



BURSA ULUDAĞ ÜNİVERSİTESİ
FEN BİLİMLERİ ENSTİTÜSÜ
2022-2023 EĞİTİM ÖĞRETİM YILI DERS PLANLARI

FR 1.1.1_02

ANABİLİM DALI		GIDA MÜHENDİSLİĞİ ANABİLİM DALI															
BİLİM DALI / PROGRAMI		YÜKSEK LİSANS PROGRAMI															
DERS AŞAMASI	I. YARIYIL / GÜZ								II. YARIYIL / BAHAR								
	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS	
	GMB5191	YÜKSEK LİSANS TEZ DANIŞMANLIĞI I	Z	0	1	0	0	1	GMB5192	YÜKSEK LİSANS TEZ DANIŞMANLIĞI II	Z	0	1	0	0	1	
	GMB5181	YÜKSEK LİSANS UZMANLIK ALAN DERSİ I	Z	4	0	0	0	5	GMB5182	YÜKSEK LİSANS UZMANLIK ALAN DERSİ II	S	4	0	0	0	5	
	GMB5001	GÜVENLİ GIDA ÜRETİM SİSTEMLERİ	Z	3	0	0	3	6	GMB5172	SEMİNER	Z	0	2	0	0	4	
	GMB5003	ENSTRÜMENTAL GIDA ANALİZLERİ TEKNİĞİ	Z	3	0	0	3	6	GMB5002	İLERİ GIDA MİKROBİYOLOJİSİ	Z	2	0	2	3	6	
	GMB...	SEÇMELİ DERS I	S				3	6	FEN5000	GIDA MÜHENDİSLİĞİNDE ARAŞTIRMA TEKNİKLERİ VE YAYIN ETİĞİ	Z	2	0	0	2	2	
	GMB...	SEÇMELİ DERS II*	S				3	6	GMB...	SEÇMELİ DERS I	S				3	6	
									GMB...	SEÇMELİ DERS II*	S				3	6	
Toplam Kredi							12	30	Toplam Kredi							11	30
TEZ AŞAMASI	III. YARIYIL / GÜZ								IV. YARIYIL / BAHAR								
	GMB5183	YÜKSEK LİSANS UZMANLIK ALAN DERSİ III	Z	4	0	0	0	5	GMB5184	YÜKSEK LİSANS UZMANLIK ALAN DERSİ IV	Z	4	0	0	0	5	
	GMB5193	YÜKSEK LİSANS TEZ DANIŞMANLIĞI III	Z	0	1	0	0	25	GMB5194	YÜKSEK LİSANS TEZ DANIŞMANLIĞI IV	Z	0	1	0	0	25	
	Toplam Kredi							0	30	Toplam Kredi							0
TOPLAM KREDİ: 23 - TOPLAM AKTS: 120																	



BURSA ULUDAĞ ÜNİVERSİTESİ
FEN BİLİMLERİ ENSTİTÜSÜ
2022-2023 EĞİTİM ÖĞRETİM YILI DERS PLANLARI (SEÇMELİ DERSLER)

FR 1.1.1_02

ANABİLİM DALI	GIDA MÜHENDİSLİĞİ ANABİLİM DALI
BİLİM DALI / PROGRAMI	YÜKSEK LİSANS PROGRAMI

DERS AŞAMASI	I. YARIYIL / GÜZ								II. YARIYIL / BAHAR							
	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS
	GMB5011	ENDÜSTRİYEL GIDA İŞLEME MÜHENDİSLİĞİ	S	3	0	0	3	6	GMB5010	GIDALARDA UYGULANAN KURUTMA TEKNİKLERİ	S	3	0	0	3	6
	GMB5013	ENDÜSTRİYEL MEYVE SUYU İŞLEME TEKNOLOJİSİ	S	2	0	2	3	6	GMB5012	ENDÜSTRİYEL KONSERVE TEKNOLOJİSİ	S	2	0	2	3	6
	GMB5015	YEMEKLİK YAĞ KİMYASI VE TEKNOLOJİSİ	S	3	0	0	0	6	GMB5014	KİMYASAL MİKROBİYOLOJİ	S	3	0	0	3	6
	GMB5017	TAHİL KİMYASI	S	2	0	2	3	6	GMB5016	FERMENTE TAHİL ÜRÜNLERİ TEKNOLOJİSİ	S	2	0	2	3	6
	GMB5019	BİSKÜVİ, KRAKER VE KEK TEKNOLOJİSİ	S	2	0	2	3	6	GMB5018	MAKARNA VE ERİŞTE TEKNOLOJİSİ	S	2	0	2	3	6
	GMB5021	GIDA SANAYİNDE STARTER ÜRETİMİ VE KULLANIMI	S	2	0	2	3	6	GMB5020	GIDA GÜVENLİĞİ MİKROBİYOLOJİSİ VE KİMYASI	S	3	0	0	3	6
	GMB5023	GIDALARDA BOZULMAYA NEDEN OLAN MİKROORGANİZMALAR VE TANIMLANMALARI	S	2	0	2	3	6	GMB5022	GIDA AMBALAJLAMADA UYGULANAN TEKNİKLER	S	3	0	0	3	6
	GMB5025	MİKROBİYEL PROSES TEKNOLOJİSİ	S	3	0	0	3	6	GMB5024	TOPLUM BESLENMESİ	S	3	0	0	3	6
	GMB5027	GIDA SANİTASYONU	S	3	0	0	3	6	GMB5026	FONKSİYONEL GIDALAR VE NUTRASÖTİKLER	S	3	0	0	3	6
	GMB5029	ENDÜSTRİYEL MEYVE ŞARAPLARI TEKNOLOJİSİ	S	2	0	2	3	6	GMB5028	VİSKİ VE KONYAK ÜRETİMİ	S	2	0	2	3	6
	GMB5031	GIDA SANAYİNDE ENZİM KULLANIMI	S	2	0	2	3	6	GMB5030	GIDA AROMA MADDELERİ VE AROMA KİMYASI	S	2	0	2	3	6
	GMB5033	MALT VE BİRA TEKNOLOJİSİ	S	2	0	2	3	6	GMB5032	SÜT ÜRÜNLERİ ÜRETİM TEKNOLOJİSİ	S	2	0	2	3	6

GMB5035	PROSES DİZAYNI VE DEĞERLENDİRMESİ	S	3	0	0	3	6	GMB5034	GIDALARIN MİNERALLERLE ZENGİNLEŞTİRİLMESİ VE BİYÖYARARLILIK	S	3	0	0	3	6
GMB5037	SÜT VE ÜRÜNLERİ FİZİK VE KİMYASI	S	2	0	2	3	6	GMB5036	GIDALARDA RAF ÖMRÜ	S	3	0	0	3	6
GMB5039	GIDALARDAKİ İZ ELEMENTLER	S	3	0	0	3	6	GMB5038	SÜT TEKNOLOJİSİNDE PROBİYOTİK BAKTERİLER VE PREBİYOTİKLER	S	2	0	2	3	6
GMB5041	SÜT TEKNOLOJİSİNDE ALTERNATİF KORUMA YÖNTEMLERİ	S	3	0	0	3	6	GMB5040	GIDALARIN MODİFİYE ATMOSFERDE MUHAFAZASI	S	3	0	0	3	6
GMB5043	GIDA MÜHENDİSLİĞİNDE MOLEKÜLER UYGULAMALAR	S	2	0	2	3	6	GMB5042	GASTRONOMİ VE YEMEK TARİHİ	S	3	0	0	3	6
GMB5045	ASEPTİK AMBALAJLAMA TEKNOLOJİSİ	S	3	0	0	3	6	GMB5044	MAYALAR VE MAYALARIN BİYOTEKNOLOJİK UYGULAMALARDA KULLANIMI	S	3	0	0	3	6
GMB5047	MISIR ÜRÜNLERİ VE TATLANDIRICILAR	S	3	0	0	3	6	GMB5046	TEMEL UYGULAMALI MİKROBİYOLOJİ	S	2	2	0	3	6
GMB5049	GIDA SANAYİNDE YATIRIM PROJESİ HAZIRLAMA, DEĞERLENDİRME VE İZLEME YÖNTEMLERİ	S	3	0	0	3	6	GMB5048	ET TEKNOLOJİSİNDE SON GELİŞMELER	S	3	0	0	3	6
GMB5051	SÜT ÜRÜNLERİNDE REOLOJİ VE TEKSTÜR	S	3	0	0	3	6	GMB5050	GIDA BULAŞANLARI VE KALINTILARI	S	3	0	0	3	6
GMB5053	ÇAY İŞLEME TEKNOLOJİSİ	S	3	0	0	3	6	GMB5052	GIDA İŞLEMEDE YENİ TEKNİKLER	S	3	0	0	3	6
GMB5055	İLERİ ET BİLİMİ VE TEKNOLOJİSİ	S	3	0	0	3	6	GMB5054	KAROTENOİDLER VE GIDA SANAYİNDE KULLANIMI	S	3	0	0	3	6
GMB5057	GIDA ANALİZ LABORATUVARLARINDA KALİTE YÖNETİM SİSTEMLERİ	S	3	0	0	3	6	GMB5056	GIDA BİLİMİNDE OMİK YAKLAŞIMLAR	S	3	0	0	3	6
GMB5059	GIDA ENDÜSTRİSİNDE KULLANILAN TIBBİ VE AROMATİK BİTKİLER	S	3	0	0	3	6	GMB5058	GIDA SANAYİNDE ENERJİ VE EKSERJİ	S	3	0	0	3	6
GMB5061	SÜRDÜRÜLEBİLİR GIDA ÜRETİMİ	S	3	0	0	3	6	GMB5060	ORGANİK GIDA İŞLEME VE SÜRDÜRÜLEBİLİR GIDA SİSTEMLERİ	S	3	0	0	3	6

GMB5063	ARI ÜRÜNLERİ İŞLEME TEKNOLOJİLERİ VE KALİTESİNİN DEĞERLENDİRİLMESİ	S	3	0	0	3	6	GMB5062	GIDA PROTEİNLERİ	S	3	0	0	3	6
GMB5065	GIDALARDA RENK MADDELERİ	S	3	0	0	3	6								



