

## BACHELOR OF AEROSPACE ENGINEERING WITH HONOURS CURRICULUM STRUCTURE

### SEMESTER 1 (16.5 CH)

No.	Course Code	Course Title	Cr Hrs	Pre-requisite	Co-requisite
1	MECH 1301	Statics	3		
2	EECE 1316	Fundamentals of Electrical and Electronics	3		
3	MFGA 1201	Computer Aided Drawing	2		
4	MATH 1310	Engineering Mathematics 1	3		
5	UNGS 1301	Basic Philosophy and Islamic Worldview	3		
6	UNGS 1201	Sustainable development Issues, Policies and Practices	2		
7	CCUB 1061	Usrah 1	0.5		

### SEMESTER 2 (16 CH)

No.	Course Code	Course Title	Cr Hrs	Pre-requisite	Co-requisite
1	AERO 1322	Thermal Sciences	3		
2	AERO 1121	Introduction to Aerospace Engineering	1		
3	EECE 1102	Electrical Engineering Lab 1	1	EECE 1316	
4	EECE 1317	Engineering Programming	3		
5	MFGA 1141	Introduction to Workshop	1	MFGA 1201	
6	MATH 1321	Engineering Mathematics 2	3	MATH 1310	
7	TQTD 1002	Tilawah Al-Quran 1	0.5		
8	LQAD 1003	Arabic for <i>Ibadah</i> 1	0.5		
9	LEED 1301	English for Academic Writing	3		

### SEMESTER 3 (17.5 CH)

No.	Course Code	Course Title	Cr Hrs	Pre-requisite	Co-requisite
1	AERO 2302	Dynamics	3	MECH 1301, MATH 1301	
2	MECH 2340	Fluid Mechanics	3	AERO 1322	
3	MECH 2241	Instrumentation and Measurements	2	EECE 1316	
4	AERO 2320	Aerospace Materials and Manufacturing Processes	3		
5	MECH 2342	Mechanics of Materials	3	MECH 1301	
6	MATH 2311	Differential Equations	3	MATH 1321	
7	CCUB 1062	Usrah 2	0.5	CCUB 1061	

**SEMESTER 4 (17 CH)**

No.	Course Code	Course Title	Cr Hrs	Pre-requisite	Co-requisite
1	AERO 2343	Control Systems	3	MATH 2311	
2	AERO 2128	Aerospace Engineering Lab 1	1	AERO 1322, MECH 2340, MECH 2342	
3	AERO 2322	Aerodynamics 1	3	MECH 2340	
4	MATH 2330	Computational Methods and Statistics	3	MATH 2311	
5	AERO 2326	Space Mechanics	3	AERO 2302	
6	TQTD 2002	Tilawah Al-Quran 2	0.5	TQTD 1002	
7	LQAD 2003	Arabic for Ibadah 2	0.5	LQAD 1003	
8	CCUB 2163	Usrah in Action 1 (SD: Community Profiling)	1	CCUB 1062	
9	UNGS 2290	Knowledge and Civilization in Islam	2	UNGS 1301	

**SEMESTER 5 (16 CH)**

No.	Course Code	Course Title	Cr Hrs	Pre-requisite	Co-requisite
1	AERO 3321	Aircraft Structures 1	3	MECH 2342	
2	AERO 3220	Flight Mechanics	2	AERO 2322	
3	AERO 3326	Aerodynamics 2	3	AERO 2322	
4	MECH 3342	Computational Mechanics	3	MATH 2330	
5	AERO 3128	Aerospace Engineering Lab 2	1	AERO 2322, AERO 2320, AERO 2343	
6	MFGA 2305	Project and Operations Management	3	MATH 1321	
7	CCLM 2051	Leadership	0.5		
8	CCSS 1010/2010/3010	Skill 1	0.5		

**SEMESTER 6 (16.5 CH)**

No.	Course Code	Course Title	Cr Hrs	Pre-requisite	Co-requisite
1	AERO 3325	Aircraft Structures 2	3	AERO 3321	
2	AERO 3324	Aerospace Propulsion	3	AERO 2322	
3	AERO 3327	Aerospace Vehicle Design	3	AERO 3220	
4	MECH 3241	Introduction to IoT and Applications	2	MECH 2241, EECE 1317	
5	MECH 3140	Engineering Design Ideation	1	3rd Year	
6	MFGA 3309	Engineering Economics & Management	3	MFGA 2305	
7	CCFM 2061	Family Management	0.5		
8	CCUB 3164	Usrah in Action 2	1	CCUB 2163	

**SHORT SEMESTER (5 CH)**

No.	Course Code	Course Title	Cr Hrs	Pre-requisite	Co-requisite
1	AERO 3500	Engineering Industrial Training	5	90 CHs	

**SEMESTER 7 (17.5 CH)**

No.	Course Code	Course Title	Cr Hrs	Pre-requisite	Co-requisite
1	MECH 4300	Integrated Design Project	3	MECH 3140, MFGA 2305	
2	AERO 4342	Spacecraft Dynamics and Control	3	AERO 2326, AERO 2343	
3	AERO 4122	Aerospace Engineering Lab 3	1	AERO 3324, AERO 3325	AERO 4342
4	AERO 4200	Final Year Project 1	2	4th Year	
5	AERO 43XX	Technical Elective 1	2		
6	XXXX XXXX	Free Elective 1	3		
8	UNGS 2380	Ethics and Fiqh of Contemporary Issues	3	UNGS 2290	
9	CCSS 1010/2010/3010	Skill 2	0.5		

**SEMESTER 8 (17 CH)**

No.	Course Code	Course Title	Cr Hrs	Pre-requisite	Co-requisite
1	AERO 4322	Flight Dynamics and Control	3	AERO 2343, AERO 3220	
2	AERO 4XXX	Technical Elective 2	2		
3	AERO 4400	Final Year Project 2	4	AERO 4200	
4	GENE 4301	Engineering Ethics, Safety and Environment	3	UNGS 2380	
5	MECH 4211	Technology Entrepreneurship	2	MECH 4300, MFGA 3309	
6	XXXX XXXX	Free Elective 2	3		

**LIST OF ELECTIVE COURSES FOR BACHELOR OF AEROSPACE  
ENGINEERING WITH HONOURS**

The elective courses are divided into three groups or streams. This is to promote focus towards a particular area.

**Group I Aerothermodynamics and Propulsion**

No	Course Code	Course Title	Cr Hrs	Pre-requisite
1	AERO 4260	Helicopter Aerodynamics	2	AERO 3326
2	AERO 4262	Rocket Propulsion	2	AERO 3324

**Group II Structures, Materials and Manufacturing**

No	Course Code	Course Title	Cr Hrs	Pre-requisite
3	AERO 4263	Aeroelasticity	2	AERO 3325
4	AERO 4287	Composite Structures	2	MECH 2342
5	AERO 4265	Aerospace Composites Technology	2	AERO 2320
6	AERO 4270	Aerospace Manufacturing Technology	2	AERO 2320

**Group III Aerospace Systems, Safety and Maintenance**

No	Course Code	Course Title	Cr Hrs	Pre-requisite
7	AERO 4264	Spacecraft Systems Engineering	2	AERO 2326
8	AERO 4286	Nondestructive Evaluation of Structures	2	None