

Program Code & Name: **P164-NN1::MCA**

System: **Semester**

Year of Admission: **2021**

Duration in Years: **2**

Term 1										P164-NN1-1-2021
S.No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Type	Nature	
1		PATHWAY ELECTIVE 1	2	2	0	4.0	4.0	PW	LCS	
2	CAP275	DATA COMMUNICATION AND NETWORKING	3	0	0	3.0	3.0	CR	DSC	
3	CAP276	DATA COMMUNICATION AND NETWORKING-LABORATORY	0	0	2	1.0	2.0	CR	DSC	
4	CAP437	SOFTWARE ENGINEERING PRACTICES	4	0	0	4.0	4.0	CR	DSC	
5	CAP444	OBJECT ORIENTED PROGRAMMING USING C++	3	0	0	3.0	3.0	CR	DSC	
6	CAP445	OBJECT ORIENTED PROGRAMMING USING C++ - LABORATORY	0	0	2	1.0	2.0	CR	DSC	
7	CAP446	DATA WAREHOUSING AND DATA MINING	3	0	0	3.0	3.0	CR	DSC	
8	CAP447	DATA WAREHOUSING AND DATA MINING-LABORATORY	0	0	2	1.0	2.0	CR	DSC	
9	CAP448	LINUX AND SHELL SCRIPTING	3	0	0	3.0	3.0	CR	DSC	
10	CAP454	LINUX AND SHELL SCRIPTING - LAB	0	0	2	1.0	2.0	CR	DSC	
TOTAL			18.0	2.0	8.0	24.0	28.0			

PATHWAY ELECTIVE 1 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	PEA515	ANALYTICAL SKILLS-I	2	2	0	4.0	4.0	GOVERNMENT JOBS
2	PEA515	ANALYTICAL SKILLS-I	2	2	0	4.0	4.0	HIGHER STUDIES
3	PEA515	ANALYTICAL SKILLS-I	2	2	0	4.0	4.0	PRODUCT DEVELOPMENT
4	PEA515	ANALYTICAL SKILLS-I	2	2	0	4.0	4.0	SERVICE MANAGEMENT

Term 2										P164-NN1-2-2021
S.No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Type	Nature	
1		PATHWAY ELECTIVE 2	2	2	0	4.0	4.0	PW	DSE	
2	CAP456	INTRODUCTION TO BIG DATA	3	0	0	3.0	3.0	CR	DSC	
3	CAP457	INTRODUCTION TO BIG DATA - LABORATORY	0	0	2	1.0	2.0	CR	DSC	
4	CAP470	CLOUD COMPUTING	3	0	0	3.0	3.0	CR	DSC	
5	CAP471	CLOUD COMPUTING-LABORATORY	0	0	2	1.0	2.0	CR	DSC	
6	CAP615	PROGRAMMING IN JAVA	3	0	0	3.0	3.0	CR	DSC	
7	CAP680	PROGRAMMING IN JAVA-LABORATORY	0	0	2	1.0	2.0	CR	DSC	
8	CAP756	WEB TECHNOLOGIES	3	0	0	3.0	3.0	CR	DSC	
9	CAP757	WEB TECHNOLOGIES-LABORATORY	0	0	2	1.0	2.0	CR	DSC	
10	CAP770	ADVANCED DATA STRUCTURES	3	0	2	4.0	5.0	CR	DSC	
11	MTH403	MATHEMATICAL FOUNDATION FOR COMPUTER SCIENCE	3	1	0	4.0	4.0	CR	BSC	
TOTAL			20.0	3.0	10.0	28.0	33.0			

PATHWAY ELECTIVE 2 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	PEA516	ANALYTICAL SKILLS-II	2	2	0	4.0	4.0	GOVERNMENT JOBS
2	PEA516	ANALYTICAL SKILLS-II	2	2	0	4.0	4.0	HIGHER STUDIES
3	PEA516	ANALYTICAL SKILLS-II	2	2	0	4.0	4.0	PRODUCT DEVELOPMENT
4	PEA516	ANALYTICAL SKILLS-II	2	2	0	4.0	4.0	SERVICE MANAGEMENT

