

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

First Cycle Curriculum: Mechanical Engineering (ME)

Academic Year: 2024-2025

Click on the course code or course title to see the syllabus.

Semester I

Code	Title	Prerequisites	Lec	Tut	Lab	ECTS
ELIT100	Academic English and Effective Communication		2	0	0	6
ENS101	Introduction to Engineering		3	0	0	3
ENS103	Introduction to Machine Design		2	0	1	3
MATH101	Calculus I		3	2	0	6
NS102	Physics		3	1	2	6
NS104	General Chemistry		3	1	1	6
Semester Total =						30

Semester III

Code	Title	Prerequisites	Lec	Tut	Lab	ECTS
ENS202	Thermodynamics	NS102	3	2	0	6
ENS205-3	Materials Science	NS104	3	0	1	3
ENS208-3	Introduction to Manufacturing Systems	ENS103	3	0	2	3
MATH202	Differential Equations	MATH101	3	2	0	6
MATH203	Introduction to Probability and Statistics	MATH101	3	2	0	6
ME208-3	Dynamics	NS102	3	2	0	3
ME210-3	Strength of Materials I	ENS209	3	2	0	3
Semester Total =						30

Semester V

Code	Title	Prerequisites	Lec	Tut	Lab	ECTS
ME306	Heat and Mass Transfer	MATH202	3	2	0	6
ME312	Machine Elements	ME210	3	2	0	6
xxx	Foreign Language Elective I See Table 1					3
xxx	Program Elective I See Table 2	Junior Standing				6
xxx	Program Elective II See Table 2	Junior Standing				6
xxx	University Elective See Table 1					3
Semester Total =						30

Semester VII

Code	Title	Prerequisites	Lec	Tut	Lab	ECTS
EE311	Control System Design	ENS206	3	2	0	6
ME370	Work Placement / Internship	Junior Standing	0	14	0	6
xxx	Program Elective III See Table 2	Junior Standing				6
xxx	Program Elective IV See Table 2	Junior Standing				6
xxx	Free Elective I					6
Semester Total =						30

Total Credits Required for Graduation	240
Total Credits of Electives	63

Semester II

Code	Title	Prerequisites	Lec	Tut	Lab	ECTS
ENS207-3	Engineering Graphics		1	2	0	3
ENS209-3	Statics	MATH101	3	2	0	3
ENS213 / CS103	Programming for Engineers / Introduction to Programming		3	2	0	6
MATH102	Calculus II	MATH101	3	2	0	6
MATH201	Linear Algebra	MATH101	3	2	0	6
NS122	Physics II	NS102	3	1	2	6
Semester Total =						30

Semester IV

Code	Title	Prerequisites	Lec	Tut	Lab	ECTS
ENS203	Electrical Circuits I	NS122	3	2	0	6
ENS204	Thermodynamics II	ENS202	3	2	0	6
MATH205	Numerical Analysis	MATH202	3	2	0	6
ME206	Engineering Materials	ENS205	3	0	0	3
ME211	Strength of Materials II	ME210-3	3	2	0	3
ME304	Fluid Mechanics	MATH202	3	2	0	6
Semester Total =						30

Semester VI

Code	Title	Prerequisites	Lec	Tut	Lab	ECTS
EE305	Instrumentation and Measurements	ENS203	3	0	2	6
ELIT200	Critical Reading and Writing	ELIT100	2	1	0	6
ENS206	System Modeling	MATH202	3	2	0	6
ENS309	Ethics in Engineering and Natural Sciences		3	1	0	6
NS112	Understanding Science and Technology		2	0	0	3
xxx	Foreign Language Elective II See Table 1					3
Semester Total =						30

Semester VIII

Code	Title	Prerequisites	Lec	Tut	Lab	ECTS
ENS490	Graduation Project	Last Semester	0	4	0	6
xxx	Program Elective V See Table 2	Senior Standing				6
xxx	Program Elective VI See Table 2	Senior Standing				6
xxx	Program Elective VII See Table 2	Senior Standing				6
xxx	Free Elective II					6
Semester Total =						30

No. of Courses	45
Average ECTS Credit Load Per Semester	30
Elective Ratio	26%

IMPORTANT NOTES

7 available Program elective courses are taken from junior, senior, or graduate level courses in ME, as seen in Table 2. Three program elective courses can be chosen from other junior or senior level courses offered in FENS with the consent of the Academic Advisor.

