

AEROSPACE ENGINEERING

COURSES/CREDIT DISTRIBUTION OF AEROSPACE ENGINEERING DEPARTMENT

I. Basic Science Courses (BSC)

Semester I					
Course code	Course name	L	T	P	Credits
PYN 101	Oscillations and Optics	3	1/2	2/2	4
Semester II					
Course code	Course name	L	T	P	Credits
MAN 109	Numerical Analysis	3	1	0	4
PYN 106	Electromagnetic Theory	3	1/2	2/2	4

II. Engineering Science Courses (ESC)

Semester II					
Course code	Course name	L	T	P	Credits
ESC 101	Engineering Drawing	2	0	4	4
Semester III					
Course code	Course name	L	T	P	Credits
ESC 201	Thermodynamics	3	1	0	4
Semester IV					
ESC 205	Introduction to Electronics	3	1	0	4

III. Departmental Core Courses (DCC)

Course code	Course name	L	T	P	Credits
AEN 101	Introduction to Aerospace Engineering	2	0	0	2
AEN 102	Elements of Aerodynamics	3	0	2	4
AEN 103	Aircraft systems & instrumentation	3	0	2	4
AEN 104	Workshop Project	0	0	4	2
AEN 201	Aircraft materials & Processes	3	1	0	4
AEN 202	Aircraft Propulsion	3	0	2	4
AEN 203	Aircraft Performance	3	1	0	4
AEN 204	Aircraft Structures	3	0	2	4
AEN 205	Technical Communication	0	0	3	2
AEN 206	Engineering Analysis and Design	3	1	0	4
AEN 207	Aero Engine Design	3	0	2	4
AEN 208	Aircraft Structural Analysis & Design	3	0	2	4
AEN 209	Aircraft Stability and control	3	1	0	4
AEN 210	Compressible and finite wing Aerodynamics	3	0	2	4
AEN 301	Vibrations and Aero elasticity	3	1	0	4
AEN 302	Gas Dynamics	3	1	0	4
AEN 303	Airplane Design	3	1	0	4
AEN 304	Computational Fluid Dynamics	3	0	2	4
AEN 305	Space Dynamics	3	1	0	4

IV. Departmental Elective courses (DEC)

Group-I (Choose any ONE course)

Course code	Course name	L	T	P	Credits
AEN 401	Helicopter Dynamics	3	1	0	4
AEN 402	Aircraft Maintenance and Airworthiness	3	1	0	4
AEN 403	Wind Turbines	3	1	0	4
AEN 404	Kinematics & Dynamics of Machines	3	1	0	4
AEN 405	Experimental Aerodynamics	3	1	0	4

Group-2 (Choose any TWO courses)

Course code	Course name	L	T	P	Credits
AEN 411	Avionics	3	1	0	4
AEN 412	Viscous flow Theory	3	1	0	4
AEN 413	Rocket Propulsion	3	1	0	4
AEN 414	Wind Tunnel Techniques	3	1	0	4
AEN 415	Composite materials	3	1	0	4
AEN 416	Missile Technology	3	1	0	4
AEN 417	Air Transportation and Operations	3	1	0	4

V. Open elective Courses (OEC)

Course code	Course name	L	T	P	Credits
AEN 461	Aircraft Performance	3	1	0	4
AEN 462	Aircraft Structures	3	1	0	4
AEN 463	Space Dynamics	3	1	0	4
AEN 464	Introduction to Aerospace Engineering	3	1	0	4
AEN 465	Rocket Propulsion	3	1	0	4
AEN 466	Aircraft Propulsion	3	1	0	4

VI. Departmental Honors Courses (DHC)

Course code	Course name	L	T	P	Credits
AEN 421	Advanced Aerodynamics	3	1	0	4
AEN 422	Automatic flight control	3	1	0	4
AEN 423	Aircraft Design & Optimization	3	1	0	4
AEN 424	Dynamics of Aerospace Structures	3	1	0	4
AEN 425	Advanced Aerospace Propulsion systems	3	1	0	4

VII. Minor Specialization Courses (MSC)

Course code	Course name	L	T	P	Credits
AEN 431	Introduction to Aerospace Engineering	3	1	0	4
AEN 432	Aircraft Structures	3	0	2	4
AEN 433	Elements of Aerodynamics	3	0	2	4
AEN 434	Aircraft Performance	3	1	0	4
AEN 435	Aircraft Propulsion	3	0	2	4

TEACHING SCHEME FOR B.E. AEROSPACE ENGINEERING

First Year

Semester-I

Course Code	Subject	Credit	Category
MAN101	Mathematics-I	4	BSC
AEN 101	Introduction to Aerospace Engineering	2	DCC
CSN104/105	Computer Programming (Basic/Advanced)	4	ESC
PYN 101	Oscillations and Optics	4	BSC
HSS101	Ethics and Self- Awareness	2	HSSC
	Total	16	

Semester-II

Course Code	Subject	Credit	Category
MAN 109	Numerical Analysis	4	BSC
HSS(102/103)	Communication Skills	2	HSSC
ESC101	Engineering Drawing	4	ESC
AEN 102	Elements of Aerodynamics	4	DCC
AEN 103	Aircraft systems & instrumentation	4	DCC
AEN 104*	Workshop Project*	2	DCC
GSN101	Introduction to Environmental Science	4	GSC
	Total	24	

