GLA UNIVERSITY MATHURA

Accredited with A Grade by NAAC

COURSE STRUCTURE

B.TECH. COMPUTER SCIENCE & ENGINEERING

Under

Choice Based Credit System (CBCS)

Session 2020-21

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technolog
GLA University, Mathura

First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics I	3	1	0	4	4
2.	BCHS0101/ BPHS0001	Engineering Chemistry/ Engineering Physics	3	1	0	4	4
3.	BELH0001	English Language Skills for Communication I	2	0	0	2	2
4.	BEEG0001/ BECG0001	Basic Electrical Engineering / Electronics Engineering	3	1	0	4	4
5.	BCSC0001	Computer Programming	4	1	0	5	5
		PRACTICALS					
6.	BCHS0801/ BPHS0801	Engineering Chemistry Lab / Engineering Physics Lab	0	0	2	1	2
7.	BELH0801	English Language Lab I	0	0	2	1	2
8.	BEEG0800/ BECG0800	Electrical Engineering Lab/ Electronics Lab I	0	0	2	1	2
9.	BMEG0801	Engineering Drawing Lab	0	0	2	1	2
10.	BCSC0800	Computer Programming Lab	0	0	2	1	2
		TOTAL	15	4	10	24	29

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0102	Engineering Mathematics II	3	1	0	4	4
2.	BPHS0001/ BCHS0101/	Engineering Physics/ Engineering Chemistry	3	1	0	4	4
3.	BELH0002	English Language Skills for Communication II	2	0	0	2	2
4.	BECG0001/ BEEG0001	Electronics Engineering/ Electrical Engineering	3	1	0	4	4
5.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
6.	BCSG0001	Python Programming	4	1	0	5	5
		PRACTICALS					
7.	BPHS0801/ BCHS0801	Engineering Physics Lab/ Engineering Chemistry Lab	0	0	2	1	2
8.	BELH0802	English Language Lab II	0	0	2	1	2
9.	BECG0800/ BEEG0800	Electronics Lab I/ Electrical Engineering Lab	0	0	2	1	2
10.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	1	2
11.	BCSG0800	Python Programming Lab	0	0	2	1	2
		TOTAL	18	5	10	28	33

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Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
		THEORY							
1.	BCSC0001	Computer Programming	4	1	0	0	5	5	
2.	BCSC0002	Object Oriented Programming	3	0	0	0	3	3	Programming
3.	BCSC0003	Database Management System	3	0	0	0	3	3	
4.	BCSC0004	Operating Systems	3	0	0	0	3	3	
5.	BCSC0005	Computer Organization	3	0	0	0	3	3	
6.	BCSC0006	Data Structures and Algorithms	3	1	0	0	4	4	Programming
7.	BCSC0007	Introduction to Microprocessors	3	0	0	0	3	3	Computer Organization
8.	BCSC0008	Computer Networks	3	1	0	0	4	4	
9.	BCSC0009	Software Engineering	3	0	0	0	3	3	
10.	BCSC0010	Discrete Mathematics	3	1	0	0	4	4	
11.	BCSC0011	Theory of Automata and Formal Language	3	1	0	0	4	4	
12.	BCSC0012	Design and Analysis of Algorithms	3	0	0	0	3	3	Programming, Data Structures
13.	BCSC0014	Applied Database Management System	4	0	0	0	4	4	
14.	BCSC0015	Applied Data Structures and Algorithms	4	1	0	0	5	5	
		PRACTICALS							
1.	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	
2,	BCSC0801	Object Oriented Programming Lab	0	0	2	0	1	2	Programming Lab
3.	BCSC0802	Database Management System Lab	0	0	2	0	1	2	
4.	BCSC0803	Operating Systems Lab	0	0	2	0	1	2	
5.	BCSC0804	Computer Organization Lab	0	0	2	0	1	2	
6.	BCSC0805	Data Structures and Algorithms Lab	0	0	2	0	1	2	Programming Lab
7.	BCSC0806	Microprocessors Lab	0	0	2	0	1	2	
8.	BCSC0807	Design and Analysis of Algorithms Lab	0	0	2	0	1	2	Programming, Data Structures
9.	BCSC0808	Applied Database Management System	0	0	2	0	1	2	
10	BCSC0809	Applied Data Structures and Algorithms	0	0	2	0	1	2	
		Total	45	6	20	0	61	71	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Computer Network and Security									
THEORY									
1.	BCSE0001	Network Programming and Management	3	0	0	0	3	3	Computer Networks
2.	BCSE0002	Principles of Mobile Computing	3	1	0	0	4	4	Computer Networks
3.	BCSE0003	Ad Hoc Networks	3	0	0	0	3	3	Computer Networks
4.	BCSE0004	Cryptography and Network Security	3	0	0	0	3	3	Computer Networks
5.	BCSE0005	Cyber security and Digital Forensics	3	0	0	0	3	3	Computer Networks
6.	BCSE0006	Information Coding Techniques	3	0	0	0	3	3	Computer Networks
PRACTICALS									
1.	BCSE0070	Network Programming and Management Lab	0	0	2	0	1	2	Computer Networks
2.	BCSE0071	Cryptography and Network Security Lab	0	0	2	0	1	2	Computer Networks
3.	BCSE0072	Information Coding Techniques Lab	0	0	2	0	1	2	Computer Networks

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet: Software Engineering									
THEORY									
1.	BCSE0051	Software Quality Engineering	3	0	0	0	3	3	Software Engineering
2.	BCSE0052	Service Oriented Architecture	3	0	0	0	3	3	Software Engineering
3.	BCSE0053	Agile Software Development	3	0	0	0	3	3	Software Engineering
4.	BCSE0054	Software Project Management	3	0	0	0	3	3	Software Engineering
5.	BCSE0055	Software Testing	3	0	0	0	3	3	Software Engineering
6.	BCSC0013	Compiler Design	3	1	0	0	4	4	Theory of Automata & Formal Language

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Image Processing and Intelligent System									
THEORY									
1.	BCSE0101	Digital Image Processing	3	0	0	0	3	3	Mathematics, Programming
2.	BCSE0102	Computer Graphics And Multimedia	3	1	0	0	4	4	Mathematics, Programming
3.	BCSE0103	Soft Computing	3	0	0	0	3	3	Discrete Mathematics
4.	BCSE0104	Artificial Intelligence	3	0	0	0	3	3	Data Structures
5.	BCSE0105	Machine Learning	3	0	0	0	3	3	Mathematics, Programming
6.	BCSE0106	Machine Learning And Its Applications	3	0	0	0	3	3	Mathematics, Programming
PRACTICALS									
1.	BCSE0131	Digital Image Processing Lab	0	0	2	0	1	2	Programming
2.	BCSE0132	Soft Computing Lab	0	0	2	0	1	2	Programming
4.	BCSE0133	Machine Learning Lab	0	0	2	0	1	2	Programming
PROJECTS									
1.	BCSE0141	Machine Learning Project	0	0	0	-	2	-	Programming

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet: Advanced Data Processing									
THEORY									
1.	BCSE0151	Advanced Concepts in Database Systems	3	0	0	0	3	3	DBMS
2.	BCSE0152	Data Mining and Warehousing	3	0	0	0	3	3	DBMS
3.	BCSE0153	Business Intelligence	3	0	0	0	3	3	DMW
4.	BCSE0154	Information Retrieval System	3	0	0	0	3	3	DATA STRUCTURE
5.	BCSE0155	Distributed and Parallel Databases	3	0	0	0	3	3	DBMS
6.	BCSE0156	Natural Language Processing	3	0	0	0	3	3	TAFL/Compiler Design
7.	BCSE0157	Introduction to Big Data Analytics	3	0	0	0	3	3	DBMS
8.	BCSE0158	Big Data Analytics	3	0	0	0	3	3	
PRACTICALS									
1.	BCSE0181	Data Mining and Warehousing Lab	0	0	2	0	1	2	
2.	BCSE0182	Business Intelligence Lab	0	0	2	0	1	2	
3.	BCSE0183	Big Data Analytics Lab	0	0	2	0	1	2	
PROJECTS									
1.	BCSE0191	Business Intelligence Project	0	0	0	-	2	-	
2.	BCSE0192	Big Data Analytics Project	0	0	0	-	2	-	Programming

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: High Performance Computing									
THEORY									
1.	BCSE0201	Advanced Computer Architecture	3	0	0	0	3	3	Computer Organization
2.	BCSE0202	Embedded System	3	0	0	0	3	3	Microprocessors
3.	BCSE0203	Internet of Things	3	0	0	0	3	3	Microprocessors
4.	BCSE0204	Internet of Things And Its Applications	3	0	0	0	3	3	
5.	BCSE0205	Distributed System	3	0	0	0	3	3	CN /OS
6.	BCSE0206	Parallel Algorithms	3	0	0	0	3	3	CO & Algorithms
7.	BCSE0207	Cloud Computing	3	0	0	0	3	3	
8.	BCSE0208	Cloud Computing and Virtualization	3	0	0	0	3	3	
PRACTICALS									
1.	BCSE0231	Embedded System Lab	0	0	2	0	1	2	
2.	BCSE0232	Internet of Things Lab	0	0	2	0	1	2	
3.	BCSE0233	Parallel Algorithms Lab	0	0	2	0	1	2	
4.	BCSE0234	Cloud Computing lab	0	0	2	0	1	2	
PROJECTS									
1.	BCSE0241	Internet of Things Project	0	0	0	-	2	-	
2.	BCSE0242	Cloud Computing And Virtualization Project	0	0	0	-	2	-	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Development Tools and Technologies									
THEORY									
1.	BCSE0251	Full Stack Using Scripting Technologies	3	0	0	0	3	3	
2.	BCSE0252	Full Stack Using Node JS	3	0	0	0	3	3	
3.	BCSE0253	Full Stack Using C#.net	3	0	0	0	3	3	
4.	BCSE0254	PHP - Scripting Language	3	0	0	0	3	3	
5.	BCSE0255	Digital Marketing And Transformation	3	0	0	0	3	3	
PRACTICALS									
1.	BCSE0281	Full Stack Using Scripting Technologies Lab	0	0	2	0	1	2	
2.	BCSE0282	Full Stack Using Node JS Lab	0	0	2	0	1	2	
3.	BCSE0283	Full Stack Using C#.net Lab	0	0	2	0	1	2	
4.	BCSE0284	PHP - Scripting Language Lab	0	0	2	0	1	2	
PROJECTS									
1.	BCSE0291	Full Stack Using Scripting Technologies Project	0	0	0	0	2	-	
2.	BCSE0292	Full Stack Using Node JS Project	0	0	0	0	2	-	
3.	BCSE0293	Full Stack Using C#.net Project	0	0	0	0	2	-	
4.	BCSE0294	PHP - Scripting Language Project	0	0	0	0	2	-	

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Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BCSJ0950	Mini Project – I	0	0	0	0	2	0	
2.	BCSJ0951	Mini Project – II	0	0	0	0	2	0	
3.	BCSJ0971	Project – Part I	0	0	0	0	3	0	
4.	BCSJ0972	Project – Part II	0	0	0	0	8	0	
5.	BCSJ0991	Industrial Training	0	0	0	0	2	0	
		TOTAL	**0**	**0**	**0**	**0**	**17**	**0**	

Mandatory Non Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
5.	BCHM0202	Environmental Studies	2	0	0	0	2	2	
6.	BELM0001	Introduction to Bhagavad Gita	2	0	0	0	2	2	
		TOTAL	**8**	**0**	**0**	**0**	**0**	**8**	

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Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purposes – I	2	0	0	0	2	2	
4.	BELH0004	English for Professional Purposes – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAH0005	Industrial Management	3	0	0	0	3	3	
		PRACTICALS							
7.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
8.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
9.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
10.	BTDH0302	Soft Skills – II	0	0	2	0	1	2	
11.	BTDH0303	Soft Skills – III	0	0	8	0	4	8	
12.	BTDH0304	Soft Skills – IV	0	0	8	0	4	8	
		TOTAL	**13**	**0**	**24**	**0**	**25**	**37**	

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Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BMAS0101	Engineering Mathematics I	3	1	0	0	4	4	
2.	BMAS0102	Engineering Mathematics II	3	1	0	0	4	4	
3.	BMAS0103	Engineering Mathematics III	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
		PRACTICALS							
7.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
8.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
		TOTAL	**17**	**5**	**4**	**0**	**24**	**26**	

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Engineering Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG0001	Basic Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	
4.	BCSG0001	Python Programming	4	1	0	0	5	5	
5.	BCSC0001	Computer Programming	4	1	0	0	5	5	
PRACTICALS									
6.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
7.	BECG0800	Electronics Lab I	0	0	2	0	1	2	
8.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	
9.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
10.	BCSG0800	Python Programming Lab	0	0	2	0	1	2	
11	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	

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Open Elective (Offer to other Departments)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSO0001	Data Structures and Applications	3	0	0	0	3	3	Programming
2.	BCSO0002	Introduction To Object Oriented Programming	3	0	0	0	3	3	Programming
3.	BCSO0003	Essentials of Information Technology	3	0	0	0	3	3	Object Oriented Programming
4.	BCSO0004	Elements of Soft Computing	3	0	0	0	3	3	
5.	BCSO0005	Fundamentals of Computer	2	0	0	0	2	2	
6.	BCSO0006	Introduction to Programming	2	0	0	0	2	2	
PRACTICALS									
7.	BCSO0070	Data Structures and Applications Lab	0	0	2	0	1	2	Programming
8.	BCSO0071	Introduction To Object Oriented Programming Lab	0	0	2	0	1	2	Programming
9.	BCSO0072	Essentials of Information Technology Lab	0	0	2	0	1	2	Object Oriented Programming
10.	BCSO0073	Elements of Soft Computing Lab	0	0	2	0	1	2	
11.	BCSO0074	Fundamentals of Computer Lab	0	0	2	0	1	2	
12.	BCSO0075	Programming Lab	0	0	2	0	1	2	

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GLA UNIVERSITY MATHURA

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COURSE STRUCTURE

B.TECH. COMPUTER SCIENCE & ENGINEERING

Specialization

in

Artificial Intelligence & Machine Learning

Under

Choice Based Credit System (CBCS)

Session 2020-21

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics I	3	1	0	4	4
2.	BPHS0001	Engineering Physics	3	1	0	4	4
3.	BELH0001	English Language Skills for Communication – I	2	0	0	2	2
4.	BECG0001	Electronics Engineering	3	1	0	4	4
5.	BCSG0001	Python Programming	4	1	0	5	5
		PRACTICALS					
7.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
8.	BELH0801	English Language Lab – I	0	0	2	1	2
9.	BECG0800	Electronics Lab I	0	0	2	1	2
10.	BMEG0801	Engineering Drawing Lab	0	0	2	1	2
11.	BCSG0800	Python Programming Lab	0	0	2	1	2
		TOTAL	**15**	**4**	**10**	**24**	**29**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0102	Engineering Mathematics II	3	1	0	4	4
2.	BCHS0101	Engineering Chemistry	3	1	0	4	4
3.	BELH0002	English Language Skills for Communication – II	2	0	0	2	2
4.	BEEG0001	Electrical Engineering	3	1	0	4	4
5.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
6.	BCSC2001	Computer Programming	3	0	0	3	3
7.	BCSC0606	Introduction to Artificial Intelligence	3	0	0	3	3
		PRACTICALS					
8.	BCHS0801	Engineering Chemistry Lab	0	0	2	1	2
9.	BELH0802	English Language Lab – II	0	0	2	1	2
10.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
11.	BCSC0800	Computer Programming Lab	0	0	2	1	2
		TOTAL	**20**	**4**	**8**	**28**	**32**

