

**Section 3. Program Study Plan**  
**Bachelor of Science in Renewable and Sustainable Energy Engineering**  
**Study Plan (Fall Start)**

**Total Credit Hours: 142**

**First Year (Freshman)**

Semester 1

Code	Title	Cr.	Prerequisite
ARL101(A)	Comm. Skills in Arabic I	3	Nil
RSN200	Intro. to Renewable and Sustainable Energy Engineering	3	Nil
MTT102	Calculus I	3	Nil/MTT101
STT100	General Statistics	3	Nil
ISL100(A)	Islamic Culture	3	Nil
FWS205	UAE and GCC Society	3	ENG102

**Total Credit Hours 18**

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)
OE1	Open Elective I	3	
CHE205	General Chemistry I	3	ENG200/ENG102(co)
CHE201L	Chemistry lab	1	CHE205(co)
RSN215	Engineering Mechanics	3	PHY102

**Total Credit Hours 17**

Semester 5

Code	Title	Cr.	Prerequisite
CEN320	Signals and Systems	3	MTT205, CEN201
EEN220	Electric Circuits II	3	CEN201
RSN325	Internet of Energy Efficient Things	3	CSC201
MEC350	Fluid Mechanics	3	(RSN 215 or CIV201) +MTT205
RSN323	Modeling and Simulation of Energy Systems	3	EEN220
CEN304	Electronic Devices and Circuits	3	CEN201

**Total Credit Hours 18**

Summer Semester

Code	Title	Cr.	Prerequisite
RSN399i	Internship in Renewable & Sustainable Energy Eng I	2	90 Credit Hours

Semester 7

Code	Title	Cr.	Prerequisite
RSN455	Wind Energy	3	MEC350
MEC420	Heat Transfer	3	MEC 320, MEC 350
ME1	Major Elective I	3	
ME2	Major Elective II	3	
RSN450A	RSN Engineering Design Project I	1	Senior level
RSN460B	Hybrid Smart Vehicles Project – MEC Design	2	RSN460A
RSN480A	Energy-Efficient Green Building Design I	2	Senior level

**Total Credit Hours 17**

**Second Year (Sophomore)**

Semester 2

Code	Title	Cr.	Prerequisite
IEN220	Probability and Statistics	3	STT100
ENG200	English II	3	EPT/IELTS 6 /ENG102
COE101	Introductory 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**

Semester 4

Code	Title	Cr.	Prerequisite
MEC320	Thermodynamics I	3	PHY102
RSN301	Energy Materials	3	CHE205
CEN201	Electric Circuits I	3	RSN200 or PHY201
COE 202	Engineering Ethics, Economy and Law	3	ENG200 + MTT102
MTT205	Differential Equations	3	MTT200, MTT204(co)
MTT204	Introduction to Linear Algebra	3	MTT200

**Total Credit Hours 18**

**Third Year (Junior)**

Semester 6

Code	Title	Cr.	Prerequisite
FWS310	Fund. of Innovation & Entrepreneurship	3	ENG200, 60 credits
EEN345	Power Systems	3	EEN220
EEN441	Photovoltaics and Solar Energy	3	EEN220
MEC410	Control Systems	3	RSN215 or (MEC 310+MEC 390)
RSN352	Thermal Energy	3	MEC320
RSN460A	Hybrid Smart Vehicles Project – Materials and Energy	2	RSN301

**Total Credit Hours 17**

**Fourth Year (Senior)**

Code	Title	Cr.	Prerequisite
RSN399ii	Internship in Renewable & Sustainable Energy Eng II	1	RSN399i

Semester 8

Code	Title	Cr.	Prerequisite
RSN450B	RSN Engineering Design Project II	2	RSN450A
RSN460C	Hybrid Smart Vehicles Project – AI Design	2	RSN460B
RSN480B	Energy-Efficient Green Building Design II	2	RSN480A
RSN477	Nuclear Energy	3	MEC420
RSN411	Grid Integration of Renewable Energy	3	EEN441
RSN485	Energy Storage	3	EEN441
RSN404	UAE Energy Regulations and Standards	3	EEN345