

RAYAT-BAHRA UNIVERSITY

University School of Management Studies (USMS)

Department of Computer Applications

DEPARTMENT CORE AND DEPARTMENT ELECTIVES

Department Core (Choose 2 of 5 Specializations)

Specialisations		DSC-A		DSC-B
<i>Software Engineering</i>	CAP251	Software Testing and Quality Assurance	CAP252	Object Oriented Modeling and Design using UML
<i>Networking</i>	CAP353	Cryptography and System Security	CAP354	Wireless Networks
<i>Artificial Intelligence</i>	CAP451	Natural Language processing	CAP452	Soft computing
<i>Application Development</i>	CAP054	E-Commerce and Web Development	CAP055	Advanced Web Development
<i>Database Management Systems</i>	CAP152	Advanced Databases	CAP153	Big Data

Department Electives (Choose same 2 of 5 Specializations)

Specialisations		DSE-I & DSE-II	
<i>Software Engineering</i>	CAP253	Component based software Engineering	
	CAP254	Software Project management	
<i>Networking</i>	CAP355	IOT	
	CAP202	Digital Forensics	
<i>Artificial Intelligence</i>	CAP453	Neural Networks	
	CAP454	Expert System	
<i>Application Development</i>	CAP056	Python	
	CAP057	Android Application Development	
<i>Database Management</i>	CAP154	Data Analytics	
	CAP155	Database Administration using SQL Server/Oracle	

RAYAT-BAHRA UNIVERSITY										
University School of Management Studies (USMS)										
Department of Computer Applications										
Master of Computer Applications										
Course Structure for MCA - 3 Years - 6 Semesters										
Sem-I (Year-I)								Category of Course		
S.No.	Code	Course Title	L	T	P	TOTAL C H		As per RBU	As per UGC-CBCS	
1	CAP001	Mathematics for Computer Applications	4	1	0	5	5	School Core	Foundation Core	
2	CAP002	Computer Fundamentals & Office Automation	4	0	1	5	6	School Core	Foundation Core	
3	CAP051	OOPS & Programming in C++	4	0	2	6	8	School Core	Foundation Core	
4	CAP351	Computer System Architecture	4	0	0	4	4	School Core	Foundation Core	
5	HMU104	Essentials of Learning - UE(H&M)-I -GE-I	2	0	0	2	2	Univ Elective	Interdisc/Generic Elective	
6	MCP041	Student Mentoring & Counseling	0	0	0.5	0.5	1	Essential Comp	Foundation Core	
Credits= 22.5, Hours=26								SEM-I		
Sem-II (Year-I)								Category of Course		
S.No.	Code	Course Title	L	T	P	TOTAL C H		As per RBU	As per UGC-CBCS	
1	CAP151	Database Management Systems	4	0	1	5	6	School Core	Foundation Core/ SEC	
2	CAP352	Network Principles & Protocols	4	0	0	4	4	School Core	Foundation Core/ SEC	
3	CAP301	Data Structures	4	0	1	5	6	School Core	Foundation Core	
4	CAP101	Operating Systems	4	0	1	5	6	School Core	Foundation Core	
5	OPUNNN	UE(Open)-I	2	0	0	2	2	Univ Elective	Interdisc/Generic Elective	
6	CPU300	English communications, soft skills and image management- UE(C& PD)	3	0	0	3	3	Univ Elective	AECC	
7	SPP041	Seminar -SEC-IV	1	0	0	1	1	Essential Comp	SEC	
8	MCP042	Student Mentoring & Counseling	0	0	0.5	0.5	1	Essential Comp	Foundation Core	
Credits= 25.5, Hours=29								SEM-II		
Sem-III (Year-II)								Category of Course		
S.No.	Code	Course Title	L	T	P	TOTAL C H		As per RBU	As per UGC-CBCS	
1	CAP102	Advanced Operating System	4	0	0	4	4	School Core	Foundation Core	
2	CAP052	Programming in Advanced Java	4	0	1	5	6	School Core	Foundation Core	
3	CAP053	Search Engine Optimization	3	0	1	4	5	School Core	Foundation Core	
4	CAPNNN	DSC-IA (E-Commerce and Web Development)	3	0	1	4	5	Dept Core	DSC	
5	CAPNNN	DSC-IIA (Software Testing and Quality Assurance)	3	0	1	4	5	Dept Core	DSC	
6	HMU115	Marketing Mangement - UE(H&M)-II	2	0	0	2	2	Univ Elective	Interdisc/Generic Elective	
7	PVP041	Professional/Industrial Visit	0	0	0	1	0	Essential Comp	SEC	
8	MCP041	Student Mentoring and Counseling	0	0	0.5	0.5	1	Essential Comp	Foundation Core	
Credits= 24.5, Hours=28								SEM-III		

