



FSR

FAKULTET STROJARSTVA
I RAČUNARSTVA
SVEUČILIŠTA U MOSTARU

**CURRICULUM
GRADUATE STUDY PROGRAM OF
MECHANICAL ENGINEERING**



Students who successfully complete the undergraduate study of mechanical engineering can continue their education at graduate study for the Master of Engineering for a period of four semesters. The students usually continue the same direction of graduate study they chose on undergraduate studies. Faculty of Mechanical Engineering for the Master of Engineering is presented in the tables by direction.

Major: Design and Product Development

I. SEMESTER

Code	Course	P+V	Exam	ECTS
	Integrated Product Development	2+2	1	5
	Measuring devices and sensors	2+2	1	5
	Construction diagnosis	2+2	1	5
	Numerical methods of structures analysis	2+2	1	5
	Vibration diagnosis machinery and equipment	2+2	1	5
	Elective technical course I	2+2	1	5
Total:		24	6	30

II. SEMESTER

Code	Course	P+V	Exam	ECTS
	Welded constructions	2+2	1	5
	Modeling and calculation of mechanical constructions	2+2	1	5
	Automatic control	2+2	1	5
	Tools design	2+2	1	5
	CAD/CAM systems	2+2	1	5
	Elective technical course II	2+2	1	5
Total:		24	6	30

III. SEMESTER

Code	Course	P+V	Exam	ECTS
	Optimization of construction	2+2	1	5
	Technological design	2+2	1	5
	Construction of machinery and equipment	2+2	1	5
	Industrial design	2+2	1	5
	Elective technical course III	2+2	1	5
	Elective non-technical course	2+2	1	5
Total:		24	6	30

IV. SEMESTER

Code	Course	P+V	Exam	ECTS
	Industrials skills	0+12	0	10
	Master thesis	0+12	1	20
Total:		24	1	30

Major: Production Engineering

I. SEMESTER

Code	Course	P+V	Exam	ECTS
	Numerically Controlled Machine Tools	2+2	1	5
	Technological processes	2+2	1	5
	Quality control	2+2	1	5
	New molding technologies	2+1	1	5
	Quality assurance of welded structures	2+2	1	5
	Elective technical course I	2+2	1	5
Total:		23	6	30

II. SEMESTER

Code	Course	P+V	Exam	ECTS
	Pneumatics and Hidraulics	2+2	1	5
	Tribology	2+2	1	5
	Modeling and simulation of manufacturing processes	2+2	1	5
	Computer aided manufacturing - CAM	2+2	1	5
	Robotics	2+2	1	5
	Elective technical course II	2+2	1	5
Total:		24	6	30

III. SEMESTER

Code	Course	P+V	Exam	ECTS
	New technologies of metal forming processes	2+2	1	5
	Forming machines	2+2	1	5
	Production Management	2+2	1	5
	Design production system	2+2	1	5
	Flexible Manufacturing Systems	2+2	1	5
	Elective non-technical course	2+2	1	5
Total:		24	6	30

IV. SEMESTER

Code	Course	P+V	Exam	ECTS
	Industrials skills	0+12	0	10
	Master thesis	0+12	1	20
Total:		24	1	30

Major: Industrial Engineering and Design

I. SEMESTER

Code	Course	P+V	Exam	ECTS
	Project Management	2+2	1	5
	Computer Aided Design - CAD	2+2	1	5
	Quality Management	2+2	1	5
	Operations research	2+2	1	5
	Elective technical course I	2+2	1	5
	Elective technical course II	2+2	1	5
Total:		24	6	30

II. SEMESTER

Code	Course	P+V	Exam	ECTS
	Production Management	2+2	1	5
	Planning informations systems	2+2	1	5
	Business Process Modeling	2+2	1	5
	Industrial Engineering	2+2	1	5
	Designing the assembly process	2+2	1	5
	Elective technical course III	2+2	1	5
Total:		24	6	30

III. SEMESTER

Code	Course	P+V	Exam	ECTS
	Management of human resources	2+2	1	5
	Informacijske tehnologije i poduzetništvo	2+2	1	5
	Development of production and business system	2+2	1	5
	Design production system	2+2	1	5
	Flexible Manufacturing Systems	2+2	1	5
	Elective non-technical course	2+2	1	5
Total:		24	6	30

IV. SEMESTER

Code	Course	P+V	Exam	ECTS
	Industrials skills	0+12	0	10
	Master thesis	0+12	1	20
Total:		24	1	30

Major: Mechatronics

I. SEMESTER

Code	Course	P+V	Exam	ECTS
	Artificial Intelligence	2+2	1	5
	Mechatronic systems	2+2	1	
	Integrated Product Development	2+2	1	5
	Quality Management	2+2	1	5
	Elective non-technical course	2+2	1	5
	Elective technical course I	2+2	1	
Total:		24	6	30

II. SEMESTER

Code	Course	P+V	Exam	ECTS
	Production automation	2+2	1	5
	Simulation and optimization machining processes	2+2	1	5
	Robotics	2+2	1	5
	Computer aided manufacturing - CAM	2+2	1	5
	Biomechatronics	2+2	1	5
	Elective technical course II	2+2	1	5
Total:		24	6	30

III. SEMESTER

Code	Course	P+V	Exam	ECTS
	Microcontrollers in manufacturing	2+2	1	5
	Intelligent CAD systems	2+2	1	5
	Computer Simulations	2+2	1	5
	Maintenance	2+2	1	5
	Elective technical course III	2+2	1	5
	Elective non-technical course	2+2	1	5
Total:		24	6	30

IV. SEMESTER

Code	Course	P+V	Exam	ECTS
	Industrials skills	0+12	0	10
	Master thesis	0+12	1	20
Total:		24	1	30

Elective courses

Elective courses at Mechanical Engineering Faculty are divided into following groups:

- Elective technical courses
- Elective non-technical courses

Elective technical courses

Elective technical courses in one major can be all courses from other majors that are held in the semester when and elective courses or courses from a common group of elective courses as shown in the following table:

Code	Course	P+V	ECTS
	New technologies of metal forming processes	2+2	5
	New molding technologies	2+2	5
	Motor vehicles	2+2	5
	Development and 3D printing products	2+2	5
	Assembly processes and machines for assembly	2+2	5
	Laboratory testing materials	2+2	5
	Methods of protection from vibration and noise	2+2	5
	Heating and air conditioning	2+2	5
	Hydraulic systems	2+2	5
	Technical information systems	2+2	5
	Planning technological processes	2+2	5
	Physical hazard	2+2	5
	Pending transport machinery	2+2	5
	Ergonomics	2+2	5
	Biomechanics	2+2	5
	Business Process Modeling	2+2	5
	Mobile robots	2+2	5
	Simulation and optimization machining processes	2+2	5

Elective non-technical course

Students choose elective non-technical course:

Code	Course	P+V	ECTS
	IT and entrepreneurship	2+2	5
	Communications skills in organization	2+2	5
	Technological Development and European Integration I	2+2	5
	Technological Development and European Integration II	2+2	5
	German	2+2	5