Program Core

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S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSC2001	Computer Programming	3	0	0	0	3	3	
2.	BCSC0002	Object Oriented Programming	3	0	0	0	3	3	Programming
3.	BCSC0003	Database Management System	3	0	0	0	3	3	
4.	BCSC0004	Operating Systems	3	0	0	0	3	3	
5.	BCSC0005	Computer Organization	3	0	0	0	3	3	
6.	BCSC0006	Data Structures & Algorithms	3	1	0	0	4	4	Programming
7.	BCSC0007	Introduction to Microprocessors	3	0	0	0	3	3	Computer Organization
8.	BCSC0008	Computer Networks	3	1	0	0	4	4	
9.	BCSC0009	Software Engineering	3	0	0	0	3	3	
10.	BCSC00010	Discrete Mathematics	3	1	0	0	4	4	
11.	BCSC0011	Theory of Automata & Formal Language	3	1	0	0	4	4	
12.	BCSC0012	Design & Analysis of Algorithms	3	0	0	0	3	3	Data Structures
13.	BCSC0606	Introduction to Artificial Intelligence	3	0	0	0	3	3	
14.	BCSC0015	Applied Data Structures and Algorithms	4	1	0	0	5	5	
PRACTICALS									
1.	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	
2.	BCSC0801	Object Oriented Programming Lab	0	0	2	0	1	2	
3.	BCSC0802	Database Management System Lab	0	0	2	0	1	2	
4.	BCSC0803	Operating Systems Lab	0	0	2	0	1	2	
5.	BCSC0804	Computer Organization Lab	0	0	2	0	1	2	
6.	BCSC0805	Data Structures & Algorithms Lab	0	0	2	0	1	2	Programming Lab
7.	BCSC0806	Microprocessors Lab	0	0	2	0	1	2	
8.	BCSC0807	Design & Analysis of Algorithms Lab	0	0	2	0	1	2	Programming, Data Structures
9.	BCSC0808	Applied Database Management System	0	0	2	0	1	2	
		Total	43	5	18	0	57	66	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Specialization In Artificial Intelligence And Machine Learning									
THEORY									
1.	BCSE0701	Introduction To Machine Learning	3	0	0	0	3	3	
2.	BCSE0702	Algorithm for Intelligent Systems and Robotics	2	0	0	0	2	2	
3.	BCSE0703	Data mining & Predictive Modeling	2	0	0	0	2	2	
4.	BCSE0704	Computational Linguistics and Natural Language Processing	2	0	0	0	2	2	
5.	BCSE0705	Application of Machine Learning in industries	2	0	0	0	2	2	
6.	BCSE0706	Neural Networks	3	0	0	0	3	3	
7.	BCSE0707	Cognitive Analytics	2	0	0	0	2	2	
8.	BCSE0708	Pattern and Anomaly Detection	3	0	0	0	3	3	
PRACTICALS									
1.	BCSE0731	Introduction To Machine Learning Lab	0	0	2	0	1	2	
2,	BCSE0732	Algorithm for Intelligent Systems and Robotics Lab	0	0	2	0	1	2	
3.	BCSE0733	Data mining & Predictive Modeling Lab	0	0	2	0	1	2	
4.	BCSE0734	Computational Linguistic and Natural Language Processing Lab	0	0	2	0	1	2	
5.	BCSE0735	Application of Machine Learning in Industries Lab	0	0	2	0	1	2	
6.	BCSE0736	Neural Networks Lab	0	0	2	0	1	2	
15.	BCSE0737	Cognitive Analytics Lab	0	0	2	0	1	2	
16.	BCSE0738	Pattern and Anomaly Detection Lab	0	0	2	0	1	2	
Total			**19**	**0**	**16**	**0**	**27**	**35**	

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BCSJ0950	Mini Project – I	0	0	0	0	2	0	
2.	BCSJ0951	Mini Project – II	0	0	0	0	2	0	
3.	BCSJ0971	Project – Part I	0	0	0	0	3	0	
4.	BCSJ0972	Project – Part II	0	0	0	0	8	0	
5.	BCSJ0991	Industrial Training	0	0	0	0	2	0	
		TOTAL	**0**	**0**	**0**	**0**	**17**	**0**	

Mandatory Non Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
5.	BCHM0202	Environmental Studies	2	0	0	0	2	2	
6.	BELM0001	Introduction to Bhagavad Gita	2	0	0	0	2	2	
		TOTAL	**12**	**0**	**0**	**0**	**0**	**12**	

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purposes – I	2	0	0	0	2	2	
4.	BELH0004	English for Professional Purposes – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAH0005	Industrial Management	3	0	0	0	3	3	
PRACTICALS									
7.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
8.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
9.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
10.	BTDH0302	Soft Skills – II	0	0	2	0	1	2	
11.	BTDH0303	Soft Skills – III	0	0	8	0	4	8	
12.	BTDH0304	Soft Skills – IV	0	0	8	0	4	8	
TOTAL			**13**	**0**	**24**	**0**	**25**	**37**	

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technolog
GLA University, Mathura

Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BMAS0101	Engineering Mathematics I	3	1	0	0	4	4	
2.	BMAS0102	Engineering Mathematics II	3	1	0	0	4	4	
3.	BMAS0103	Engineering Mathematics III	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
		PRACTICALS							
7.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
8.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
		TOTAL	**17**	**5**	**4**	**0**	**24**	**26**	

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

Engineering Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG0001	Basic Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	
4.	BCSG0001	Python Programming	4	1	0	0	5	5	
PRACTICALS									
5.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
6.	BECG0800	Electronics Lab I	0	0	2	0	1	2	
7.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	
8.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
9.	BCSG0800	Python Programming Lab	0	0	2	0	1	2	

Head of the Department
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GLA UNIVERSITY MATHURA

Accredited with A Grade by NAAC

COURSE STRUCTURE

B.TECH. COMPUTER SCIENCE & ENGINEERING

Specialization

in

Cyber Security & Forensics

Under

Choice Based Credit System (CBCS)

Session 2020-21

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics I	3	1	0	4	4
2.	BPHS1001	Engineering Physics	3	1	0	4	4
3.	BELH0001	English Language Skills for Communication – I	2	0	0	2	2
4.	BEEG0001	Electrical Engineering	3	1	0	4	4
5.	BCSG0001	Python Programming	4	1	0	5	5
6.	BCSC0602	Information Security Fundamentals	2	0	0	0	2
		PRACTICALS					
7.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
8.	BELH0801	English Language Lab – I	0	0	2	1	2
9.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
10.	BMEG0801	Engineering Drawing Lab	0	0	2	1	2
11.	BCSG0800	Python Programming Lab	0	0	2	1	2
		TOTAL	17	4	10	26	31

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0102	Engineering Mathematics II	3	1	0	4	4
2.	BCSC 1001	C PROGRAMMING	3	1	0	4	4
3.	BELH0002	English Language Skills for Communication – II	2	0	0	2	2
4.	BECG0001	Electronics Engineering	3	1	0	4	4
5.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
6.	BCSC0603	IT Systems Security and Physical Security	3	0	0	3	3
		PRACTICALS					
7.	BCSC 0800	C PROGRAMMING Lab	0	0	2	1	2
8.	BELH0802	English Language Lab – II	0	0	2	1	2
9.	BECG0800	Electronics Lab I	0	0	2	1	2
10.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	1	2
11.	BCSC0900	IT Systems Security and Physical Security Lab	0	0	2	1	2
		TOTAL	17	4	10	26	31

Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME	CRE DITS	CON TAC	PRE- REQUISITES

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

			L	T	P	J			
					THEORY				
1.	BCSC1001	Computer Programming	3	1	0	0	4	4	
2.	BCSC0002	Object Oriented Programming	3	0	0	0	3	3	Computer Programming
3.	BCSC0003	Database Management System	3	0	0	0	3	3	
4.	BCSC0004	Operating Systems	3	0	0	0	3	3	
5.	BCSC0005	Computer Organization	3	0	0	0	3	3	
6.	BCSC0006	Data Structures & Algorithms	3	1	0	0	4	4	Computer Programming
7.	BCSC0007	Introduction to Microprocessors	3	0	0	0	3	3	Computer Organization
8.	BCSC0008	Computer Networks	3	1	0	0	4	4	
9.	BCSC0009	Software Engineering	3	0	0	0	3	3	
10.	BCSC0010	Discrete Mathematics	3	1	0	0	4	4	
11.	BCSC0011	Theory of Automata & Formal Language	3	1	0	0	4	4	
12.	BCSC0012	Design and Analysis of Algorithm	3	1	0	0	4	4	Data Structures & Algorithms
13.	BCSC0602	Information Security Fundamentals	2	0	0	0	2	2	
14.	BCSC0603	IT Systems Security and Physical Security	3	0	0	0	3	3	
15.	BCSC0014	Applied Database Management System	4	0	0	0	4	4	
					PRACTICALS				
1.	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	
2.	BCSC0801	Object Oriented Programming Lab	0	0	2	0	1	2	Programming Lab
3.	BCSC0802	Database Management System Lab	0	0	2	0	1	2	
4.	BCSC0803	Operating Systems Lab	0	0	2	0	1	2	
5.	BCSC0804	Computer Organization Lab	0	0	2	0	1	2	
6.	BCSC0805	Data Structures & Algorithms Lab	0	0	2	0	1	2	Programming Lab
7.	BCSC0806	Microprocessors Lab	0	0	2	0	1	2	Computer Organization Lab
8.	BCSC807	Design and Analysis of Algorithms	0	0	2	0	1	2	
9.	BCSC0901	IT Systems Security and Physical Security Lab	0	0	2	0	1	2	
10.	BCSC0808	Applied Database Management System	0	0	2	0	1	2	
		Total	**45**	**6**	**20**	**0**	**61**	**71**	

Head of the Department
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GLA University, Mathura

Program Elective (Only for Specialization Programme)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Cyber Security and Forensics									
THEORY									
1.	BCSE0601	IT Application and Data Security	3	0	0	0	3	3	
2.	BCSE0602	IT Network Security	3	0	0	0	3	3	
3.	BCSE0603	Information Security Audit & Monitoring	2	0	0	0	2	2	
4.	BCSE0604	Cloud Architecture and Deployment Models	3	0	0	0	3	3	
5.	BCSE0605	IT business Continuity & Disaster Recovery	2	0	0	0	2	2	
6.	BCSE0606	Digital Forensics	3	0	0	0	3	3	
7.	BCSE0607	Ethical Hacking and Penetration Testing	2	0	0	0	2	2	
PRACTICALS									
1.	BCSE0631	IT Application and Data Security Lab	0	0	2	0	1	2	
2.	BCSE0632	IT Network Security Lab	0	0	2	0	1	2	
3.	BCSE0633	Information Security Audit & Monitoring Lab	0	0	2	0	1	2	
4.	BCSE0634	Cloud Architecture and Deployment Models Lab	0	0	2	0	1	2	
5.	BCSE0635	Digital Forensics Lab	0	0	2	0	1	2	
6.	BCSE0636	Ethical Hacking and Penetration Testing Lab	0	0	2	0	1	2	
		TOTAL	18	0	12	0	24	30	

Projects

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BCSJ0950	Mini Project – I	0	0	0	0	2	0	
2.	BCSJ0951	Mini Project – II	0	0	0	0	2	0	
3.	BCSJ0971	Project – Part I	0	0	0	0	3	0	
4.	BCSJ0972	Project – Part II	0	0	0	0	8	0	
5.	BCSJ0991	Industrial Training	0	0	0	0	2	0	
		TOTAL	**0**	**0**	**0**	**0**	**17**	**0**	

Mandatory Non Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
5.	BCHM0202	Environmental Studies	2	0	0	0	2	2	
6.	BELM0001	Introduction to Bhagavad Gita	2	0	0	0	2	2	
		TOTAL	**12**	**0**	**0**	**0**	**0**	**12**	

Humanities and Social Sciences

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purposes – I	2	0	0	0	2	2	
4.	BELH0004	English for Professional Purposes – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAH0005	Industrial Management	3	0	0	0	3	3	
PRACTICALS									
7.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
8.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
9.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
10.	BTDH0302	Soft Skills – II	0	0	2	0	1	2	
11.	BTDH0303	Soft Skills – III	0	0	8	0	4	8	
12.	BTDH0304	Soft Skills – IV	0	0	8	0	4	8	
TOTAL			**13**	**0**	**24**	**0**	**25**	**37**	

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BMAS0101	Engineering Mathematics I	3	1	0	0	4	4	
2.	BMAS0102	Engineering Mathematics II	3	1	0	0	4	4	
3.	BMAS0103	Engineering Mathematics III	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
PRACTICALS									
7.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
8.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
TOTAL			**17**	**5**	**4**	**0**	**24**	**26**	

Head of the Department
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GLA University, Mathura

Engineering Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BEEG0001	Basic Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	
4.	BCSG0001	Python Programming	4	1	0	0	5	5	
		PRACTICALS							
5.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
6.	BECG0800	Electronics Lab I	0	0	2	0	1	2	
7.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	
8.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
9.	BCSG0800	Python Programming Lab	0	0	2	0	1	2	

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COURSE STRUCTURE

B.TECH. COMPUTER SCIENCE & ENGINEERING

Specialization

in

Data Analytics

Under

Choice Based Credit System (CBCS)

Session 2020-21

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics I	3	1	0	4	4
2.	BPHS0001	Engineering Physics	3	1	0	4	4
3.	BELH0001	English Language Skills for Communication – I	2	0	0	2	2
4.	BEEG0001	Electrical Engineering	3	1	0	4	4
5.	BCSG0001	Python Programming	4	1	0	5	5
6.	BCSC0600	Introduction to Open Source Software & Open Standards	2	0	0	2	2
PRACTICALS							
7.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
8.	BELH0801	English Language Lab – I	0	0	2	1	2
9.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
10.	BMEG0801	Engineering Drawing Lab	0	0	2	1	2
11.	BCSG0800	Python Programming Lab	0	0	2	1	2
		TOTAL	17	4	10	26	31

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0102	Engineering Mathematics II	3	1	0	4	4
2.	BCSC 1001	C PROGRAMMING	3	1	0	4	4
3.	BELH0002	English Language Skills for Communication – II	2	0	0	2	2
4.	BECG0001	Electronics Engineering	3	1	0	4	4
5.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
6.	BCSC0601	Web Programming through PHP	3	0	0	3	3
PRACTICALS							
7.	BCSC 0800	C PROGRAMMING Lab	0	0	2	1	2
8.	BELH0802	English Language Lab – II	0	0	2	1	2
9.	BECG0800	Electronics Lab I	0	0	2	1	2
10.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	1	2
11.	BCSC0800	Web Programming Lab	0	0	2	1	2
		TOTAL	17	4	10	26	31