Sem-IV (Year-II)								Category of Course	
S.N o.	Code	Course Title	L	T	P	TOTAL C H		As per RBU	As per UGC-CBCS
1	CAP501	Digital Marketing	4	0	0	4	4	School Core	Foundation Core
2	CAP502	ERP and Information System	4	0	0	4	4	School Core	Foundation Core
3	CAP201	Interactive Computer Graphics	4	0	1	5	6	School Core	Foundation Core
4	CAPNNN	DSC-IB	3	0	1	4	5	Dept Core	DSC
5	CAPNNN	DSC-IIB	3	0	1	4	5	Dept Core	DSC
6	OPUNNN	UE(Open)-II	1	0	0	1	1	Univ Elective	AECC
7	RVP041	Review paper (in Conference)	2	0	0	2	2	Univ Elective	Open Elective
8	MCP044	Student Mentoring & Counseling	0	0	0.5	0.5	1	Essential Comp	Foundation Core
9	DPP041	Progression Interview by Dean/HoD	0	0	0	1	0	Essential Comp	Foundation Core
Credits= 25.5, Hours=30								SEM-IV	
Sem-V (Year-III)								Category of Course	
S.N o.	Code	Course Title	L	T	P	TOTAL C H		As per RBU	As per UGC-CBCS
1	CAP004	Open Source Technologies	4	0	0	4	4	School Core	Foundation Core
2	CAP355	Cloud Computing	4	1	0	5	5	School Core	Foundation Core
3	CAP302	Analysis and Design of Algorithms	4	1	0	5	5	School Core	Foundation Core
4	CAPNNN	DSE- IA	3	0	1	4	5	Dept Elective	DSE
5	CAPNNN	DSE - IIA	3	0	1	4	5	Dept Elective	DSE
6	MNP041	Minor project	0	0	0	3	3	Essential Comp	SEC
7	RPP041	Research Paper(in a Journal)	1	0	0	1	1	Essential Comp	SEC
8	MCP045	Student Mentoring & Counseling	0	0	0.5	0.5	1	Essential Comp	Foundation Core
Credits=25.5, Hours=15								SEM -V	
Sem-VI (Year-III)								Category of Course	
S.N o.	Code	Course Title	L	T	P	TOTAL C H		As per RBU	As per UGC-CBCS
1	MJP041	Major Project and Dissertation	0	0	0	14	14	Essential Comp	SEC
2	PTP041	Internship	0	0	0	10	0	Essential Comp	SEC
3	MCP046	Student Mentoring & Counseling	0	0	0.5	0.5	1	Essential Comp	Foundation Core
4	DXP041	Exit Interview by Dean/HoD	0	0	0	1	0	Essential Comp	Foundation Core
Credits=25.5, Hours=15								SEM -VI	
TOTAL NO. OF CREDITS IN MCA PROGRAMME - 150									
PLEASE NOTE:									
1. Each Lecture and Tutorial Credit has one Contact hour and Each Practical Credit has two contact hours; 2. UE (H&M) = University Elective (Humanities & Management); UE (C&PD) = University Elective (Communication & Personality Development); UE (OE) = University Elective (Open Elective); SC = School Core; SE = School Elective; DC = Department Core; DE = Department Elective; SEC = Skill Enhancement Course; AECC = Ability Enhancement Compulsory Course; AEC = Ability Enhancement Courses (AECC and SEC); DSC = Department Specific Core; DSE = Department Specific Elective; GE = Generic or Interdisciplinary Elective;									



RAYAT BAHRA UNIVERSITY, MOHALI UNIVERSITY SCHOOL OF MANAGEMENT STUDIES

S.No	Course	1st Sem.				2nd Sem.		
		C & PD	H&M	OPEN ELECTIVE		C & PD	H&M	OPEN ELECTIVE
1	BBA	×	Essentials of Learning	✓		English Communication & soft Skills	×	×
2	BCA	×	Essentials of Learning	✓		English Communication & soft Skills	×	×
3	BCOM	×	Essentials of Learning	×		English Communication & soft Skills	×	✓
4	MCOM	×	×	✓		English Communication, soft Skills and image mgt.	Essentials of Sociology	×
5	MBA1	×	×	✓		English Communication, soft Skills and image mgt.	Essentials of Sociology	×
6	MCA 3Sem.	×	Essentials of Marketing Mgt.	×	MCA 4TH SEM	×	×	✓

RAYAT-BAHRA UNIVERSITY					
University School of Management Studies (USMS)					
Department of Computer Applications					
Master of Computer Applications					
Course Structure for MCA - 3 Years - 6 Semesters					
Sem-III (Year-II)					
S.No.	Code	Subject Name	L	T	P
1	CAP102	Advanced Operating System	4	0	0
2	CAP052	Programming in Advanced Java	4	0	1
3	CAP053	Search Engine Optimization	3	0	1
4	CAP054	E-Commerce and Web Development	3	0	1
5	CAP251	Software Testing and Quality Assurance	3	0	1
6	HMU115	Essentials of Marketing Mangement - UE(H&M)-II	2	0	0
7	PVP041	Professional/Industrial Visit	0	0	0
8	MCP041	Student Mentoring and Counseling	0	0	0.5