BURSA ULUDAĞ UNIVERSITY
INSTITUTE of SCIENCE
2022-2023 ACADEMIC YEAR COURSE PLAN

FR 1.1.1_02

DEPARTMENT OF **FOOD ENGINEERING**
DEPARTMENT / PROGRAM **MASTER'S PROGRAM**

COURSE STAGE	I. TERM / FALL								II. TERM / SPRING										
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS			
	GMB5191	M.Sc. THESIS I	C	0	1	0	0	1	GMB5192	M.Sc. THESIS II	C	0	1	0	0	1			
	GMB5181	ADVANCED TOPICS IN M.Sc. THESIS I	C	4	0	0	0	5	GMB5182	ADVANCED TOPICS IN M.Sc. THESIS II	C	4	0	0	0	5			
	GMB5001	SAFE FOOD PROCESSING TECHNIQUES	C	3	0	0	3	6	GMB5171	SEMINAR	C	0	2	0	0	5			
	GMB5003	INSTRUMENTAL FOOD ANALYSIS TECHNIQUES	C	3	0	0	3	6	GMB5002	ADVANCED FOOD MICROBIOLOGY	C	2	0	2	3	6			
	GMB...	ELECTIVE COURSE I	E				3	6	FEN5000	RESEARCH TECHNIQUES AND PUBLICATION ETHICS IN FOOD ENGINEERING	Z	2	0	0	2	2			
	GMB...	ELECTIVE COURSE II*	E				3	6	GMB...	ELECTIVE COURSE I	E				3	6			
									GMB...	ELECTIVE COURSE II*	E				3	6			
Total Credits								12	30	Total Credits								11	30
STAGE THESIS	III. TERM / FALL								IV. TERM / SPRING										
	GMB5183	ADVANCED TOPICS IN M.Sc. THESIS III	C	4	0	0	0	5	GMB5182	ADVANCED TOPICS IN M.Sc. THESIS IV	C	4	0	0	0	5			
	GMB5193	M.Sc. THESIS III	C	0	1	0	0	25	GMB5194	M.Sc.. THESIS IV	C	0	1	0	0	25			
	Total Credits								0	30	Total Credits								0
TOTAL CREDITS: 23 - TOTAL ECTS: 120																			



BURSA ULUDAG UNIVERSITY
INSTITUTE of SCIENCE

2022-2023 ACADEMIC YEAR COURSE PLAN (ELECTIVE COURSES)

FR 1.1.1_02

DEPARTMENT OF **FOOD ENGINEERING**

DEPARTMENT / PROGRAM **MASTER'S PROGRAM**

COURSE STAGE	I. TERM / FALL								II. TERM / SPRING							
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS
	GMB5011	INDUSTRIAL FOOD PROCESS ENGINEERING	E	3	0	0	3	6	GMB5010	DRYING TECHNIQUES OF FOODS	E	3	0	0	3	6
	GMB5013	INDUSTRIAL FRUIT JUICE PRODUCTION TECHNOLOGY	E	2	0	2	3	6	GMB5012	INDUSTRIAL CANNING TECHNOLOGY	E	2	0	2	3	6
	GMB5015	CHEMISTRY AND TECHNOLOGY OF EDIBLE FATS AND OILS	E	3	0	0	3	6	GMB5014	CHEMICAL MICROBIOLOGY	E	3	0	0	3	6
	GMB5017	CEREAL CHEMISTRY	E	2	0	2	3	6	GMB5016	FERMENTED CEREAL PRODUCTS TECHNOLOGIES	E	2	0	2	3	6
	GMB5019	TECHNOLOGY OF BISCUIT, CRACKER AND CAKE	E	2	0	2	3	6	GMB5018	PASTA AND NOODLE TECHNOLOGY	E	2	0	2	3	6
	GMB5021	STARTER PRODUCTION AND USE IN FOOD INDUSTRY	E	2	0	2	3	6	GMB5020	SAFETY, MICROBOLOGY AND CHEMISTRY OF FOODS	E	3	0	0	3	6
	GMB5023	IDENTIFICATION OF MICROORGANISMS CAUSING SPOILAGE IN FOODS	E	2	0	2	3	6	GMB5022	TECHNIQUES APPLIED IN FOOD PACKAGING	E	3	0	0	3	6
	GMB5025	MICROBIAL PROCESS TECHNOLOGY	E	3	0	0	3	6	GMB5024	COMMUNITY NUTRITION	E	3	0	0	3	6
	GMB5027	FOOD SANITATION	E	3	0	0	3	6	GMB5026	FUNCTIONAL FOODS AND NUTRACEUTICALS	E	3	0	0	3	6
	GMB5029	INDUSTRIAL FRUIT WINES TECHNOLOGY	E	2	0	2	3	6	GMB5028	WHISKY AND COGNAC PRODUCTION	E	2	0	2	3	6
	GMB5031	ENZYMES IN FOOD INDUSTRY	E	2	0	2	3	6	GMB5030	FOOD AROMA AND AROMA CHEMISTRY	E	2	0	2	3	6
	GMB5033	MALT AND BEER TECHNOLOGY	E	2	0	2	3	6	GMB5032	DAIRY PROCESSING TECHNOLOGY	E	2	0	2	3	6
	GMB5035	PROCEES DESIGN AND EVALUATION	E	3	0	0	3	6	GMB5034	FORTIFICATION OF FOODS WITH MINERALS AND BIOAVAILABILITY	E	3	0	0	3	6

GMB5037	PHYSICS AND CHEMISTRY OF MILK AND DAIRY PRODUCTS	E	2	0	2	3	6	GMB5036	SHELFLIFE OF FOODS	E	3	0	0	3	6
GMB5039	TRACE ELEMENTS IN FOODS	E	3	0	0	3	6	GMB5038	PROBIOTIC BACTERIA AND PROBIOTICS IN DAIRY SCIENCE	E	2	0	2	3	8
GMB5041	ALTERNATIVE PRESERVATION TECHNIQUES IN DAIRY SCIENCE	E	3	0	0	3	6	GMB5040	MODIFIED ATMOSPHERE PACKAGING OF FOOD	E	3	0	0	3	6
GMB5043	MOLECULAR APPLICATIONS IN FOOD ENGINEERING	E	2	0	2	3	6	GMB5042	GASTRONOMY AND FOOD HISTORY	E	3	0	0	3	6
GMB5045	ASEPTIC PACKAGING TECHNOLOGY	E	3	0	0	3	6	GMB5044	YEASTS and BIOTECHNOLOGICAL APPLICATIONS OF YEASTS	E	3	0	0	3	6
GMB5047	CORN PRODUCTS AND SWEETENERS	E	3	0	0	3	6	GMB5046	BASIC PRACTICAL MICROBIOLOGY	E	2	2	0	3	6
GMB5049	INVESTMENT PROJECT PREPARATION, EVALUATION AND MONITORING METHODS IN FOOD INDUSTRY	E	3	0	0	3	6	GMB5048	RECENT ADVANCES IN MEAT TECHNOLOGY	E	3	0	0	3	6
GMB5051	RHEOLOGY AND TEXTURE OF DAIRY PRODUCTS	E	3	0	0	3	6	GMB5050	FOOD CONTAMINANTS AND RESIDUES	E	3	0	0	3	6
GMB5053	TEA PROCESSING TECHNOLOGY	E	3	0	0	3	6	GMB5052	NOVEL FOOD PROCESSING TECHNIQUES	E	3	0	0	3	6
GMB5055	ADVANCED MEAT SCIENCE AND TECHNOLOGY	E	3	0	0	3	6	GMB5054	CAROTENOIDS AND THEIR USAGE IN FOOD INDUSTRY	E	3	0	0	3	6
GMB5057	QUALITY MANAGEMENT SYSTEMS FOR FOOD TESTING LABORATORIES	E	3	0	0	3	6	GMB5056	OMIC APPROACHES IN FOOD SCIENCE	E	3	0	0	3	6
GMB5059	MEDICINAL and AROMATIC PLANTS USED IN FOOD INDUSTRY	E	3	0	0	3	6	GMB5058	ENERGY AND EXERGY IN THE FOOD INDUSTRY	E	3	0	0	3	6
GMB5061	SUSTAINABLE FOOD PRODUCTION	E	3	0	0	3	6	GMB5060	ORGANIC FOOD PROCESSING AND SUSTAINABLE FOOD SYSTEMS	E	3	0	0	3	6
GMB5063	PROCESSING TECHNOLOGIES OF BEE PRODUCTS AND QUALITY EVALUATION	E	3	0	0	3	6	GMB5062	FOOD PROTEINS	E	3	0	0	3	6
GMB5065	COLOR COMPOUNDS IN FOODS	E	3	0	0	3	6								



BURSA ULUDAĞ ÜNİVERSİTESİ
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2022-2023 EĞİTİM ÖĞRETİM YILI DERS PLANLARI

FR 1.1.1_02

ANABİLİM DALI

GIDA MÜHENDİSLİĞİ ANABİLİMDALI

BİLİM DALI / PROGRAMI

DOKTORA PROGRAMI

DERS AŞAMASI	I. YARIYIL / GÜZ								II. YARIYIL / BAHAR							
	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS
	GMB6191	DOKTORA TEZ DANIŞMANLIĞI I	Z	0	1	0	0	1	GMB6192	DOKTORA TEZ DANIŞMANLIĞI II	Z	0	1	0	0	1
	GMB6181	DOKTORA UZMANLIK ALAN DERSİ I	S	4	0	0	0	5	GMB6182	DOKTORA UZMANLIK ALAN DERSİ II	S	4	0	0	0	5
	GMB6001	İLERİ STERİLİZASYON TEKNİKLERİ	Z	3	0	0	3	6	GMB6172	SEMİNER	Z	0	2	0	0	4
	GMB...	SEÇMELİ DERS I	S				3	6	FEN6002	TEKNOLOJİ TRANSFERİ, ARGE VE İNOVASYON	Z	2	0	0	2	2
	GMB...	SEÇMELİ DERS II	S				3	6	GMB...	SEÇMELİ DERS I	S				3	6
	GMB...	SEÇMELİ DERS III*	S				3	6	GMB...	SEÇMELİ DERS II	S				3	6
									GMB...	SEÇMELİ DERS III*	S				3	6
	Toplam Kredi						12	30	Toplam Kredi						11	30
TEZ AŞAMASI	III. YARIYIL / GÜZ								IV. YARIYIL / BAHAR							
	GMB6183	DOKTORA UZMANLIK ALAN DERSİ III	Z	4	0	0	0	5	GMB6184	DOKTORA UZMANLIK ALAN DERSİ IV	Z	4	0	0	0	5
	GMB6193	DOKTORA TEZ DANIŞMANLIĞI III	Z	0	1	0	0	20	GMB6194	DOKTORA TEZ DANIŞMANLIĞI IV	Z	0	1	0	0	25
	YET6177	DOKTORA YETERLİK SINAVI	Z	0	0	0	0	5								
	Toplam Kredi						0	30	Toplam Kredi						0	30
	V. YARIYIL / GÜZ								VI. YARIYIL / BAHAR							
	GMB6185	DOKTORA UZMANLIK ALAN DERSİ V	Z	4	0	0	0	5	GMB6186	DOKTORA UZMANLIK ALAN DERSİ VI	Z	4	0	0	0	5
	GMB6195	DOKTORA TEZ DANIŞMANLIĞI V	Z	0	1	0	0	25	GMB6196	DOKTORA TEZ DANIŞMANLIĞI VI	Z	0	1	0	0	25
	Toplam Kredi						0	30	Toplam Kredi						0	30
	VII. YARIYIL / GÜZ								VIII. YARIYIL / BAHAR							
	GMB6187	DOKTORA UZMANLIK ALAN DERSİ VII	Z	4	0	0	0	5	GMB6188	DOKTORA UZMANLIK ALAN DERSİ VIII	Z	4	0	0	0	5
	GMB6197	DOKTORA TEZ DANIŞMANLIĞI VII	Z	0	1	0	0	25	GMB6198	DOKTORA TEZ DANIŞMANLIĞI VIII	Z	0	1	0	0	25
	Toplam Kredi						0	30	Toplam Kredi						0	30