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BCSC1001	Computer Programming	3	1	0	0	4	4	
2.	BCSC0002	Object Oriented Programming	3	0	0	0	3	3	Computer Programming
3.	BCSC0003	Database Management System	3	0	0	0	3	3	
4.	BCSC0004	Operating Systems	3	0	0	0	3	3	
5.	BCSC0005	Computer Organization	3	0	0	0	3	3	
6.	BCSC0006	Data Structures & Algorithms	3	1	0	0	4	4	Computer Programming
7.	BCSC0007	Introduction to Microprocessors	3	0	0	0	3	3	Computer Organization
8.	BCSC0008	Computer Networks	3	1	0	0	4	4	
9.	BCSC0009	Software Engineering	3	0	0	0	3	3	
10.	BCSC0010	Discrete Mathematics	3	1	0	0	4	4	
11.	BCSC0011	Theory of Automata & Formal Language	3	1	0	0	4	4	
12.	BCSC0012	Design and Analysis of Algorithm	3	1	0	0	4	4	Data Structures & Algorithms
13.	BCSC0600	Introduction to Open Source Software & Open Standards	2	0	0	0	2	2	
14.	BCSC0601	Web Programming through PHP	3	0	0	0	3	3	Computer Programming
15.	BCSC0014	Applied Database Management System	4	0	0	0	4	4	Database Management System
		PRACTICALS							
1.	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	
2.	BCSC0801	Object Oriented Programming Lab	0	0	2	0	1	2	Programming Lab
3,	BCSC0802	Database Management System Lab	0	0	2	0	1	2	
4.	BCSC0803	Operating Systems Lab	0	0	2	0	1	2	
5.	BCSC0804	Computer Organization Lab	0	0	2	0	1	2	
6.	BCSC0805	Data Structures & Algorithms Lab	0	0	2	0	1	2	Programming Lab
7.	BCSC0806	Microprocessors Lab	0	0	2	0	1	2	Computer Organization Lab
8.	BCSC807	Design and Analysis of Algorithms	0	0	2	0	1	2	
9.	BCSC0601	Web Programming Lab	0	0	2	0	1	2	Programming Lab
10.	BCSC0808	Applied Database Management System	0	0	2	0	1	2	
		Total	**45**	**6**	**20**	**0**	**61**	**71**	

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

Program Elective (Only for Specialization Programme)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Data Analytics									
THEORY									
1.	BCSE0551	Introduction to Business Analytics	3	0	0	0	3	3	
2.	BCSE0552	Applied Statistical Analysis	3	0	0	0	3	3	Introduction to Business Analytics
3.	BCSE0553	Data Mining and Predictive Modeling	3	0	0	0	3	3	Applied Statistical Analysis
4.	BCSE0554	Data Warehouse & Multidimensional Modeling	3	0	0	0	3	3	Data Mining and Predictive Modeling
5.	BCSE0555	Business Intelligence	3	0	0	0	3	3	
6.	BCSE0556	Hadoop & Big Data Analytics	3	0	0	0	3	3	Data Warehouse & Multidimensional Modeling
7.	BCSE0557	Social, Web & Mobile Analytics	3	0	0	0	3	3	Hadoop & Big Data Analytics
PRACTICALS									
1.	BCSE0581	Applied Statistical Analysis Lab	0	0	2	0	1	2	
2.	BCSE0582	Data Mining and Predictive Modeling Lab	0	0	2	0	1	2	
3.	BCSE0583	Data Warehouse Lab	0	0	2	0	1	2	
4.	BCSE0584	Business Intelligence Lab	0	0	2	0	1	2	
5.	BCSE0585	Hadoop & Big Data Analytics Lab	0	0	2	0	1	2	
6.	BCSE0586	Social, Web & Mobile Analytics Lab	0	0	2	0	1	2	
Total			**21**	**0**	**12**	**0**	**27**	**33**	

Head of the Department
Computer Engineering & Applications
Institute of Engineering & Technology
GLA University, Mathura

Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BCSJ0950	Mini Project – I	0	0	0	0	2	0	
2.	BCSJ0951	Mini Project – II	0	0	0	0	2	0	
3.	BCSJ0971	Project – Part I	0	0	0	0	3	0	
4.	BCSJ0972	Project – Part II	0	0	0	0	8	0	
5.	BCSJ0991	Industrial Training	0	0	0	0	2	0	
		TOTAL	0	0	0	0	17	0	

Mandatory Non Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
5.	BCHM0202	Environmental Studies	2	0	0	0	2	2	
6.	BELM0001	Introduction to Bhagavad Gita	2	0	0	0	2	2	
		TOTAL	12	0	0	0	0	12	

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Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purposes – I	2	0	0	0	2	2	
4.	BELH0004	English for Professional Purposes – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAH0005	Industrial Management	3	0	0	0	3	3	
		PRACTICALS							
7.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
8.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
9.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
10.	BTDH0302	Soft Skills – II	0	0	2	0	1	2	
11.	BTDH0303	Soft Skills – III	0	0	8	0	4	8	
12.	BTDH0304	Soft Skills – IV	0	0	8	0	4	8	
		TOTAL	**13**	**0**	**24**	**0**	**25**	**37**	

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Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BMAS0101	Engineering Mathematics I	3	1	0	0	4	4	
2.	BMAS0102	Engineering Mathematics II	3	1	0	0	4	4	
3.	BMAS0103	Engineering Mathematics III	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
PRACTICALS									
7.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
8.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
TOTAL			**17**	**5**	**4**	**0**	**24**	**26**	

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Engineering Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG0001	Basic Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	
4.	BCSG0001	Python Programming	4	1	0	0	5	5	
PRACTICALS									
5.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
6.	BECG0800	Electronics Lab I	0	0	2	0	1	2	
7.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	
8.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
9.	BCSG0800	Python Programming Lab	0	0	2	0	1	2	

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B.TECH. COMPUTER SCIENCE & ENGINEERING

Specialization

in

Industrial Internet of Things

Under

Choice Based Credit System (CBCS)

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PO12: Life-Long Learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning the broadest context of technological change.

First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics I	3	1	0	4	4
2.	BPHS0001	Engineering Physics	3	1	0	4	4
3.	BELH0001	English Language Skills for Communication – I	2	0	0	2	2
4.	BECG0001	Electronics Engineering	3	1	0	4	4
5.	BCSG0001	Python Programming	4	1	0	5	5
6.	BCSG0900	Introduction to IoT	4	0	0	4	5
PRACTICALS							
7.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
8.	BELH0801	English Language Lab – I	0	0	2	1	2
9.	BECG0800	Electronics Lab I	0	0	2	1	2
10.	BMEG0801	Engineering Drawing Lab	0	0	2	1	2
11.	BCSG0800	Python Programming Lab	0	0	2	1	2
		TOTAL	**19**	**4**	**10**	**28**	**34**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0102	Engineering Mathematics II	3	1	0	4	4
2.	BEEG0001	Electrical Engineering	3	1	0	4	4
3.	BELH0002	English Language Skills for Communication – II	2	0	0	2	2
4.	BCSG0901	IIOT Communication & Interface	4	0	0	4	5
5.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
6.	BCSC 1001	Computer Programming	3	0	0	3	4
PRACTICALS							
7.	BCSC 0800	C PROGRAMMING Lab	0	0	2	1	2
8.	BELH0802	English Language Lab – II	0	0	2	1	2
9.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
10.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	1	2
		TOTAL	**18**	**3**	**8**	**25**	**31**

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Mechanical Engineering

First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics I	3	1	0	4	4
2.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
3.	BELH0001	English Language Skills for Communication – I	2	0	0	2	2
4.	BECG0001	Electronics Engineering	3	1	0	4	4
5.	BMEG0900	Product Design & Development	5	0	0	5	5
PRACTICALS							
7.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	1	2
8.	BELH0801	English Language Lab – I	0	0	2	1	2
9.	BECG0800	Electronics Lab I	0	0	2	1	2
10.	BMEG0801	Engineering Drawing Lab	0	0	2	1	2
		TOTAL	**17**	**4**	**10**	**23**	**31**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0102	Engineering Mathematics II	3	1	0	4	4
2.	BEEG0001	Electrical Engineering	3	1	0	4	4
3.	BELH0002	English Language Skills for Communication – II	2	0	0	2	2
4.	BMEG0901	Product Design Manufacturing	4	0	0	4	5
5.	BPHS0001	Engineering Physics	3	1	0	4	4
6.		C Programming	3	0	0	3	3
7.		Applied Mechanics	3	0	0	3	3
PRACTICALS							
7.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
8.	BELH0802	English Language Lab – II	0	0	2	1	2
9.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
10.		C Programming/Python Lab	0	0	2	1	2
11.		Mechanics Lab	0	0	2	1	2
		TOTAL	**17**	**3**	**10**	**29**	**35**

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Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSC1001	Computer Programming	3	1	0	0	4	4	
2.	BCSC0002	Object Oriented Programming	3	0	0	0	3	3	Computer Programming
3.	BCSC0003	Database Management System	3	0	0	0	3	3	
4.	BCSC0004	Operating Systems	3	0	0	0	3	3	
5.	BCSC0005	Computer Organization	3	0	0	0	3	3	
6.	BCSC0006	Data Structures & Algorithms	3	1	0	0	4	4	Computer Programming
7.	BCSC0007	Introduction to Microprocessors	3	0	0	0	3	3	Computer Organization
8.	BCSC0008	Computer Networks	3	1	0	0	4	4	
9.	BCSC0009	Software Engineering	3	0	0	0	3	3	
10.	BCSC0010	Discrete Mathematics	3	1	0	0	4	4	
11.	BCSC0011	Theory of Automata & Formal Language	3	1	0	0	4	4	
12.	BCSC0012	Design and Analysis of Algorithm	3	1	0	0	4	4	Data Structures & Algorithms
13.	BCSC0600	Introduction to Open Source Software & Open Standards	2	0	0	0	2	2	
14.	BCSC0601	Web Programming through PHP	3	0	0	0	3	3	Computer Programming
15.	BCSC0014	Applied Database Management System	4	0	0	0	4	4	
PRACTICALS									
1.	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	
2.	BCSC0801	Object Oriented Programming Lab	0	0	2	0	1	2	Programming Lab
3.	BCSC0802	Database Management System Lab	0	0	2	0	1	2	
4.	BCSC0803	Operating Systems Lab	0	0	2	0	1	2	
5.	BCSC0804	Computer Organization Lab	0	0	2	0	1	2	
6.	BCSC0805	Data Structures & Algorithms Lab	0	0	2	0	1	2	Programming Lab
7.	BCSC0806	Microprocessors Lab	0	0	2	0	1	2	Computer Organization Lab
8.	BCSC807	Design and Analysis of Algorithms	0	0	2	0	1	2	
9.	BCSC0900	Web Programming Lab	0	0	2	0	1	2	Programming Lab
10.	BCSC0808	Applied Database Management System	0	0	2	0	1	2	
		Total	**45**	**6**	**20**	**0**	**61**	**71**	

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Program Elective (Only for Specialization Programme)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet: Industrial Internet of Things (IIoT)									
THEORY									
1.	BCSE0902	Smart Industrial Connectivity	4	0	0	0	4	4	
2.	BCSE0903	Data Science And Analytics	4	0	0	0	4	4	
3.	BCSE0904	Machine Learning	4	0	0	0	4	4	
4.	BCSE0905	Artificial Intelligence	4	0	0	0	4	4	
		TOTAL	16	0	0	0	16	16	

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Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BCSJ0950	Mini Project – I	0	0	0	0	2	0	
2.	BCSJ0951	Mini Project – II	0	0	0	0	2	0	
3.	BCSJ0971	Project – Part I	0	0	0	0	3	0	
4.	BCSJ0972	Project – Part II	0	0	0	0	8	0	
5.	BCSJ0991	Industrial Training	0	0	0	0	2	0	
		TOTAL	**0**	**0**	**0**	**0**	**17**	**0**	

Mandatory Non Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
		TOTAL	**8**	**0**	**0**	**0**	**0**	**8**	

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Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purposes – I	2	0	0	0	2	2	
4.	BELH0004	English for Professional Purposes – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAH0005	Industrial Management	3	0	0	0	3	3	
PRACTICALS									
7.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
8.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
9.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
10.	BTDH0302	Soft Skills – II	0	0	2	0	1	2	
11.	BTDH0303	Soft Skills – III	0	0	8	0	4	8	
12.	BTDH0304	Soft Skills – IV	0	0	8	0	4	8	
TOTAL			**13**	**0**	**24**	**0**	**25**	**37**	

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Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BMAS0101	Engineering Mathematics I	3	1	0	0	4	4	
2.	BMAS0102	Engineering Mathematics II	3	1	0	0	4	4	
3.	BMAS0103	Engineering Mathematics III	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
		PRACTICALS							
7.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
8.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
		TOTAL	**17**	**5**	**4**	**0**	**24**	**26**	

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Engineering Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG0001	Basic Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	
4.	BCSG0001	Python Programming	4	1	0	0	5	5	
PRACTICALS									
5.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
6.	BECG0800	Electronics Lab I	0	0	2	0	1	2	
7.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	
8.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
9.	BCSG0800	Python Programming Lab	0	0	2	0	1	2	

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Specialization

in

Internet of Things

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics I	3	1	0	4	4
2.	BPHS0001	Engineering Physics	3	1	0	4	4
3.	BELH0001	English Language Skills for Communication – I	2	0	0	2	2
4.	BECG0001	Electronics Engineering	3	1	0	4	4
5.	BCSG0001	Python Programming	4	1	0	5	5
6.	BCSC0604	Introduction to Internet of Things	2	0	0	2	2
		PRACTICALS					
7.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
8.	BELH0801	English Language Lab – I	0	0	2	1	2
9.	BECG0800	Electronics Lab I	0	0	2	1	2
10.	BMEG0801	Engineering Drawing Lab	0	0	2	1	2
11.	BCSG0800	Python Programming Lab	0	0	2	1	2
		TOTAL	**17**	**4**	**10**	**26**	**31**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0102	Engineering Mathematics II	3	1	0	4	4
2.	BCHS0101	Engineering Chemistry	3	1	0	4	4
3.	BELH0002	English Language Skills for Communication – II	2	0	0	2	2
4.	BEEG0001	Electrical Engineering	3	1	0	4	4
5.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
6.	BCSC0605	Sensor Technology & Instrumentation	3	0	0	3	3
		PRACTICALS					
7.	BCHS0801	Engineering Chemistry Lab	0	0	2	1	2
8.	BELH0802	English Language Lab – II	0	0	2	1	2
9.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
10.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	1	2
11.	BCSC0902	Sensor Technology & Instrumentation Lab	0	0	2	1	2
		TOTAL	**17**	**4**	**10**	**26**	**31**

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Third Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0103	Engineering Mathematics III	3	1	0	4	4
2.	BELH0006	Ethics & Values	2	0	0	2	2
3.	BELH0003	English for Professional Purpose – I	2	0	0	2	4
4.	BCSC0002	Object Oriented Programming	3	0	0	3	3
5.	BCSC0003	Database Management System	3	0	0	3	3
6.	BCSC0005	Computer Organization	3	0	0	3	3
7.	BCSE0651	Wireless Sensor Networks &IoT Standards	3	0	0	3	3
8.		Mandatory Non Graded– I	0	0	0	0	2
		PRACTICALS					
10.	BCSC0801	Object Oriented Programming Lab	0	0	2	1	2
11	BCSC0802	Database Management System Lab	0	0	2	1	2
12.	BCSC0804	Computer Organization Lab	0	0	2	1	2
	BCSE0681	Wireless Sensor Networks &IoT Standards Lab	0	0	2	1	2
13.	BTDH0301	Soft Skills – I	0	0	2	1	2
		TOTAL				25	34

Forth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BCHS0201	Environmental Studies	2	0	0	2	2
2.	BELH0004	English for Professional Purpose – II	2	0	0	2	4
3.	BCSC0006	Data Structures & Algorithms	3	1	0	4	4
4.	BCSC0007	Introduction to Microprocessors	3	0	0	3	3
5.	BCSC0008	Computer Networks	3	1	0	4	4
6.	BCSC0004	Operating System	3	0	0	3	3
7.	BCSC00010	Discrete Mathematics	3	1	0	4	4
8.	BCSE0503	Cloud Computing Architecture & Deployment Models	3	0	0	3	3
9.		Mandatory Non Graded - II	0	0	0	0	2
		PRACTICALS					
10.	BCSC0805	Data Structures & Algorithms Lab	0	0	2	1	2
11.	BCSC0806	Microprocessors Lab	0	0	2	1	1
12.	BCSE0532	Cloud Computing Architecture & Deployment Models Lab	0	0	2	1	1
13.	BTDH0302	Soft Skills – II	0	0	2	1	2
14.	BCSC 0803	Operating System Lab	0	0	2	1	2

