

International University of Sarajevo, Faculty of Engineering and Natural Sciences (FENS)
First Cycle Curriculum - Electrical and Electronics Engineering Program: AY 2022-2023

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

Semester I					
Code	Title	Prerequisites	T	P	ECTS
ELIT100	Academic English and Effective Communication		3	0	6
MATH101	Calculus I		3	2	6
NS102	Physics		3	2	6
CS103/ENS213	Introduction to Programming/Programming for Engineers		3	3	6
ENS101	Introduction to Engineering		2	1	3
xxx	Foreign Language Elective I	See Table 2	0	2	3
			Semester Total = 30		
Semester III					
Code	Title	Prerequisites	T	P	ECTS
EE202	Electrical Circuits II	ENS203	3	3	6
MATH202	Differential Equations	MATH102	3	2	6
EE201	Analog Electronics I	ENS203	3	3	6
ENS201	Electromagnetism I	MATH102	3	1	6
MATH203	Introduction to Probability and Statistics	MATH101	3	2	6
			Semester Total = 30		
Semester V					
Code	Title	Prerequisites	T	P	ECTS
EE322	Power Systems	EE202	3	2	6
EE311	Control System Design	ENS206	3	3	6
CS303	Digital Design	Junior standing	3	3	6
xxx	Faculty Elective I	See Table 4			6
xxx	Programme Elective I	See Table 3			6
			Semester Total = 30		
Semester VII					
Code	Title	Prerequisites	T	P	ECTS
IE408	Project Management		2	2	6
xxx	Programme Elective IV	See Table 3			6
xxx	Programme Elective V	See Table 3			6
xxx	Faculty Elective II	See Table 4			6
EE370	Work placement/Internship	Junior Standing	0	14	6
			Semester Total = 30		
Abbreviations: T (Theory), P (Practice), ECTS credit					
Total Credits Required for Graduation					240
Total Credits of Electives					66

Semester II					
Code	Title	Prerequisites	T	P	ECTS
MATH102	Calculus II	MATH101	3	2	6
NS122	Physics II	NS102	3	2	6
MATH201	Linear Algebra	MATH101	3	2	6
ENS203	Electrical Circuits I	MATH101	3	3	6
NS112	Understanding Science and Technology		2	0	3
xxx	Foreign Language Elective II	See Table 2	0	2	3
			Semester Total = 30		
Semester IV					
Code	Title	Prerequisites	T	P	ECTS
ELIT200	Critical Reading and Writing		2	1	6
CS105/EE221	Advanced Programming/Object Oriented Programming	ENS213 or CS103	3	3	6
ENS207	Engineering Graphics		1	2	6
EE321	Electrical Machines	EE202	3	2	6
ENS206	System Modeling	MATH202	3	3	6
			Semester Total = 30		
Semester VI					
Code	Title	Prerequisites	T	P	ECTS
EE325	Embedded Systems	ENS213 or CS103	2	3	6
EE305	Instrumentation and Measurements	ENS203	3	2	6
MATH205	Numerical Analysis	MATH201	3	2	6
ENS309	Ethics in Engineering and Science		3	0	6
xxx	Programme Elective II	See Table 3			6
			Semester Total = 30		
Semester VIII					
Code	Title	Prerequisites	T	P	ECTS
xxx	Programme Elective V	See Table 3			6
xxx	Programme Elective VI	See Table 3			6
xxx	Programme Elective VII	See Table 3			6
xxx	Free Elective I				6
ENS490	Graduation Project	Last Semester	0	4	6
			Semester Total = 30		
No. of Courses					42
Min. ECTS Credits for Applied/Practical Component of the Curriculum					78
Elective Ratio					28%

- 7 Program Electives are taken from Table 3. At most 2 graduate level courses in EEE can be taken as program elective with academic advisor's approval.
- 2 Faculty Elective courses are taken from Table 2. Other junior or senior level courses in FENS can be taken with academic advisor's approval.
- 3 University Electives for a total of 12 ECTS credits can be taken from Table 1: University Elective Courses List.
- 2 Language Elective courses are taken from the list of language courses provided (can not be the student's mother language).
- 1 Free Elective courses are taken from any faculty or program.
- This new curriculum is being implemented for the new freshman students who entered the freshman class in the year 2017 or after.
- For the existing sophomore, junior and senior students, the Faculty Board will make plans for proper adaptation to the new curriculum.
- In exceptional cases only, Faculty Council may make a decision for a student bypass a prerequisite for any course.
- Work placement/Internship is typically practiced in summer for a period of at least 25 work days, totalling at least 150 hours.