TOPLAM KREDİ: 23 - TOPLAM AKTS: 240



BURSA ULUDAĞ ÜNİVERSİTESİ
FEN BİLİMLERİ ENSTİTÜSÜ
2022-2023 EĞİTİM ÖĞRETİM YILI DERS PLANLARI (SEÇMELİ DERSLER)

FR 1.1.1_02

ANABİLİM DALI GIDA MÜHENDİSLİĞİ ANABİLİMDALI

BİLİM DALI / PROGRAMI DOKTORA PROGRAMI

DERS AŞAMASI	I. YARIYIL / GÜZ								II. YARIYIL / BAHAR							
	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS
	GMB6009	DURULTMA VE FİLTASYON TEKNİKLERİ	S	3	0	0	3	6	GMB6008	GIDA MUHAFAZA TEKNOLOJİSİ	S	3	0	0	3	6
	GMB6011	YAĞLARIN HİDROJENENASYONU VE MARGARİN TEKNOLOJİSİ	S	3	0	0	3	6	GMB6010	LİPİTLER	S	3	0	0	3	6
	GMB6013	NİŞASTA KİMYASI VE TEKNOLOJİSİ	S	2	0	2	3	6	GMB6012	GIDA SANAYİNDE İSTATİKSEL KALİTE KONTROL	S	3	0	0	3	6
	GMB6015	GIDA MİKROLOJİSİ	S	2	0	2	3	6	GMB6014	İLERİ GIDA KİMYASI	S	3	0	0	3	6
	GMB6017	AROMA AKTİF GIDA BİLEŞENLERİ	S	2	0	2	3	6	GMB6016	DEĞİRMENCİLİK TEKNOLOJİSİ	S	2	0	2	3	6
	GMB6019	GIDA KAYNAKLI SÜLFÜR BİLEŞENLERİ	S	2	0	2	3	6	GMB6018	ÖZEL TAHİL ÜRÜNLERİ	S	2	0	2	3	6
	GMB6021	İLERİ SÜT TEKNOLOJİSİ	S	3	0	0	3	6	GMB6020	GIDA TOKSİKOLOJİSİ	S	3	0	0	3	6
	GMB6023	İLERİ GIDA BİYOKİMYASI	S	3	0	0	3	6	GMB6022	GIDALARIN İŞLENMESİ SİRASINDA OLUŞAN KİMYASAL DEĞİŞİKLİKLER	S	3	0	0	3	6
	GMB6025	GIDA BİLİMİNDE ARAŞTIRMA METOTLARI	S	3	0	0	3	6	GMB6024	GIDA FERMENTASYONLARI	S	3	0	0	3	6
	GMB6027	LAKTİK ASİT BAKTERİLERİ VE LAKTİK ASİT BAKTERİLERİNİN BİYOTEKNOLOJİK UYGULAMALARDA KULLANIMI	S	3	0	0	3	6	GMB6026	FLAVOR VE FENOL BİLEŞİKLERİ TEKNOLOJİSİ	S	2	0	2	3	6
	GMB6029	SÜT ÜRÜNLERİNDE FONKSİYONEL KATKILAR	S	3	0	0	3	6	GMB6028	FERMENTE SÜT ÜRÜNLERİ KİMYASI VE TEKNOLOJİSİ	S	3	0	0	3	6
	GMB6031	ET ÜRÜNLERİNDE FONKSİYONEL KÜLTÜRLER	S	3	0	0	3	6	GMB6030	GIDALARIN FİZİKSEL ÖZELLİKLERİ	S	3	0	0	3	6

GMB6033	GIDA SANAYİNDE EKSTRAKSİYON TEKNİKLERİ VE OPTİMİZASYON	S	3	0	0	3	6	GMB6032	ÜRÜN GELİŞTİRMEDE GIDA KATKILARI	S	3	0	0	3	6
								GMB6034	GIDA KALİTESİNİN MİKROBİYOLOJİK OLARAK BELİRLENMESİNDE PROTEOM VE METABOLOM ANALİZLERİ	S	3	0	0	3	6
								GMB6036	GIDA SANAYİNDE KULLANILAN BAHARATLAR VE ÖZELLİKLERİ	S	3	0	0	3	6
								GMB6038	GIDALARDA MİKROBİYEL RAF ÖMRÜ	S	3	0	0	3	6
								GMB6040	İLERİ PEYNİR TEKNOLOJİSİ	S	3	0	0	3	6
								GMB6042	ET VE ET ÜRÜNLERİ KAYNAKLI SAĞLIK RİSKLERİ	S	3	0	0	3	6
								GMB6044	YENİLİKÇİ GIDA AMBALAJLAMA TEKNİKLERİ VE BİYOPOLİMERLER	S	3	0	0	3	6



BURSA ULUDAĞ UNIVERSITY
INSTITUTE of SCIENCE
2022-2023 ACADEMIC YE COURSE PLAN

FR 1.1.1_02

DEPARTMENT OF **FOOD ENGINEERING**
DEPARTMENT / PROGRAM **DOCTORATE PROGRAM**

COURSE STAGE	I. TERM / FALL								II. TERM / SPRING									
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS		
	GMB6191	PHD THESIS CONSULTING I	C	0	1	0	0	1	GMB6192	PHD THESIS CONSULTING II	C	0	1	0	0	1		
	GMB6181	ADVANCED TOPICS IN PHD THESIS I	C	4	0	0	0	5	GMB6182	ADVANCED TOPICS IN PHD THESIS II	E	4	0	0	0	5		
	GMB6001	ADVANCED STERILISATION TECHNIQUES	C	3	0	0	3	6	GMB6172	SEMINAR	C	0	2	0	0	4		
	GMB...	ELECTIVE COURSE -I	E				3	6	FEN6002	TECHNOLOGY TRANSFER, R&D AND INNOVATION	C	2	0	0	2	2		
	GMB...	ELECTIVE COURSE -II	E				3	6	GMB...	ELECTIVE COURSE -I	S				3	6		
	GMB...	ELECTIVE COURSE -III							GMB...	ELECTIVE COURSE -II	S				3	6		
								GMB...	ELECTIVE COURSE -III	S				3	6			
Total Credits							12	30	Total Credits							11	30	
STAGE THESIS	III. TERM / FALL								IV. TERM / SPRING									
	GMB6183	ADVANCED TOPICS IN PHD THESIS III	C	4	0	0	0	5	GMB6184	ADVANCED TOPICS IN PHD THESIS IV	C	4	0	0	0	5		
	GMB6193	PHD THESIS III	C	0	1	0	0	20	GMB6194	PHD THESIS IV	C	0	1	0	0	25		
	YET6177	PHD PROFICIENCY EXAMINATION	C	0	0	0	0	5										
	Total Credits							0	30	Total Credits							0	30
	V. TERM / FALL								VI. TERM / SPRING									
	GMB6185	ADVANCED TOPICS IN PHD THESIS V	C	4	0	0	0	5	GMB6186	ADVANCED TOPICS IN PHD THESIS VI	C	4	0	0	0	5		
	GMB6195	PHD THESIS V	C	0	1	0	0	25	GMB6196	PHD THESIS VI	C	0	1	0	0	25		
	Total Credits							0	30	Total Credits							0	30
	VII. TERM / FALL								VIII. TERM / SPRING									
GMB6187	ADVANCED TOPICS IN PHD THESIS VII	C	4	0	0	0	5	GMB6188	ADVANCED TOPICS IN PHD THESIS VIII	C	4	0	0	0	5			
GMB6197	PHD THESIS VII	C	0	1	0	0	25	GMB6198	PHD THESIS VIII	C	0	1	0	0	25			
Total Credits									Total Credits									

TOTAL CREDITS: 23 - TOTAL ECTS: 30



BURSA ULUDAĞ UNIVERSITY
INSTITUTE of SCIENCE
2022-2023 ACADEMIC YE COURSE PLAN (ELECTIVE COURSES)

FR 1.1.1_02

DEPARTMENT OF	FOOD ENGINEERING
DEPARTMENT / PROGRAM	DOCTORATE PROGRAM

COURSE STAGE	I. TERM / FALL								II. TERM / SPRING							
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS
	GMB6009	CLARIFICATION AND FILTRATION TECHNIQUES	S	3	0	0	3	6	GMB6008	FOOD PRESERVATION TECHNOLOGY	S	3	0	0	3	6
	GMB6011	HYDROGENATION OF FATS AND MARGARINE TECHNOLGY	S	3	0	0	3	6	GMB6010	LIPIDS	S	3	0	0	3	6
	GMB6013	CHEMISTRY AND TECHNOLOGY OF STARCH	S	2	0	2	3	6	GMB6012	STATISTICAL QUALITY CONTROL IN FOOD INDUSTRY	S	3	0	0	3	6
	GMB6015	FOOD MYCOLOGY	S	2	0	2	3	6	GMB6014	ADVANCED FOOD CHEMISTRY	S	3	0	0	3	6
	GMB6017	AROMA-ACTIVE FOOD COMPONENTS	S	2	0	2	3	6	GMB6016	MILLING TECHNOLOGY	S	2	0	2	3	6
	GMB6019	FOOD-ORIGINATED SULPHUR COMPOUNDS	S	2	0	2	3	6	GMB6018	SPECIAL CEREAL PRODUCTS	S	2	0	2	3	6
	GMB6021	ADVANCED DAIRY TECHNOLOGY	S	3	0	0	3	6	GMB6020	FOOD TOXICOLOGY	S	3	0	0	3	6
	GMB6023	ADVANCED FOOD BIOCHEMISTRY	S	3	0	0	3	6	GMB6022	CHEMICAL CHANGES OCCURED DURING FOOD PROCESSING	S	3	0	0	3	6
	GMB6025	RESEARCH METHODS IN FOOD SCIENCE	S	3	0	0	3	6	GMB6024	FOOD FERMENTATIONS	S	3	0	0	3	6
	GMB6027	LACTIC ACID BACTERIA and BIOTECHNOLOGICAL APPLICATIONS OF LACTIC ACID BACTERIA	S	3	0	0	3	6	GMB6026	TECHNOLOGY OF FLAVOR AND PHENOLIC COMPOUNDS	S	2	0	2	3	6
	GMB6029	FUNCTIONAL ADDITIVES IN DAIRY PRODUCTS	S	3	0	0	3	6	GMB6028	CHEMISTRY AND TECHNOLOGY OF FERMENTED DAIRY PRODUCTS	S	3	0	0	3	6
	GMB6031	FUNCTIONAL CULTURES IN MEAT PRODUCTS	E	3	0	0	3	6	GMB6030	PHYSICAL PROPERTIES OF FOOD	S	3	0	0	3	6

