CHANDIGARH UNIVERSITY
Discover. Learn. Empower.

Program Schemes for *Aerospace Engineering*

Cluster: Engineering **Institute**: UIE

Department: Aerospace Engineering **Type of Program:** UG

SEMESTER-1		
Course Name	**Course Category**	**Credits**
Logical Thinking and Problem Solving	Minor Core BS	4
Mathematics-I	Major Core BS	5
Communication Skills-I	Skill Enhancement	2
AI Applications Lab	Minor Core BS	1
Engineering Physics	Major Core BS	4
Academic and Career Pathway Planning	Minor Core	0
Semiconductor Physics and Applications	Major Core BS	3
Engineering Graphics using CAD Lab	Minor Core	2
Design Thinking and Innovation	Skill Enhancement	1

SEMESTER-2		
Course Name	**Course Category**	**Credits**
Data Structures and Algorithms	Minor Core	4
Mathematics-II	Minor Core BS	5
Engineering Chemistry	Major Core BS	3
Communications Skills - II	Skill Enhancement	1
Emerging & Disruptive Technologies Workshop	Major Core BS	2
Engineering Mechanics	Major Core BS	3
Soft Skills-I	Skill Enhancement	1
General Proficiency-1	Ability Enhancement	1
Workshop	Skill Enhancement	1
Universal Human values, Ethics and Life Skills-I	Value Education	1

SEMESTER-3		
Course Name	**Course Category**	**Credits**
Strength of Materials	Major Core	4
Aero Engineering Thermodynamics	Major Core	4
Engineering Fluid Mechanics	Major Core	3
Physics of Flight	Major Core BS	3
Material Science	Major Core BS	2
Engineering Mathematics - Bridge Course (LEET)	Minor Core	4
CAD/CAM in Aerospace Engineering (Non-LEET)	Minor Core	4
Entrepreneurship Mindset	Ability Enhancement	1
Critical Enquiry and Research Methodology	Ability Enhancement	1
Aptitude-1	Ability Enhancement	1
Social Internship	Internship or Training	2

SEMESTER-4		
Course Name	**Course Category**	**Credits**
Applied Mathematics-III	Major Core	4
Aircraft Structures-I	Major Core	3
Aerodynamics-I	Major Core	3
Aircraft Propulsion-I	Major Core	3
Universal Human Values, Ethics & Life-Skills-II	Value Education	2
General Proficiency-2	Ability Enhancement	1
Professional Ethics	Ability Enhancement	1
Mid-Grade Project [MGP-1]	Project	1
RIE Tracks (Student will earn 2 credit by selecting any one of the Track)		
Aptitude-2	Ability Enhancement	1
Soft Skills-2	Skill Enhancement	1
Marketing & Management Essentials	Ability Enhancement	1
AI Automation & Sustainability	Skill Enhancement	1
Academic Writing	Ability Enhancement	1
Research Ethics & Intellectual Property Rights	Skill Enhancement	1

SEMESTER-5		
Course Name	**Course Category**	**Credits**
Aerodynamics-II	Major Core	2
Aircraft Structures-II	Major Core	4
Aircraft Propulsion-II	Major Core	2
Computational Fluid Dynamics	Major Core	3
Aircraft Design Project Lab -I	Major Core	1
PE1	Minor Elective	3
PE2	Minor Elective	3
General Proficiency-3	Ability Enhancement	1
Technical/Domain Internship	Summer Internship	1
RIE Tracks (Student will earn 2 credits by selecting any one of the Track)		
Aptitude-3	Ability Enhancement	1
Soft Skills-3	Skill Enhancement	1
Business Strategies & Operations	Ability Enhancement	1
Finance & Economics Fundamentals	Skill Enhancement	1
Statistical Data Analysis	Ability Enhancement	1
Emerging Research Tools and Technologies	Skill Enhancement	1

SEMESTER-6		
Course Name	**Course Category**	**Credits**
Aircraft System and Instrumentation	Major Core	3
Flight Mechanics	Major Core	3
Unmanned Aerial Vehicle	Minor Core	2
Aircraft Design Project Lab -II	Major Core	1
PE3	Major Elective	3
PE4	Major Elective	3
Gender Equity and Empowerment	Value Education	1
Introduction to SDGs	Value Education	1
Open Elective-I	Open Elective	3
Mid-Grade Project [MGP-2]	Project	1
RIE Tracks (Student will earn 2 credit by selecting any one of the Track)		
Aptitude-4	Ability Enhancement	1
Soft Skills-4	Skill Enhancement	1
Customer Engagement & Organic Growth	Ability Enhancement	1
Business Planning & Legal Basics	Skill Enhancement	1
AI & Data-Driven Research	Ability Enhancement	1
Domain Specific Term Paper	Skill Enhancement	1

SEMESTER-7		
Course Name	**Course Category**	**Credits**
Space Mechanics	Major Core	3
Open Elective-II	Open Elective	3
PE5	Major Elective	3
Capstone Project-1	Project	4
Environment Science & Management	Value Education	2
Industry Internship	Internship/ Training	1
General Proficiency-4	Skill Enhancement	1

SEMESTER-8		
Course Name	**Course Category**	**Credits**
PE6	Major Elective	3
Capstone Project-2	Project	8
Open Elective-III	Open Elective	3
OR		
End Semester Internship	Internship/ Training	14

Program Electives			
Semester	**Course Name**	**Course Category**	**Credits**
5	Wind tunnel Techniques	Minor Elective	3
5	Composite Materials	Minor Elective	3
5	Combustion Theory	Minor Elective	3
5	Aircraft Rules and Regulations	Minor Elective	3
5	Hypersonic Aerodynamics	Minor Elective	3
5	Finite element analysis	Minor Elective	3
5	Rockets and Missiles	Minor Elective	3
5	Missiles Navigation and Guidance	Minor Elective	3
6	Helicopter Aerodynamics	Major Elective	3
6	Fatigue and Fracture Mechanics	Major Elective	3
6	High speed Jets	Major Elective	3
6	Air Transport Management	Major Elective	3
6	Industrial Aerodynamics	Major Elective	3
6	Additive Manufacturing	Major Elective	3
6	Refrigeration and Cryogenics	Major Elective	3
6	Engine control and system	Major Elective	3
7	Boundary Layer Theory	Major Elective	3
7	Experimental Stress analysis	Major Elective	3
7	Heat Transfer in space application	Major Elective	3
7	Avionics	Major Elective	3

8	Missile Aerodynamics	Major Elective	3
8	Vibration and Aero-elasticity	Major Elective	3
8	Design of Gas Turbine Engine Components	Major Elective	3
8	Aircraft Maintenance and Repair	Major Elective	3

Program Electives			
Semester	**Course Name**	**Course Category**	**Credits**
	Introduction to Aerospace Engineering	Open Elective	3
	Drone Technology	Open Elective	3
	Aircraft Systems and Instruments	Open Elective	3
	Aircraft and Drone Rules and Regulations	Open Elective	3