

BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI
COURSE STRUCTURE - (w.e.f. academic session 2021- 22)
Based on CBCS system & OBE model for M. Tech. (Rocket Propulsion)

SEMESTER / Session of Study (Recommended)	Course Level	Category of course	Course Code	Courses	Mode of delivery & credits <i>L-Lecture; T-Tutorial;P-Practicals</i>			Total Credits <i>C- Credits</i>
					L <i>(Periods/week)</i>	T <i>(Periods/week)</i>	P <i>(Periods/week)</i>	C
FIRST / Monsoon	FIFTH	THEORY						
		Programme Core (PC)	SR 501	Elements of Rocket Propulsion	3	0	0	3
			SR 502	Elements of Aerodynamics	3	0	0	3
			SR 503	Space Engineering & Space Dynamics	3	0	0	3
			SR 601	Propellant Technology	3	0	0	3
		Programme Elective (PE)	SR 504	(One Course to be selected) Fundamentals of Combustion	3	0	0	3
			SR 505	Flame Propagation & Stability				
		LABORATORIES						
		Programme Core (PC)	SR 506	Rocket Propulsion Lab	0	0	4	2
			SR 507	Aerodynamics Lab	0	0	4	2
TOTAL							19	

THEORY												
SECOND/ Spring	FIFTH	Programme Core (PC)	SR 550	Liquid and Hybrid Rocket Propulsion	3	0	0	3				
			SR 551	Solid Rocket Propulsion	3	0	0	3				
			SR 552	Rocket Combustion Processes	3	0	0	3				
		Programme ELECTIVE (PE)	SR 553 SR 554 SR 555 SR 602 SR 603 SR 604 SR 605	(Two Courses to be selected) Ignition and Extinction in Chemical Rockets Advanced Propulsion System Heat Transfer in Space Applications Special Topics in Chemical Propulsion Computational Combustion Rocket and Missile Structures Cryogenic Propulsion			3	0	0	3		
				LABORATORIES								
				Programme Core (PC)	SR 556	Solid Rocket Propulsion Lab		0	0	4	2	
					SR 557	Liquid and Hybrid Propulsion Lab		0	0	4	2	
				TOTAL								19
				TOTAL								38
		THIRD /Monsoon	SIXTH	Programme Core (PC)	SR 621	Thesis Part - I				8		
Open Elective (OE)					OE -1/MOOC-1	3	0	0	3			
				OE - 2/MOOC-2	3	0	0	3				
TOTAL								14				
FOURTH/ Spring	SIXTH	Programme Core (PC)	SR 621	Thesis Part - II				16				
		TOTAL								16		
TOTAL FOR SIXTH LEVEL								30				
GRAND TOTAL FOR M.TECH PROGRAMME (38 + 30)								68				

DEPARTMENT OF SPACE ENGINEERING & ROCKETRY
PROGRAMME ELECTIVES (PE)
OFFERED FOR M. TECH (ROCKET PROPULSION)

PE / LEVEL	Code no.	Name of the PE subjects	Prerequisites Subjects with code	L	T	P	C
FIFTH	SR 504	Fundamentals of Combustion		3	0	0	3
	SR 505	Flame Propagation & Stability		3	0	0	3
	SR 553	Ignition and Extinction in Chemical Rockets		3	0	0	3
	SR 554	Advanced Propulsion System		3	0	0	3
	SR 555	Heat Transfer in Space Applications		3	0	0	3
SIXTH	SR 602	Special Topics in Chemical Propulsion		3	0	0	3
	SR 603	Computational Combustion		3	0	0	3
	SR 604	Rocket and Missile Structures		3	0	0	3
	SR 605	Cryogenic Propulsion		3	0	0	3
* PROGRAMME ELECTIVES TO BE OPTED ONLY BY THE DEPARTMENT STUDENTS							

DEPARTMENT OF SPACE ENGINEERING & ROCKETRY
OPEN ELECTIVES (OE)*
OFFERED FOR LEVEL 5-6

OE / LEVEL	Code no.	Name of the O E subjects	Prerequisites Subjects with code	L	T	P	C
FIFTH	SR 509	Aero acoustics	NIL	3	0	0	3
	SR 505	Flame Propagation & Stability	NIL	3	0	0	3
	SR 553	Ignition and Extinction in Chemical Rockets	NIL	3	0	0	3
	SR 555	Heat Transfer in Space Applications	NIL	3	0	0	3
	SR 579	Experimental Aerodynamics	NIL	3	0	0	3
SIXTH	SR 603	Computational Combustion	NIL	3	0	0	3
* OPEN ELECTIVES TO BE OPTED ONLY BY OTHER DEPARTMENT STUDENTS							