-
-
-
-
-



RAYAT-BAHRA UNIVERSITY							
University School of Management Studies (USMS)							
Department of Computer Applications							
Master of Computer Applications							
Course Structure for MCA - 3 Years - 6 Semesters							
Sem-IV (Year-II)							
S.No.	Code	Course Title	L	T	P	TOTAL C H	
1	CAP501	Digital Marketing	4	0	0	4	4
2	CAP502	ERP and Information System	4	0	0	4	4
3	CAP201	Interactive Computer Graphics	4	0	1	5	6
4	CAP252	DSC-IB (Object Oriented Modeling and Design using UML)	3	0	1	4	5
5	CAP055	DSC-IIB (Advanced Web Development)	3	0	1	4	5
6	OPU255	UE(Open)-II (Basic Numeracy, Logical Reasoning & Data Interpretation)	1	0	0	1	1
7	RVP041	Review paper (in Conference)	2	0	0	2	2
8	MCP044	Student Mentoring & Counseling	0	0	0.5	0.5	1
9	DPP041	Progression Interview by Dean/HoD	0	0	0	1	0

RAYAT-BAHRA UNIVERSITY

University School of Management Studies (USMS)

Department of Computer Applications

Master of Computer Applications

Course Structure for MCA - 3 Years - 6 Semesters

Sem-I (Year-I)							Category of Course	
S.No.	Code	Course Title	L	T	P	TOTAL C H	As per RBU	As per UGC-CBCS
1	CAP001	Mathematics for Computer Applications	4	1	0	5 5	School Core	Foundation Core
2	CAP002	Computer Fundamentals & Office Automation	4	0	1	5 6	School Core	Foundation Core
3	CAP051	OOPS & Programming in C++	4	0	2	6 8	School Core	Foundation Core
4	CAP351	Computer System Architecture	4	0	0	4 4	School Core	Foundation Core
5	HMU104	Essentials of Learning - UE(H&M)-I -GE-I	2	0	0	2 2	Univ Elective	Interdisc/Generic Elective
6	MCP041	Student Mentoring & Counseling	0	0	0.5	0.5 1	Essential Comp	Foundation Core
Credits= 22.5, Hours=26							SEM-I	

RAYAT-BAHRA UNIVERSITY									
University School of Management Studies (USMS)									
Department of Computer Applications									
Master of Computer Applications									
Course Structure for MCA - 3 Years - 6 Semesters									
Sem-III (Year-II)								Category of Course	
S.No	Code	Course Title	L	T	P	TOTAL C H		As per RBU	As per UGC-CBCS
1	CAP102	Advanced Operating System	4	0	0	4	4	School Core	Foundation Core
2	CAP052	Programming in Advanced Java	4	0	1	5	6	School Core	Foundation Core
3	CAP053	Search Engine Optimization	3	0	1	4	5	School Core	Foundation Core
4	CAP054	DSC-IA (E-Commerce and Web Development)	3	0	1	4	5	Dept Core	DSC
5	CAP251	DSC-IIA (Software Testing and Quality Assurance)	3	0	1	4	5	Dept Core	DSC
6	HMU115	Marketing Mangement - UE(H&M)-II	2	0	0	2	2	Univ Elective	Interdisc/Generic Elective
7	PVP041	Professional/Industrial Visit	0	0	0	1	0	Essential Comp	SEC
8	MCP041	Student Mentoring and Counseling	0	0	0.5	0.5	1	Essential Comp	Foundation Core
Credits= 24.5, Hours=28								SEM-III	

RAYAT-BAHRA UNIVERSITY									
University School of Management Studies (USMS)									
Department of Computer Applications									
Master of Computer Applications									
Course Structure for MCA - 3 Years - 6 Semesters									
Sem-V (Year-III)								Category of Course	
S.No.	Code	Course Title	L	T	P	TOTAL C H		As per RBU	As per UGC-CBCS
1	CAP004	Open Source Technologies	4	0	0	4	4	School Core	Foundation Core
2	CAP355	Cloud Computing	4	1	0	5	5	School Core	Foundation Core
3	CAP302	Analysis and Design of Algorithms	4	1	0	5	5	School Core	Foundation Core
4	CAP254	Software Project management	3	0	1	4	5	Dept Elective	DSE
5	CAP057	Android Application Development	3	0	1	4	5	Dept Elective	DSE
6	MNP041	Minor project	0	0	0	3	3	Essential Comp	SEC
7	RPP041	Research Paper(in a Journal)	1	0	0	1	1	Essential Comp	SEC
8	MCP045	Student Mentoring & Counseling	0	0	0.5	0.5	1	Essential Comp	Foundation Core
								SEM -V	