Term 3 (For those students who opt for course work)									P164-NN1-3-2021
S.No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Type	Nature
1		GENERIC ELECTIVE 1	3	0	0	3.0	3.0	GE	OEM
2		GENERIC ELECTIVE 2	0	0	3	2.0	3.0	GE	OEM
3		PATHWAY ELECTIVE 3	0	0	3	2.0	3.0	PW	PWE
4		SPECIALIZATION ELECTIVE 1	3	0	0	3.0	3.0	SP	SEC
5		SPECIALIZATION ELECTIVE 2	3	0	0	3.0	3.0	SP	SEC
6	CAP735	SEMINAR ON SUMMER TRAINING	0	0	8	4.0	8.0	CR	DSC
7	CAP776	PROGRAMMING IN PYTHON	3	0	2	4.0	5.0	CR	DSC
TOTAL			12.0	0.0	16.0	21.0	28.0		

GENERIC ELECTIVE 1 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	FIN501	CORPORATE FINANCE	3	1	0	4.0	4.0	FINANCE
2	ECE231	EMBEDDED SYSTEM DESIGN	3	0	0	3.0	3.0	INTERNET OF THINGS
3	MGN502	MANAGEMENT AND ORGANISATIONAL BEHAVIOUR DYNAMICS	4	0	0	4.0	4.0	MANAGEMENT
4	MKT501	MARKETING MANAGEMENT	4	0	0	4.0	4.0	MANAGEMENT
5	MKT501	MARKETING MANAGEMENT	4	0	0	4.0	4.0	MARKETING

GENERIC ELECTIVE 2 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	FIN623	INTERNATIONAL FINANCIAL MANAGEMENT	4	0	0	4.0	4.0	FINANCE
2	ECE350	ARDUINO FOR THE BEGINNERS	0	0	3	2.0	3.0	INTERNET OF THINGS
3	MKT613	CONSUMER BEHAVIOR	3	1	0	4.0	4.0	MARKETING

PATHWAY ELECTIVE 3 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	CAP778	COMBINATORIAL STUDIES-I	3	0	0	3.0	3.0	GOVERNMENT JOBS
2	ECE352	EMBEDDED SYSTEMS WITH PYTHON	0	0	3	2.0	3.0	HIGHER STUDIES
3	PES501	SOFT SKILLS	1	2	0	3.0	3.0	PRODUCT DEVELOPMENT
4	PES501	SOFT SKILLS	1	2	0	3.0	3.0	SERVICE MANAGEMENT

SPECIALIZATION ELECTIVE 1 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	CAP660	NETWORK ADMINISTRATION	3	0	2	4.0	5.0	CYBER SECURITY
2	CAP747	PROBABILITY AND STATISTICS	3	0	0	3.0	3.0	DATA SCIENCE
3	CAP774	STYLING AND SCRIPTING FOR WEB DEVELOPMENT	3	0	2	4.0	5.0	WEB DEVELOPMENT

SPECIALIZATION ELECTIVE 2 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	CAP790	SECURING NETWORK AND IT INFRASTRUCTURE	3	0	0	3.0	3.0	CYBER SECURITY
2	CAP787	DATA SCIENCE TOOLBOX	3	0	0	3.0	3.0	DATA SCIENCE
3	CAP777	WEB DEVELOPMENT USING PHP	3	0	2	4.0	5.0	WEB DEVELOPMENT

Term 3 (For those students who opt for industrial internship)

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S.No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Type	Nature
1	CAP735	SEMINAR ON SUMMER TRAINING	0	0	8	4.0	8.0	CR3A	PRI
2	CAP776	PROGRAMMING IN PYTHON	3	0	2	4.0	5.0	CR	DSC
3	CAP831	INDUSTRY CO-OP PROJECT	0	0	32	16.0	32.0	CR	DSC
TOTAL			3.0	0.0	42.0	24.0	45.0		