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		TOTAL				30	37

Fifth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BCSC0011	Theory of Automata & Formal Language	3	1	0	4	4
2.		Design and Analysis of Algorithms	3	1	0	4	4
3.	BCSE0653	Descriptive Analytics for IoT	3	0	0	3	3
4.		Soft Skills	8	0	0	4	8
5.	BCSE0654	Ipv6 Analysis and Applications	3	0	0	3	3
6.	BCSC 0009	Software Engineering	3	0	0	3	3
7.		Open Elective	4	0	0	4	4
8.		Mandatory Non Graded - II	0	0	0	0	2
		PRACTICALS					
10.	BCSC0805	Mini Project	0	0	0	2	0
11.	BCSC0806	Industrial Training	0	0	0	2	0
12.	BCSE0683	Descriptive Analytics for IoT Lab	0	0	1	1	2
		TOTAL				30	33

Program Core

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S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSC1001	Computer Programming	3	1	0	0	4	4	
2.	BCSC0002	Object Oriented Programming	3	0	0	0	3	3	Programming
3.	BCSC0003	Database Management System	3	0	0	0	3	3	
4.	BCSC0004	Operating Systems	3	0	0	0	3	3	
5.	BCSC0005	Computer Organization	3	0	0	0	3	3	
6.	BCSC0006	Data Structures & Algorithms	3	1	0	0	4	4	Programming
7.	BCSC0007	Introduction to Microprocessors	3	0	0	0	3	3	Computer Organization
8.	BCSC0008	Computer Networks	3	1	0	0	4	4	
9.	BCSC0009	Software Engineering	3	0	0	0	3	3	
10.	BCSC00010	Discrete Mathematics	3	1	0	0	4	4	
11.	BCSC0011	Theory of Automata & Formal Language	3	1	0	0	4	4	
12.	BCSC0012	Design & Analysis of Algorithms	3	0	0	0	3	3	Data Structures
13.	BCSC0604	Introduction to Internet of Things	2	0	0	0	2	2	
14.	BCSC0605	Sensor Technology & Instrumentation	3	0	0	0	3	3	
15.	BCSC0014	Applied Database Management System	4	0	0	0	4	4	
PRACTICALS									
1.	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	
2.	BCSC0801	Object Oriented Programming Lab	0	0	2	0	1	2	Programming Lab
3.	BCSC0802	Database Management System Lab	0	0	2	0	1	2	
4.	BCSC0803	Operating Systems Lab	0	0	2	0	1	2	
5.	BCSC0804	Computer Organization Lab	0	0	2	0	1		
6.	BCSC0805	Data Structures & Algorithms Lab	0	0	2	0	1	2	Programming Lab
7.	BCSC0806	Microprocessors Lab	0	0	2	0	1	2	
8.	BCSC0807	Design & Analysis of Algorithms Lab	0	0	2	0	1	2	Programming, Data Structures
9.	BCSC0902	Sensor Technology & Instrumentation Lab	0	0	2	0	1	2	
10.	BCSC0808	Applied Database Management System	0	0	2	0	1	2	
		Total	45	5	29	0	60	68	

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Program Elective (Only for IBM Programme)

S. NO.	SEMESTER	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Internet of Things(IoT)									
THEORY									
1.	BCSE0651	Wireless Sensor Networks &IoT Standards	3	0	0	0	3	3	
2.	BCSE0652	Cloud Architecture and Deployment Models	3	0	0	0	3	3	
3.	BCSE0653	Descriptive Analytics for IoT	3	0	0	0	3	3	
4.	BCSE0654	Ipv6 Analysis and Applications	3	0	0	0	3	3	
5.	BCSE0655	Big Data Analytics	2	0	0	0	2	2	
6.	BCSE0656	IoT for Industries	2	0	0	0	2	2	
7.	BCSE0657	Designer of Smarter Cities	2	0	0	0	2	2	
PRACTICALS									
1.	BCSE0681	Wireless Sensor Networks &IoT Standards Lab	0	0	2	0	1	2	
2.	BCSE0682	Cloud Architecture and Deployment Models Lab	0	0	2	0	1	2	
3.	BCSE0683	Descriptive Analytics for IoT Lab	0	0	2	0	1	2	
4.	BCSE0684	Big Data Analytics Lab	0	0	2	0	1	2	
Total			**18**	**0**	**8**	**0**	**22**	**26**	

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Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BCSJ0950	Mini Project – I	0	0	0	0	2	0	
2.	BCSJ0951	Mini Project – II	0	0	0	0	2	0	
3.	BCSJ0971	Project – Part I	0	0	0	0	3	0	
4.	BCSJ0972	Project – Part II	0	0	0	0	8	0	
5.	BCSJ0991	Industrial Training	0	0	0	0	2	0	
		TOTAL	0	0	0	0	17	0	

Mandatory Non Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
5.	BCHM0202	Environmental Studies	2	0	0	0	2	2	
6.	BELM0001	Introduction to Bhagavad Gita	2	0	0	0	2	2	
		TOTAL	12	0	0	0	0	12	

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Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purposes – I	2	0	0	0	2	2	
4.	BELH0004	English for Professional Purposes – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAH0005	Industrial Management	3	0	0	0	3	3	
		PRACTICALS							
7.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
8.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
9.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
10.	BTDH0302	Soft Skills – II	0	0	2	0	1	2	
11.	BTDH0303	Soft Skills – III	0	0	8	0	4	8	
12.	BTDH0304	Soft Skills – IV	0	0	8	0	4	8	
		TOTAL	**13**	**0**	**24**	**0**	**25**	**37**	

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Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BMAS0101	Engineering Mathematics I	3	1	0	0	4	4	
2.	BMAS0102	Engineering Mathematics II	3	1	0	0	4	4	
3.	BMAS0103	Engineering Mathematics III	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
PRACTICALS									
7.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
8.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
TOTAL			**17**	**5**	**4**	**0**	**24**	**26**	

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Engineering Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG0001	Basic Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	
4.	BCSG0001	Python Programming	4	1	0	0	5	5	
PRACTICALS									
5.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
6.	BECG0800	Electronics Lab I	0	0	2	0	1	2	
7.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	
8.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
9.	BCSG0800	Python Programming Lab	0	0	2	0	1	2	

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COURSE STRUCTURE

B.TECH. COMPUTER SCIENCE & ENGINEERING

Specialization

in

Cloud Computing & Virtualization

Under

Choice Based Credit System (CBCS)

Session 2020-21

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PO12: Life-Long Learning: Recognize the need for and have the preparation and ability to engage in independent and life-long learning the broadest context of technological change.

First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics I	3	1	0	4	4
2.	BPHS0001	Engineering Physics	3	1	0	4	4
3.	BELH0001	English Language Skills for Communication – I	2	0	0	2	2
4.	BEEG0001	Electrical Engineering	3	1	0	4	4
5.	BCSG0001	Python Programming	4	1	0	5	5
6.	BCSC0600	Introduction to Open Source Software & Open Standards	2	0	0	2	2
		PRACTICALS					
7.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
8.	BELH0801	English Language Lab – I	0	0	2	1	2
9.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
10.	BMEG0801	Engineering Drawing Lab	0	0	2	1	2
11.	BCSG0800	Python Programming Lab	0	0	2	1	2
		TOTAL	**17**	**4**	**10**	**26**	**31**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0102	Engineering Mathematics II	3	1	0	4	4
2.	BCSC 1001	C PROGRAMMING	3	1	0	4	4
3.	BELH0002	English Language Skills for Communication – II	2	0	0	2	2
4.	BECG0001	Electronics Engineering	3	1	0	4	4
5.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
6.	BCSC0601	Web Programming through PHP	3	0	0	3	3
		PRACTICALS					
7.	BCSC 0800	C PROGRAMMING Lab	0	0	2	1	2
8.	BELH0802	English Language Lab – II	0	0	2	1	2
9.	BECG0800	Electronics Lab I	0	0	2	1	2
10.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	1	2
11.	BCSC0800	Web Programming Lab	0	0	2	1	2

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		TOTAL	17	4	10	26	31

Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSC1001	Computer Programming	3	1	0	0	4	4	
2.	BCSC0002	Object Oriented Programming	3	0	0	0	3	3	Computer Programming
3.	BCSC0003	Database Management System	3	0	0	0	3	3	
4.	BCSC0004	Operating Systems	3	0	0	0	3	3	
5.	BCSC0005	Computer Organization	3	0	0	0	3	3	
6.	BCSC0006	Data Structures & Algorithms	3	1	0	0	4	4	Computer Programming
7.	BCSC0007	Introduction to Microprocessors	3	0	0	0	3	3	Computer Organization
8.	BCSC0008	Computer Networks	3	1	0	0	4	4	
9.	BCSC0009	Software Engineering	3	0	0	0	3	3	
10.	BCSC0010	Discrete Mathematics	3	1	0	0	4	4	
11.	BCSC0011	Theory of Automata & Formal Language	3	1	0	0	4	4	
12.	BCSC0012	Design and Analysis of Algorithm	3	1	0	0	4	4	Data Structures & Algorithms
13.	BCSC0600	Introduction to Open Source Software & Open Standards	2	0	0	0	2	2	
14.	BCSC0601	Web Programming through PHP	3	0	0	0	3	3	Computer Programming
15.	BCSC0014	Applied Database Management System	4	0	0	0	4	4	
PRACTICALS									
1.	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	
2.	BCSC0801	Object Oriented Programming Lab	0	0	2	0	1	2	Programming Lab
3,	BCSC0802	Database Management System Lab	0	0	2	0	1	2	
4.	BCSC0803	Operating Systems Lab	0	0	2	0	1	2	
5.	BCSC0804	Computer Organization Lab	0	0	2	0	1	2	
6.	BCSC0805	Data Structures & Algorithms Lab	0	0	2	0	1	2	Programming Lab

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7.	BCSC0806	Microprocessors Lab	0	0	2	0	1	2	Computer Organization Lab
8.	BCSC807	Design and Analysis of Algorithms	0	0	2	0	1	2	
9.	BCSC0900	Web Programming Lab	0	0	2	0	1	2	Programming Lab
10.	BCSC0808	Applied Database Management System	0	0	2	0	1	2	
		Total	**45**	**6**	**20**	**0**	**61**	**71**	

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Program Elective (Only for Specialization Programme)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Cloud Computing & Virtualization									
THEORY									
1.	BCSE0501	Introduction to IT Infrastructure Landscape	2	0	0	0	2	2	
2.	BCSE0502	Introduction to Virtualization and Cloud Computing	3	0	0	0	3	3	
3.	BCSE0503	Cloud Computing Architecture & Deployment Models	3	0	0	0	3	3	
4.	BCSE0508	Cloud and Business Process Management	3	0	0	0	3	3	
5.	BCSE0509	Cloud Security, Backup & Disaster Recovery	3	0	0	0	3	3	
6.	BCSE0510	Container Orchestration and Infrastructure Automation	3	0	0	0	3	3	
7.	BCSE0511	Devops	3	0	0	0	3	3	
PRACTICALS									
1.	BCSE0531	Virtualization Lab	0	0	2	0	1	2	
2.	BCSE0532	Cloud Deployment Lab	0	0	2	0	1	2	
3.	BCSE0536	Cloud and Business Process Management Lab	0	0	2	0	1	2	
4.	BCSE0537	Cloud Security, Backup & Disaster Recovery Lab	0	0	2	0	1	2	
5.	BCSE0538	Container Orchestration and Infrastructure Automation Lab	0	0	2	0	1	2	
6.	BCSE0539	DevOps Lab	0	0	2	0	1	2	
Total			**20**	**0**	**12**	**0**	**26**	**32**	

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Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BCSJ0950	Mini Project – I	0	0	0	0	2	0	
2.	BCSJ0951	Mini Project – II	0	0	0	0	2	0	
3.	BCSJ0971	Project – Part I	0	0	0	0	3	0	
4.	BCSJ0972	Project – Part II	0	0	0	0	8	0	
5.	BCSJ0991	Industrial Training	0	0	0	0	2	0	
		TOTAL	**0**	**0**	**0**	**0**	**17**	**0**	

Mandatory Non Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
5.	BCHM0202	Environmental Studies	2	0	0	0	2	2	
6.	BELM0001	Introduction to Bhagavad Gita	2	0	0	0	2	2	
		TOTAL	**12**	**0**	**0**	**0**	**0**	**12**	

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Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purposes – I	2	0	0	0	2	2	
4.	BELH0004	English for Professional Purposes – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAH0005	Industrial Management	3	0	0	0	3	3	
		PRACTICALS							
7.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
8.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
9.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
10.	BTDH0302	Soft Skills – II	0	0	2	0	1	2	
11.	BTDH0303	Soft Skills – III	0	0	8	0	4	8	
12.	BTDH0304	Soft Skills – IV	0	0	8	0	4	8	
		TOTAL	**13**	**0**	**24**	**0**	**25**	**37**	

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Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BMAS0101	Engineering Mathematics I	3	1	0	0	4	4	
2.	BMAS0102	Engineering Mathematics II	3	1	0	0	4	4	
3.	BMAS0103	Engineering Mathematics III	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
PRACTICALS									
7.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
8.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
TOTAL			**17**	**5**	**4**	**0**	**24**	**26**	

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Engineering Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG0001	Basic Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	
4.	BCSG0001	Python Programming	4	1	0	0	5	5	
PRACTICALS									
5.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
6.	BECG0800	Electronics Lab I	0	0	2	0	1	2	
7.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	
8.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
9.	BCSG0800	Python Programming Lab	0	0	2	0	1	2	

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COURSE STRUCTURE

BACHLOR OF COMPUTER APPLICATIONS

Under

Choice Based Credit System (CBCS)

Session 2020-21

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COURSE STRUCTURE

Bachelor of Computer Applications (BCA)

Under

Choice Based Credit System (CBCS)

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BCAC0001	Programming Logic Using 'C'	4	0	0	4	4
2.	BCAC0002	Fundamentals of Computer and IT	4	0	0	4	4
3.	BCAC0003	Introduction of Logical Circuit and Digital Design	3	1	0	4	4
4.	BELH0005	Remedial English	3	0	0	3	4
5.	BMAS0151	Mathematics –I	3	1	0	4	4
		PRACTICALS					
6.	BCAC0800	Programming Lab	0	0	4	2	4
7.	BCAC0801	Information Technology Lab	0	0	2	1	2
8.	BCTH0101	Soft Skills -I	0	0	2	1	2
		TOTAL	**16**	**4**	**8**	**23**	**28**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BCAC0004	Data Structures using 'C'	3	1	0	4	4
2.	BCAC0005	Fundamental of Database Management System	3	0	0	3	3
3.	BCAC0006	Fundamentals of Operating Systems	3	0	0	3	3
4.	BBAC0001	Management Concepts & Practices	3	2	0	4	4
5.	BMAS0152	Mathematics –II	3	1	0	4	4
		PRACTICALS					
6.	BCAC0802	Data Structures using 'C' Lab	0	0	4	2	4
7.	BCAC0803	Database Management System Lab	0	0	4	2	4
8.	BCAC0804	Operating System Lab	0	0	2	1	2
9.	BELH0803	English in Practice	0	0	2	1	2
10.	BCTH0102	Soft Skills -II	0	0	2	1	2
		Total	**16**	**2**	**14**	**25**	**32**

