

Mechatronics Department / First Level

(Fall semester) / First Level

	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
University requirements	Compulsory	English language	3	-	3	-	UOMC101	
	Compulsory	Computer	2	2	3	-	UOMC102	
College requirements	Compulsory	Calculus I	3	-	3	-	ENGC121	
	Compulsory	Engineering Drawing	-	3	1	-	ENGC123	
Department requirements	Compulsory	Electric circuit analysis	2	2	3	-	ECAN100	
	Compulsory	Engineering mechanics I (static)	3	-	3	-	EMSA101	
	Compulsory	Physics	2	-	2	-	PHY102	
	Total hours		15	18	18			

(Spring semester)/ First Level

	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
University requirements	Compulsory	Arabic language	2		2		UOMC100	
	Compulsory	Rights and freedom	2		2		UOMC103	
	Elective	Manufacturing processes	2		2		-	Student choose one
	Elective	Environmental pollution	2		2		-	
	Elective	Information technology	2		2		-	
	Elective	Electrical installation	2		2		-	
	Elective	Modelling of building materials	2		2		-	
College requirements	Compulsory	Calculus II	3		3	Calculus I	ENGC122	
	Compulsory	Auto cad		3	1	Engineering drawing	ENGC124	
Department requirements	Compulsory	Strength of materials	2		2	Engineering mechanics (static)	STMT150	
	Compulsory	Algorithm and computer programing	1	2	2	Computer	ALCP151	
	Compulsory	Engineering materials and manufacturing	3	2	4		ENMM152	
	Total hours		15	7	18			

Mechatronics Department / Second Level

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	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
University requirements	Compulsory	Professional ethics	2		2		UOMC104	
College requirements	Compulsory	statistics	2		2		ENGC227	
	Compulsory	Engineering math I	3		3	Calculus I,II	ENGC228	Compulsory for department student
Department requirements	Compulsory	Engineering mechanics II(dynamic)	2		2	Engineering mechanic I	EMDY201	
	Compulsory	Electrical machine	2	2	3	Electrical circuit analysis	ELMA202	
	Compulsory	Thermodynamic and heat transfer	2		2		THHT203	
	Compulsory	Electronic principle	2	2	3	Electrical circuit analysis	ELCP204	
Total hours			15	4	17			

(Spring semester)/ Second Level

	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes	
University requirements	Compulsory	English language pre intermediate	1		1			last level take 3 units	
College requirements	Compulsory	Engineering economics	2		2		ENGC226		
	Compulsory	Engineering math II	3		3		ENGE230	Compulsory for dep.	
Department requirements	Compulsory	Fluid mechanics	2		2	Thermodynamic and heat transfer	FLME251		
	Compulsory	Digital logic	2	2	3	Electronic principle	DILO252		
	Compulsory	Electromechanical systems	2	2	3	Electrical machine	ELES253		
	Compulsory	Signal and system	2		2	Calculus II	SISY254		
	Elective	Elective	Introduction to mechanical design	3		3	Strength of materials	INMD261	Student choose one
			Composite materials	3		3	Engineering materials and manufacturing process	COMA262	
			Advanced heat transfer	3		3	Thermodynamic and heat transfer	AHTR263	

		Renewable energy	3		3	Thermodynamic and heat transfer	REN264	
Total hours			17	4	19			

Mechatronics Department / Third Level

(Fall semester) /Third Level								
	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
University requirements	Compulsory	English language intermediate	2		2			
College requirements	Compulsory	Numerical analysis	2		2	Calculus I,II	ENGE320	Compulsory for depart.
Department requirements	Compulsory	Mechanism and vibration	2		2	Engineering mechanics II dynamics	MEVI300	
	Compulsory	Mechanics engineering lab.		2	1	Engineering mechanics II dynamics	MLAB301	
	Compulsory	Modelling and simulation	1	2	2	Signal and system	MODS302	
	Compulsory	Measurement and instrumentation	2	2	3	Electronic principle	MEIN303	
	Compulsory	Microprocessors and assembly language	2	2	3	Digital logic	MICA304	
	Elective	Signal processing	3		3	Signal and system	SPRO361	Student choose one
	Elective	Image processing	3		3		IMPR362	
	Total hours		14	8	18			

(Spring semester)/ Third Level

Notes	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes	
Department requirements	Compulsory	Design of machine element	3		3	Engineering mechanics II dynamic	DMEL350		
	Compulsory	Power electronics and drives	2	2	3	Electronic principle	PELD351		
	Compulsory	Control systems	2	2	3	Modelling and simulation	2CONS35		
	Compulsory	Microcontroller system design	2	2	3	Microprocessors and assembly language	MCSD353		
	Compulsory	Theory of machine	2		2	Engineering mechanics II dynamic	THMH354		
	Compulsory	Hydraulic and pneumatic systems	2		2	Fluid mechanics	HPNS355		
	Elective		Solid modelling	3		3		SMOD363	Student choose one
			Industrial LAN	3		3		ILAN364	
			Communication engineering	3		3		COEN365	
	Total hours			16	6	19			

Note :Summer Training is one of the requirements that the student has to apply during July or August.

Mechatronics Department / Fourth Level

(Fall semester) / Fourth Level								
	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
College requirements	Elective	Public safety	2		2		ENGE429	Compulsory for depa.
Department requirements	Compulsory	Robotics	2	2	3	Theory of machine	ROTI400	
	Compulsory	Design of machine elements II	3		3	Design of machine element I	DMEL401	
	Compulsory	Modern control systems	2	2	3	Control system	MOCS402	
	Compulsory	Graduation project I	2		2	All compulsory department requirements for the third level	ENGP403	
	Elective	Special topics in mechatronics	3		3		STME461	Student choose one
	Elective	CNC machine	3		3		CNCM462	
	Elective	Building management system	3		3		BMSY463	Student choose one
	Elective	PC interface and data acquisition	2	2	3	Microcontroller and system design	PCID464	
Total hours			16/17	4/6	19			

(Spring semester) / Fourth Level

	Type	Subject	Theoretical hours	Practical hours	Units	Pre-request	Code	Notes
University requirements	Compulsory	English language upper intermediate	2		2			
College requirements	Elective	Engineering management	2		2		ENDC425	
Department requirements	Compulsory	Mechatronics systems design	2	2	3	Control system	MSTD450	
	Compulsory	Industrial automation	2	2	3	robotics	INAU451	
	Compulsory	Graduation project II	2		2	Graduation project I	ENGP452	
	Compulsory	Artificial intelligent	2		2		ARIN453	
	Elective	Mobile robot	3		3	robotics	MROB465	Student choose one
	Elective	Intelligent control	3		3	Control system	ICON464	
Total hours			15	4	17			