

International University of Sarajevo, Faculty of Engineering and Natural Sciences (FENS)

First Cycle Curriculum - Bioengineering Program (DDP - MU)

Semester I					
Code	Title	Prerequisite	T	P	ECTS
ELIT100	Academic English and Effective Communication		2	1	6
NS104	General Chemistry		3	2	6
MATH101	Calculus I		3	2	6
NS102	Physics		3	2	6
xxx	University Elective I / pool 1 (1 course)*	DDP			3
xxx	Foreign Language Elective I / pool 1 (1 course)*	DDP			3
Semester Total =					30

Semester II					
Code	Title	Prerequisite	T	P	ECTS
xxx	Critical Reading and Writing / pool 2 (2 courses)*	DDP	2	1	6
MATH102	Calculus II	MATH101	3	2	6
NS207	Organic Chemistry		3	2	6
NS103	Biology		3	0	6
NS112	Understanding Science and Technology		2	0	3
xxx	Foreign Language Elective II / University Elective x		0	2	3
Semester Total =					30

Semester III					
Code	Title	Prerequisite	T	P	ECTS
MATH202	Differential Equations	MATH102	3	2	6
NS205	Cell Biology		3	1	6
ENS205-6	Materials Science		3	1	6
MATH203	Introduction to Probability and Statistics	MATH101	3	2	6
NS202	Biochemistry I	NS207	3	2	6
Semester Total =					30

Semester IV					
Code	Title	Prerequisite	T	P	ECTS
NS209	Genetics I		3	2	6
ENS213	Programming for Engineers (+)		3	2	6
BIO305	Biochemistry II	NS207	3	2	6
xxx	University Elective II See Table 1				6
xxx	Free Elective				6
Semester Total =					30

Abbreviations: T (Theory), P (Practice), ECTS credit

*** DDP program students of Turkish nationality must take IATA101, ITRD101, IATA102 and ITRD102 courses, see Table 2.**

Table 1: University Electives					
Code	Title	Prerequisite	T	P	ECTS
IUS Pool of 3 ECTS University Courses					
ARCH107	Understanding Art and Architecture		2	0	3
CS100	Computer Skills		0	2	3
CULT101	Understanding Cultural Encounters		2	0	3
ECON105	Understanding Business		2	0	3
ECON107	Python		1	1	3
ECON108	Matlab		1	1	3
NS111	Understanding Nature and Knowledge		2	0	3
SPS140	Understanding Religion		2	0	3
	Foreign Language Elective I (&)		0	2	3
	Foreign Language Elective II (&)		0	2	3
IUS Pool of 6 ECTS University Courses					
CS103	Introduction to Programming		3	2	6
ECON111	Intro. to Microeconomics		3	0	6
ECON112	Intro. to Macroeconomics		3	0	6
ELIT101	Introduction to Literature		2	1	6
ENS105	The Brain		3	0	6
LAW109	Law and Ethics		3	0	6
MAN102	Introduction to Management		3	0	6
IR101	Introduction to International Relations		3	0	6
POLS102	Introduction to Political Science		3	0	6
PSY103	Introduction to Psychology		3	0	6
SPS120	Critical Thinking		3	0	6
SOC102	Introduction to Sociology		3	0	6
VA121	History of Art I		3	0	6

Table 2: IUS and MU DDP Compulsory Course Pool					
Code	Title	Prerequisite	T	P	ECTS
DDP pool 1					
IATA101	Atatürk İlkeleri ve İnkılap Tarihi 1		2	0	3
ITRD101	Türk Dili 1		2	0	3
DDP pool 2					
IATA102	Atatürk İlkeleri ve İnkılap Tarihi 2	IATA101	2	0	3
ITRD102	Türk Dili 2	ITRD101	2	0	3

Mühendislik Fakültesi
Biyomühendislik (İngilizce) - Dönemlik
Lisans - 2023 - Biyomühendislik (İngilizce) (UOLP-IUS) - Lisans

Genel Toplam

Semester V					
Code	Title	Prerequisite	T	P	ECTS
BIOE3200	Summer Practice I		0	0	10
BIOE2201	Microbiology for Bioengineers		2	2	5
BIOE2211	Bioengineering Principles		3	0	6
ECON2003	Introduction to Economics		3	0	4
BIOE3215	Biotransport Phenomena I		3	0	5
BIOE3235	Bioprocess Unit Operations I		3	0	5
BIOE3271	Bioinformatics		3	0	5
Semester Total =					40

Semester VI					
Code	Title	Prerequisite	T	P	ECTS
BIOE2240	Bioreaction Kinetics		3	0	5
BIOE_TE	Technical Elective		3	0	5
BIOE2282	Engineering Thermodynamics		3	0	5
BIOE3216	Biotransport Phenomena II		3	0	5
BIOE3236	Bioprocess Unit Operations II	BIOE3235	3	0	5
BIOE3242	Bioreactor Design	BIOE2211	3	0	5
Semester Total =					30

Semester VII					
Code	Title	Prerequisite	T	P	ECTS
BIOE4200	Summer Practice II		0	0	10
BIOE4265	Bioprocess Dynamics and Control		3	0	5
BIOE4290	Innovation and Entrepreneurship		3	0	5
BIOE4291	Computer Aided Unit Operations Design	BIOE3235	3	2	8
BIOE4297	Bioengineering Project I		0	4	7
BIOE3211	Bioengineering Lab I		0	4	5

