

**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 MCA Programme**

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/w eek)	T (Periods/w eek)	P (Periods/ week)	C	
<b>THEORY</b>									
<b>FIRST / Monsoon</b>	<b>FOURTH</b>	Fundamental Science (FS)	MA430	Discrete Mathematical Structure	3	0	0	3	
			MA428	Numerical and Statistical Methods	3	0	0	3	
	<b>FIRST</b>	Humanities & Social Sciences (HSS)	MT123	Business Communication	3	0	0	3	
			MT114	Fundamentals of management & Organization Behaviour	3	0	0	3	
	<b>FOURTH</b>	Programme Core (PC)	CA401	Programming with C	3	0	0	3	
			CA403	Computer Organization and Architecture	3	0	0	3	
	<b>LABORATORIES</b>								
	<b>FOURTH</b>	Programme Core (PC)	CA402	Programming Lab in C	0	0	3	1.5	
			MA429	Numerical and Statistical Methods Lab	0	0	3	1.5	
	<b>TOTAL</b>								<b>21</b>
<b>THEORY</b>									
<b>SECOND/ Spring</b>	<b>FOURTH</b>	Fundamental Science (FS)	CA455	Fundamentals of Data Structures	3	1	0	4	
	<b>FIRST</b>		BT417	Bioinformatics	3	0	0	3	
	<b>FOURTH</b>	Programme Core (PC)	CA457	Operating System	3	0	0	3	
			CA459	Object Oriented Design and Programming	3	0	0	3	
			CA461	Database Management Systems	3	1	0	4	
	<b>FIRST</b>	HSS	MT117	Basics of Financial Accounting Management	3	0	0	3	
	<b>LABORATORIES</b>								
	<b>FOURTH</b>	Programme Core (PC)	CA456	Data Structure Lab	0	0	3	1.5	
			CA458	Operating Systems Lab	0	0	3	1.5	
			CA460	C++ Programming Lab	0	0	3	1.5	
CA412			RDBMS Lab	0	0	3	1.5		
<b>TOTAL</b>								<b>26</b>	
<b>THEORY</b>									
<b>THIRD/ Monsoon</b>	<b>FIFTH</b>	Programme Core (PC)	CA501	Java Programming	3	0	0	3	
			CA503	Computer Algorithm Design	3	1	0	4	
			CA504	Automata Theory	3	1	0	4	
			CA505	Software Engineering	3	1	0	4	
	<b>FIRST</b>	HSS	MT121	Corporate Social Responsibility	2	0	0	2	
		Programme Elective (PE)		Programme Elective-I	3	0	0	3	
				Programme Elective-I	3	0	0	3	
	<b>LABORATORIES</b>								
	<b>FIFTH</b>	Programme Core (PC)	CA502	Java Programming Lab	0	0	3	1.5	
			CA506	Software Engineering Lab	0	0	3	1.5	
<b>TOTAL</b>								<b>26</b>	
<b>THEORY</b>									
	<b>FIFTH</b>	Programme Core (PC)	CA557	Front end Design	3	1	0	4	
			CA559	Data Communication and Computer Network	3	1	0	4	
			CA561	Software Project Management	3	0	0	3	
		Programme Elective(PE)		Programme Elective- II	3	0	0	3	
				Programme Elective- II	3	0	0	3	

<b>FOURTH/Spring</b>		MOOC		Massive Online Courses and Assignments	4	0	0	4	
	<b>LABORATORIES</b>								
	<b>FIFTH</b>	Programme Core (PC)	CA558	Front end Design Lab	0	0	3	1.5	
			CA560	Data Communication and Computer Networks Lab	0	0	3	1.5	
<b>TOTAL</b>								<b>24</b>	
<b>THEORY</b>									
<b>FIFTH/Monsoon</b>	<b>FIEST</b>	Humanities & Social Sciences (HSS)	MT116	Quantitative methods for Business Decision	3	0	0	3	
	<b>SIXTH</b>	Programme Core (PC)	CA601	Computer Graphics	3	0	0	3	
			CA603	System Simulation and Modeling	3	0	0	3	
			CA605	Optimization Techniques	3	0	0	3	
		Programme Elective(PE)		Programme Elective-III	3	0	0	3	
				Programme Elective-IV	3	1	0	4	
		SIT / Soft Skill Course / Extra OE		Small Industrial Training/ Small Project /	0	0	6	6	
	<b>LABORATORIES</b>								
	<b>SIXTH</b>	Programme Core (PC)	CA602	Computer Graphics Lab	0	0	3	1.5	
			CA604	System Simulation and Modeling Lab	0	0	3	1.5	
<b>TOTAL</b>								<b>28</b>	
<b>PROJECT</b>									
<b>SIXTH/ Spring</b>	<b>SIXTH</b>	Project(P)	CA656	Project				<b>15</b>	
<b>TOTAL</b>								<b>15</b>	
<b>GRAND TOTAL</b>								<b>140</b>	

<b>List of Program Electives:</b>							
<b>PE/ LEVEL</b>		<b>Code No.</b>	<b>Name of the PE courses</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>C</b>
5	<b>PE1</b>	CA530	Distributed Databases	3	0	0	3
5		CA531	Decision Support Systems	3	0	0	3
5		CA532	Data Mining and Warehousing	3	0	0	3
5		CA533	Multimedia Databases	3	0	0	3
5	<b>PE2</b>	CA580	Advanced Java Programming	3	0	0	3
5		CA581	Systems Programming	3	0	0	3
5		CA582	Compiler Design	3	0	0	3
5		CA583	Programming Language Design and Concepts	3	0	0	3
5		CA584	Web Programming	3	0	0	3
6		CA635	Natural Language Processing	3	0	0	3
6		CA636	Artificial Intelligence	3	0	0	3
6		CA637	Image Processing	3	0	0	3

6	<b>PE3</b>	CA638	Soft Computing	3	0	0	3
6		CA639	Cloud Computing	3	0	0	3
6		CA640	Machine Learning	3	0	0	3
6		CA641	In-Memory Computing	3	0	0	3
6	<b>PE4</b>	CA630	Network Security and Cryptography	3	1	0	4
6		CA631	Internet of Things(IoT)	3	1	0	4
6		CA632	Mobile Computing	3	1	0	4
6		CA634	Multimedia and Animation	3	1	0	4