

**BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI**  
**NEWCOURSE STRUCTURE - To be effective from academic session 2018- 19**  
**Based on CBCS & OBE model**  
**Recommended scheme of study 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	<b>THEORY</b>						
		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
		Programme Elective (PE)	SR 504	(One Course to be selected) Fundamentals of Combustion	3	0	0	3
			SR 505	Flame Propagation & Stability				
		Open elective OE		Open Elective (OE) 1	3	0	0	3
		<b>LABORATORIES</b>						
		Programme Core (PC)	SR 506	Rocket Propulsion Lab	0	0	4	2
			SR 507	Aerodynamics Lab	0	0	4	2
<b>TOTAL</b>							<b>19</b>	
SECOND/ Spring	FIFTH	<b>THEORY</b>						
		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
			SR 553	(One Course to be selected) Ignition and Extinction in Chemical Rockets				
			SR 554 SR 555	Advanced Propulsion System Heat Transfer in Space Applications	3	0	0	3
		Open Elective (OE)		Open Elective (OE) 2	3	0	0	3
		<b>LABORATORIES</b>						
		Programme Core (PC)	SR 556	Solid Rocket Propulsion Lab	0	0	4	2
			SR 557	Liquid and Hybrid Propulsion Lab	0	0	4	2
<b>TOTAL</b>							<b>19</b>	
<b>TOTAL FOR FIFTH LEVEL</b>							<b>38</b>	
THIRD / Monsoon	SIXTH	Programme Core (PC)	SR 600	Thesis Part - I				8
			SR 601	Propellant Technology	3	0	0	3
		Programme Elective (PE)	SR 602	(One Course to be selected) Special Topics in Chemical Propulsion				
			SR 603	Computational Combustion Rocket	3	0	0	3
			SR 604 SR 605	and Missile Structures Cryogenic Propulsion				
		<b>LABORATORIES</b>						
Programme Core (PC)	SR 606	Energetics & Combustion Lab	0	0	4	2		
<b>TOTAL</b>							<b>16</b>	
FOURTH/ Spring	SIXTH	Programme Core (PC)	SR 650	Thesis Part - II				16
		<b>TOTAL</b>						
<b>TOTAL FOR SIXTH LEVEL</b>							<b>32</b>	
<b>GRAND TOTAL FOR M.TECH PROGRAMME (38 + 32)</b>							<b>70</b>	

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

PE / LEVEL	Code no.	Name of the PE courses	Prerequisites courses with code	L	T	P	C
FIFTH	SR 504	Fundamentals of Combustion	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 554	Advanced Propulsion System	NIL	3	0	0	3
	SR 555	Heat Transfer in Space Applications	NIL	3	0	0	3
SIXTH	SR 602	Special Topics in Chemical Propulsion	NIL	3	0	0	3
	SR 603	Computational Combustion	NIL	3	0	0	3
	SR 604	Rocket and Missile Structures	NIL	3	0	0	3
	SR 605	Cryogenic Propulsion	NIL	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 OE courses	Prerequisites courses 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