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Program Core (Computer)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR /WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BCAC0001	Programming Logic Using 'C'	4	0	0	0	4	4	
2.	BCAC0002	Fundamentals of Computer and IT	4	0	0	0	4	4	
3.	BCAC0003	Introduction of Logical Circuit and Digital Design	3	1	0	0	4	4	
4.	BCAC0004	Data Structures using 'C'	3	1	0	0	4	4	
5.	BCAC0005	Fundamental of Database Management System	3	0	0	0	3	3	
6.	BCAC0006	Fundamentals of Operating Systems	3	0	0	0	3	3	
7.	BCAC0007	Object Oriented Programming	3	0	0	0	3	3	Programming using 'C'
8.	BCAC0008	Computer Organization & Architecture	3	1	0	0	4	4	Introduction of Logical Circuit and Digital Design
9.	BCAC0009	Introduction to Python	3	0	0	0	3	3	Programming using 'C'
10.	BCAC0010	System Design & Software Engineering	3	0	0	0	3	3	
11.	BCAC0011	Computer Networks & Communication	3	1	0	0	4	4	
12.	BCAC0012	Programming in Java	3	0	0	0	3	3	Object Oriented Programming using C++
13.	BCAC0013	GUI based Programming Using Visual Basic	2	0	0	0	2	2	Object Oriented Programming using C++
14.	BCAC0014	Web Technology	4	0	0	0	4	4	Object Oriented Programming using C++
		Total	**44**	**4**	**0**	**0**	**48**	**48**	

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S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
PRACTICALS									
15.	BCAC0800	Programming Lab	0	0	4	0	2	4	
16.	BCAC0801	Information Technology Lab	0	0	2	0	1	2	
17.	BCAC0802	Data Structures using 'C' Lab	0	0	4	0	2	4	
18.	BCAC0803	Database Management System Lab	0	0	4	0	2	4	
19.	BCAC0804	Operating System Lab	0	0	2	0	1	2	
20.	BCAC0805	Object Oriented Programming Lab	0	0	4	0	2	4	Programming using 'C'
21.	BCAC0806	Python Programming Lab	0	0	4	0	2	4	Programming using 'C'
22.	BCAC0807	Programming in Java Lab	0	0	4	0	2	4	Object Oriented Programming using C++
23.	BCAC0808	Visual Basic Programming Lab	0	0	4	0	2	4	Object Oriented Programming using C++
24.	BCAC0809	Web Technology Lab	0	0	4	0	2	4	Object Oriented Programming using C++
		Total	**0**	**0**	**36**	**0**	**18**	**36**	

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S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
PROJECTS									
29.	BCAJ0950	Mini Project 1	0	0	0	0	1	0	
30.	BCAJ0951	Mini Project 2	0	0	0	0	1	0	
31..	BCAJ0971	Major Project	0	0	0	0	6	0	
		Total	**0**	**0**	**0**	**0**	**8**	**0**	

Program Elective Bouquet

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet 1									
THEORY									
1.	BCAE0001	Advanced Database Management System	3	0	0	0	3	3	DBMS
2.	BCAE0002	Enterprise Resource Planning	4	0	0	0	4	4	
3.	BCAE0003	Software Project Management	4	0	0	0	4	4	System Design & Software Engineering
4.	BCAE0004	Management Information System and E commerce	4	0	0	0	4	4	Fundamentals of Computer and IT
5.	BCAE0005	Digital Marketing & Transformation	3	0	0	0	3	3	Computer Network & Web Technology
		Total	**18**	**0**	**0**	**0**	**18**	**18**	
PRACTICALS									
1.	BCAE0070	Advanced Database Management System Lab	0	0	2	0	1	2	DBMS

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2.	BCAE0071	Digital Marketing & Transformation Lab	0	0	2	0	1	2	Computer Network & Web Technology
		Total	**0**	**0**	**4**	**0**	**2**	**4**	

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet 2									
THEORY									
1.	BCAE0101	Introduction to Artificial Intelligence	4	0	0	0	4	4	Data Structure Using 'C'
2.	BCAE0102	Software Testing	4	0	0	0	4	4	Software Engineering
3.	BCAE0103	Cyber Security	4	0	0	0	4	4	Computer Network
4.	BCAE0104	Data Mining & Warehousing	4	0	0	0	4	4	DBMS
5.	BCAE0105	Discrete Structure & Graph Theory	3	1	0	0	4	4	
6.	BCAE0106	Design and Analysis of Algorithms	3	1	0	0	4	4	Data Structure Using 'C'
		Total	**22**	**2**	**0**	**0**	**24**	**24**	

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S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet 3									
THEORY									
1.	BCAE0201	Programming in Advanced Java	3	0	0	0	3	3	Object Oriented Programming using C++
2.	BCAE0202	Introduction to Distributed System	4	0	0	0	4	4	Fundamentals of Operating Systems
3.	BCAE0203	Introduction to Cloud Computing	4	0	0	0	4	4	Computer Network
4.	BCAE0204	Introduction to Big Data	3	0	0	0	3	3	
5.	BCAE0205	Introduction to Internet of Things	4	0	0	0	4	4	Computer Organization & Computer Network
6.	BCAE0206	.Net Framework using VB.Net	3	0	0	0	3	3	Object Oriented Programming using C++
		Total	**21**	**0**	**0**	**0**	**21**	**21**	
PRACTICALS									
1.	BCAE0270	Advanced Java Lab	0	0	2	0	1	2	Object Oriented Programming using C++
2.	BCAE0271	Introduction to Big Data Lab	0	0	2	0	1	2	
3.	BCAE0272	VB.Net Programming Lab	0	0	2	0	1	2	Object Oriented Programming using C++
		Total	**0**	**0**	**6**	**0**	**3**	**6**	

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Program Core of Basic Science

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet 4									
THEORY									
1.	BMAS0151	Mathematics –I	3	1	0	0	4	4	
2.	BMAS0152	Mathematics –II	3	1	0	0	4	4	
3.	BMAS0153	Optimization Methods	3	1	0	0	4	4	
		Total	**9**	**3**	**0**	**0**	**12**	**12**	

Program Core of Humanities

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet 5									
THEORY									
1.	BELH0005	Remedial English	3	0	0	0	3	3	
2.	BBAC0001	Management Concepts & Practices	4	0	0	0	4	4	
3.	BCHS0202	Environmental Studies	2	0	0	0	2	2	
4	BELH0006	Ethics & Values	2	0	0	0	2	2	
		Total	**10**	**2**	**0**	**0**	**11**	**12**	
PRACTICALS									
1.	BELH 0803	English in Practice	0	0	2	0	1	2	
2.	BELH 0804	Effective Communication and Personality Development	0	0	2	0	1	2	
3.	BELH 0805	Professional Communication & Behavioral Grooming	0	0	2	0	1	2	
4.	BCTH 0101	Soft Skills -I	0	0	2	0	1	2	

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5.	BCTH 0102	Soft Skills -II	0	0	2	0	1	2	
6.	BCTH 0103	Soft Skills -III	0	0	4	0	2	4	
7.	BCTH 0104	Soft Skills -IV	0	0	4	0	2	4	
8.	BCTH 0105	Soft Skills -V	0	0	4	0	2	4	
		Total	**0**	**0**	**22**	**0**	**11**	**22**	

Summary of Credits for BCA

S. No.	Title	Credits
1	Program Core (Computer)	66
2	Project	8
3	Program Core (Humanities)	22
4	Basic Science	12
5	Program Elective (Computer)	32
	Total	**140**

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COURSE STRUCTURE

M.TECH. COMPUTER SCIENCE & ENGINEERING

Under

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First Semester

S. No.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	Contact Hrs/wk
			L	T	P		
1	MCSC0001	Theory of Computation	4	0	0	4	4
2	MCSC0002	Software Engineering Methodologies	4	0	0	4	4
3	MCSC0003	Advanced Concepts in Data Mining	4	0	0	4	4
4	MCSC0004	Advanced Concepts in Networking	4	0	0	4	4
5	MCSC0005	Probability and Stochastic Processes	4	0	0	4	4
		PRACTICALS					
6	MCSC0800	Problem Solving Lab - I	0	0	2	1	2
7	MCSC0801	Seminar-I	0	0	2	1	2
		TOTAL	20	0	4	22	24

Second Semester

S. No.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	Contact Hrs/wk
			L	T	P		
1	MCSC0006	Mobile Ad-hoc Networks	4	0	0	4	4
2	MCSC0007	Intelligent Systems	4	0	0	4	4
3	MCSC0008	Information Retrieval	4	0	0	4	4
4	MCSC0009	Image Processing and Analysis	4	0	0	4	4
5	MCSC0010	Design of Distributed Systems	4	0	0	4	4
		PRACTICALS					
6	MCSC0802	Problem Solving Lab - II	0	0	2	1	2
7	MCSC0803	Image Processing and Analysis Lab	0	0	2	1	2
8	MCSC0804	Seminar-II	0	0	2	1	2
		TOTAL	20	0	6	23	26

Third Semester

S. No.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	Contact Hrs/wk
			L	T	P		
1		Elective-I	4	0	0	4	4
2		Elective - II	4	0	0	4	4
3	MCSJ0950	Dissertation – I	0	0	-	4	
4	MCSC0805	Colloquium	0	0	2	1	2
		TOTAL	20	0	2	13	10

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Fourth Semester

S. No.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	Contact Hrs/wk
			L	T	P		
1	MCSJ0951	Dissertation – II	0	0	-	14	-

Program Elective

S. No.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	Contact Hrs/wk
			L	T	P		
1	MCSE0001	Computer Vision	4	0	0	4	4
2	MCSE0002	Wireless Sensor Networks	4	0	0	4	4
3	MCSE0003	Software andService Oriented Architecture	4	0	0	4	4
4	MCSE0004	Pattern Recognition	4	0	0	4	4
5	MCSE0005	High Performance Computing	4	0	0	4	4
6	MCSE0006	Web Mining	4	0	0	4	4
7	MCSE0007	Machine Learning	4	0	0	4	4

Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK
			L	T	P	J		
1.	MCSJ0950	Dissertation – I	0	0	0	0	4	-
2.	MCSJ0951	Dissertation – II	0	0	0	0	14	-
TOTAL			0	0	0	0	18	0

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COURSE STRUCTURE
M.TECH (CSE)
PART TIME

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First Semester

S. No.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	Contact Hrs/wk
			L	T	P		
1	MCSC0001	Theory of Computation	4	0	0	4	4
2	MCSC0002	Software Engineering Methodologies	4	0	0	4	4
3	MCSC0005	Probability and Stochastic Processes	4	0	0	4	4
		PRACTICALS					
4	MCSC0800	Problem Solving Lab - I	0	0	2	1	2
5	MCSC0801	Seminar-I	0	0	2	1	2
		TOTAL	**12**	**0**	**4**	**14**	**16**

Second Semester

S. No.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	Contact Hrs/wk
			L	T	P		
1	MCSC0007	Intelligent Systems	4	0	0	4	4
2	MCSC0009	Image Processing and Analysis	4	0	0	4	4
3	MCSC0010	Design of Distributed Systems	4	0	0	4	4
		PRACTICALS					
4	MCSC0802	Problem Solving Lab - II	0	0	2	1	2
5	MCSC0803	Image Processing and Analysis Lab	0	0	2	1	2
		TOTAL	**12**	**0**	**4**	**14**	**16**

Third Semester

S. No.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	Contact Hrs/wk
			L	T	P		
1	MCSC0003	Advanced Concepts in Data Mining	4	0	0	4	4
2	MCSC0004	Advanced Concepts in Networking	4	0	0	4	4
3		Elective	4	0	0	4	4
		TOTAL	**12**	**0**	**0**	**12**	**12**

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Fourth Semester

S. No.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	Contact Hrs/wk
			L	T	P		
1	MCSC0006	Mobile Ad-hoc Networks	4	0	0	4	4
2	MCSC0008	Information Retrieval	4	0	0	4	4
3		Elective	4	0	0	4	4
		PRACTICALS					
4	MCSC0804	Seminar-II	0	0	2	1	2
		TOTAL	12	0	2	13	14

Fifth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK
			L	T	P	J		
1.	MCSJ0950	Dissertation – I	0	0	0	0	4	-
2.	MCSC0805	Colloquium	0	0	2	0	1	0
		TOTAL	0	0	0	0	5	0

Sixth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK
			L	T	P	J		
1.	MCSJ0951	Dissertation – II	0	0	0	0	14	-
		TOTAL	0	0	0	0	14	0

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COURSE STRUCTURE

MASTER OF COMPUTER APPLICATIONS

Under

Choice Based Credit System (CBCS)

Session 2020-21

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Institute of Engineering & Technology

Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	MCAC0003	Computer Organization	3	0	0	0	3	3	
2.	MCAC0007	Object Oriented Programming	3	0	0	0	3	3	Computer Programming
3.	MCAC0008	Data Structures	3	1	0	0	4	4	
4.	MCAC0009	Database Management System	3	0	0	0	3	3	
5.	MCAC0010	Operating Systems	3	0	0	0	3	3	
6.	MCAC0011	Computer Networks	3	1	0	0	4	4	
7.	MCAC0012	Software Engineering	3	0	0	0	3	3	
8	MCAC0013	Design and Analysis of Algorithm	3	1	0	0	4	4	
9.	MCAC0014	Web Technology	3	0	0	0	3	3	Object Oriented Programming
10.	MCAC0016	Programming in Python	3	0	0	0	3	3	
		PRACTICALS							
10.	MCAC0802	Computer Organization Lab	0	0	2	0	1	2	
11.	MCAC0805	Object Oriented Programming Lab	0	0	4	0	2	4	
12.	MCAC0806	Data Structures Lab	0	0	4	0	2	4	
13.	MCAC0807	Database Management System Lab	0	0	2	0	1	2	
14.	MCAC0809	Web Technology Lab	0	0	4	0	2	4	
15.	MCAC0810	Programming in Python Lab	0	0	4	0	2	4	
		Total	**30**	**3**	**20**	**0**	**43**	**53**	

Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		Bouquet : Computer Network & Security							
		THEORY							
1.	MCAE0001	Principles of Mobile Computing	3	0	0	0	3	3	Computer Networks
2.	MCAE0002	Ad Hoc Networks	3	0	0	0	3	3	Computer Networks
3.	MCAE0003	Cryptography & Network Security	3	0	0	0	3	3	
4.	MCAE0004	Cybersecurity and Digital Forensics	3	0	0	0	3	3	Computer Networks

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S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet :Software Engineering									
THEORY									
1.	MCAE0101	Agile Software Development	3	0	0	0	3	3	Software Engineering
2.	MCAE0102	Software Project Management	3	0	0	0	3	3	Software Engineering
3.	MCAE0103	Service Oriented Architecture	3	0	0	0	3	3	Software Engineering
4.	MCAE0104	Management Information System	3	0	0	0	3	3	Software Engineering
5.	MCAE0105	E-Commerce	3	0	0	0	3	3	

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet : Image Processing and Intelligent System									
THEORY									
1.	MCAE0201	Digital Image Processing	3	0	0	0	3	3	Mathematics, Programming
2.	MCAE0202	Introduction to Machine Learning	3	0	0	0	3	3	Mathematics
3.	MCAE0203	Soft Computing	3	0	0	0	3	3	Discrete Mathematics
4.	MCAE0204	Artificial Intelligence	3	0	0	0	3	3	Data Structures
PRACTICALS									
1.	MCAE0271	Digital Image Processing Lab	0	0	2	0	1	2	Programming
2.	MCAE0272	Machine Learning Lab	0	0	2	0	1	2	

