School	Arts and Sciences		
Major	Master of Food Technology		
Course Descriptions			
Code	**Title**	**Credits**	**Description**
FDSC505	Statistical Methods in Applied Sciences		This course provides students with theoretical and practical knowledge of statistical methods and experimental designs used in scientific research. The course reviews basic statistical tests, extensively discusses experimental designs, correlation and regression analysis, and introduces multivariate analysis, including principal component analysis and cluster analysis. Practical sessions using Excel and SPSS applications are conducted. The course hour distribution per week consists of two theoretical lecture hours and one laboratory session.
FDSC510	Physicochemical Aspect of Foods		This course provides an advanced and systematic examination of the impact of processing operations on the physical, chemical, and selected biochemical properties of food systems. Emphasis is placed on the underlying physicochemical principles governing food engineering and processing. The course hour distribution per week consists of two theoretical lecture hours and one laboratory session (practical work and filed visit).
FDSC525	Sustainability in Food Technology		This course will provide the students with an in-depth understanding of sustainability principles and the critical role food technologists play in preserving natural resources. The course explores the environmental impacts of food production, processing, distribution, and consumption, with a focus on carbon footprint, water footprint, life cycle assessment (LCA), climate change, and circular economy concepts. Students will critically evaluate sustainable food systems and develop strategies to reduce environmental impacts while maintaining food quality, safety, and economic viability. The course hour distribution per week consists of three theoretical lectures.
FDSC530	Advanced Dairy Processing		This course provides a comprehensive and in-depth examination of the chemical and physical properties of water, proteins, carbohydrates, lipids, minerals, and vitamins, and their functional roles in cheese production. It explores the fundamental principles governing the various stages of cheese manufacturing. The course further examines the interactions among milk constituents during cheese making and how these interactions are influenced by starter cultures, milk coagulation mechanisms, and the microbiological and biochemical processes involved in cheese ripening. Particular attention is given to the development of flavor, texture, and rheological properties in both natural and processed cheeses. The course hour distribution consists of two lecture hours and one laboratory session (practical work).
FDSC540	Food Additives: Practical Applications		This course explores the safe and rational use of additives in foods. It covers the various classes of food additives, focusing on their chemical and physical properties, modes of action, and toxicological aspects. Additionally, the course addresses global regulations and legislations governing the use of food additives. The course hour distribution consists of two theoretical lecture hours and one laboratory session (practical work and student’s presentations).
FDSC545	Food Analysis		This course focuses on analytical techniques for evaluating various food components, emphasizing the application of chemical and physical principles in each method. It also provides hands-on experience in the determination of selected food constituents. The course hour distribution consists of two theoretical lecture hours and one laboratory session (practical work or filed visit).
FDSC550	Food Packaging		This course provides students with both theoretical and practical knowledge of various food packaging technologies. It covers different packaging materials and explores the packaging requirements of selected food products. The course hour distribution consists of two theoretical lecture hours and one laboratory session (practical work).
FDSC551	Food Engineering Applications		This course offers a quantitative introduction to the principles of food engineering, emphasizing the application of engineering concepts to common unit operations in food processing. Topics include refrigeration, freezing, evaporation, psychrometrics, and dehydration, with a focus on material and energy balances for designing and evaluating processing systems. Students will also learn methods for conducting technical and economic feasibility studies, linking engineering design with industrial implementation. The course hour distribution consists of two lecture hours and one laboratory session (practical work).
FDSC555	Product Innovation and Development		This course provides insights into creating new food products. It emphasizes the integration of students’ scientific knowledge while working collaboratively in teams with entrepreneurs and companies to develop innovative products. The course engages students at multiple levels—scientific, interpersonal, and managerial—preparing them for real-world product development challenges. The course hour distribution consists of two lecture hours and one laboratory session (practical work).

FDSC560	Fruits And Their Products		The course will introduce the students with processing and storage of fresh fruits and vegetables; respiration, transpiration and decay of fresh fruits and vegetables; CAP and MAP of fruits and vegetables; manufacture of dried fruits and vegetables, frozen fruits and vegetables, pickled vegetable and canned fruits with examples.
FDSC565	Grains and Baking		This course provides an advanced study of wheat milling and bread baking techniques. It covers different categories of milling and baking, including an overview of raw materials and their functional roles in the processes. The course hour distribution consists of three lecture hours.
FDSC570	Nuts and Roasting		This course focuses on various types of tree nuts, their chemical composition, and associated health effects. It emphasizes the nutritional and bioactive components of edible nuts, the identification of allergens and volatile compounds, and the anti-aflatoxigenic activity of phytochemicals present in tree nuts. The course hour distribution consists of three lecture hours.
FDSC575	Oil Production		This course provides an overview of oils as essential food components, covering their composition, nutritional effects, and production processes. Topics include the chemistry of fatty acids and minor compounds, major vegetable and fish oils, lipid oxidation, frying oils, extraction methods, and byproduct treatment and utilization. The course also examines the health benefits and potential risks associated with different oils. The course hour distribution consists of three theoretical lecture hours. A field visit to an olive oil mill will also be arranged during the semester to enhance students' practical understanding of oil production processes.
FDSC585	Waste Treatment in the Food Industry		This course provides both theoretical and practical knowledge of current and emerging waste treatment methods, with a focus on the food industry. It also explores the applications and potential uses of treated waste, emphasizing sustainable and value-added approaches. The course hour distribution consists of two lecture hours and one laboratory session (practical work and filed visit).
FDSC590	Advanced Topics in Food Biotechnology		This course introduces graduate students to the principles and applications of biotechnology in food modification. It covers current developments in enzymatic processes, microbial fermentation, and genetic approaches to enhance food quality, safety, and functionality. Students will gain both theoretical understanding and practical insights into biotechnological strategies for modern food production. The course hour distribution consists of three lecture hours.
FDSC594	Graduate skills		This course provides graduate students with advanced academic skills essential for preparing research proposals, projects, grant applications, and scholarly articles. Emphasis is placed on research planning, academic writing, critical analysis of literature, and effective communication of research findings. The course also prepares students for the research project they will undertake in their final semester. The course hour distribution consists of three theoretical lecture hours.
FDSC595	Sensory Evaluation of Food		This course explores the role of consumer perception in the success of food products, focusing on how taste, aroma, texture, color, and presentation influence acceptance. It also considers consumer factors such as age, gender, and background. Students will learn the fundamentals of sensory perception and gain hands-on experience in designing and conducting sensory tests, selecting appropriate panels, and analyzing results using statistical and scientific methods. The course combines theoretical instruction with practical application. The course hour distribution consists of two lecture hours and one laboratory session (practical work).
FDSC597	Project		This course provides graduate students with the opportunity to apply the skills acquired during their coursework and practical work by translating theoretical and practical knowledge into structured research topics. Students will develop novel research ideas and gain hands-on experience through the laboratory application of relevant techniques. The course is structured as three credits of supervisory research work with zero lecture hours. The student is allowed to register the course after completing minimum 27 credits. During the final semester, the student is expected to complete and submit the project report. If necessary, the project may be registered up to two additional times, allowing a maximum of three semesters to complete the project. The student should dedicate about fifteen hours/week for research and lab-work.