GMB6033	EXTRACTION TECHNIQUES AND PROCESS OPTIMIZATION IN THE FOOD INDUSTRY	E	3	0	0	3	6	GMB6032	FOOD INGREDIENTS AND ADDITIVES IN PRODUCT DEVELOPMENT	S	3	0	0	3	6
								GMB6034	THE PROTEOM AND METABOLOM ANALYSIS USED IN DETERMINATION OF	S	3	0	0	3	6
								GMB6036	THE SPICES USED IN FOOD INDUSTRY AND THEIR PROPERTIES	S	3	0	0	3	6
								GMB6038	MICROBIAL SHELF LIFE ASSESSMENT OF FOOD	S	3	0	0	3	6
								GMB6040	ADVANCED CHEESE TECHONOLOGY	S	3	0	0	3	6
								GMB6042	HEALTH RISKS OF MEAT AND MEAT PRODUCTS	E	3	0	0	3	6
								GMB6044	INNOVATIVE FOOD PACKAGING TECHNIQUES AND BIOPOLYMERS	E	3	0	0	3	6



BURSA ULUDAĞ ÜNİVERSİTESİ
FEN BİLİMLERİ ENSTİTÜSÜ
2022-2023 EĞİTİM ÖĞRETİM YILI DERS PLANLARI

FR 1.1.1_02

ANABİLİM DALI GIDA MÜHENDİSLİĞİ ANABİLİM DALI
BİLİM DALI / PROGRAMI BÜTÜNLEŞİK DOKTORA PROGRAMI

DERS AŞAMASI	I. YARIYIL / GÜZ								II. YARIYIL / BAHAR							
	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS
	GMB6191	DOKTORA TEZ DANIŞMANLIĞI I	Z	0	1	0	0	1	GMB6192	DOKTORA TEZ DANIŞMANLIĞI II	Z	0	1	0	0	1
	GMB6181	DOKTORA UZMANLIK ALAN DERSİ I	Z	4	0	0	0	5	GMB6182	DOKTORA UZMANLIK ALAN DERSİ II	Z	4	0	0	0	5
	GMB5001	GÜVENLİ GIDA ÜRETİM SİSTEMLERİ	Z	3	0	0	3	6	GMB5002	İLERİ GIDA MİKROBİYOLOJİSİ	Z	2	0	2	3	6
	GMB5003	ENSTRÜMENTAL GIDA ANALİZLERİ TEKNİĞİ	Z	3	0	0	3	6	GMB5...	SEÇMELİ DERS-I	S	3	0	0	3	6
	GMB5...	SEÇMELİ DERS-I	S				3	6	GMB5...	SEÇMELİ DERS-II	S				3	6
	GMB5...	SEÇMELİ DERS-II	S				3	6	GMB5...	SEÇMELİ DERS-III	S				3	6
	Toplam Kredi						12	30	Toplam Kredi						12	30
	III. YARIYIL / GÜZ								IV. YARIYIL / BAHAR							
DERS AŞAMASI	GMB6193	DOKTORA TEZ DANIŞMANLIĞI III	Z	0	1	0	0	1	GMB6194	DOKTORA TEZ DANIŞMANLIĞI IV	Z	0	1	0	0	1
	GMB6183	DOKTORA UZMANLIK ALAN DERSİ III	Z	4	0	0	0	5	GMB6184	DOKTORA UZMANLIK ALAN DERSİ IV	Z	4	0	0	0	5
	GMB6001	İLERİ STERİLİZASYON TEKNİKLERİ	Z	3	0	0	3	6	GMB6174	SEMİNER	Z	0	2	0	0	2
	GMB6...	SEÇMELİ DERS-I	S				3	6	FEN5000	ARAŞTIRMA TEKNİKLERİ VE YAYIN ETİĞİ	Z	2	0	0	2	2
	GMB6...	SEÇMELİ DERS-II	S				3	6	FEN6002	TEKNOLOJİ TRANSFERİ, AGE VE İNOVASYON	Z	2	0	0	2	2
	GMB6...	SEÇMELİ DERS-III	S				3	6	GMB6...	SEÇMELİ DERS-I	S				3	6
									GMB6...	SEÇMELİ DERS-II	S				3	6
									GMB6...	SEÇMELİ DERS-III	S				3	6
	Toplam Kredi						12	30	Toplam Kredi						11	30
	V. YARIYIL / GÜZ								VI. YARIYIL / BAHAR							
TEZ	GMB6195	DOKTORA TEZ DANIŞMANLIĞI V	Z	0	1	0	0	20	GMB6196	DOKTORA TEZ DANIŞMANLIĞI VI	Z	0	1	0	0	25
	GMB6185	DOKTORA UZMANLIK ALAN DERSİ V	Z	4	0	0	0	5	GMB6186	DOKTORA UZMANLIK ALAN DERSİ VI	Z	4	0	0	0	5
	YET6177	DOKTORA YETERLİK SINAVI	Z	0	0	0	0	5								
	Toplam Kredi							30	Toplam Kredi							30

VII. YARIYIL / GÜZ								VIII. YARIYIL / BAHAR							
GMB6197	DOKTORA TEZ DANIŞMANLIĞI VII	Z	0	1	0	0	25	GMB6198	DOKTORA TEZ DANIŞMANLIĞI VIII	Z	0	1	0	0	25
GMB6187	DOKTORA UZMANLIK ALAN DERSİ VII	Z	4	0	0	0	5	GMB6188	DOKTORA UZMANLIK ALAN DERSİ VIII	Z	4	0	0	0	5
Toplam Kredi							30	Toplam Kredi							30
IX.YARIYIL / GÜZ								X. YARIYIL / BAHAR							
GMB6199	DOKTORA TEZ DANIŞMANLIĞI IX	Z	0	1	0	0	25	GMB6200	DOKTORA TEZ DANIŞMANLIĞI X	Z	0	1	0	0	25
GMB6189	DOKTORA UZMANLIK ALAN DERSİ IX	Z	4	0	0	0	5	GMB6190	DOKTORA UZMANLIK ALAN DERSİ X	Z	4	0	0	0	5
Toplam Kredi							30	Toplam Kredi							30
TOPLAM KREDİ: 47 - TOPLAM AKTS: 300															



BURSA ULUDAĞ ÜNİVERSİTESİ
FEN BİLİMLERİ ENSTİTÜSÜ
2022-2023 EĞİTİM ÖĞRETİM YILI DERS PLANLARI (SEÇMELİ DERSLER)

FR 1.1.1_02

ANABİLİM DALI GIDA MÜHENDİSLİĞİ ANABİLİM DALI
BİLİM DALI / PROGRAMI BÜTÜNLEŞİK DOKTORA PROGRAMI

DERS AŞAMASI	I. YARIYIL / GÜZ								II. YARIYIL / BAHAR							
	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS
	GMB5011	ENDÜSTRİYEL GIDA İŞLEME MÜHENDİSLİĞİ	S	3	0	0	3	6	GMB5010	GIDALARDA UYGULANAN KURUTMA TEKNİKLERİ	S	3	0	0	3	6
	GMB5013	ENDÜSTRİYEL MEYVE SUYU İŞLEME TEKNOLOJİSİ	S	2	0	2	3	6	GMB5012	ENDÜSTRİYEL KONSERVE TEKNOLOJİSİ	S	2	0	2	3	6
	GMB5015	YEMEKLİK YAĞ KİMYASI VE TEKNOLOJİSİ	S	3	0	0	0	6	GMB5014	KİMYASAL MİKROBİYOLOJİ	S	3	0	0	3	6
	GMB5017	TAHİL KİMYASI	S	2	0	2	3	6	GMB5016	FERMENTE TAHİL ÜRÜNLERİ TEKNOLOJİSİ	S	2	0	2	3	6
	GMB5019	BİSKÜVİ, KRAKER VE KEK TEKNOLOJİSİ	S	2	0	2	3	6	GMB5018	MAKARNA VE ERİŞTE TEKNOLOJİSİ	S	2	0	2	3	6
	GMB5021	GIDA SANAYİNDE STARTER ÜRETİMİ VE KULLANIMI	S	2	0	2	3	6	GMB5020	GIDA GÜVENLİĞİ MİKROBİYOLOJİSİ VE KİMYASI	S	3	0	0	3	6
	GMB5023	GIDALARDA BOZULMAYA NEDEN OLAN MİKROORGANİZMALAR VE TANIMLANMALARI	S	2	0	2	3	6	GMB5022	GIDA AMBALAJLAMADA UYGULANAN TEKNİKLER	S	3	0	0	3	6
	GMB5025	MİKROBİYEL PROSES TEKNOLOJİSİ	S	3	0	0	3	6	GMB5024	TOPLUM BESLENMESİ	S	3	0	0	3	6
	GMB5027	GIDA SANİTASYONU	S	3	0	0	3	6	GMB5026	FONKSİYONEL GIDALAR VE NUTRASÖTİKLER	S	3	0	0	3	6
	GMB5029	ENDÜSTRİYEL MEYVE ŞARAPLARI TEKNOLOJİSİ	S	2	0	2	3	6	GMB5028	VİSKİ VE KONYAK ÜRETİMİ	S	2	0	2	3	6
	GMB5031	GIDA SANAYİNDE ENZİM KULLANIMI	S	2	0	2	3	6	GMB5030	GIDA AROMA MADDELERİ VE AROMA KİMYASI	S	2	0	2	3	6
	GMB5033	MALT VE BİRA TEKNOLOJİSİ	S	2	0	2	3	6	GMB5032	SÜT ÜRÜNLERİ ÜRETİM TEKNOLOJİSİ	S	2	0	2	3	6
	GMB5035	PROSES DİZAYNI VE DEĞERLENDİRMESİ	S	3	0	0	3	6	GMB5034	GIDALARIN MİNERALLERLE ZENGİNLEŞTİRİLMESİ VE BİYİYARARLILIK	S	3	0	0	3	6
	GMB5037	SÜT VE ÜRÜNLERİ FİZİK VE KİMYASI	S	2	0	2	3	6	GMB5036	GIDALARDA RAF ÖMRÜ	S	3	0	0	3	6

