CURRICULUM
60711500- Mechatronics and Robotics

Name of qualification: **Bachelor of Engineering Sciences**
Official length of programme: **Four years studies, 240 credits**
Mode of studies: **Continual studies**

Course type	Course code	Course name	Credit	Hours	Classes: Total	Classes: Lecture	Classes: Practice	Classes: Labs	Classes: Seminar	Self-study	Course	Course code	Course name	Credit	Hours	Classes: Total	Classes: Lecture	Classes: Practice	Classes: Labs	Classes: Seminar	Self-study
1 semester (15 weeks)											**2 semester (15 weeks)**										
1		Humanities course	4	120	60	30			30	60	1		Humanities course	4	120	60	30			30	60
1		Academic Writing 1	2	60	30		30			30	1		Academic writing 2	2	60	30		30			30
1		Foreign Language 1	4	120	60		60			60	1		Foreign Language 2	4	120	60		60			60
2		Calculus	8	240	120	60	60			120	2		Differential equations	4	120	60	30	30			60
2		Physics 1	6	180	90	30	30	30		90	2		Linier algebra	4	120	60	30	30			60
3		Computer Programming 1	6	180	90	30		60		90	2		Physics 2	6	180	90	30	30	30		90
1		Sport	0	0	0					0	3		Computer Programming 2	6	180	90	30		60		90
											1		Sport	0	0						0
		Total for semester:	**30**	**900**	**450**	**150**	**180**	**90**	**30**	**450**			**Total for semester:**	**30**	**900**	**450**	**150**	**180**	**90**	**30**	**450**
													Total for year:	**60**	**1800**	**900**	**300**	**360**	**180**	**60**	**900**
3 semester (15 weeks)											**4 semester (15 weeks)**										
3	DBM1316	Database	6	180	90	30		60		90	3		Introduction to Mechatronics and Robotics	6	180	90	60	30			90
3	CSF1316	Cyber Security Basics	6	180	90	60	30			90	3		Engineering and computer graphics	6	180	90	60	30			90
3	SWD1336	Data structure and Algorithms	6	180	90	30		60		90	3		Automatic control systems	6	180	90	60	30			90
3	CAE1316	Electronics and circuits 1	6	180	90	60		30		90	3	CAE1426	Electronics and circuits 2	6	180	90	60	30			90
2	MTH1246	Discrete Structures	6	180	90	60	30			90	3		Measurements, certification and standardization	6	180	90	60	30			90
		Total for semester:	**30**	**900**	**450**	**240**	**60**	**150**	**0**	**450**			**Total for semester:**	**30**	**900**	**450**	**300**	**150**	**0**	**0**	**450**
													Internship	**0**							
													Total for year:	**60**	**1800**	**900**	**540**	**210**	**150**	**0**	**900**
5 semester (15 weeks)											**6 semester (15 weeks)**										
4		Digital Systems and Microprocessors	6	180	90	60	30			90	4		Robotic Control Systems	6	180	90	60	30			90
4		Communication and Networking	6	180	90	60	30			90	4		Mechatronics System Design 2	6	180	90	60	30			90
4		Mechatronics System Design 1	6	180	90	60	30			90	4		Robot Operating system and programming	6	180	90	60	30			90
4		Electric Drive and Electromechanical Systems	6	180	90	60	30			90	4		CAD/CAM Systems	6	180	90	60	30			90
1	OEL*	Open Elective Course 1	4	120	60	60				60	1	OEL*	Open Elective Course 2	4	120	60	60				60
3	ICP1312	Individual Project 1	2	60						60	3	ICP1322	Individual Project 2	2	60						60
		Total for semester:	**30**	**900**	**420**	**300**	**120**	**0**	**0**	**480**			**Total for semester:**	**30**	**900**	**420**	**300**	**120**	**0**	**0**	**480**
													Industrial Internship	**0**							
													Total for year:	**60**	**1800**	**840**	**600**	**240**	**0**	**0**	**960**
7 semester (15 weeks)											**8 semester (10 weeks)**										
4		Industrial Control Systems	6	180	90	60	30			90	5		Elective Course 4	6	180	90	60	30			90
4		Artificial Intelligence and Robotics	6	180	90	60	30			90	5		Elective Course 5	6	180	90	60	30			90
5		Elective Course 1	6	180	90	60	30			90	4		Graduation Thesis	18	540						540
5		Elective Course 2	6	180	90	60	30			90											
5		Elective Course 3	6	180	90	60	30			90											
		Total for semester:	**30**	**900**	**450**	**300**	**150**	**0**	**0**	**450**			**Total for semester:**	**30**	**900**	**180**	**120**	**60**	**0**	**0**	**720**
													Career Internship	**0**							
													Total for year:	**60**	**1800**	**630**	**420**	**210**	**0**	**0**	**1170**
													Total:	**240**	**7200**	**3270**	**1860**	**1020**	**330**	**60**	**3930**

1. Humanitarian and Social sciences Courses
2. Mathematical and Natural science Courses
3. General Professional Courses
4. Professional Courses
5. Professional Elective Courses

Elective courses:

1. Materials Science
2. Engineering Mechanics
3. Fluid Mechanics and Thermodynamics
4. Theory of Mechanisms and Machines
5. Machine Elements
6. Mechanics of Materials
7. Materials in Mechatronics
8. Robotical Technology