Table 1: IUS Pool of 6 ECTS University Courses					
Code	Title	Prerequisites	T	P	ECTS
CS103	Introduction to Programming		3	2	6
ECON111	Introduction to Microeconomics		3	0	6
ECON112	Introduction to Macroeconomics		3	0	6
ELIT101	Introduction to Literature		2	1	6
ENS105	The Brain		3	0	6
IBF205	Principles of International Business		3	0	6
IR101	Introduction to International Relations		3	0	6
MAN102	Introduction to Management		3	0	6
NS104	General Chemistry		3	2	6
NS103	Biology		3	0	6
POLS102	Introduction to Political Science		3	0	6
PSY103	Introduction to Psychology		3	0	6
SPS103	Law and Ethics		3	0	6
SPS120	Critical Thinking		3	0	6
SPS150	World History		3	0	6
SOC102	Introduction to Sociology		3	0	6
VA121	History of Art I		3	0	6

Table 2: IUS Pool of 3 ECTS University Courses					
Code	Title	Prerequisites	T	P	ECTS
ARCH107	Understanding Art and Architecture		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
NS111	Understanding Nature and Knowledge		2	0	3
NS112	Understanding Science and Technology		2	0	3
CULT101	Understanding Cultural Encounters		2	0	3
SPS140	Understanding Religion		2	0	3
TURK111	Spoken Turkish I *		0	2	3
BOS111	Spoken Bosnian I *		0	2	3
TURK112	Spoken Turkish II **	TURK111	0	2	3
BOS112	Spoken Bosnian II **	BOS111	0	2	3
	* Scholarship students will take either TURK111 / BOS111				
	** Scholarship students will take either TURK112 / BOS112				

Table 4: Faculty electives for EEE					
Code	Title	Prerequisites			ECTS
CS105	Advanced Programming	CS103			6
CS304	Computer Architecture	CS103			6
ENS202	Thermodynamics	MATH102, NS102			6
ENS205	Materials Science				6
ENS302	Engineering Optics				6
ENS208	Introduction to Manufacturing Systems	MATH101			6
ENS211	Signals and Systems	MATH202			6
MATH204	Discrete Mathematics	MATH101			6
MATH207	Vector Calculus	MATH101			6
MATH209	Discrete Mathematics II	MATH204			6
MATH306	Statistical Modeling	MATH203			6
ME306	Heat and Mass Transfer	MATH202			6
ME330	Engineering Graphics II	ENS207			6
ME414	Energy Conversion Technologies	Senior standing			6
NS207	Organic Chemistry	NS104			6

8 ECTS, Senior standing: successfully completed at least 168 ECTS

Table 3: Programme electives for EEE, ***			
Code	Title	Pre-requisites	ECTS
EE301	Analog Electronics II	EE201	6
EE309	Introduction to Optimization	MATH202	6
EE310	Introduction to E-mobility		6
EE323	Illumination Techniques		6
EE331	Introduction to Communication Systems	ENS211	6
EE332	Electromagnetism II	ENS201	6
EE334	Information and Coding Theory	ENS211	6
EE403	Industrial Process Instrumentation	EE305	6
EE405	Software Engineering Project	EE325	6
EE406	Hardware Engineering Project		6
EE412	Motion Control System	ENS206	6
EE413	Fundamentals of Photonics		6
EE418	Introduction to Machine Learning		6
EE422	Power Electronics *	EE301	6
EE423	High Voltage Engineering *	EE322	6
EE424	Electrical Power Transmission and Distribution	EE322	6
EE429	Digital Power Systems Protection	EE322	6
EE430	Control of Electrical Drivers	EE321	6
EE431	Digital Signal Processing **	ENS211	6
EE432	Wireless and Mobile Communications		6
EE433	Microwave Engineering	ENS201	6
EE434	Digital Communications	EE331	6
EE435	Microprocessors I	CS303	6
EE436	Programmable Logic Controllers **	CS303	6
EE437	Introduction to Robotics	Senior standing	6
EE439	Optimal Filtering	MATH201	6
EE440	Microprocessors II	EE435	6
EE442	Antennas and Wave Propagation	ENS201	6
EE446	Satellite Systems and Communications		6
EE451	Power System Stability	EE322	6
EE453	Power System Control and Optimization	EE322	6
EE454	Electrical Power Generation	EE321	6
CS302	Algorithms and Data Structures	MATH204, CS105	6
CS304	Computer Architecture	CS105	6
CS305	Programming Languages		6
CS306	Database Management	CS105	6
CS307	Operating Systems	CS304	6
CS308	Software Engineering	CS105	6
CS309	Advanced Logic Design	CS303	6
CS310	Human Computer Interaction	CS105	6
CS405	Computer Graphics	MATH201, CS302	6
SE308	Communication Systems and Networks	CS105	6
CS412	Web Application Development	CS105	6
CS414	Computer Vision	MATH201, CS103	6
CS415	Pattern Recognition	MATH201	6
CS417	Introduction to Data Mining	CS302	6
CS422	Wireless and Mobile Networks	SE308	6
CS427	Computer and Network Security	CS307, SE308	6
*	Course is required for Electrical Power Engineering Path		
**	Course is required for Electronics Engineering Path		
***	Or Any new elective course offered later due to new technologies or new facilities		
#	Strongly recommended that students take MAN303 Entrepreneurship and Small Business Management		

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