

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 <i>(Periods/w eek)</i>	T <i>(Periods/w eek)</i>	P <i>(Periods/ week)</i>	C	
THEORY									
FIRST / Monsoon	FOURTH	Fundamental Science (FS)	MA430	Discrete Mathematical Structure	3	0	0	3	
			MA428	Numerical and Statistical Methods	3	0	0	3	
	FIRST	Humanities & Social Sciences (HSS)	MT123	Business Communication	3	0	0	3	
			MT114	Fundamentals of management & Organization Behaviour	3	0	0	3	
	FOURTH	Programme Core (PC)	CA401	Programming with C	3	0	0	3	
			CA403	Computer Organization and Architecture	3	0	0	3	
	LABORATORIES								
	FOURTH	Programme Core (PC)	CA402	Programming Lab in C	0	0	3	1.5	
			MA429	Numerical and Statistical Methods Lab	0	0	3	1.5	
	TOTAL								21
THEORY									
SECOND/ Spring	FOURTH	Fundamental Science (FS)	CA455	Fundamentals of Data Structures	3	1	0	4	
	FIRST		BT417	Bioinformatics	3	0	0	3	
	FOURTH	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	
	FIRST	HSS	MT117	Basics of Financial Accounting Management	3	0	0	3	
	LABORATORIES								
	FOURTH	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		
TOTAL								26	
THEORY									
THIRD/ Monsoon	FIFTH	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	
	FIRST	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	
	LABORATORIES								
FIFTH	Programme Core (PC)	CA502	Java Programming Lab	0	0	3	1.5		
		CA506	Software Engineering Lab	0	0	3	1.5		

				TOTAL				26	
THEORY									
FOURTH/Spring	FIFTH	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	
		MOOC		Massive Online Courses and Assignments	4	0	0	4	
	LABORATORIES								
	FIFTH	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	
	TOTAL								24
THEORY									
FIFTH/Monsoon	FIFTH	Humanities & Social Sciences (HSS)	MT116	Quantitative methods for Business Decision	3	0	0	3	
	SIXTH	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	
	LABORATORIES								
	SIXTH	Programme Core (PC)	CA602	Computer Graphics Lab	0	0	3	1.5	
CA604			System Simulation and Modeling Lab	0	0	3	1.5		
TOTAL								28	
PROJECT									
SIXTH/ Spring	SIXTH	Project(P)	CA656	Project				15	
TOTAL								15	
GRAND TOTAL								140	

List of Program Electives:							
PE/ LEVEL		Code No.	Name of the PE courses	L	T	P	C
4	PE1	CA430	Distributed Databases	3	0	0	3
4		CA431	Decision Support Systems	3	0	0	3
4		CA432	Data Mining and Warehousing	3	0	0	3
4		CA433	Multimedia Databases	3	0	0	3
5	PE2	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
5	PE3	CA535	Natural Language Processing	3	0	0	3
5		CA536	Artificial Intelligence	3	0	0	3
5		CA537	Image Processing	3	0	0	3
5		CA538	Soft Computing	3	0	0	3
5		CA539	Cloud Computing	3	0	0	3
5		CA540	Machine Learning	3	0	0	3
5		CA541	In-Memory Computing	3	0	0	3
6	PE4	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		CA633	Bioinformatics	3	1	0	4
6		CA634	Multimedia and Animation	3	1	0	4