beverage fermentations (short information), food additives and supplements, environmental biotechnology, microbial biodeterioration of materials and its control, and animal and plant cell culture. Downstream processing and product development, regulation and safety.	Prof. Dr. İrfan Turhan	No
7	Food Engineering <i>Gıda Mühendisliği</i>	FD 358	5	Bioprocess Engineering	Winter and Spring	The objective of the course is to make students aware of the basic principles of microbial nutrition, biotechnology and bioprocess. Definition and scope of fermentation and biotechnology, raw materials, classification of microorganisms used in biotechnology and their growth kinetics. Basic principles of bioreactors; continuous stirred tank bioreactor, bubble column, airlift, packed bed, fluidized bed, tower bioreactors, configurations for immobilized systems, the factors which affect oxygen transfer in bioreactors. Agitation. Bioreactor design. Fermentation techniques; batch, semi continuous, continuous, fed batch. Separation techniques; precipitation, centrifuge, extraction etc.)	Prof. Dr. İrfan Turhan	No

\* Courses with codes starting FY are designated as courses for master students, whereas courses assigned codes FD are for PhD students.

\*\* Students must consult the instructor prior to enrollment in the course so that measures can be taken to integrate the course into the workplan.