

**MCA – I Year : Choice Based Credit System (CBCS)**

I Semester			II Semester		
PH 601.1	E1	Database Management Systems	PH 601.2	E1	Enterprise Cloud Computing
	E2	RDBMS concepts with Oracle		E2	Grid and Cluster Computing
	E3	Database Administration Practices		E3	Cloud Infrastructure Management
PH 602.1	E1	Data Structures & Analysis of Algorithms	PH 602.2	E1	Software Engineering & UML
	E2	Data Structures & Graph Theory		E2	Object Oriented Software Engineering
	E3	Advanced Data Structures		E3	Agile Software Development
PH 603.1	E1	Enterprise Computing with Advanced Java	PH 603.2	E1	Mobile Application Development using Android
	E2	Enterprise Computing : Java EE Frameworks		E2	Windows Phone Application Development
	E3	Rich Internet Applications using Java FX		E3	Cross Platform Mobile App Development
PS 604.1	E1	Web Programming with PHP & MySQL	PS 604.2	E1	Artificial Intelligence & Knowledge Engineering
	E2	Web Scripting using Perl		E2	Image Processing & Pattern Recognition
	E3	Web Application Development using Python		E3	Evolutionary Computing & Genetic Algorithms
PS 605.1	E1	Operations Research	PS 605.2	E1	Data Warehousing & Data Mining
	E2	Optimization Techniques		E2	Business Intelligence and Advanced Data Mining
	E3	Quantitative Techniques		E3	SOA & Predictive Analytics
PH 606.1 P	RDBMS and Advanced Java Lab		PH 606.2 P	HPC & Mobile App Development Lab	
PS 607.1 P	Enterprise Application Development Lab		PS 607.2 P	Intelligent Computing & Data Mining Lab	
PAO 608.1	Business Communication / Entrepreneurship		PPR 608.2	Advanced Entrepreneurship & Mini Project	
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**MCA – II Year : Choice Based Credit System (CBCS)**

III Semester			IV Semester		
PH 601.3	E1	Information Storage and Management	P 601.4	Industry Internship	
	E2	Internet of Things		Project Work	
	E3	Augmented and Virtual Reality		Research Project / Dissertation	
PH 602.3	E1	Web Development with Angular JS, Node.js	<b>Add On / Certificate Courses offered</b>		
	E2	Content Management Systems Development	C1	IT Analytics Summer & Winter School & Lab	
	E3	MEAN Web Development Techniques	C2	Infosys Campus Connect – Industry Elective	
PH 603.3	E1	Computing with C# and .NET Framework	C3	IBM Certification on AI /Machine Learning	
	E2	Web Technologies & .NET Framework	C4	Microsoft Academia- Cloud Comp &W-Phone	
	E3	Metro App Development using XAML	C5	Dell - EMC- Cloud and Big Data Analytics	
PS 604.3	E1	Computational intelligence and Soft Computing	C6	Salesforce – Mule soft Certification	
	E2	Machine & Deep Learning Algorithms	C7	Amazon Web Services Certification	
	E3	Cognitive & Bio-inspired Computing	C8	Oracle Academy Training and Certification	
PS 605.3	E1	Data Science & Big Data Analytics	C9	Entrepreneurship Training by Wadhvani Foundation	
	E2	Big data & Business Analytics	C10	IIC –MHRD Activities on Innovation and Startup	
	E3	Big data : Map Reduce with Hadoop	C11	NAC TECH Certification by NASSCOM	
PH 606.3 P	Web Application Development & .NET Lab		C12	National Creativity & Aptitude Test –by IIT Delhi	
PS 607.5 P	Soft Computing & Big Data Lab		C13	Spoken Tutorials & Certifications from IIT, Bombay	
PPR 608.3	Business Consultancy Project		C14	IEEE & IEE CS / CSI Student member	
PAO 609.3	Domain Knowledge Seminar - I		C15	Business English Certification (BEC) by Cambridge	