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S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet :Advanced Data Processing									
THEORY									
1.	MCAE0301	Data Mining and Warehousing	3	0	0	0	3	3	DBMS
2.	MCAE0302	Business Intelligence	3	0	0	0	3	3	DMW
3.	MCAE0303	Information Retrieval System	3	0	0	0	3	3	Data Structure
4.	MCAE0304	Big Data and Analytics	3	0	0	0	3	3	DBMS
5.	MCAE0305	Internet of Things	3	0	0	0	3	3	Microprocessors
6.	MCAE0306	Cloud Computing	3	0	0	0	3	3	Distributed System
PRACTICALS									
1.	MCAE0370	Big Data and Analytics Lab	0	0	2	0	1	2	
2.	MCAE0371	Internet of Things Lab	0	0	2	0	1	2	
3.	MCAE0372	Cloud Computing Lab	0	0	2	0	1	2	

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet : Advance Technologies									
THEORY									
1.	MCAE0402	.Net Framework using C#	3	0	0	0	3	3	
2.	MCAE0403	Mobile Application Development	3	0	0	0	3	3	
3.	MCAE0404	Digital Marketing and Transformation	3	0	0	0	3	3	
4.	MCAE0405	Object Oriented Programming Using C++	3	0	0	0	3	3	
PRACTICALS									
1.	MCAE0471	.Net Framework Lab	0	0	4	0	2	4	
2	MCAE0472	Mobile Application Development Lab	0	0	2	0	1	2	
3.	MCAE0473	Object Oriented Programming Lab	0	0	4	0	2	4	

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Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
1.	MCAJ0950	Mini Project-I	0	0	0	2	2	-	
2.	MCAJ0951	Mini Project-II	0	0	0	2	2	-	
3.	MCAJ0971	Major Project	0	0	0	25	25	-	
		Total	**0**	**0**	**0**	**29**	**29**	-	

Program Core of Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
THEORY									
1.	BELH0003	English for Professional Purpose–I	2	0	0	0	2	4	
2.	BELH0004	English for Professional Purpose–II	2	0	0	0	2	4	
3.	MELH0007	Ethics & Values	2	0	0	0	2	2	
4.	MBAC0004	Accounting & Financial Management	2	1	0	0	3	3	
5.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
PRACTICALS									
6.	MTDH0301	Soft Skills-I	0	0	2	0	1	2	
7.	MTDH0302	Soft Skills-II	0	0	4	0	1	2	
		Total	**10**	**1**	**6**	**0**	**13**	**19**	

Note:

1. Student must obtain at least **104 credits** in two years for completion of MCA degree.

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COURSE STRUCTURE

B.TECH. ELECTRONICS & COMMUNICATION ENGINEERING

Under

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Credits Distributions

Sr. No.	Category	No. of Credits
1	Humanities and Social Sciences (HS)	25
2	Basic Sciences (BS)	24
3	Engineering Sciences (ES)	28
4	Professional Core (PC)	48
5	Professional Elective (PE)	26
6	Open Elective (OE)	16
7	Project Work (PW)	17
8	Mandatory Non Credit Courses (MNG) (4 Courses)	-
	Total	**184**

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B.Tech. Electronics & Communication Engineering
Session 2020-21

First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics- I	3	1	0	4	4
2.	BPHS0002	Engineering Physics-I	3	1	0	4	4
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
4.	BELH0001	English Language Skills for Communication – I	2	0	0	2	2
5.	BECG0001	Electronics Engineering	3	1	0	4	4
		PRACTICALS					
1.	BECG0800	Electronics Lab-I	0	0	2	1	2
2.	BECG0801	Electronics Simulation Lab	0	0	2	1	2
3.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
4.	BMEG0800	Engineering Workshop & Practice lab Practice Lab	0	0	2	1	2
5.	BMEG0801	Engineering Drawing	0	0	2	1	2
6.	BELH0801	English language Lab I	0	0	2	1	2
		TOTAL	14	4	12	24	30

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0102	Engineering Mathematics-II	3	1	0	4	4
2.	BCHS0101	Engineering Chemistry	3	1	0	4	4
3.	BCSC0001	Computer Programming	4	1	0	5	5
4.	BEEG0001	Basic Electrical Engineering	3	1	0	4	4
5.	BELH0002	English Language Skills for Communication-II	2	0	0	2	2
6.	BECG0002	Digital Electronics	3	1	0	4	4
		PRACTICALS					
1.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
2.	BECG0802	Digital Electronics Lab	0	0	2	1	2
3.	BCHS0801	Engineering Chemistry Lab	0	0	2	1	2
4.	BCSC0800	Computer Programming Lab	0	0	2	1	2
5.	BELH0802	English Language Lab – II	0	0	2	1	2
		TOTAL	21	6	10	28	33

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Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
		THEORY							
1.	BECC0001	Network Analysis and Synthesis	3	1	0	0	4	4	BECC0001
2.	BECC0002	Electromagnetic Field Theory	3	1	0	0	4	4	BECC0002
3.	BECC0003	Solid State Devices and	3	1	0	0	4	4	BECC0003
4.	BECC0004	Signals and Systems	3	1	0	0	4	4	BECC0004
5.	BECC0005/ BECC0012	Microprocessors and Applications/ Advanced Microprocessor	3/4	0	0	0	3/4	3/4	BECC0005/BECC0012
6.	BECC0006	Analog Integrated Circuits	3	0	0	0	3	3	SSDC
7.	BECC0007	Control Systems	3	1	0	0	4	4	N/A
8.	BECC0008	Communication Engineering	3	1	0	0	4	4	Signals and Systems
9.	BECC0009	Digital Communication	3	1	0	0	4	4	Communication Engineering
10.	BECC0010	Digital Signal Processing	3	1	0	0	4	4	Signals and Systems
11.	BECC0011	VLSI Design	3	0	0	0	3	3	SSDC
		PRACTICALS							
1.	BECC0800	Microprocessors Lab	0	0	2	0	1	2	N/A
2.	BECC0801	Electronics Lab-II	0	0	2	0	1	2	N/A
3.	BECC0802	Control Systems Lab	0	0	2	0	1	2	N/A
3.	BECC0803	Communication Engineering Lab	0	0	2	0	1	2	N/A
4.	BECC0804	Digital Communication Lab	0	0	2	0	1	2	N/A
5.	BECC0805	Digital Signal Processing Lab	0	0	2	0	1	2	N/A
6.	BECC0806	CAD of Electronics Lab	0	0	2	0	1	2	N/A
		Total	33/ 34	8	14	0	48/ 49	54/ 55	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: COMMUNICATION ENGINEERING									
THEORY									
1.	BECE0001	Random Variables and Stochastic Processes	3	0	0	0	3	3	Fundamentals of Probability
2.	BECE0002	Antenna & Wave Propagation	3	0	0	0	3	3	EMFT
3.	BECE0003	Data Communication and Networks	3	0	0	0	3	3	Digital Communication
4.	BECE0004	Microwave Engineering	3	0	0	0	3	3	EMFT
5.	BECE0005	Optical Communication	3	0	0	0	3	3	Digital Communication
6.	BECE0006	Wireless Communication	3	0	0	0	3	3	Digital Communication
7.	BECE0007	Information Theory & Coding	3	0	0	0	3	3	Digital Communication
8.	BECE0008	Multicarrier Communication	3	0	0	0	3	3	Digital Communication
9.	BECE0009	Spread Spectrum System	3	0	0	0	3	3	Digital Communication
10.	BECE0010	Satellite Communication	3	0	0	0	3	3	Digital Communication
11.	BECE0011	Long Term Evolution	3	0	0	0	3	3	Wireless Communication
PRACTICALS									
1.	BECE0070	Simulation Lab-II	0	0	2	0	1	1	N/A
2.	BECE0071	Microwave Lab	0	0	2	0	1	1	N/A
3.	BECE0072	Optical communication Lab	0	0	2	0	1	1	N/A
4.	BECE0073	Multicarrier Communication Lab	0	0	2	0	1	1	Digital Communication
5.	BECE0086	Multicarrier Communication Projects	0	0	0	8	2	2	Digital Communication

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet: Signal and Image Processing									
THEORY									
1.	BECE0001	Random Variable and stochastic Process	3	0	0	0	3	3	Fundamentals of Probability
2.	BECE0101	Fundamentals of Digital Image Processing	3	0	0	0	3	3	S&S
3.	BECE0102	Digital Image Processing	3	0	0	0	3	3	S&S
4.	BECE0103	Bio-Medical Image Processing	3	0	0	0	4	4	S&S
5.	BECE0104	Analog Signal Processing	3	0	0	0	3	3	SSDC, S&S
6.	BECE0105	Adaptive Signal Processing	3	0	0	0	3	3	DSP, RV&SP
7.	BECE0106	Bio-Medical Signal Processing	3	0	0	0	3	3	Digital Signal Processing
8.	BECE0107	Speech Processing	3	0	0	0	3	3	Adaptive Signal Processing
PRACTICALS									
1.	BECE0070	Simulation Lab-II		0	2	0	1	1	N/A
2.	BECE0171	Digital Image Processing Lab	0	0	2	0	1	1	S&S
3.	BECE0171	Bio-Medical Signal Processing Lab	0	0	2	0	1	1	Digital Signal Processing
4.	BECE0172	Speech Processing Lab	0	0	2	0	1	1	Adaptive Signal Processing
PROJECTS									
1.	BECE0186	Digital Image Processing Project	0	0	0	8	2	2	S&S

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: VLSI									
THEORY									
1.	BECE0001	Random Variable and stochastic Process	3	0	0	0	3	3	Fundamentals of Probability
2.	BECE0201	Fundamentals of HDL Programming	3	0	0	0	3	3	DE
3.	BECE0202	Digital System Design using HDL	3	0	0	0	3	3	DE
4.	BECE0203	Analog VLSI Design	3	0	0	0	3	3	S&S
5.	BECE0204	VLSI Testing And Testability	3	0	0	0	3	3	VLSI Design
6.	BECE0205	Integrated Circuit Technology	3	0	0	0	3	3	VLSI Design
7.	BECE0206	Fundamentals of Low-Power VLSI Circuits and Systems	3	0	0	0	3	3	VLSI Design
8.	BECE0207	Low-Power VLSI Circuits and Systems	3	0	0	0	3	3	VLSI Design
9.	BECE0208	Fundamentals of RF Integrated Circuits	3	0	0	0	3	3	SSDC. Comm Engg.
10.	BECE0209	RF Integrated Circuits	3	0	0	0	3	3	SSDC. Comm. Engg.
11.	BECE0210	Micro and Nano devices	3	0	0	0	3	3	SSDC
PRACTICALS									
1.	BECE0070	Simulation Lab-II	0	0	2	0	1	1	N/A
2.	BECE0271	Digital System Design using HDL LAB	0	0	2	0	1	1	DE
3.	BECE0272	Low-Power VLSI Circuits and Systems Lab	0	0	2	0	1	1	VLSI Design
4.	BECE0273	RF Integrated Circuits Lab	0	0	2	0	1	1	SSDC. Comm. Engg.
PROJECTS									
1.	BECE0286	Digital System Design using HDL PROJECT	0	0	0	8	2	2	DE
2.	BECE0288	RF Integrated Circuits Project	0	0	0	8	2	2	SSDC. Comm. Engg.
3.	BECE0287	Low-Power VLSI Circuits and Systems Project	0	0	0	8	2	2	VLSI Design

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet: Control and Embedded system									
THEORY									
1.	BECE0001	Random Variable and stochastic Process	3	0	0	0	3	3	Fundamentals of Probability
2.	BECE0301	Electronic Instruments and Measurements	3	0	0	0	3	3	N/A
3.	BECE0302	Microcontrollers and Embedded Systems	3	0	0	0	3	3	Microprocessors
4.	BECE0303	Embedded Systems Design	3	0	0	0	3	3	Microprocessors
5.	BECE0304	Intelligent System	3	0	0	0	3	3	Control System
6.	BECE0305	Industrial Process Control	3	0	0	0	3	3	Control System
7.	BECE0306	Digital Control System	3	0	0	0	3	3	Control System and
8.	BECE0307	Modern control system	3	0	0	0	3	3	Control System
9.	BECE0308	Industrial Automation	3	0	0	0	3	3	Digital Electronics. Control System
10	BECE0311	Adaptive Control	3	0	0	0	3	3	Control System
PRACTICALS									
1.	BECE0070	Simulation Lab-II	0	0	2	0	1	1	N/A
2.	BECE0371	Embedded Systems Lab	0	0	2	0	1	1	N/A
3.	BECE0372	Industrial Process Control Lab	0	0	2	0	1	1	Control System
4.	BECE0373	PLC Automation Lab	0	0	2	0	1	1	Digital Electronics. Control System
PROJECTS									
1.	BECE0386	Embedded Systems Project	0	0	0	8	2	2	N/A
2.	BECE0387	Industrial Process Control Project	0	0	0	8	2	2	Control System

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Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BECJ0950	Mini Project-I	0	0	0	4	1	1	N/A
2.	BECJ0951	Mini Project-II	0	0	0	4	1	1	N/A
3.	BEC0952	Mini Project-III	0	0	0	8	2	2	N/A
4.	BECJ0971	Project-I	0	0	0	12	3	3	144 Credits earned and CPI>=5.5
5.	BECJ0972	Project-II	0	0	0	32	8	8	144 Credits earned and CPI>=5.5
	BECJ0991	Industrial Training	0	0	0	8	2	2	N/A
		TOTAL	0	0	0	0	17	17	

Mandatory Non Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	N/A
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	N/A
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	N/A
4.	MBAM0002	Leadership and Organizational Behavior	2	0	0	0	0	2	N/A

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Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	N/A
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	N/A
3.	BELH0006	Ethics & Values	2	0	0	0	2	2	N/A
4.	MBAH0001	Industrial Management	3	0	0	0	3	3	N/A
		PRACTICALS							
1.	BTDH0301	Soft Skills-I	0	0	2	0	1	2	N/A
2.	BTDH0302	Soft Skills-II	0	0	2	0	1	2	N/A
3.	BTDH0303	Soft Skills-III	0	0	8	0	4	8	N/A
4.	BTDH0304	Soft Skills-IV	0	0	8	0	4	8	N/A
		TOTAL	9	0	20	0	19	29	

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Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BMAS1101	Engineering Mathematics I	3	1	0	0	4	4	N/A
2.	BMAS1102	Engineering Mathematics II	3	1	0	0	4	4	N/A
3.	BMAS1103	Engineering Mathematics III	3	1	0	0	4	4	N/A
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	N/A
5.	BPHS0002	Engineering Physics	3	1	0	0	4	4	N/A
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	N/A
PRACTICALS									
1.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	N/A
2.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	N/A
TOTAL			17	5	4	0	24	26	

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Engineering Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG0001	Basic Electrical Engineering	3	1	0	0	4	4	N/A
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	N/A
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	N/A
4.	BECG0002	Digital Electronics	3	1	0	0	4	4	N/A
5.	BCSC0001	Computer Programming	4	1	0	0	5	5	N/A
PRACTICALS									
1.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	N/A
2.	BECG0800	Electronics Lab I	0	0	2	0	1	2	N/A
3.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	N/A
4.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	N/A
5.	BCSG1800	Digital Electronics Lab	0	0	2	0	1	2	N/A
6.	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	N/A
7.	BECG0801	Electronics Simulation Lab	0	0	2	0	1	2	N/A
Total			16	5	14	0	28	35	