Term 4 (For those students who opt for course work)									P164-NN1-4-2021
S.No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Type	Nature
1		GENERIC ELECTIVE 3	0	0	3	2.0	3.0	GE	OEM
2		GENERIC ELECTIVE 4	0	0	8	4.0	8.0	GE	BSC
3		PATHWAY ELECTIVE 3	0	0	2	1.0	2.0	PW	DSE
4		PATHWAY ELECTIVE 3 LAB	0	0	0		0	PW	DSE
5		PATHWAY ELECTIVE 4	0	0	2	1.0	2.0	PW	DSE
6		PATHWAY ELECTIVE 4 LAB	0	0	0		0	PW	DSE
7		SPECIALIZATION ELECTIVE 3	0	0	2	1.0	2.0	SP	BSC
8		SPECIALIZATION ELECTIVE 3 LAB	0	0	0		0	SP	BSC
9		SPECIALIZATION ELECTIVE 4	0	0	2	1.0	2.0	SP	BSC
10		SPECIALIZATION ELECTIVE 4 LAB	0	0	0		0	SP	BSC
11	CAP769	PROJECT WORK	0	0	8	4.0	8.0	CR	DSC
TOTAL			0.0	0.0	27.0	14.0	#Error		

GENERIC ELECTIVE 3 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	FIN656	INTERNATIONAL BANKING AND FOREX MANAGEMENT	4	0	0	4.0	4.0	FINANCE
2	ECE351	IOT WITH NODEMCU	0	0	3	2.0	3.0	INTERNET OF THINGS
3	FIN501	CORPORATE FINANCE	3	1	0	4.0	4.0	MANAGEMENT
4	MKT512	DIGITAL AND SOCIAL MEDIA MARKETING	3	1	0	4.0	4.0	MARKETING

GENERIC ELECTIVE 4 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	FIN611	INVESTMENT ANALYSIS AND PORTFOLIO MANAGEMENT	3	1	0	4.0	4.0	FINANCE
2	OPR602	PRODUCTION AND OPERATIONS MANAGEMENT	3	1	0	4.0	4.0	MANAGEMENT
3	MKT687	CUSTOMER RELATIONSHIP MANAGEMENT	3	1	0	4.0	4.0	MARKETING
4	CAP799	RESEARCH PROJECT -II	0	0	8	4.0	8.0	RESEARCH

PATHWAY ELECTIVE 3 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	CAP538	ALGORITHM DESIGN AND ANALYSIS	3	0	0	3.0	3.0	PRODUCT DEVELOPMENT
2	CAP539	ALGORITHM DESIGN AND ANALYSIS - LABORATORY	0	0	2	1.0	2.0	PRODUCT DEVELOPMENT
3	CAP771	SOFTWARE TESTING AND QUALITY ASSURANCE	3	0	2	4.0	5.0	SERVICE MANAGEMENT

PATHWAY ELECTIVE 4 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	CAP868	SOFTWARE PROJECT MANAGEMENT	3	0	0	3.0	3.0	PRODUCT DEVELOPMENT
2	CAP871	SOFTWARE PROJECT MANAGEMENT-- LABORATORY	0	0	2	1.0	2.0	PRODUCT DEVELOPMENT
3	CAP950	OPEN SOURCE TECHNOLOGIES	3	0	2	4.0	5.0	SERVICE MANAGEMENT

SPECIALIZATION ELECTIVE 3 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	CAP794	VULNERABILITY ASSESSMENT AND PENETRATION TESTING	3	0	0	3.0	3.0	CYBER SECURITY
2	CAP795	VULNERABILITY ASSESSMENT AND PENETRATION TESTING- LABORATORY	0	0	2	1.0	2.0	CYBER SECURITY
3	CAP792	ADVANCE DATA VISUALIZATION	3	0	0	3.0	3.0	DATA SCIENCE
4	CAP793	ADVANCE DATA VISUALIZATION- LABORATORY	0	0	2	1.0	2.0	DATA SCIENCE
5	CAP782	RESPONSIVE WEB DESIGN	3	0	2	4.0	5.0	WEB DEVELOPMENT