DERS AŞAMASI	GMB5039	GIDALARDAKİ İZ ELEMENTLER	S	3	0	0	3	6	GMB5038	SÜT TEKNOLOJİSİNDE PROBİYOTİK BAKTERİLER VE PREBİYOTİKLER	S	2	0	2	3	6
	GMB5041	SÜT TEKNOLOJİSİNDE ALTERNATİF KORUMA YÖNTEMLERİ	S	3	0	0	3	6	GMB5040	GIDALARIN MODİFİYE ATMOSFERDE MUHAFAZASI	S	3	0	0	3	6
	GMB5043	GIDA MÜHENDİSLİĞİNDE MOLEKÜLERUYGULAMALAR	S	2	0	2	3	6	GMB5042	GASTRONOMİ VE YEMEK TARİHİ	S	3	0	0	3	6
	GMB5045	ASEPTİK AMBALAJLAMA TEKNOLOJİSİ	S	3	0	0	3	6	GMB5044	MAYALAR VE MAYALARIN BİYOTEKNOLOJİK UYGULAMALARDA KULLANIMI	S	3	0	0	3	6
	GMB5047	MISIR ÜRÜNLERİ VE TATLANDIRICILAR	S	3	0	0	3	6	GMB5046	TEMEL UYGULAMALI MİKROBİYOLOJİ	S	2	2	0	3	6
	GMB5049	GIDA SANAYİNDE YATIRIM PROJESİ HAZIRLAMA, DEĞERLENDİRME VE İZLEME YÖNTEMLERİ	S	3	0	0	3	6	GMB5048	ET TEKNOLOJİSİNDE SON GELİŞMELER	S	3	0	0	3	6
	GMB5051	SÜT ÜRÜNLERİNDE REOLOJİ VE TEKSTÜR	S	3	0	0	3	6	GMB5050	GIDA BULAŞANLARI VE KALINTILARI	S	3	0	0	3	6
	GMB5053	ÇAY İŞLEME TEKNOLOJİSİ	S	3	0	0	3	6	GMB5052	GIDA İŞLEMEDE YENİ TEKNİKLER	S	3	0	0	3	6
	GMB5055	İLERİ ET BİLİMİ VE TEKNOLOJİSİ	S	3	0	0	3	6	GMB5054	KAROTENOİDLER VE GIDA SANAYİNDE KULLANIMI	S	3	0	0	3	6
	GMB5057	GIDA ANALİZ LABORATUVARLARINDA KALİTE YÖNETİM SİSTEMLERİ	S	3	0	0	3	6	GMB5056	GIDA BİLİMİNDE OMİK YAKLAŞIMLAR	S	3	0	0	3	6
	GMB5059	GIDA ENDÜSTRİSİNDE KULLANILAN TIBBİ VE AROMATİK BİTKİLER	S	3	0	0	3	6	GMB5058	GIDA SANAYİNDE ENERJİ VE EKSERJİ	S	3	0	0	3	6
	GMB5061	SÜRDÜRÜLEBİLİR GIDA ÜRETİMİ	S	3	0	0	3	6	GMB5060	ORGANİK GIDA İŞLEME VE SÜRDÜRÜLEBİLİR GIDA SİSTEMLERİ	S	3	0	0	3	6
	GMB5063	ARI ÜRÜNLERİ İŞLEME TEKNOLOJİLERİ VE KALİTESİNİN DEĞERLENDİRİLMESİ	S	3	0	0	3	6	GMB5062	GIDA PROTEİNLERİ	S	3	0	0	3	6
	GMB5065	GIDALARDA RENK MADDELERİ	S	3	0	0	3	6								
DERS AŞAMASI	III. YARIYIL / GÜZ								IV. YARIYIL / BAHAR							
	GMB6009	DURULTMA VE FİLTASYON TEKNİKLERİ	S	3	0	0	3	6	GMB6008	GIDA MUHAFAZA TEKNOLOJİSİ	S	3	0	0	3	6
	GMB6011	YAĞLARIN HİDROJENENASYONU VE MARGARİN TEKNOLOJİSİ	S	3	0	0	3	6	GMB6010	LİPİTLER	S	3	0	0	3	6
	GMB6013	NİŞASTA KİMYASI VE TEKNOLOJİSİ	S	2	0	2	3	6	GMB6012	GIDA SANAYİNDE İSTATİKSEL KALİTE KONTROL	S	3	0	0	3	6

GMB6015	GIDA MİKROLOJİSİ	S	2	0	2	3	6	GMB6014	İLERİ GIDA KİMYASI	S	3	0	0	3	6
GMB6017	AROMA AKTİF GIDA BİLEŞENLERİ	S	2	0	2	3	6	GMB6016	DEĞİRMENCİLİK TEKNOLOJİSİ	S	2	0	2	3	6
GMB6019	GIDA KAYNAKLI SÜLFÜR BİLEŞENLERİ	S	2	0	2	3	6	GMB6018	ÖZEL TAHİL ÜRÜNLERİ	S	2	0	2	3	6
GMB6021	İLERİ SÜT TEKNOLOJİSİ	S	3	0	0	3	6	GMB6020	GIDA TOKSİKOLOJİSİ	S	3	0	0	3	6
GMB6023	İLERİ GIDA BİYOKİMYASI	S	3	0	0	3	6	GMB6022	GIDALARIN İŞLENMESİ SIRASINDA OLUŞAN KİMYASAL DEĞİŞİKLİKLER	S	3	0	0	3	6
GMB6025	GIDA BİLİMİNDE ARAŞTIRMA METOTLARI	S	3	0	0	3	6	GMB6024	GIDA FERMENTASYONLARI	S	3	0	0	3	6
GMB6027	LAKTİK ASİT BAKTERİLERİ VE LAKTİK ASİT BAKTERİLERİNİN BİYOTEKNOLOJİK UYGULAMALARDA KULLANIMI	S	3	0	0	3	6	GMB6026	FLAVOR VE FENOL BİLEŞİKLERİ TEKNOLOJİSİ	S	2	0	2	3	6
GMB6029	SÜT ÜRÜNLERİNDE FONKSİYONEL KATKILAR	S	3	0	0	3	6	GMB6028	FERMENTE SÜT ÜRÜNLERİ KİMYASI VE TEKNOLOJİSİ	S	3	0	0	3	6
GMB6031	ET ÜRÜNLERİNDE FONKSİYONEL KÜLTÜRLER	S	3	0	0	3	6	GMB6030	GIDALARIN FİZİKSEL ÖZELLİKLERİ	S	3	0	0	3	6
GMB6033	GIDA SANAYİNDE EKSTRAKSİYON TEKNİKLERİ VE OPTİMİZASYON	S	3	0	0	3	6	GMB6032	ÜRÜN GELİŞTİRMEDE GIDA KATKILARI	S	3	0	0	3	6
								GMB6034	KALİTESİNİN MİKROBİYOLOJİK OLARAK BELİRLENMESİNDE PROTEOM VE METABOLOM ANALİZLERİ	S	3	0	0	3	6
								GMB6036	GIDA SANAYİNDE KULLANILAN BAHARATLAR VE ÖZELLİKLERİ	S	3	0	0	3	6
								GMB6038	GIDALARDA MİKROBİYEL RAF ÖMRÜ	S	3	0	0	3	6
								GMB6040	İLERİ PEYNİR TEKNOLOJİSİ	S	3	0	0	3	6
								GMB6042	ET VE ET ÜRÜNLERİ KAYNAKLI SAĞLIK RİSKLERİ	S	3	0	0	3	6
								GMB6044	YENİLİKÇİ GIDA AMBALAJLAMA TEKNİKLERİ VE BİYOPOLİMERLER	S	3	0	0	3	6



BURSA ULUDAG UNIVERSITY
INSTITUTE OF SCIENCE
2022-2023 ACADEMIC YEAR COURSE

FR 1.1.1_02

DEPARTMENT OF

FOOD ENGINEERING

DEPARTMENT / PROGRAM

INTEGRATED DOCTORAL PROGRAM

COURSE STAGE	I. TERM / FALL								II. TERM / SPRING							
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS
	GMB6191	PHD THESIS CONSULTING I	C	0	1	0	0	1	GMB6192	PHD THESIS CONSULTING II	C	0	1	0	0	1
	GMB6181	ADVANCED TOPICS IN PHD THESIS I	C	4	0	0	0	5	GMB6182	ADVANCED TOPICS IN PHD THESIS II	C	4	0	0	0	5
	GMB5001	SAFE FOOD PROCESSING TECHNIQUES	C	3	0	0	3	6	GMB5002	ADVANCED FOOD MICROBIOLOGY	C	2	0	2	3	6
	GMB5003	INSTRUMENTAL FOOD ANALYSIS TECHNIQUES	C	3	0	0	3	6	GMB5...	ELECTIVE COURSE -I	E	3	0	0	3	6
	GMB5...	ELECTIVE COURSE -I	E				3	6	GMB5...	ELECTIVE COURSE -II	E				3	6
	GMB5...	ELECTIVE COURSE -II	E				3	6	GMB5...	ELECTIVE COURSE -III	E				3	6
	Total Credits						12	30	Total Credits						12	30
	III. TERM / FALL								IV. TERM / SPRING							
THESES	GMB6193	PHD THESIS CONSULTING III	C	0	1	0	0	1	GMB6194	PHD THESIS CONSULTING IV	C	0	1	0	0	1
	GMB6183	ADVANCED TOPICS IN PHD THESIS III	C	4	0	0	0	5	GMB6184	ADVANCED TOPICS IN PHD THESIS IV	C	4	0	0	0	5
	GMB6001	ADVANCED STERILISATION TECHNIQUES	C	3	0	0	3	6	GMB6172	SEMINAR	C	0	2	0	0	2
	GMB6...	ELECTIVE COURSE -I	E				3	6	FEN5000	RESEARCH TECHNIQUES AND PUBLICATION ETHICS IN FOOD ENGINEERING	Z	2	0	0	2	2
	GMB6...	ELECTIVE COURSE -II	E				3	6	FEN6002	TECHNOLOGY TRANSFER, R&D AND INNOVATION	C	2	0	0	2	2
	GMB6...	ELECTIVE COURSE -III	E				3	6	GMB6...	ELECTIVE COURSE -I	E				3	6
									GMB6...	ELECTIVE COURSE -II	E				3	6
									GMB6...	ELECTIVE COURSE -III	E				3	6
	Total Credits						12	30	Total Credits						11	30
	V. TERM / FALL								VI. TERM / SPRING							
	GMB6195	PHD THESIS CONSULTING V	C	0	1	0	0	20	GMB6196	PHD THESIS CONSULTING VI	C	0	1	0	0	25
	GMB6185	ADVANCED TOPICS IN PHD THESIS V	C	4	0	0	0	5	GMB6186	ADVANCED TOPICS IN PHD THESIS VI	C	4	0	0	0	5
	GMB6177	PHD PROFICIENCY EXAMINATION	C	0	0	0	0	5								