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COURSE STRUCTURE

M.TECH. ELECTRONICS & COMMUNICATION ENGINEERING

Under

Choice Based Credit System (CBCS)

Session 2020-21

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Credits Distributions

Sr. No.	Category	No. of Credits
4	Professional Core (PC)	36
5	Program Elective (PE)	12
7	Project Work (PW)	22
	Total	70

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	MECC0001	Adaptive Signal Processing	4	0	0	4	4
2.	MECC0002	Communication Techniques	4	0	0	4	4
3.	MECC0003	CMOS Analog IC Design	4	0	0	4	4
4.	MECC0004	Digital Hardware Design	4	0	0	4	4
5.	MECC0005	Image Processing	4	0	0	4	4
6.	MECC0800	Signal Processing Lab	0	0	2	1	1
7.	MECC0801	Communication Lab	0	0	2	1	1
		TOTAL	**20**	**0**	**4**	**22**	**22**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	MECC0006	Low Power VLSI Design	4	0	0	4	4
2.	MECC1007	Intelligent Systems and Control	4	0	0	4	4
3.	MECC0008	RF and Microwave Techniques	4	0	0	4	4
4.		Elective-I	4	0	0	4	4
5.	MECC0802	HDL Programming Lab	0	0	2	1	1
6.	MECC0803	RF and Microwave Design Lab	0	0	2	1	1
7.	MECJ0950	Minor Project	0	0	0	3	3
		TOTAL	**16**	**0**	**4**	**21**	21

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Third Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.		Elective-II	4	0	0	4	4
2.		Elective-III	4	0	0	4	4
3.	MECJ0961	Seminar	0	0	2	1	1
4.	MECJ0971	Dissertation-I	0	0	8	4	4
		Total	**8**	**0**	**10**	**13**	**13**

Fourth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	MECJ0972	Dissertation- II	0	0	28	14	
2.		**Total**	**0**	**0**	**28**	**14**	

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ELECTIVES

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	MECE0001	Embedded Systems	4	0	0	4	4
2.	MECE0002	Information Theory and Coding	4	0	0	4	4
3.	MECE0003	Application Specific Integrated Circuits	4	0	0	4	4
4.	MECE0004	Optimal Control System	4	0	0	4	4
5.	MECE0005	Digital Satellite Communication	4	0	0	4	4
6.	MECE0006	Advanced Data Network	4	0	0	4	4
7.	MECE0007	Speech Processing	4	0	0	4	4
8.	MECE0008	CMOS RF Integrated Circuits	4	0	0	4	4
9.	MECE0009	Optoelectronic Devices	4	0	0	4	4
10.	MECE0010	VLSI Testing and Testability	4	0	0	4	4
11.	MECE0011	Biomedical Signal Processing	4	0	0	4	4
12.	MECE0012	Wireless Communication and Networks	4	0	0	4	4
13.	MECE0013	CAD for VLSI Circuits	4	0	0	4	4
14.	MECE0014	Memory Design and Testing	4	0	0	4	4

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GLA UNIVERSITY
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Established vide U.P. Act 21 of 2010.

COURSE STRUCTURE

(w.e.f. Session 2020-21)

M.Tech

(Electronics & Communication Engg.)

(Part Time)

(CBCS)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

INSTITUTE OF ENGINEERING & TECHNOLOGY

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	MECC0001	Adaptive Signal Processing	4	0	0	4	4
2.	MECC0002	Communication Techniques	4	0	0	4	4
3.	MECC0004	Digital Hardware Design	4	0	0	4	4
		TOTAL	**12**	**0**	**0**	**12**	**12**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	MECC0006	Low Power VLSI Design	4	0	0	4	4
2.	MECC0008	RF and Microwave Techniques	4	0	0	4	4
3	MECC0802	HDL Programming Lab	0	0	2	1	1
4.	MECC0803	RF and Microwave Design Lab	0	0	2	1	1
		TOTAL	**8**	**0**	**4**	**10**	**10**

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Third Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	MECC0003	CMOS Analog IC Design	4	0	0	4	4
2.	MECC0005	Image Processing	4	0	0	4	4
3.	MECC0800	Signal Processing Lab	0	0	2	1	1
4	MECC0801	Communication Lab	0	0	2	1	1
5.	MECC0804	Seminar	0	0	2	1	1
		TOTAL	8	0	6	11	11

Fourth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	MECC1007	Intelligent Systems and Control	4	0	0	4	4
2.		Elective-I	4	0	0	4	4
4.	MECJ0950	Minor Project	0	0	6	3	3
		TOTAL	8	0	6	11	11

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Fifth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.		Elective-II	4	0	0	4	4
2.		Elective-III	4	0	0	4	4
3.	MECJ0951	Dissertation-I	0	0	8	4	4
		Total	**8**	**0**	**8**	**12**	**12**

Sixth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	MECJ0952	Dissertation- II	0	0	28	14	14
		Total	0	0	28	14	14

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ELECTIVES

S. NO	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	MECE0001	Embedded Systems	4	0	0	4	4
2.	MECE0002	Information Theory and Coding	4	0	0	4	4
3.	MECE0003	Application Specific Integrated Circuits	4	0	0	4	4
4.	MECE0004	Optimal Control System	4	0	0	4	4
5.	MECE0005	Satellite Communication	4	0	0	4	4
6.	MECE0006	Advanced Data Network	4	0	0	4	4
7.	MECE0007	Speech Processing	4	0	0	4	4
8.	MECE0008	CMOS RF Integrated Circuits	4	0	0	4	4
9.	MECE0009	Optoelectronic Devices	4	0	0	4	4
10.	MECE0010	VLSI Testing and Testability	4	0	0	4	4
11.	MECE0011	Biomedical Signal Processing	4	0	0	4	4
12.	MECE0012	Wireless Communication and Networks	4	0	0	4	4
13.	MECE0013	CAD for VLSI Circuits	4	0	0	4	4
14.	MECE0014	Memory Design and Testing	4	0	0	4	4

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COURSE STRUCTURE

B.TECH. CIVIL ENGINEERING

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Session 2020-21

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Semester I

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDIT	CONTACT HRS/WK
			L	T	P		
THEORY							
1	BMAS 0101	Engineering Mathematics I	3	1	0	4	4
2	BCHS 0101/ BPHS 0001	Engineering Chemistry/ Engineering Physics	3	1	0	4	4
3	BELH0001	English Language Skills for Communication - I	2	0	0	2	2
4	BMEG 0001	Basic Mechanical Engineering	3	1	0	4	4
5	BCEG 0002	Surveying and Geoinformatics	4	1	0	5	5
PRACTICALS							
1	BCHS 0801/ BPHS 0801	Engineering Chemistry/ Engineering Physics Laboratory	0	0	2	1	2
2	BELH 0801	English Language Laboratory - I	0	0	2	1	2
3	BMEG 0800	Engineering Workshop Practice Laboratory	0	0	2	1	2
4	BCEG 0802	Surveying Laboratory	0	0	2	1	2
5	BCEG 0803	Geoinformatics Laboratory	0	0	2	1	2
TOTAL			15	4	10	24	29

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Semester II

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDIT	CONTACT HRS/WK
			L	T	P		
THEORY							
1	BMAS 0102	Engineering Mathematics II	3	1	0	4	4
2	BPHS 0001/ BCHS 0101	Engineering Physics/ Engineering Chemistry	3	1	0	4	4
3	BELH 0002	English Language Skills for Communication - II	2	0	0	2	2
4	BECG 0001	Electrical Engineering	3	1	0	4	4
5	BCSG 0001	C Programming	4	1	0	5	5
6	BCEG 0001	Fundamental of Mechanics	3	1	0	4	4
PRACTICALS							
1	BPHS 0801/ BCHS 0801	Engineering Physics / Engineering Chemistry Laboratory	0	0	2	1	2
2	BELH 0802	English Language Laboratory - II	0	0	2	1	2
3	BECG 0800/ BEEG 0800	Electronics Laboratory/ Electrical Engineering Laboratory	0	0	2	1	2
4	BCSG 0800	C Programming Laboratory	0	0	2	1	2
5	BCEG 0800	Engineering Graphics Laboratory	0	0	2	1	2
TOTAL			18	5	10	28	33

Sgoyal

Professor & Head
Department of Civil Engineering
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NO.	CODE	SUBJECT	TEACHING SCHEME				CREDIT	CONTACT HRS/WK	PREREQUISITE
			L	T	P	J			
1	BCEC 0001	Mechanics of solids	3	1	0	0	4	4	
2	BCEC 0002	Structural analysis	3	1	0	0	4	4	BCEC 0001
3	BCEC 0003	Concrete Structure	3	1	0	0	4	4	BCEC 0002
4	BCEC 0004	Design of Steel Structures	3	1	0	0	4	4	BCEC 0001
5	BCEC 0005	Quantity Surveying and Estimation	3	1	0	0	4	4	
6	BCEC 0006	Building Materials and Geology	3	0	0	0	3	3	
7	BCEC 0007	Construction Management and Equipments	3	0	0	0	3	3	
8	BCEC 0101	Mechanics of fluid	2	1	0	0	3	3	
9	BCEC 0102	Open channel hydraulics	2	0	0	0	2	2	BCEC 0101
10	BCEC 0103	Water Resourse Engineering	2	1	0	0	3	3	BCEC 0101
11	BCEC 0201	Geotechnical Engineering	3	1	0	0	4	4	
12	BCEC 0301	Transportation Engineering	3	1	0	0	4	4	
13	BCEC 0401	Environmental Engineering	3	1	0	0	4	4	
		PRACTICALS							
14	BCEC 0800	Fluid Mechanics Laboratory	0	0	2	0	1	2	
15	BCEC 0802	Structural analysis Laboratory	0	0	2	0	1	2	

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16	BCEC 0803	Structural Detailing Laboratory	0	0	2	0	1	2	
17	BCEC 0804	CAD Laboratory	0	0	2	0	1	2	
18	BCEC 0806	Geotechnical Engineering Laboratory	0	0	2	0	1	2	
19	BCEC 0807	Transportation Engineering Laboratory	0	0	2	0	1	2	
20	BCEC 0808	Environmental Engineering Laboratory	0	0	2	0	1	2	
21	BCEC 0811	Channel Hydraulics Laboratory	0	0	2	0	1	2	
TOTAL			30	10	16	0	48	56	

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professional Electives

Bouquet I: Structural Engineering

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDIT	CONTACT HRS/WK	PREREQUISITE	COREQUISITE
			L	T	P	J				
THEORY										
1	BCEE 0001	Advanced Design of Steel Structure	3	1	0	0	4	4	BCEC 0004	
2	BCEE 0002	Bridge Engineering	3	1	0	0	4	4	BCEC 0003	
3	BCEE 0003	Advanced Design of Concrete Structure	3	1	0	0	4	4	BCEC 0003	
4	BCEE 0004	Matrix Analysis of Structure	3	1	0	0	4	4	BCEC 0002	
5	BCEE 0005	Plastic Analysis of Structure	3	1	0	0	4	4	BCEC 0002	
6	BCEE 0008	Construction Engineering	3	0	0	0	3	3		
7	BCEE 0007	Introduction to Earthquake Engineering	3	0	0	0	3	3		
8	BCEE 0011	Structural Dynamics	3	1	0	0	4	4		
9	BCEE 0009	Advanced Construction Engineering	3	0	0	0	3	3		BCEE 0801 & BCEJ 0001
10	BCEE 0010	Earthquake Resistant Design	3	0	0	0	3	3		BCEE 0802 & BCEJ 0002
PRACTICAL										
11	BCEE 0801	Construction Engineering Laboratory	0	0	2	0	1	2		
12	BCEE	Computational Laboratory for	0	0	2	0	1	2		

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	0802	Seismic Analysis								
13	BCEE 0803	Advanced Construction Engineering laboratory	0	0	2	0	1	2		
PROJECT										
14	BCEE 0109	Construction Engineering Project	0	0	0	8	2	0		
15	BCEE 0110	Earthquake Resistant Design Project	0	0	0	8	2	0		

Bouquet II: Geotechnical Engineering

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDIT	CONTACT HRS/WK	PREREQUISITE	COREQUISITE
			L	T	P	J				
THEORY										
1	BCEE 0101	Foundation Engineering	3	0	0	0	3	3	BCEC 0201	
2	BCEE 0102	Ground Improvement Engineering	3	0	0	0	3	3	BCEC 0201	
3	BCEE 0103	Earth and Earth retaining structure	3	1	0	0	4	4	BCEC 0201	
4	BCEE 0104	Geotechnical Exploration & Measurement Technique	3	1	0	0	4	4	BCEC 0201	
5	BCEE 0105	Advanced Foundation Design	3	1	0	0	4	4	BCEE 0101	
6	BCEE 0106	Advanced Foundation Engineering	3	0	0	0	3	3	BCEC 0201	BCEE 0803 & BCEJ 0003

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7	BCEE 0108	Geosynthetic and Reinforced Soil Structures	3	0	0	0	3	3	BCEC 0201	BCEE 0804 & BCEJ 0004
PRACTICAL										
9	BCEE 0804	Geosynthetics Testing Laboratory	0	0	2	0	1	2		
PROJECT										
10	BCEJ 0003	Foundation Engineering Project	0	0	0	8	2	0		
11	BCEJ 0004	Geosynthetic And Reinforced Soil Structures Project	0	0	0	8	2	0		

Bouquet III: Water Resource Engineering & Environmental Engineering

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDIT	CONTACT HRS/WK	PREREQUISITE	COREQUISITE
			L	T	P	J				
THEORY										
1	BCEE 0214	Engineering Hydrology	3	1	0		4	4		
2	BCEE 0202	Ground Water Management	3	1	0		4	4		
3	BCEE 0203	Hydro Power Engineering	3	1	0		4	4		
4	BCEE 0204	Hydraulic Structures	3	1	0		4	4	BCEC 0103	
5	BCEE 0211	Introductory Rural water Supply	3	0	0		3	3	BCEC 0401	
6	BCEE 0206	Introduction to Climate Change studies	3	0	0		3	3	BCEC 0401	
7	BCEE 0207	Environmental Instrumentation AndAnalysis	3	1	0		4	4	BCEC 0401	

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8	BCEE 0208	Advanced Geoinformatics	3	0	0		3	3		
9	BCEE 0209	Applied Hydrology	3	0	0	0	3	3		BCEE 0805 & BCEJ 0005
10	BCEE 0210	Advanced Climate Change and Modelling	3	0	0	0	3	3		BCEE 0806 & BCEJ 0006
11	BCEE 0212	Advanced Water Treatment Technologies	3	0	0	0	3	3		BCEE 0807 & BCEJ 0007
PRACTICAL										
10	BCEE 0805	Applied Hydrology Laboratory	0	0	2	0	1	2		
11	BCEE 0806	Experimental Analysis of Climate	0	0	2	0	1	2		
12	BCEE 0807	Advanced Water Treatment Technologies Laboratory	0	0	2	0	1	2		
PROJECT										
13	BCEJ 0005	Applied Hydrology Project	0	0	0	8	2	0		
14	BCEJ 0006	Climate Change Modelling Project	0	0	0	8	2	0		
15	BCEJ 0007	Water Treatment Project	0	0	0	8	2	0		

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Bouquet IV: Transportation Engineering & Construction Management