Semester VIII					
Code	Title	Prerequisite	T	P	ECTS
BIOE4266	Analytical Techniques in Bioengineering		3	0	5
BIOE4292	Bioprocess Design and Economics	BIOE4291	3	2	8
BIOE4298	Bioengineering Project II		0	4	7
ENG-FTE	Faculty Technical Elective		3	0	5
BIOE3212	Bioengineering Lab II		0	4	5
IISG102	ISG 2		2	0	2

IISG101	ISG 1		2	0	2
Semester Total =					42

Semester Total =					32

BIOE_NTE					
Ders Kodu	Ders Adı	Prerequisite	T	P	ECTS
BUS1003	Entrepreneurship and Innovation		2	0	3
BUS1004	Strategic Entrepreneurship		2	0	3
BUS2005	International Business		2	0	3
CAS1001	Self Management		2	0	3
CAS1010	Our Biosphere		2	0	3
CAS1061	Geometric Origami		2	0	3
CAS2001	Energy for Physical Activity		2	0	3
CAS2002	Human Performance and Nutrition		2	0	3
CAS2003	Cardiopulmonary Resuscitation and First Aid Basics		2	0	3
CAS2004	Interpersonal Relations and Communication		2	0	3
CAS2005	Trekking and Orienteering		2	0	3
CAS3001	Earthquake and Rescue Principles		2	0	3
CAS3044	Positive Thinking		2	0	3

BIOE_TE					
Ders Kodu	Ders Adı	Prerequisite	T	P	ECTS
BIOE3202	Industrial Microbiology		3	0	5
BIOE3203	Modern Techniques in Bioengineering		3	0	5
BIOE3204	Protein Interactions		3	0	5
BIOE3205	Introduction to Toxicology		3	0	5
BIOE3206	Introduction to Immunology		3	0	5
BIOE3207	Introduction to Biomedical Optics		3	0	5
BIOE3213	Introduction to Protein Structure and Function		3	0	5
BIOE3232	Introduction to Systems Biology		3	0	5
BIOE3250	Bioprocess Optimization		3	0	5
BIOE3252	Introduction to Computational Structural Biology		3	0	5
BIOE3253	Cellular and Metabolic Engineering		3	0	5
BIOE4201	Recombinant DNA Technology		3	0	5
BIOE4202	Special Topics in Biomedical Engineering		3	0	5

COMM2060	Communication Models and Techniques		2	0	3
FNCE3003	Investment Planning		2	0	3
HR1013	Career Development		2	0	3
HR4001	Career Orientation		2	0	3
HSS3002	Ethics in Engineering and Science		2	0	3
IKT1054	Industrial and Economic Sociology		2	0	3
INF1001	Information Literacy in Engineering		2	0	3
LAW2004	Labor Law		2	0	3
MAN1001	Principles of Managerial Economics & Financial Management		2	0	3
MGT1021	Design, Innovation and Entrepreneurship		2	0	3
MGT3082	Creativity and Innovation Management		2	0	3
MGT4083	Sustainability Management		2	0	3
MRK3082	Integrated Marketing Communication		2	0	3
MRK3084	Brand Creation/Branding		2	0	3

BIOE4203	Environmental Biotechnology		3	0	5
BIOE4204	Food Biotechnology		3	0	5
BIOE4205	Industrial Biotechnology		3	0	5
BIOE4206	Biomedical Imaging and Diagnostics		3	0	5
BIOE4207	Advanced Biomedical Optics		3	0	5
BIOE4221	Tissue Engineering		3	0	5
BIOE4223	Protein Engineering		3	0	5
BIOE4231	Cell Culture Techniques and Applications		3	0	5
BIOE4255	Fundamentals of Machine Learning		3	0	5
BIOE4271	Management of Bioprocess Development		3	0	5
BIOE4272	Sustainable Biotechnology		3	0	5
BIOE4293	Special Topics in Bioengineering I		3	0	5
BIOE4294	Special Topics in Bioengineering II		3	0	5

NTE1002	Effects of Human Behaviour on Environment		2	0	3
NTE1003	The Culture of Radiation Safety		2	0	3
NTE1004	World Cultures		2	0	3
NTE1006	Basic Principles of Accessibility in Informatics and Technology		2	0	3
NTE1008	Cinema		2	0	3
NTE1010	Introduction to Finance for Engineers		2	0	3
NTE1011	Business Communication		2	0	3
NTE1012	Introduction to Corporate Governance for Engineers		2	0	3
NTE1013	Business Intelligence for Managers		2	0	3
NTE1014	Introduction to Strategic Human Resources Management		2	0	3
NTE1015	Introduction to Leadership & Management for Engineers		2	0	3
NTE1016	Introduction to Strategy for Engineers		2	0	3

NTE1017	Marketing in a Technology Driven world for Engineers		2	0	3
NTE1019	Introduction to Programming with Python		2	0	3
NTE1020	Introduction to Angel Financing for Engineers		2	0	3
OB2040	Industrial Psychology		2	0	3
OB2041	Behavioral Sciences for Engineers		2	0	3
OB3043	Organizational Behaviour		2	0	3
SOC3082	Environmental Sociology		2	0	3
YDA1001	German for Beginners		2	0	3
YDA1002	German		2	0	3
YDA1003	German Communication		2	0	3
YDA2001	Seminars in German		2	0	3
YDAR1001	Arabic for Beginners		2	0	3
YDC1001	Chinese - I		2	0	3
YDC1002	Chinese - II		2	0	3
YDC1003	Chinese - III		2	0	3
YDF1001	French for Beginners		2	0	3
YDF1002	French		2	0	3
YDI1004	Report Writing in English		2	0	3
YDIS1001	Spanish for Beginners		2	0	3
YDIS1002	Spanish		2	0	3
YDJ1001	Japanese - I		2	0	3