

M.C.A

Programme: Master of Computer Applications

A. Distribution of Courses, Credits and Contact Hours

Type of Course	Total No. of Courses	Credits per Course	Total Credits	Percentage in Total Credits	Total Contact Hours	Percentage in Total Contact Hours
Core (Compulsory)						
Theory	18	4	72	51.43	72	40.00
Laboratory	10	2	20	14.29	40	22.22
Research Review	1	2	2	1.43	2	1.11
Article Publication	1	2	2	1.43	6	3.33
Application Development	1	2	2	1.43	2	1.11
Internship: Review and Report	1	2	2	1.43	Extra	-
Project	1	12	12	8.57	25	13.89
Elective (Optional)						
Theory	5	4	20	14.29	21	11.67
Laboratory	1	4	4	2.86	4	2.22
Ability Enhancement						
Value Added Technical Skill	2	1	2	1.43	4	2.22
Soft and Quantitative Skills	2	1	2	1.43	4	2.22
Total	43	1-12	140	100	180	100

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B. List of Core and Elective Courses

Core Courses (Compulsory)

Theory :

16PCA101	:	Fundamentals of Information Technology
16PCA102	:	Programming in C
16PCA103	:	Numerical Methods and Statistics
16PCA104	:	Accounting and Financial Management
16PCA105	:	Data Structures and Algorithms
16PCA106	:	Multimedia Systems
16PCA107	:	Object Oriented Programming with C++
16PCA108	:	Operating Systems
16PCA109	:	Computer Networks
16PCA110	:	Mathematical Foundation for Computer Applications
16PCA111	:	Advanced Relational and Distributed Database Management Systems
16PCA112	:	Advanced Java Programming
16PCA113	:	Web Programming
16PCA114	:	PHP Programming
16PCA115	:	Linux and Shell Programming
16PCA116	:	Big Data Analytics
16PCA117	:	ASP.Net Programming
16PCA118	:	Software Testing

Laboratory :

16PCA301	:	Programming in C
16PCA302	:	Data Structures and Algorithms
16PCA303	:	Multimedia Systems
16PCA304	:	Object Oriented Programming with C++
16PCA305	:	Advanced Relational Database Management Systems
16PCA306	:	Advanced Java Programming
16PCA307	:	PHP Programming
16PCA308	:	Linux and Shell Programming
16PCA309	:	ASP.Net Programming
16PCA310	:	Software Testing

Elective Courses (Optional)

Regular Study – Theory :

Group 1(Any One Course)

16PCA201	Programming in Angular JS and Bootstrap
16PCA202	Cloud Computing

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16PCA203 Mobile Computing

Group 2(Any One Course)

16PCA204 Information Security
16PCA205 Software Project Management
16PCA206 Data Mining and R Programming

Group 3(Any One Course)

16PCA207 Web Programming using Ruby and Python
16PCA208 NoSQL Data Stores
16PCA209 Mobile Programming with Android

Group 4(Any One Course)

16PCA210 Internet of Things
16PCA211 Objective C
16PCA212 Client/Server Technology

Regular Study – Laboratory :

Group 1(Any One Course)

16PCA213 Web Programming
16PCA214 NoSQL Data Stores
16PCA215 Mobile Application Development

Self Study :

Group 1(Any One Course)

16PCA216 Design Patterns using UML
16PCA217 Research Methodology
16PCA218 Entrepreneurship Development

Interdisciplinary

16PCA001 : E-learning
16PCA002 : Animation Techniques
16PCA003 : PC Hardware and Troubleshooting

Explanation for Course Code:

**First 02 Digits : Year 2016; Third Digit : Level of the Programme (U : UG / P : PG);
Fourth and Fifth Digits : Cluster / Discipline Code; Last 03 Digits : Nature of the
Course (Core/Elective/Supportive etc.,)**

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**C. Semester-wise Distribution of Courses, Credits, Marks and
Contact Hours**