*To be conducted during summer vacation. Evaluation marks to be carried over to next semester

Second Year

Semester-I

Course Code	Subject	Credit	Category
PYN 106	Electromagnetic Theory	4	BSC
ESC 201	Thermodynamics	4	ESC
AEN 201	Aircraft materials & Processes	4	DCC
AEN 202	Aircraft Propulsion	4	DCC
AEN 203	Aircraft Performance	4	DCC
AEN 204	Aircraft Structures	4	DCC
	Psychology	3	HSSMEC
	Total	27	

Semester-II

Course Code	Subject	Credit	Category
AEN 206	Engineering Analysis and Design	4	DCC
ESC 205	Introduction to Electronics	4	ESC
AEN 207	Aero Engine Design	4	DCC
AEN 208	Aircraft Structural Analysis & Design	4	DCC
AEN 209	Aircraft Stability & Control	4	DCC
AEN 210	Compressible and finite wing Aerodynamics	4	DCC
AEN 221	Educational Tour	Non-credit	DCC
AEN 205	Technical communication	2	DCC
	Total	26	

Third Year

Semester-I

Course Code	Subject	Credit	Category
AEN 301	Vibrations & Aero elasticity	4	DCC
AEN 302	Gas Dynamics	4	DCC
AEN 303	Airplane Design	4	DCC
AEN 304	Computational Fluid Dynamics	4	DCC
AEN 305	Space Dynamics	4	DCC
AEN 321	Minor Project	2	DCC
	Total	22	

Semester-II

Course Code	Subject	Credit	Category
AEN 331	Semester Internship*	20	DCC
	Total	20	

*Internship Seminar presentations may be held a week before the date of Registration in Semester-I of Fourth Year

Fourth Year

Semester-I

Course Code	Subject	Credit	Category
	Open Elective	4	GSEC/MEC
	Department Elective course-I	4	DEC
	Department Elective course-II	4	DEC
AEN 441	Major Project	2	DCC
AEN 431 AEN 421	Introduction to Aerospace Engineering Advanced Aerodynamics	4	MSC/DHC
AEN 432 AEN 422	Aircraft Structures Automatic Flight control	4	MSC/DHC
	Total	14/22	

Semester-II

Course Code	Subject	Credit	Category
	Cross Cultural Management	3	HSSMEC
	Department Elective course-III	4	DEC
AEN 451	Major Project	6	DCC
AEN 433 AEN 423	Elements of Aerodynamics Aircraft Design & Optimization	4	MSC/DHC
AEN 434 AEN 424	Aircraft Performance Dynamics of Aerospace Structures	4	MSC/DHC
AEN 435 AEN 425	Aircraft Propulsion Advanced Aerospace Propulsion systems	4	MSC/DHC
	Total	13/25	

COURSES OFFERED BY APPLIED SCIENCE DEPARTMENT TO ALL DEPARTMENTS

I. Departmental Elective courses (DEC)

Group-I

Course code	Course name	L	T	P	Credits
CHN 401	Modern Instrumental Methods Of Chemical Analysis	3	1	0	4
PYN 401	Advanced Physics	3	1	0	4
PYN 402	Crystal Physics	3	1	0	4
PYN 403	Solid State Physics	3	1	0	4
MAN 401	Operation Research	3	1	0	4
MAN 402	Optimization Techniques	3	1	0	4

II. Minor Specialization Courses For 7th Semester

Course Code	Course Name	L	T	P	Credits
Humanities Section					
HSM 401	Principles of Management	2	2	0	4
HSM 402	Business Environment and Business Laws	2	2	0	4
HSM 431	Managing Innovation and Change	2	2	0	4
Chemistry Section					
CHN 431	Inorganic Chemistry	3	0	3	4
CHN 432	Organic Chemistry	3	0	3	4
Physics Section					
PYN 431	Quantum Mechanics	3	1	0	4
PYN 432	Statistical Physics	3	1	0	4
Mathematics Section					
MAN 431	Algebra	3	1	0	4
MAN 432	Number Theory	3	1	0	4

Minor Specialization Courses For 8th Semester

Course Code	Course Name	L	T	P	Credits
Humanities Section					
HSM 404	Financial Management	2	2	0	4
HSM 405	Marketing Management	2	2	0	4
HSM 406	Human Resource Management	2	2	0	4
HSM 432	Business Research	2	2	0	4
Chemistry Section					
CHN 433	Physical Chemistry / Analytical Chemistry	3	1	0	4
CHN 434	Environmental Chemistry	3	1	0	4
CHN 435	Recent Advances in Chemical Sciences	3	1	0	4
Physics Section					
PYN 433	Nuclear Physics	3	1	0	4
PYN 434	Experimental Nuclear Physics	3	1	0	4
PYN 435	X-Ray Crystallography	3	1	0	4
Mathematics Section					
MAN 433	Fourier Series and Integral Transforms	3	1	0	4
MAN 434	Calculus of Variations	3	1	0	4
MAN 435	Algebraic Coding Theory	3	1	0	4