Department of Space Engineering and Rocketry
Birla Institute of Technology, Mesra, Ranchi - 835215 (India)

M. Tech. (Aerospace Engineering)

Semester	Course code	Courses	Mode of delivery		Total credits
			L	P	
First	SR501	Elements of Rocket Propulsion	3	0	3
	SR502	Elements of Aerodynamics	3	0	3
	SR503	Space Engineering & Space Dynamics	3	0	3
	SR514	Rocket and Missile Structures	3	0	3
	SR513	Applied Mathematics	3	0	3
	SR506	Rocket Propulsion Lab	0	2	2
	SR507	Aerodynamics Lab	0	2	2
	MT132	Communication Skills I	0	1.5	1.5
	Total				**20.5**
(Specialization: Aerodynamics)					
Second		Elective I	3	0	3
		Elective II	3	0	3
		Elective III	3	0	3
		Elective IV	3	0	3
		Elective V	3	0	3
	SR582	Low Speed Aerodynamics Lab	0	2	2
	SR583	High Speed Aerodynamics Lab	0	2	2
	MT133	Communication Skills II	0	1.5	1.5
	Total				**20.5**
(Specialization: Rocket Propulsion)					
Second		Elective I	3	0	3
		Elective II	3	0	3
		Elective III	3	0	3
		Elective IV	3	0	3
		Elective V	3	0	3
	SR556	Solid Rocket Propulsion Lab	0	2	2
	SR557	Liquid and Hybrid Propulsion Lab	0	2	2
	MT133	Communication Skills II	0	1.5	1.5
	Total				**20.5**
Third	SR600	Thesis Part I			8
		Open Elective I/MOOC I	3	0	3
		Open Elective II/MOOC II	3	0	3
	Total				**14**
Fourth	SR650	Thesis Part II			16
	Total				**16**
***GRAND TOTAL FOR M.TECH PROGRAMME* (20.5+20.5+14+16)**					**71**

List of Program Electives for Second Semester (Any five courses have to be selected)

(Specialization: Aerodynamics)

Course code	Courses	Mode of delivery		Total credits
		L	P	
SR508	Aerodynamic Stability and Control	3	0	3
SR509	Aeroacoustics	3	0	3
SR515	Fundamentals of Turbulence	3	0	3
SR516	Aerodynamics of Internal Flows	3	0	3
SR517	Basics of Measurement	3	0	3
SR518	Turbulence Modelling in CFD	3	0	3
SR576	Compressible Flows	3	0	3
SR577	Boundary Layer Theory	3	0	3
SR578	Computational Fluid Dynamics	3	0	3
SR579	Experimental Aerodynamics	3	0	3
SR580	Elements of Hypersonic Flight	3	0	3

List of Program Electives for Second Semester (Any five courses have to be selected)

(Specialization: Rocket Propulsion)

Course code	Courses	Mode of delivery		Total credits
		L	P	
SR505	Flame Propagation & Stability	3	0	3
SR519	Propellant Technology	3	0	3
SR520	Special Topics in Chemical Propulsion	3	0	3
SR521	Computational Combustion	3	0	3
SR522	Cryogenic Propulsion	3	0	3
SR523	Combustion Instabilities in Rocket Engines	3	0	3
SR550	Liquid and Hybrid Rocket Propulsion	3	0	3
SR551	Solid Rocket Propulsion	3	0	3
SR552	Rocket Combustion Processes	3	0	3
SR553	Ignition and Extinction in Chemical Rockets	3	0	3
SR554	Advanced Propulsion Systems	3	0	3
SR555	Heat Transfer in Space Applications	3	0	3

List of Open Electives (To be taken by other department)

Course code	Courses	Mode of delivery		Total credits
		L	P	
SR504	Fundamentals of Combustion	3	0	3
SR510	Fundamentals of Aerospace Engineering	3	0	3
SR511	Fundamentals of Fuel and Combustion	3	0	3
SR512	Acoustics	3	0	3
SR578	Computational Fluid Dynamics	3	0	3
SR579	Experimental Aerodynamics	3	0	3