Part	Type of Course	Course Code	Title of the Course	Credits	Marks	Contact Hours / Week
Semester I						
III	Core: Theory – 1	16PCA101	Fundamentals of Information Technology	4	100	4
	Core: Theory – 2	16PCA102	Programming in C	4	100	4
	Core: Theory – 3	16PCA103	Numerical Methods and Statistics	4	100	4
	Core: Theory – 4	16PCA104	Accounting and Financial Management	4	100	4
	Core: Theory – 5	16PCA105	Data Structures and Algorithms	4	100	4
	Core: Laboratory – 1	16PCA301	Programming in C	2	100	4
	Core: Laboratory – 2	16PCA302	Data Structures and Algorithms	2	100	4
	Ability Enhancement	16PCA401	Value Added Technical Skill – I	1	100	2
Total				25	800	30
Semester II						
III	Core: Theory – 6	16PCA106	Multimedia Systems	4	100	4
	Core: Theory – 7	16PCA107	Object Oriented Programming with C++	4	100	4
	Core: Theory – 8	16PCA108	Operating Systems	4	100	4
	Core: Theory – 9	16PCA109	Computer Networks	4	100	4
	Core: Theory - 10	16PCA110	Mathematical Foundation for Computer Applications	4	100	4
	Core: Laboratory – 3	16PCA303	Multimedia Systems	2	100	4
	Core: Laboratory – 4	16PCA304	Object Oriented Programming with C++	2	100	4
	Ability Enhancement	16PCA402	Value Added Technical Skill – II	1	100	2
Total				25	800	30
Semester III						
III	Core: Theory - 11	16PCA111	Advanced Relational and Distributed Database Management Systems	4	100	4
	Core: Theory - 12	16PCA112	Advanced Java Programming	4	100	4
	Core: Theory - 13	16PCA113	Web Programming	4	100	4
	Elective: Theory – 1	16PCA201/ 16PCA202/ 16PCA203	Programming in Angular JS and Bootstrap / Cloud Computing / Mobile Computing	4	100	4
	Elective: Theory – 2	16PCA204/ 16PCA205/ 16PCA206	Information Security / Software Project Management / Data Mining and R Programming	4	100	4
	Core: Laboratory – 5	16PCA305	Advanced Relational	2	100	4

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			Database Management Systems			
	Core: Laboratory - 6	16PCA306	Advanced Java Programming	2	100	4
	Article Publication	16PCA601	Publication of Article in Research Journal/Proceedings	---	CIA	2
Total				24	700	30
Semester IV						
III	Core: Theory – 14	16PCA114	PHP Programming	4	100	4
	Core: Theory – 15	16PCA115	Linux and Shell Programming	4	100	4
	Elective: Theory – 3	16PCA207/ 16PCA208/ 16PCA209	Web Programming using Ruby and Python/ NoSQL Data Stores/ Mobile Programming with Android	4	100	4
	Elective: Theory – 4	16PCA210/ 16PCA211/ 16PCA212	Internet of Things / Objective C / Client/Server Technology	4	100	4
	Core: Laboratory – 7	16PCA307	PHP Programming	2	100	4
	Core: Laboratory - 8	16PCA308	Linux and Shell Programming	2	100	4
	Article Publication	16PCA601	Publication of Article in Research Journal	---	CIA	2
	Research Review	16PCA701	Research Review on Current Trends in the Discipline : Report	2	100	2
	Ability Enhancement	16PAB401	Soft and Quantitative Skills – I	1	100	2
	Total				23	800
		16PCA801	Summer Internship			
Semester V						
III	Core: Theory – 16	16PCA116	Big Data Analytics	4	100	4
	Core: Theory – 17	16PCA117	ASP.Net Programming	4	100	4
	Core: Theory – 18	16PCA118	Software Testing	4	100	4
	Elective: Laboratory – 1	16PCA213/ 16PCA214/ 16PCA215	Web Programming/ NoSQL Data Stores/ Mobile Application Development	4	100	4
	Core: Laboratory – 9	16PCA309	ASP.Net Programming	2	100	4
	Core: Laboratory - 10	16PCA310	Software Testing	2	100	4
	Core: Article Publication	16PCA601	Publication of Articles in Research Journals	2	100	2
	Core : Application Development	16PCA951	Development of Application using the Concepts Learned and Skills Attained	2	100	2
	Ability Enhancement	16PAB402	Soft and Quantitative Skills – II	1	100	2
	Core: Internship	16PCA801	Summer Internship : Review and Report	2	100	Extra
Total				27	1000	30
Semester VI						
III	Elective: Theory – 5 : (Self Study)	16PCA216 /	Design Patterns using UML/	4	100	5

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		16PCA217 / 16PCA218	Research Methodology/ Entrepreneurship Development			
	Core: Project	16PCA501	Project Work and Viva Voce	12	100	25
Total				16	200	30

Total Credits: $25+25+24+23+27+16 = 140$

Total Marks: $800+800+700+800+1000+200 = 4300$