Junior standing means the student has successfully completed at least 105 ECTS units in the program.

Senior standing means the student has successfully completed at least 165 ECTS units in the program.

University Elective can be taken from Table 1: University Elective Courses List.

2 Language elective courses are taken from the list of language courses provided (cannot be the student's mother tongue).

2 Free elective courses are taken from any faculty or program.

Work placement/Internship is typically practiced in summer for a period of at least 25 work days, totalling at least 150 hours.

This curriculum is being implemented for the new freshman students who entered the freshman class in the 2022-2023 academic year or after.

The course ENS309 has replaced LAW109 (sixth semester) since AY 2024-2025.

TABLE 1: University Elective Courses

Code	Title	Prerequisite	T	P	ECTS
ARCH107	Understanding Art and Architecture		2	0	3
BIO100	Introduction to Bioengineering		3	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
HUM100	Social Responsibility and Sustainable Development		2	0	3
IBF105	Financial Literacy		2	0	3
IR100	Understanding the Contemporary World through Curr		2	0	3
MAN105	Corporate Social Responsibility		2	0	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

(&) International students are highly encouraged to take Bosnian language courses, while students from Bosnia and Herzegovina and Turkiye cannot enroll in courses of their native language.

TABLE 2: Program Elective Courses

Code	Title	Prerequisites	T	P	ECTS	Code	Title	Prerequisites	T	P	ECTS
ARCH408-6	Building Physics		1	2	6	MATH306	Statistical Modeling	MATH203	3	2	6
CS304	Computer Architecture	CS105	3	2	6	ME301	Engineering Project I	Junior Standing	3	0	6
EE201	Analog Electronics I	ENS203	3	3	6	ME302	Engineering Project II	Junior Standing	3	0	6
EE202	Electrical Circuits II	ENS203	3	3	6	ME313	Mechanical Vibrations	Junior Standing	3	2	6
EE221	Object Oriented Programming	ENS213 or CS103	3	2	6	ME401	Engineering Design I	Junior Standing	3	2	6
EE325	Embedded Systems	ENS213 or CS103	3	2	6	ME402	Engineering Design II	Junior Standing	3	2	6
ENS201	Electromagnetism I	MATH102	3	0	6	ME411	Renewable Energy Technology	Junior Standing	3	0	6
IE301	Production Planning I	MATH203	3	2	6	ME412	Introduction to Computational Fluid Dynamics	Senior Standing	3	0	6
IE303	Operations Research I	MATH201	3	2	6	ME413	Unmanned Aerial Vehicles	Junior Standing	3	0	6
IE305	Work Analysis and Design	Junior Standing	3	2	6	ME414	Energy Conversion Technology	Senior Standing	3	0	6
IE306	Simulation	MATH203	3	2	6	ME415	Computational methods	Senior Standing	3	2	6
IE307	Quality and Reliability Engineering	Junior Standing	3	2	6	ME416	Turbomachinery	Senior Standing	3	0	6
IE309	Ergonomics	Junior Standing	2	2	6	ME430	Hydraulics and Pneumatics	Senior Standing	3	2	6
IE318	Engineering Economics	Junior Standing	2	2	6	ME432	HVAC	Senior Standing	3	2	6
IE425	Computer Aided Design And Manufacturing	Senior Standing	3	2	6	ME436	Plumbing System and Design	Senior Standing	3	2	6
IE408	Project Management	Junior Standing	2	2	6	Abbreviations: T (Theory), P (Practice), ECTS credit					