

**BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI**  
**NEWCOURSE STRUCTURE - To be effective from academic session 2018- 19**  
*Based on CBCS system & 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
<b>FIRST / Monsoon</b>	<b>FIFTH</b>	<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>

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	
			SR 553	(One Course to be selected) Ignition and Extinction in Chemical Rockets	3	0	0	3	
			SR 554 SR 555	Advanced Propulsion System Heat Transfer in Space Applications					
		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>TOTAL FOR FIFTH LEVEL</b>								<b>38</b>	
THIRD /Monsoon	SIXTH	Programme Core (PC)	SR 621	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	3	0	0	3	
			SR 603	Computational Combustion					
			SR 604 SR 605	Rocket 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>
<b>FOURTH/ Spring</b>	<b>SIXTH</b>	Programme Core (PC)	SR 621	Thesis Part - II				16
		<b>TOTAL</b>						<b>16</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 M. TECH (ROCKET PROPULSION)**

<b>PE / LEVEL</b>	<b>Code no.</b>	<b>Name of the PE subjects</b>	<b>Prerequisites Subjects with code</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
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
<b>* PROGRAMME ELECTIVES TO BE OPTED ONLY BY THE DEPARTMENT STUDENTS</b>							

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

<b>OE / LEVEL</b>	<b>Code no.</b>	<b>Name of the P E subjects</b>	<b>Prerequisites Subjects with code</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
<b>FIFTH</b>	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
<b>SIXTH</b>	SR 603	Computational Combustion	NIL	3	0	0	3
<b>* OPEN ELECTIVES TO BE OPTED ONLY BY OTHER DEPARTMENT STUDENTS</b>							