Total Credits								30	Total Credits								30
VII. TERM / FALL									VIII. TERM / SPRING								
GMB6197	PHD THESIS CONSULTING VII	C	0	1	0	0	20	GMB6198	PHD THESIS CONSULTING VIII	C	0	1	0	0	25		
GMB6187	ADVANCED TOPICS IN PHD THESIS VII	C	4	0	0	0	5	GMB6188	ADVANCED TOPICS IN PHD THESIS VIII	C	4	0	0	0	5		
Total Credits								30	Total Credits								30
IX. TERM / FALL									X. TERM / SPRING								
GMB6199	PHD THESIS CONSULTING IX	C	0	1	0	0	25	GMB6100	PHD THESIS CONSULTING X	C	4	0	0	0	5		
GMB6189	ADVANCED TOPICS IN PHD THESIS IX	C	4	0	0	0	5	GMB6190	ADVANCED TOPICS IN PHD THESIS X	C	0	1	0	0	25		
Total Credits								30	Total Credits								30
TOTAL CREDITS: 47 - TOTAL ECTS: 300																	



**BURSA ULUDAG UNIVERSITY
INSTITUTE OF SCIENCE**

2022-2023 ACADEMIC YEAR COURSE PLAN (ELECTIVE COURSES)

FR 1.1.1_02

DEPARTMENT OF

FOOD ENGINEERING

DEPARTMENT / PROGRAM

INTEGRATED DOCTORAL PROGRAM

COURSE STAGE	I. TERM / FALL								II. TERM / SPRING							
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS
	GMB5011	INDUSTRIAL FOOD PROCESS ENGINEERING	E	3	0	0	3	6	GMB5010	DRYING TECHNIQUES OF FOODS	E	3	0	0	3	6
	GMB5013	INDUSTRIAL FRUIT JUICE PRODUCTION TECHNOLOGY	E	2	0	2	3	6	GMB5012	INDUSTRIAL CANNING TECHNOLOGY	E	2	0	2	3	6
	GMB5015	CHEMISTRY AND TECHNOLOGY OF EDIBLE FATS AND OILS	E	3	0	0	3	6	GMB5014	CHEMICAL MICROBIOLOGY	E	3	0	0	3	6
	GMB5017	CEREAL CHEMISTRY	E	2	0	2	3	6	GMB5016	FERMENTED CEREAL PRODUCTS TECHNOLOGIES	E	2	0	2	3	6
	GMB5019	TECHNOLOGY OF BISCUIT, CRACKER AND CAKE	E	2	0	2	3	6	GMB5018	PASTA AND NOODLE TECHNOLOGY	E	2	0	2	3	6
	GMB5021	STARTER PRODUCTION AND USE IN FOOD INDUSTRY	E	2	0	2	3	6	GMB5020	SAFETY, MICROBIOLOGY AND CHEMISTRY OF FOODS	E	3	0	0	3	6
	GMB5023	IDENTIFICATION OF MICROORGANISMS CAUSING SPOILAGE IN FOODS	E	2	0	2	3	6	GMB5022	TECHNIQUES APPLIED IN FOOD PACKAGING	E	3	0	0	3	6
	GMB5025	MICROBIAL PROCESS TECHNOLOGY	E	3	0	0	3	6	GMB5024	COMMUNITY NUTRITION	E	3	0	0	3	6
	GMB5027	FOOD SANITATION	E	3	0	0	3	6	GMB5026	FUNCTIONAL FOODS AND NUTRACEUTICALS	E	3	0	0	3	6
	GMB5029	INDUSTRIAL FRUIT WINES TECHNOLOGY	E	2	0	2	3	6	GMB5028	WHISKY AND COGNAC PRODUCTION	E	2	0	2	3	6
	GMB5031	ENZYMES IN FOOD INDUSTRY	E	2	0	2	3	6	GMB5030	FOOD AROMA AND AROMA CHEMISTRY	E	2	0	2	3	6
	GMB5033	MALT AND BEER TECHNOLOGY	E	2	0	2	3	6	GMB5032	DAIRY PROCESSING TECHNOLOGY	E	2	0	2	3	6
	GMB5035	PROCESSES DESIGN AND EVALUATION	E	3	0	0	3	6	GMB5034	FORTIFICATION OF FOODS WITH MINERALS AND BIOAVAILABILITY	E	3	0	0	3	6
	GMB5037	PHYSICS AND CHEMISTRY OF MILK AND DAIRY PRODUCTS	E	2	0	2	3	6	GMB5036	SHELF LIFE OF FOODS	E	3	0	0	3	6

	GMB5039	TRACE ELEMENTS IN FOODS	E	3	0	0	3	6	GMB5038	PROBIOTIC BACTERIA AND PROBIOTICS IN DAIRY SCIENCE	E	2	0	2	3	6
	GMB5041	ALTERNATIVE PRESERVATION TECHNIQUES IN DAIRY SCIENCE	E	3	0	0	3	6	GMB5040	MODIFIED ATMOSPHERE PACKAGING OF FOOD	E	3	0	0	3	6
	GMB5043	MOLECULAR APPLICATIONS IN FOOD ENGINEERING	E	2	0	2	3	6	GMB5042	GASTRONOMY AND FOOD HISTORY	E	3	0	0	3	6
	GMB5045	ASEPTIC PACKAGING TECHNOLOGY	E	3	0	0	3	6	GMB5044	YEASTS AND BIOTECHNOLOGICAL APPLICATIONS OF YEASTS	E	3	0	0	3	6
	GMB5047	CORN PRODUCTS AND SWEETENERS	E	3	0	0	3	6	GMB5046	BASIC PRACTICAL MICROBIOLOGY	E	2	2	0	3	6
	GMB5049	INVESTMENT PROJECT PREPARATION, EVALUATION AND MONITORING METHODS IN FOOD INDUSTRY	E	3	0	0	3	6	GMB5048	RECENT ADVANCES IN MEAT TECHNOLOGY	E	3	0	0	3	6
	GMB5051	RHEOLOGY AND TEXTURE OF DAIRY PRODUCTS	E	3	0	0	3	6	GMB5050	FOOD CONTAMINANTS AND RESIDUES	E	3	0	0	3	6
	GMB5053	TEA PROCESSING TECHNOLOGY	E	3	0	0	3	6	GMB5052	NOVEL FOOD PROCESSING TECHNIQUES	E	3	0	0	3	6
	GMB5055	ADVANCED MEAT SCIENCE AND TECHNOLOGY	E	3	0	0	3	6	GMB5054	CAROTENOIDS AND THEIR USAGE IN FOOD INDUSTRY	E	3	0	0	3	6
	GMB5057	QUALITY MANAGEMENT SYSTEMS FOR FOOD TESTING LABORATORIES	E	3	0	0	3	6	GMB5056	OMIC APPROACHES IN FOOD SCIENCE	E	3	0	0	3	6
	GMB5059	MEDICINAL AND AROMATIC PLANTS USED IN FOOD INDUSTRY	E	3	0	0	3	6	GMB5058	ENERGY AND EXERGY IN THE FOOD INDUSTRY	E	3	0	0	3	6
	GMB5061	SUSTAINABLE FOOD PRODUCTION	E	3	0	0	3	6	GMB5060	ORGANIC FOOD PROCESSING AND SUSTAINABLE FOOD SYSTEMS	E	3	0	0	3	6
	GMB5063	PROCESSING TECHNOLOGIES OF BEE PRODUCTS AND QUALITY EVALUATION	E	3	0	0	3	6	GMB5062	FOOD PROTEINS	E	3	0	0	3	6
	GMB5065	COLOR COMPOUNDS IN FOODS	E	3	0	0	3	6								
COURSE STAGE	III. TERM / FALL								IV. TERM / SPRING							
	GMB6009	CLARIFICATION AND FILTRATION TECHNIQUES	E	3	0	0	3	6	GMB6008	FOOD PRESERVATION TECHNOLOGY	E	3	0	0	3	6
	GMB6011	HYDROGENATION OF FATS AND MARGARINE TECHNOLOGY	E	3	0	0	3	6	GMB6010	LIPIDS	E	3	0	0	3	6
	GMB6013	CHEMISTRY AND TECHNOLOGY OF STARCH	E	2	0	2	3	6	GMB6012	STATISTICAL QUALITY CONTROL IN FOOD INDUSTRY	E	3	0	0	3	6
	GMB6015	FOOD MYCOLOGY	E	2	0	2	3	6	GMB6014	ADVANCED FOOD CHEMISTRY	E	3	0	0	3	6

GMB6017	AROMA-ACTIVE FOOD COMPONENTS	E	2	0	2	3	6	GMB6016	MILLING TECHNOLOGY	E	2	0	2	3	6
GMB6019	FOOD-ORIGINATED SULPHUR COMPOUNDS	E	2	0	2	3	6	GMB6018	SPECIAL CEREAL PRODUCTS	E	2	0	2	3	6
GMB6021	ADVANCED DAIRY TECHNOLOGY	E	3	0	0	3	6	GMB6020	FOOD TOXICOLOGY	E	3	0	0	3	6
GMB6023	ADVANCED FOOD BIOCHEMISTRY	E	3	0	0	3	6	GMB6022	CHEMICAL CHANGES OCCURED DURING FOOD PROCESSING	E	3	0	0	3	6
GMB6025	RESEARCH METHODS IN FOOD SCIENCE	E	3	0	0	3	6	GMB6024	FOOD FERMENTATIONS	E	3	0	0	3	6
GMB6027	LACTIC ACID BACTERIA AND BIOTECHNOLOGICAL APPLICATIONS OF LACTIC ACID BACTERIA	E	3	0	0	3	6	GMB6026	TECHNOLOGY OF FLAVOR AND PHENOLIC COMPOUNDS	E	2	0	2	3	6
GMB6029	FUNCTIONAL ADDITIVES IN DAIRY PRODUCTS	E	3	0	0	3	6	GMB6028	CHEMISTRY AND TECHNOLOGY OF FERMENTED DAIRY PRODUCTS	E	3	0	0	3	6
GMB6031	FUNCTIONAL CULTURES IN MEAT PRODUCTS	E	3	0	0	3	6	GMB6030	PHYSICAL PROPERTIES OF FOOD	E	3	0	0	3	6
GMB6033	EXTRACTION TECHNIQUES AND PROCESS OPTIMIZATION IN THE FOOD INDUSTRY	E	3	0	0	3	6	GMB6032	FOOD INGREDIENTS AND ADDITIVES IN PRODUCT DEVELOPMENT	E	3	0	0	3	6
								GMB6034	THE PROTEOM AND METABOLOM ANALYSIS USED IN DETERMINATION OF MICROBIOLOGICAL FOOD QUALITY	E	3	0	0	3	6
								GMB6036	THE SPICES USED IN FOOD INDUSTRY AND THEIR PROPERTIES	E	3	0	0	3	6
								GMB6038	MICROBIAL SHELF LIFE ASSESSMENT OF FOOD	E	3	0	0	3	6
								GMB6040	ADVANCED CHEESE TECHONOLOGY	E	3	0	0	3	6
								GMB6042	HEALTH RISKS OF MEAT AND MEAT PRODUCTS	E	3	0	0	3	6
								GMB6044	INNOVATIVE FOOD PACKAGING TECHNIQUES AND BIOPOLYMERS	E	3	0	0	3	6



