

**BIRLA INSTITUTE OF TECHNOLOGY- MESRA, RANCHI**  
**NEW COURSE STRUCTURE - To be effective from academic session 2018- 19**  
**Based on CBCS & OBE model**  
**Recommended scheme of study for M.Tech(Information Security)**

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 (Periods/week)	T (Periods/week)	P (Periods/week)		C
<b>THEORY</b>									
<b>FIRST / Monsoon</b>	Fifth	Programme Core (PC)	CS501	Mathematical Foundations of Computer Science	3	0	0	3	
			CS502	Advanced Data Structures	3	0	0	3	
			IT502	Fundamentals of Information Security	3	0	0	3	
		Programme Elective (PE)	**	PE 1	3	0	0	3	
		Open Elective (OE)	*	OE 1	3	0	0	3	
	<b>LABORATORIES</b>								
	Fifth	Programme Core (PC)	CS503	Advanced Data Structures Lab	0	0	4	2	
		Programme Elective (PE)	**	PE LAB 1	0	0	4	2	
	<b>TOTAL</b>								<b>19</b>
	<b>THEORY</b>								
<b>SECOND/ Spring</b>	Fifth	Programme Core (PC)	CS509	Advanced Computer Algorithm	3	0	0	3	
			IT514	Cryptography	3	0	0	3	
			IT515	Digital Forensics	3	0	0	3	
		Programme Elective (PE)	**	PE 2	3	0	0	3	
		Open Elective (OE)	*	OE 2	3	0	0	3	
	<b>LABORATORIES</b>								
	Fifth	Programme Core (PC)	CS510	Advanced Computer Algorithm Lab	0	0	4	2	
		Programme Elective (PE)	**	PE LAB 2	0	0	4	2	
	<b>TOTAL</b>								<b>19</b>
	<b>TOTAL FOR FIFTH LEVEL</b>								<b>38</b>
<b>THEORY</b>									
<b>THIRD / Monsoon</b>	Sixth	Programme Core (PC)	CS600	Thesis Part I				8	
			CS602	Data Compression	3	0	0	3	
		Programme Elective (PE)	**	PE 3	3	0	0	3	
	<b>LABORATORIES</b>								
	Sixth	Programme Elective (PE)	**	PE LAB 3	0	0	4	2	
<b>TOTAL</b>								<b>16</b>	
<b>FOURTH/ Spring</b>	Sixth	Programme Core (PC)	CS650	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>	

### Programme Elective List for M.Tech (Information Security)

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
					L (Periods/week )	T (Periods/week)	P (Periods/week )	C
<b>FIRST / Monsoon</b>	5	PE 1	IT504	Applied Cryptography	3	0	0	3
			IT505	Mobile and Wireless security	3	0	0	3
			IT506	Multimedia Security	3	0	0	3
	<b>LABORATORIES</b>							
	5	PE LAB 1	IT509	Matlab Programming	0	0	4	2
			IT510	Java Programming	0	0	4	2
<b>SECOND/ Spring</b>	5	PE 2	IT520	Network Security	3	0	0	3
			IT516	Data Mining and Data Analysis	3	0	0	3
			IT518	Internet of Things(IoT)	3	0	0	3
	<b>LABORATORIES</b>							
	5	PE LAB 2	IT517	Data Mining and Data Analysis Lab	0	0	4	2
			IT519	Internet of Things(IoT) Lab	0	0	4	2
IT511			R Programming	0	0	4	2	
<b>THIRD / Monsoon</b>	5	PE 3	IT507	Data Communication and Computer Networks	3	0	0	3
	6		IT601	Cloud Security	3	0	0	3
			IT602	Cyber Security	3	0	0	3
	<b>LABORATORIES</b>							
	5	PE LAB 3	IT521	Data Communication and Computer Networks Lab	0	0	4	2
	6		IT603	Python Programming	0	0	4	2
IT604			Web App Development Lab	0	0	4	2	

### Open Elective List for M. Tech Program

SEMESTER / Session of Study (Recommended)	Course Level	Category of Course	Course Code	Courses	Mode of delivery & credits			Total
					<i>L-Lecture; T-Tutorial; P-Practicals</i>			Credits
					L (Periods/week )	T (Periods/week)	P (Periods/week )	C
<b>FIRST / Monsoon</b>	5	OE 1	CS514	Software Metrics	3	0	0	3
			CS522	Pattern Recognition and Application	3	0	0	3
			IT518	Internet of Things	3	0	0	3
			IT522	Cyber Security and Digital Forensics	3	0	0	3
<b>SECOND/ Spring</b>	5	OE 2	IT523	Biometric Security	3	0	0	3
			IT504	Applied Cryptography	3	0	0	3
			IT524	Image Processing Techniques	3	0	0	3
			CS524	Soft Computing	3	0	0	3
			CS512	Artificial Intelligence	3	0	0	3
			IT516	Data Mining and Data Analysis	3	0	0	3

\*\* indicates program elective (PE)

\* indicates Open Elective (OE)