SPECIALIZATION ELECTIVE 4 BASKET

S. No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Elective Area
1	CAP796	CYBER FORENSICS	3	0	0	3.0	3.0	CYBER SECURITY
2	CAP797	CYBER FORENSICS- LABORATORY	0	0	2	1.0	2.0	CYBER SECURITY
3	CAP781	MACHINE LEARNING	3	0	2	4.0	5.0	DATA SCIENCE
4	CAP785	WEB PERFORMANCE OPTIMIZATION	3	0	2	4.0	5.0	WEB DEVELOPMENT

Term 4 (For those students who opt for industrial internship)

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S.No	Course Code	Course Title	L	T	P	Credit	Contact Hours	Type	Nature
1	CAP841	INDUSTRIAL TRAINING	0	0	32	16.0	32.0	CR	DSC
TOTAL			0.0	0.0	32.0	16.0	32.0		

Important Points

- The calculation of Total Contact hours in Lecture (L), Tutorial (T) and Practical (P) for Elective Course slots reflecting the minimum L, T and P of a course in Elective Basket.
- Every Course has a 'Type' and 'Nature' which defines its character.

Program Structure

Program Code: P164-NN1::MCA
Program Batch: 2021

Category	Category Description	Sub Category	Number of Theory (T)/Practical (P) BYOD (B)	Total Credits
A1	Language & Communication Skills (LCS)	<i>Language & Communication Skills(LCS)</i>	<i>1T</i>	4
B1	Basic Science(BSC)	<i>Maths</i>	<i>1T</i>	4
		<i>Basic Science(BSC)</i>	<i>3P</i>	6
C1	Discipline Core(DSC)	<i>Discipline Core(DSC)</i>	<i>11T 10P 2B</i>	52
C2	Discipline Elective(DSE)	<i>Discipline Elective(DSE)</i>	<i>1T 2P</i>	6
D	Open Minor/Open Elective(OEM)	<i>Open Minor/Open Elective(OEM)</i>	<i>1T 2P</i>	7
F	Pathway Elective(PWE)	<i>Pathway Elective(PWE)</i>	<i>1P</i>	2
	SKILL ENHANCEMENT (SEC)	<i>SKILL ENHANCEMENT(SEC)</i>	<i>2T</i>	6
Total			<i>17T 18P 2B</i>	87

Note

- For applicable programs, students can graduate with 2 Minors (1 within discipline and 1 outside discipline and as depicted in the structure under the headings Discipline Minors and Open Elective/Minors respectively).
- Discipline Core (DSC) are be mapped with GATE/UGCNET/CSIRNET/IES/AMCAT/ICAR as per applicability.

