

Course Description					
Name	Code	Semester	T+A Hour	Credit	ECTS
HUMAN MICROBIOME COURSE	MKBD2131370	Fall Semester	2+0	2	15
Prerequisites Courses					
Recommended Elective Courses					
Language of Instruction	Turkish				
Course Level	Third Cycle (Doctorate Degree)				
Course Type	Elective				
Course Coordinator	Prof.Dr. Süleyman YILDIRIM				
Name of Lecturer(s)	Prof.Dr. Süleyman YILDIRIM				
Assistant(s)					
Aim	The aim of the Human Microbiome course is to provide graduate students with a comprehensive understanding of the human microbiome, encompassing its composition, functional significance, and its intricate relationship with human health and disease.				
Course Content	This course contains; Historical perspective and milestones in microbiome research,Importance of the human microbiome in health and disease,Understanding taxonomic and functional profiling and summary of techniques for microbial community analysis,Metagenomics and Metatranscriptomics analyses,Microbiome and Human Diseases (Role of the microbiome in infectious and chronic diseases).				
Course Learning Outcomes				Teaching Methods	Assessment Methods
1. Acquires a comprehensive understanding of the human microbiome, including its composition, diversity, and the dynamic interactions between microbial communities and the human host.					
2. Develop advanced analytical skills in the evaluation and interpretation of microbiome data, utilizing techniques such as metagenomics and metatranscriptomics to analyze microbial communities at a taxonomic and functional level.					
3. Explore the role of the microbiome in human diseases, ranging from infectious diseases to chronic conditions, and develop an understanding of the mechanisms by which microbial communities influence health and contribute to disease states.					
4. Gain proficiency in integrating multi-omics data to examine complex microbial ecosystems, and understand the interconnectedness of genomics, transcriptomics, and other omics approaches in unraveling the functional aspects of the microbiome.					
Teaching Methods					
Assessment Methods					
Lecture Schedule					
Sequence	Topics	Preliminary Preparation			
1	Historical perspective and milestones in microbiome research				
2	Importance of the human microbiome in health and disease				
3	Understanding taxonomic and functional profiling and summary of techniques for microbial community analysis				
4	Metagenomics and Metatranscriptomics analyses				
5	Microbiome and Human Diseases (Role of the microbiome in infectious and chronic diseases)				
Evaluation Methods		Weight(%)			
Midterm Exam		50			
General Exam		50			

Resources	
1. Bioinformatic and Statistical Analysis of Microbiome Data: From Raw Sequences to Advanced Modeling with Qiime 2 and R,	
2. Human-Gut Microbiome, Gunjan Goel, Teresa Requena, Saurabh Bansal (ISBN: 9780323913133)	
3. Published articles	