

Bachelor of Science in Electrical Engineering – Robotics and Automation Concentration
Study Plan (Fall Start)
First Year (Freshman)

Total Credit Hours: 138

Semester 1

Code	Title	Cr.	Prerequisite
ARL101(A)	Communication Skills in Arabic	3	Nil
MTT102	Calculus I	3	Math Placement Test or MTT101 (C grade)
ECS200	Intro. to Engr. & Computing	3	Nil
STT100	General Statistics	3	Nil
ISL100(A)	Islamic Culture	3	Nil

Total Credit Hours 15

Semester 2

Code	Title	Cr.	Prerequisite
FWS205	UAE and GCC Society	3	ENG102 (P) & FWS100 (E)/ USS001 as pre-requisite. FWS100(E)/ USS001 as co-requisite if students enter to ENG200 directly
ENG200	English II	3	IELTS average score of 6 or EMSAT average score of 1400 or passing grade in ENG 102 (FWS100(E)/ USS001 as co-req if placed in ENG200)
GEN101	Introduction to Artificial Intelligence	3	STT100
PHY102	Physics & Engr. Applications I	3	MTT102
PHY102L	Physics & Engr. Applications I Lab	1	MTT102, PHY102(co)
MTT 200	Calculus II	3	MTT102

Total Credit Hours 16

Second Year (Sophomore)

Semester 3

Code	Title	Cr.	Prerequisite
CSC201	Computer Programming I	3	MTT101 or higher
PHY201	Physics & Engr. Applications II	3	PHY102
PHY201L	Physics & Engr. Applications II Lab	1	PHY102, PHY201(co)
EEN210	Digital Circuits	3	ECS200
CHE205	General Chemistry I	3	ENG200/ENG102(co)
CHE201L	Chemistry lab	1	CHE205(co)
MTT201	Calculus III	3	MTT200

Total Credit Hours 17

Semester 4

Code	Title	Cr.	Prerequisite
EEN466	FPGAs and Digital Design	3	EEN210
CEN333	Cross-platform Mobile App. Develop.	3	CSC201
CEN201	Electric Circuits I	3	ECS200 or PHY201
GEN201	Engineering Economy	2	ENG200, MTT102
MTT205	Differential Equations	3	MTT200, MTT204(co)
MTT204	Introduction to Linear Algebra	3	MTT200

Total Credit Hours 17

Third Year (Junior)

Semester 5

Code	Title	Cr.	Prerequisite
CEN320	Signals and Systems	3	MTT205, CEN201
EEN220	Electric Circuits II	3	CEN201
CEN325	IoT: Foundation & Design	3	CSC201, EEN210
FWS310	Fund. of Innovation & Entrepreneurship	3	ENG200+ min 60 credits
EEN338	Electromagnetic Fields and Waves	3	MTT201(co), MTT205
CEN304	Electronic Devices and Circuits	3	CEN201

Total Credit Hours 18

Summer Semester

Code	Title	Cr.	Prerequisite
EEN399i	Internship in Electrical Engineering	3	90 Credit Hours

Semester 6

Code	Title	Cr.	Prerequisite
CEN425	IoT: Applications & Networking	3	CEN325, CEN333
EEN345	Power Systems	3	EEN220
EEN337	Analog and Digital Communication	3	CEN320
CEN324	Digital and Analog Electronics	3	CEN304
EEN365	Control Systems	3	CEN320, MTT204
EEN330	Random Signals and Noise	3	CEN320, STT100

Total Credit Hours 18

Fourth Year (Senior)

Semester 7

Code	Title	Cr.	Prerequisite
EEN420	Digital Image Processing	3	CEN320
CSC305	Data Communications and Networks	3	Junior Level
EEN366	Introduction to Robotics	3	EEN365
EEN310	Instrumentation and Measurement	3	CEN304
CEN464	Digital Signal Processing	3	CEN320
EEN451	Electrical Engr. Design Project I	1	Senior level, EEN345, EEN337, CEN425

Total Credit Hours 16

Semester 8

Code	Title	Cr.	Prerequisite
EEN340	Energy Conversion	3	EEN220, EEN338
CEN454	Computer Vision and Machine Learning	3	CEN464, EEN330
EEN449	Renewable Energy	3	EEN345
EEN452	Electrical Engr. Design Project II	2	EEN451
GEN400	Engineering Ethics	1	Senior level
EEN339	Communication Systems	3	EEN330, EEN337
EEN413	Sensors and Transducers	3	EEN310

Total Credit Hours 18