BURSA ULUDAĞ ÜNİVERSİTESİ
FEN BİLİMLERİ ENSTİTÜSÜ
2022-2023 EĞİTİM ÖĞRETİM YILI DERS PLANLARI

FR 1.1.1_02

ANABİLİM DALI GIDA MÜHENDİSLİĞİ ANABİLİM DALI
BİLİM DALI / PROGRAMI (TEZSİZ) YÜKSEK LİSANS PROGRAMI

DERS AŞAMASI	I. YARIYIL / GÜZ								II. YARIYIL / BAHAR							
	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS
	GMB5301	GÜVENLİ GIDA ÜRETİMİ	Z	3	0	0	3	6	GMB5302	GIDA MİKROBİYOLOJİSİNDE YENİ UYGULAMALAR	Z	2	0	2	3	6
	GMB5303	ENSTRÜMENTAL GIDA ANALİZLERİ: TEORİ ve UYGULAMALAR	Z	3	0	0	3	6	GMB...	SEÇMELİ DERS-I	S				3	6
	GMB...	SEÇMELİ DERS-I					3	6	GMB...	SEÇMELİ DERS-II	S				3	6
	GMB...	SEÇMELİ DERS-II					3	6	GMB...	SEÇMELİ DERS-III	S				3	6
	GMB...	SEÇMELİ DERS-III					3	6	GMB...	SEÇMELİ DERS-IV	S				3	6
		Zorunlu olarak alınması gereken AKTS Toplamı	Z	6	0	0	6	12		Zorunlu olarak alınması gereken AKTS Toplamı	Z	2	0	2	3	6
		Seçmeli olarak alınması gereken AKTS Toplamı	S				9	18		Seçmeli olarak alınması gereken AKTS Toplamı	S				12	24
	Toplam Kredi						15	30	Toplam Kredi						15	30
	II. YARIYIL / GÜZ															
	GMB5304	DÖNEM PROJESİ	Z	0	0	0	0	30								
		Toplam Kredi					0	30								
TOPLAM KREDİ: 30 TOPLAM AKTS: 90																



BURSA ULUDAĞ ÜNİVERSİTESİ

FEN BİLİMLERİ ENSTİTÜSÜ

2022-2023 EĞİTİM ÖĞRETİM YILI DERS PLANLARI (SEÇMELİ DERSLER)

FR 1.1.1_02

ANABİLİM DALI		GIDA MÜHENDİSLİĞİ ANABİLİM DALI														
BİLİM DALI / PROGRAMI		(TEZSİZ) YÜKSEK LİSANS PROGRAMI														
DERS AŞAMASI	I. YARIYIL / GÜZ								II. YARIYIL / BAHAR							
	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS	Kodu	Dersin Adı	Türü	T	U	L	Kredi	AKTS
	GMB5311	GIDA İŞLEME MÜHENDİSLİĞİNİN TEMEL İLKELERİ VE ENDÜSTRİYEL UYGULAMALARI	S	3	0	0	3	6	GMB5310	GIDA MÜHENDİSLİĞİNDE KURUTMA TEKNİKLERİ	S	3	0	0	3	6
	GMB5313	MEYVE SUYU İŞLEME TEKNOLOJİSİNDE GELİŞMELER	S	2	0	2	3	6	GMB5312	KONSERVE BİLİMİ VE TEKNOLOJİSİ	S	2	0	2	3	6
	GMB5315	YAĞ KİMYASI VE ENDÜSTRİYEL YEMEKLİK YAĞ TEKNOLOJİSİ	S	3	0	0	3	6	GMB5314	KİMYASAL MİKROBİYOLOJİNİN TEMELLERİ	S	3	0	0	3	6
	GMB5317	İLERİ TAHİL KİMYASI	S	2	0	2	3	6	GMB5316	FERMENTE TAHİL ÜRÜNLERİ ÜRETİMİNDE İLERİ TEKNOLOJİLER	S	2	0	2	3	6
	GMB5319	BİSKÜVİ, KRAKER VE KEK TEKNOLOJİSİNDE GELİŞMELER	S	2	0	2	3	6	GMB5318	MAKARNA VE ERİŞTE ÜRETİMİNİN TEMEL İLKELERİ	S	2	0	2	3	6
	GMB5321	MİKROBİYEL STARTER ÜRETİMİ VE TEKNOLOJİSİ	S	2	0	2	3	6	GMB5320	GÜVENİLİR GIDA ÜRETİMİNDE MİKROBİYOLOJİK VE KİMYASAL TEHLİKELER	S	3	0	0	3	6
	GMB5323	GIDA PROSESLERİNDE BOZULMAYA NEDEN OLAN MİKROORGANİZMALAR	S	2	0	2	3	6	GMB5322	GIDA AMBALAJLAMADA YENİLİKÇİ UYGULAMALAR	S	3	0	0	3	6
	GMB5325	MİKROBİYEL BİYOKÜTLE PROSES TEKNOLOJİLERİ VE YÖNETİMİ	S	3	0	0	3	6	GMB5324	TOPLUM SAĞLIĞI VE BESLENME	S	3	0	0	3	6
	GMB5327	SANİTASYON VE GIDA ENDÜSTRİSİ	S	3	0	0	3	6	GMB5326	FONKSİYONEL GIDA BİLİMİ VE YENİLİKÇİ TEKNOLOJİLER	S	3	0	0	3	6
	GMB5329	MEYVE ŞARAPLARI BİLİMİ VE TEKNOLOJİSİ	S	2	0	2	3	6	GMB5328	VİSKİ VE KONYAK BİLİMİ VE TEKNOLOJİSİ	S	2	0	2	3	6
	GMB5331	GIDA İŞLEMEDE ENZİM KULLANIMI	S	2	0	2	3	6	GMB5330	AROMA KİMYASI VE GIDALARDA BULUNAN AROMA MADDELERİ	S	2	0	2	3	6
	GMB5333	MALT VE BİRA TEKNOLOJİSİNDE GELİŞMELER	S	2	0	2	3	6	GMB5332	SÜT ÜRÜNLERİ İŞLEMEDE İLERİ TEKNOLOJİLER	S	2	0	2	3	6

GMB5335	GIDA SANAYİNDE PROSES DİZAYNI VE DEĞERLENDİRMESİ	S	3	0	0	3	6	GMB5334	GIDA MÜHENDİSLİĞİNDE BİYOTARARLILIK VE GIDALARIN MİNERAL MADDELERCE ZENGİNLEŞTİRİLMESİ	S	3	0	0	3	6
GMB5337	SÜT ÜRÜNLERİ BİYOKİMYASI	S	2	0	2	3	6	GMB5336	GIDA STABİLİTESİ VE RAF ÖMRÜ	S	3	0	0	3	6
GMB5339	GIDALARDA BULUNAN İZ ELEMENTLER VE ÖNEMİ	S	3	0	0	3	6	GMB5338	PROBİYOTİKLER, PREBİYOTİKLER VE SÜT ÜRÜNLERİNDE KULLANIMI	S	2	0	2	3	6
GMB5341	SÜT İŞLEME TEKNOLOJİSİNDE YENİLİKÇİ KORUMA YÖNTEMLERİ	S	3	0	0	3	6	GMB5340	GIDA SANAYİNDE MODİFİYE ATMOSFER UYGULAMALARI	S	3	0	0	3	6
GMB5343	GIDA MÜHENDİSLİĞİNDE MOLEKÜLER TEKNİKLERİN TEMEL İLKELERİ VE GÜNCEL UYGULAMALAR	S	2	0	2	3	6	GMB5342	GASTRONOMİ VE MUTFAK SANATLARI	S	3	0	0	3	6
GMB5345	ASEPTİK AMBALAJLAMA TEKNOLOJİLERİNİN TEMEL İLKELERİ VE UYGULAMALARI	S	3	0	0	3	6	GMB5344	BİYOTEKNOLOJİK SÜREÇLERDE MAYALARIN KULLANIMI: TEMEL İLKELER VE UYGULAMALAR	S	3	0	0	3	6
GMB5347	GIDA SANAYİNDE KULLANILAN MISIR ÜRÜNLERİ VE TATLANDIRICILAR	S	3	0	0	3	6	GMB5346	GIDA MÜHENDİSLİĞİNDE UYGULAMALI MİKROBİYOLOJİ: TEMEL İLKELER VE GELİŞMELER	S	2	2	0	3	6
GMB5349	GIDA MÜHENDİSLERİ İÇİN YATIRIM PROJESİ HAZIRLAMA, DEĞERLENDİRME VE İZLEME YÖNTEMLERİNİN TEMEL İLKELERİ	S	3	0	0	3	6	GMB5348	ET İŞLEME TEKNOLOJİSİNDE YENİLİKÇİ UYGULAMALAR	S	3	0	0	3	6
GMB5351	SÜT ÜRÜNLERİNİN REOLOJİSİ	S	3	0	0	3	6	GMB5350	GIDA PROSESLERİNDE BULAŞANLAR VE KALINTILAR	S	3	0	0	3	6
GMB5353	ÇAY KİMYASI VE ÜRETİM TEKNOLOJİSİ	S	3	0	0	3	6	GMB5352	YENİLİKÇİ GIDA İŞLEME TEKNİKLERİ	S	3	0	0	3	6
GMB5355	ET BİLİMİNİN TEMEL İLKELERİ VE İŞLEME TEKNOLOJİSİ	S	3	0	0	3	6	GMB5354	GIDA ENDÜSTRİSİNDE KULLANILAN KAROTENOİDLER	S	3	0	0	3	6
GMB5357	GIDA MÜHENDİSLERİ İÇİN KALİTE YÖNETİM SİSTEMLERİ VE GIDA ANALİZ LABORATUVARLARI UYGULANMALARI	S	3	0	0	3	6	GMB5356	GIDALARDA OMİK UYGULAMALAR	S	3	0	0	3	
GMB5359	TIBBİ VE AROMATİK BİTKİLERİN GIDA ENDÜSTRİSİNDE KULLANIMI	S	3	0	0	3	6	GMB5358	ENERJİ VE EKSERJİ ANALİZİ VE GIDA UYGULAMALARI	S	3	0	0	3	