Term-wise Credits

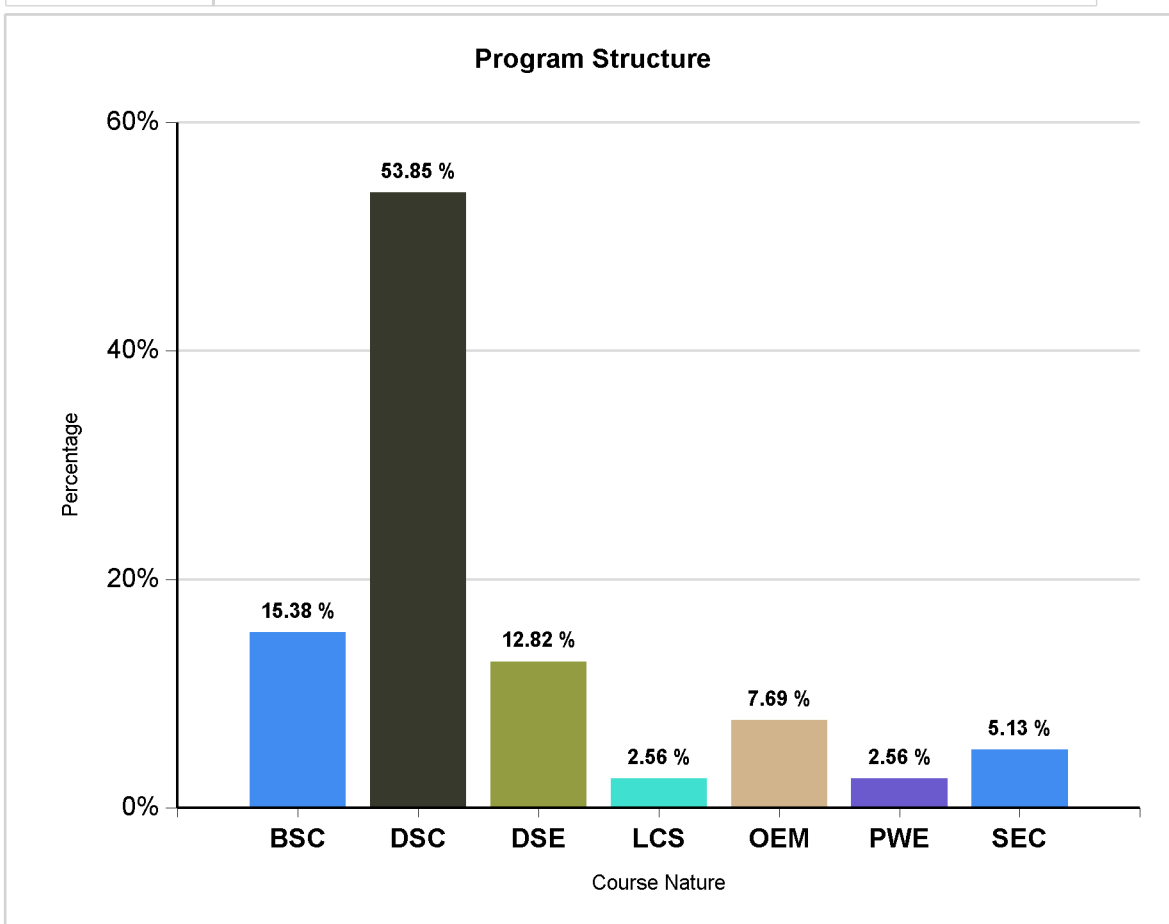
Term	Semester	Path	Credit (without rounding)	Credit(with rounding)
1	Term 1	Common	24	24.0
2	Term 2	Common	28	28.0
3	Term 3 (For students who opt for industrial internship)	A	24	24.0
3	Term 3 (For students who opt for course work)	B	20	21.0
4	Term 4 (For students who opt for industrial internship)	A	16	16.0
4	Term 4 (For students who opt for course work)	B	13.5	14.0

Term path wise Credits (Including Common Term)

Path	Credit (without rounding)	Credit(with rounding)
A	92	92.0
B	85.5	87.0

Course Type	
CR	Core Course
CR3A	CORE-III(A)
GE	Generic Elective
PW	Pathway Elective
SP	Specialization Elective

Course Nature	
BSC	Basic Science
DSC	Discipline Core
DSE	Discipline Elective
LCS	Language & Communication Skills
OEM	Open Minor/Open Elective
PRI	Innovative Project
PWE	Pathway Elective
SEC	SKILL ENHANCEMENT



Sr No	NAME	Nature Name	Total
1	BSC	Basic Science	6
2	DSC	Discipline Core	21
3	DSE	Discipline Elective	5
4	LCS	Language & Communication Skills	1
5	OEM	Open Minor/Open Elective	3
6	PWE	Pathway Elective	1
7	SEC	SKILL ENHANCEMMENT	2