GMB5361	GIDA SANAYİİNDE SÜRDÜRÜLEBİLİRLİK	S	3	0	0	3	6	GMB5360	SÜRDÜRÜLEBİLİR VE ORGANİK GIDALARIN İŞLENMESİ VE GIDA SİSTEMLERİNDE	S	3	0	0	3	6
GMB5363	ARI ÜRÜNLERİNİN ÜRETİMİ, İŞLENMESİ VE KALİTESİNİN DEĞERLENDİRİLMESİ	S	3	0	0	3	6	GMB5362	PROTEİN VE YÜKSEK PROTEİNLİ GIDALARA GİRİŞ	S	3	0	0	3	
GMB5365	GIDALARDA RENGİN ÖNEMİ VE DEĞERLENDİRİLMESİ	S	3	0	0	3	6								

		BURSA ULUDAĞ UNIVERSITY INSTITUTE of SCIENCE 2022-2023 ACADEMIC YEAR COURSE PLAN												FR 1.1.1_02			
DEPARTMENT OF		FOOD ENGINEERING															
DEPARTMENT / PROGRAM		(Non-Thesis) Master's Program															
COURSE STAGE	I. TERM / FALL								II. TERM / SPRING								
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS	
	GMB5301	SAFE FOOD PRODUCTION	C	3	0	0	3	6	GMB5002	NEW APPLICATIONS IN FOOD MICROBIOLOGY	C	2	0	2	3	6	
	GMB5303	INSTRUMENTAL FOOD ANALYSIS: THEORY AND APPLICATIONS	C	3	0	0	3	6	GMB...	ELECTIVE COURSE -I					3	6	
	GMB...	ELECTIVE COURSE -I					3	6	GMB...	ELECTIVE COURSE -II					3	6	
	GMB...	ELECTIVE COURSE -II					3	6	GMB...	ELECTIVE COURSE-III					3	6	
	GMB...	ELECTIVE COURSE -III					3	6	GMB...	ELECTIVE COURSE-IV					3	6	
		Total ECTS credits (Compulsory courses)	C	6	0	0	6	12		Total ECTS credits (Compulsory courses)	C	2	0	2	3	6	
		Total ECTS credits (Elective courses)	E				9	18		Total ECTS credits (Elective courses)					12	24	
	TOTAL Credits							15	30	TOTAL Credits							15
	III. TERM / FALL																
	GMB5304	TERM PROJECT	C		0	0	0	0	30								
	TOTAL Credits							0	30								
TOTAL CREDITS: 30 TOTAL ECTS: 90																	



BURSA ULUDAG UNIVERSITY
INSTITUTE OF SCIENCE
2022-2023 ACADEMIC YEAR COURSE PLAN (ELECTIVE COURSES)

FR 1.1.1_02

DEPARTMENT OF		FOOD ENGINEERING														
DEPARTMENT / PROGRAM		(Non-Thesis) Master's Program														
COURSE STAGE	I. TERM / FALL								IV. TERM / SPRING							
	Code	Course Title	Type	T	U	L	Credit	ECTS	Code	Course Title	Type	T	U	L	Credit	ECTS
	GMB5311	BASIC PRINCIPLES AND INDUSTRIAL APPLICATIONS OF FOOD PROCESSING ENGINEERING	E	3	0	0	3	6	GMB5310	DRYING TECHNIQUES IN FOOD ENGINEERING	E	3	0	0	3	6
	GMB5313	ADVANCES IN FRUIT JUICE PROCESSING TECHNOLOGY	E	2	0	2	3	6	GMB5312	CANNING SCIENCE AND TECHNOLOGY	E	2	0	2	3	6
	GMB5315	OIL CHEMISTRY AND INDUSTRIAL EDIBLE OILS TECHNOLOGY	E	3	0	0	3	6	GMB5314	FUNDAMENTALS OF CHEMICAL MICROBIOLOGY	E	3	0	0	3	6
	GMB5317	ADVANCED CEREAL CHEMISTRY	E	2	0	2	3	6	GMB5316	ADVANCED TECHNOLOGIES IN FERMENTED CEREAL PRODUCTS	E	2	0	2	3	6
	GMB5319	ADVANCES IN TECHNOLOGY OF BISCUIT, CRACKER AND CAKE	E	2	0	2	3	6	GMB5318	BASIC PRINCIPLES OF PASTA AND NOODLE TECHNOLOGY	E	2	0	2	3	6
	GMB5321	ADVANCES IN TECHNOLOGY OF BISCUIT, CRACKER AND CAKE	E	2	0	2	3	6	GMB5320	MICROBIOLOGICAL AND CHEMICAL HAZARDS IN SAFE FOOD PRODUCTION	E	3	0	0	3	6
	GMB5323	MICROBIAL STARTER PRODUCTION AND TECHNOLOGY	E	2	0	2	3	6	GMB5322	INNOVATIVE APPLICATIONS IN FOOD PACKAGING	E	3	0	0	3	6
	GMB5325	MICROORGANISMS THAT RESULT SPOILAGE IN FOOD PROCESSES	E	2	0	2	3	6	GMB5324	COMMUNITY HEALTH AND NUTRITION	E	3	0	0	3	6
	GMB5327	MICROBIAL BIOMASS PROCESS TECHNOLOGY AND MANAGEMENT	E	3	0	0	3	6	GMB5326	FUNCTIONAL FOOD SCIENCE AND NOVEL TECHNOLOGIES	E	3	0	0	3	6
	GMB5329	FRUIT WINE SCIENCE AND TECHNOLOGY	E	2	0	2	3	6	GMB5328	WHISKY AND COGNAC SCIENCE AND TECHNOLOGY	E	2	0	2	3	6
	GMB5331	APPLICATIONS OF ENZYMES IN FOOD PROCESSING	E	2	0	2	3	6	GMB5330	AROMA CHEMISTRY AND AROMA COMPOUNDS IN FOOD	E	2	0	2	3	6
	GMB5333	DEVELOPMENTS IN MALT AND BEER TECHNOLOGY	E	2	0	2	3	6	GMB5332	ADVANCED TECHNOLOGIES IN DAIRY PRODCUTS PROCESSING	E	2	0	2	3	6
	GMB5335	PROCESS DESIGN AND EVALUATION IN THE FOOD INDUSTRY	E	3	0	0	3	6	GMB5334	BIOABILITY IN FOOD ENGINEERING AND ENRICHMENT OF FOOD BY MINERAL SUBSTANCES	E	3	0	0	3	6

GMB5337	BIOCHEMISTRY OF DAIRY PRODUCTS	E	2	0	2	3	6	GMB5336	FOOD STABILITY AND SHEFLIFE	E	3	0	0	3	E
GMB5339	TRACE ELEMENTS IN FOODS AND THEIR IMPORTANCE	E	3	0	0	3	6	GMB5338	FOOD STABILITY AND SHEFLIFE	E	3	0	0	3	6
GMB5341	NOVEL PRESERVATION METHODS IN MILK PROCESSING TECHNOLOGY	E	3	0	0	3	6	GMB5340	PROBIOTICS, PREBIOTICS AND THEIR APPLICATIONS IN MILK PRODUCTS	E	2	0	2	3	8
GMB5343	FUNDAMENTALS AND CURRENT APPLICATIONS OF MOLECULAR TECHNIQUES IN FOOD ENGINEERING	E	2	0	2	3	6	GMB5342	MODIFIED ATMOSPHERE APPLICATIONS IN FOOD INDUSTRY	E	3	0	0	3	6
GMB5345	BASIC PRINCIPLES AND APPLICATIONS OF ASEPTIC PACKAGING TECHNOLOGIES	E	3	0	0	3	6	GMB5344	GASTRONOMY AND CULINARY ARTS	E	3	0	0	3	6
GMB5347	CORN PRODUCTS AND SWEETENERS USED IN FOOD INDUSTRY	E	3	0	0	3	6	GMB5346	APPLIED MICROBIOLOGY IN FOOD ENGINEERING: BASIC PRINCIPLES AND ADVANCES	E	2	2	0	3	6
GMB5349	FUNDAMENTALS OF INVESTMENT PROJECT PREPARATION, EVALUATION AND MONITORING METHODS FOR FOOD ENGINEERS	E	3	0	0	3	6	GMB5348	INNOVATIVE APPLICATIONS IN MEAT PROCESSING TECHNOLOGY	E	3	0	0	3	6
GMB5351	RHEOLOGY OF DAIRY PRODUCTS	E	3	0	0	3	6	GMB5350	CONTAMINANTS AND RESIDUES IN FOOD PROCESSES	E	3	0	0	3	6
GMB5353	CHEMISTRY AND PROCESSING TECHNOLOGY OF TEA	E	3	0	0	3	6	GMB5352	NOVEL FOOD PROCESSING TECHNIQUES	E	3	0	0	3	6
GMB5355	BASIC PRINCIPLES OF MEAT SCIENCE AND PROCESSING TECHNOLOGY	E	3	0	0	3	6	GMB5354	CAROTENOIDS UTILIZED IN FOOD INDUSTRY	E	3	0	0	3	6
GMB5357	QUALITY MANAGEMENT SYSTEMS AND APPLICATIONS IN FOOD ANALYSIS LABORATORIES FOR FOOD ENGINEERS	E	3	0	0	3	6	GMB5356	OMICS APPLICATION IN FOODS	E	3	0	0	3	6
GMB5359	USE OF MEDICAL AND AROMATIC PLANTS IN FOOD INDUSTRY	E	3	0	0	3	6	GMB5358	ENERGY AND EXERGY ANALYSIS AND ITS APPLICATION IN FOODS	E	3	0	0	3	6
GMB5361	SUSTAINABILITY IN FOOD INDUSTRY	E	3	0	0	3	6	GMB5360	SUSTAINABLE ORGANIC FOOD PRODUCTION	E	3	0	0	3	6
GMB5363	PRODUCTION, PROCESSING AND QUALITY EVALUATION OF BEE PRODUCTS	E	3	0	0	3	6	GMB5362	INTRODUCTION TO PROTEIN AND HIGH PROTEIN FOODS	E	3	0	0	3	6
GMB5365	IMPORTANCE AND EVALUATION OF COLOUR IN FOODS	E	3	0	0	3	6								