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDIT	CONTACT HRS/WK	PREREQUISITE	COREQUISITE
			L	T	P	J				
THEORY										
1	BCEE 0301	Railway Engineering	3	1	0		4	4		
2	BCEE 0302	Basics of Transportation System and Planning	3	0	0		3	3		
3	BCEE 0303	Airport Planning and design	2	1	0		3	3	BCEC 0301	
4	BCEE 0304	Basics of Traffic Engineering	3	0	0		3	3	BCEC 0301	
5	BCEE 0305	Construction Technology & Management	2	1	0		3	3		BCEE 0800
6	BCEE 0306	Transportation System and Planning	3	0	0	0	3	3		BCEE 0808 & BCEJ 0008
7	BCEE 0307	Advanced Traffic Engineering	3	0	0	0	3	3		BCEE 0809 & BCEJ 0009
8	BCEE 0314	Traffic Engineering	4	0	0		4	4		
PRACTICALS										
8	BCEE 0800	Computer Aided Estimation & Planning Laboratory	0	0	2	0	1	2		
9	BCEE 0808	Traffic Simulation And Analysis Laboratory	0	0	2	0	1	2		
10	BCEE	Traffic Engineering	0	0	2	0	1	2		

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	0809	Laboratory								
PROJECT										
11	BCEJ 0008	Transportation System and Planning Project	0	0	0	8	2	0		
12	BCEJ 0009	Advanced Traffic Engineering Project	0	0	0	8	2	0		

Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HRS/WK	PREREQUISITE	COREQUISITE
			L	T	P	J				
1	BCEJ 0962	Industrial Training	0	0	0	0	2	0		
2	BCEJ 0950	Mini Project	0	0	0	0	4	0		
3	BCEJ 0971	Project I	0	0	0	0	3	0		
4	BCEJ 0972	Project II	0	0	0	0	8	0		
Total			0	0	0	0	17	0		

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COURSE STRUCTURE

M.TECH. CIVIL ENGINEERING (STRUCTURAL ENGINEERING)

Under

Choice Based Credit System (CBCS)

Session 2020-21

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MCEC 1001	Advanced Mechanics of Solids	4	0	0	4	4
2	MCEC 1002	Advanced Structural Analysis	4	0	0	4	4
3	MCEC 1004	Numerical Analysis & Computer Programming	4	0	0	4	4
4	MCEC 0005	Structural Dynamics	4	0	0	4	4
5	MCEC 0009	Design of Prestress Concrete Structures	4	0	0	4	4
		PRACTICALS					
1	MCEC 0801	Cad Laboratory-I	0	0	2	1	2
		TOTAL	20	0	2	21	22

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MCEC 0006	Finite Element Method	4	0	0	4	4
2	MCEC1007	Advanced Concrete Design	4	0	0	4	4
3	MCEC 1008	Earthquake Resistant Design	4	0	0	4	4
4	MCEC 0010	Advanced Concrete Technology	4	0	0	4	4
5		Elective-I	4	0	0	4	4
		PRACTICALS					
1	MCEC1800	Concrete Technology Laboratory	0	0	2	1	2
		TOTAL	20	0	2	21	22

Third Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MCEC 0011	Introduction to Bridge design	4	0	0	4	4
2	MCEC 0012	Construction Management And Equipments	4	0	0	4	4
3	MCEJ 0971	Dissertation-I	0	0	0	6	0
		PRACTICALS					
1	MCEC 0802	Cad Laboratory-II	0	0	2	1	2

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		TOTAL	8	0	2	15	10

Fourth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MCEJ-0972	Dissertation –II	0	0	0	14	0
		TOTAL	0	0	0	14	0

Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MCEE 0003	Non-Conventional Construction Materials & Elements	4	0	0	4	4
2	MCEE 0004	High Rise Structures	4	0	0	4	4
3	MCEE 0005	Durability Assessment and Structural Strengthening of Reinforced Concrete	4	0	0	4	4
4	MCEE 0006	Experimental Stress Analysis	4	0	0	4	4
5	MCEE 0007	Soft Computing Methods for Civil Engineering	4	0	0	4	4
6	MCEE 0008	Optimization Methods in Civil Engineering	4	0	0	4	4
7	MCEE 0009	Soil Structure Interaction	4	0	0	4	4
8	MCEE 0010	Theory of Plates and Shells	4	0	0	4	4
9	MCEE 0012	Retrofitting of Structures	4	0	0	4	4
10	MCEE 0013	Advanced Design of Metal Structures	4	0	0	4	4
11	MCEE 0014	Design of Offshore and Marine Structures	4	0	0	4	4

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COURSE STRUCTURE

M.TECH. CIVIL ENGINEERING (TRANSPORTATION ENGINEERING)

Under

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACT HRS/WK
			L	T	P		
1	MTEC 0002	Pavement Analysis and Design	4	0	0	4	4
2	MTEC 0003	Highway Soil Mechanics	4	0	0	4	4
3	MTEC 0005	Transportation Economics and Evaluation	4	0	0	4	4
4	MTEC 0006	Advanced Railway Engineering	4	0	0	4	4
5	MTEC 0011	Advanced Traffic Engineering	4	0	0	4	4
6	MTEC 0012	Infrastructure Project Management	4	0	0	4	4
		TOTAL	**24**	**0**	**0**	**24**	**24**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACT HRS/WK
			L	T	P		
1	MTEC 0007	Urban Transportation Planning	4	0	0	4	4
2	MTEC 0008	Environmental Impact and Risk Assessment	4	0	0	4	4
3	MTEC 0009	Ground Improvement Techniques	4	0	0	4	4
4	MTEC 0010	Introduction to Remote Sensing and GIS	4	0	0	4	4
5	-	Elective - I	4	0	0	4	4
		PRACTICALS					
1	MTEC 0800	Modelling, Analysis and Simulation Lab	0	0	4	2	4
2	MTEC 0802	Application of Remote Sensing & GIS in Transportation Engineering	0	0	4	2	4
		TOTAL	**20**	**0**	**8**	**24**	**28**

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Third Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACT HRS/WK
			L	T	P		
1	-	Elective – II	4	0	0	4	4
2	-	Elective – III	4	0	0	4	4
3	-	Elective – IV	4	0	0	4	4
4	MTEJ 0961	Seminar	0	0	4	2	4
5	MTEJ 0971	Dissertation – I	-	-	-	4	-
		TOTAL	**12**	**0**	**4**	**18**	**16**

Fourth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACT HRS/WK
			L	T	P		
1	MTEJ 0972	Dissertation - II	-	-	-	14	-
		TOTAL	**0**	**0**	**0**	**14**	**0**

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACT HRS/WK
			L	T	P		
1	MTEE 0001	Highway Construction, Quality Control and Maintenance	4	0	0	4	4
2	MTEE 0002	Intelligent Transportation System	4	0	0	4	4
3	MTEE 0003	Airport Planning and Design	4	0	0	4	4
4	MTEE 0004	Advanced Concrete Technology	4	0	0	4	4
5	MTEE 0005	Tunnel Engineering	4	0	0	4	4
6	MTEE 0006	Bridge Engineering	4	0	0	4	4
7	MTEE 0007	Soil Structure Interaction	4	0	0	4	4
8	MTEE 0008	Road Materials and New Innovations in Pavement Engineering	4	0	0	4	4
9	MTEE 0009	Highway Construction Practice	4	0	0	4	4
10	MTEE 0010	Finite Element Method	4	0	0	4	4
11	MTEE 0800	Computer Aided Transportation Engineering Laboratory	0	0	4	2	4
12	MTEE 0801	Pavement Materials Laboratory	0	0	4	2	4

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COURSE STRUCTURE

MBA (CONSTRUCTION MANAGEMENT)

Under

Choice Based Credit System (CBCS)

Session 2020-21

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MCMC0001	Project Management	3	0	0	3	3
2	MCMC0002	Construction Economics	3	0	0	3	3
3	MCMC0003	Quantity Surveying	3	0	0	3	3
4	MCMC0004	Marketing Management	3	0	0	3	3
5	MCMC0005	Construction Methods and Techniques	3	0	0	3	3
6	MCMC0006	Research Methodology	3	0	0	3	3
7	MCMC0007	Safety and Health Management	3	0	0	3	3
8	MCMC0008	Construction Equipment Management	3	0	0	3	3
9	MELH0004	Business Communication-I	3	0	0	3	3
		PRACTICALS					
		Practice Workshop-2(MSP) After Exams 7 days				0	30
		TOTAL	**27**	**0**	**2**	**27**	**57**

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Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MCMC0021	Construction Materials Management	3	0	0	3	3
2	MCMC0022	Human Resource Management	3	0	0	3	3
3	MCMC0023	Building Science and Services	3	0	0	3	3
4	MCMC0024	Financial Management	3	0	0	3	3
5	MCMC0025	Conventional Construction Materials and Technology	3	0	0	3	3
6	MCMC0026	Tendering and Bidding	3	0	0	3	3
7		Elective-I	3	0	0	3	3
8		Elective-II	3	0	0	3	3
		PRACTICALS					
		Practice Workshop-2(Primavera) After Exams 10 Days				0	30
		TOTAL	**24**	**0**	**0**	**24**	**54**

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Third Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MCMC0031	Value Engineering and Lean Construction	3	0	0	3	3
2	MCMC0032	Contract Management	3	0	0	3	3
3	MCMC0033	Special Construction Techniques	3	0	0	3	3
4	MCMC0034	Operations Management	3	0	0	3	3
5	MCMC0035	Valuation of Properties and its Strategies	3	0	0	3	3
6	MCMC0036	Infrastructure Development and Operations	3	0	0	3	3
7		Elective-III	3	0	0	3	3
8		Elective-IV	3	0	0	3	3
9		Elective-V	3	0	0	3	3
10		Summer Training Report and Viva				2	
		PRACTICALS					
		Practice Workshop-(Advance Building Information Modeling) After Exams 10 Days				0	30
		Total	**27**	**0**	**0**	**29**	**57**

* **Summer Training** (6-8 Weeks in summer vacation)

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Fourth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1		Elective- 6	3	0	0	3	3
2		Elective- 7	3	0	0	3	3
3		Elective- 8	3	0	0	3	3
4		Elective- 9	3	0	0	3	3
5		Elective- 10	3	0	0	3	3
6		Elective- 11	3	0	0	3	3
7		Dissertation Report and Viva				10	
		Total	**18**	**0**	**0**	**28**	**18**

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Program Elective

(Construction Management, Projects, Real Estate, Infrastructure Management)

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MCME0001	Ground Improvement and Foundation Engineering	3	0	0	3	3
2	MCME0039	Port Engineering and Construction	3	0	0	3	3
3	MCME0040	Infrastructure Operations Management	3	0	0	3	3
4	MCME0041	Urban Transport Planning Design and Management	3	0	0	3	3
5	MCME0042	Construction Methods in Geo-Technical Engineering	3	0	0	3	3
6	MCME0043	Urban Water and Waste Water Management	3	0	0	3	3
7	MCME0046	Principles and Practices of Real Estate Management	3	0	0	3	3
8	MCME0047	Urban Planning and Design	3	0	0	3	3
9	MCME0050	Highway Project Development	3	0	0	3	3
10	MCME0051	Environment Management System	3	0	0	3	3
11	MCME0061	Airport Construction Management	3	0	0	3	3
12	MCME0071	Technology and Management of High-Rise Structures and Special Building	3	0	0	3	3
13	MCME0081	Repair, Retrofitting and Maintenance of Structure	3	0	0	3	3

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14	MCME0101	Green Building	3	0	0	3	3
15	MCME0111	Arbitration, Contracts and Claims Management	3	0	0	3	3

Program Elective

(General Management)

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MCME0101	Business and Project Communications	3	0	0	3	3
2	MCME0031	Management of Public Private Partnership	3	0	0	3	3
3	MCME0110	E-Business for Construction	3	0	0	3	3

Total Course is of 110 Credits

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COURSE STRUCTURE

B.TECH. MECHANICAL ENGINEERING

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Head, Dept. of Mech. Engg
GLA University, Mathura

S.No.	Department	Program Offered	Credits		Total Credits
1	ME	B.Tech. Mechanical Engineering	HSS	25	184-194
			BS	24	
			ES	28	
			PC	48	
			PE	26-36	
			OE	16	
			Proj	17	
			MNG	8 U	

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Head, Dept. of Mech. Engg
GLA University, Mathura

First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
		THEORY					
1.	BMAS0101	Engineering Mathematics – I	3	1	0	4	4
2.	BELH0001	English Language Skills for Communication I	1	2	0	2	3
3.	BPHS0001	Engineering Physics	3	1	0	4	4
4.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
5.	BEEG1001	Basic Electrical Engineering	3	1	0	4	4
		PRACTICALS					
6.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
7.	BMEG0801	Engineering Drawing	0	0	2	1	2
8.	BEEG0801	Electrical Simulation Lab	0	0	4	2	4
9.	BELH0801	English Language Lab I	0	0	2	1	2
10.	BMEG0801	Engineering	0	0	2	1	2
	BPHS0801	Engineering Physics Lab	0	0	2	1	2
		Total	15	6	14	25	33

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
		THEORY					
1.	BMAS 0102	Engineering Mathematics – II	2	0	0	4	2
2.	BELH 0002	English Language Skills for Communication – II	1	2	0	2	3
3.	BCHS 0101	Engineering Chemistry	3	1	0	4	3
4.	BCSC 0001	Computer Programming	3	2	0	5	4
5.	B 0001	Electronics Engineering	3	1	0	4	4
6.	BMEG00 02	Applied Mechanics	3	0	0	3	3
		PRACTICALS					

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7.	BME G0802	Applied Mechanics Lab	0	0	2	1	2
8.	BECG 0800	Electronics Lab – I	0	0	2	1	2
9.	BCSC 0800	Computer programming lab	0	0	2	1	4
10.	BELH 0802	English Language Lab – II	0	0	2	1	2
11.	BCHS 0801	Engineering Chemistry Lab	0	0	2	1	2
		TOTAL	15	1	10	27	34

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Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
		THEORY							
1	BMEC0001	MaterialScience	2	0	0	0	2	2	
2	BMEC0002	AppliedThermodynamics	3	1	0	0	4	4	BasicMechanical
3	BMEC0003	Measurement&Metrology	2	0	0	0	2	2	-
4	BMEC0004	Heat&MassTransfer	3	0	0	0	3	3	Applied
5	BMEC0005	FluidMechanics	3	0	0	0	3	3	Engineering
6	BMEC0006	ManufacturingScienceI	3	0	0	0	3	3	MaterialScience
7	BMEC0007	StrengthofMaterial	3	0	0	0	3	3	AppliedMechanics
8	BMEC0008	KinematicsofMachines	3	0	0	0	3	3	AppliedMechanics
9	BMEC0009	DynamicsofMachine	3	0	0	0	3	3	KinematicsofMachines
10	BMEC0010	MachineDesignI	3	0	0	0	3	3	StrengthofMaterial
11	BMEC0011	MachineDesignII	3	0	0	0	3	3	MachineDesignI
12	BMEC0012	FluidMachinery	3	0	0	0	3	3	FluidMechanics
13	BMEC0013	ManufacturingScienceII	3	0	0	0	3	3	ManufacturingScienceI
		PRACTICALS							
1	BMEC0800	MaterialScience&TestingLab	0	0	2	0	1	2	
2	BMEC0801	Measurement&Metrology Lab	0	0	2	0	1	2	
3	BMEC0802	Heat&MassTransferLab	0	0	2	0	1	2	
4	BMEC0804	ManufacturingScienceILab	0	0	2	0	1	2	
5	BMEC0803	FluidMechanicsLab	0	0	2	0	1	2	
6	BMEC0805	TheoryofMachineLab	0	0	2	0	1	2	
7	BMEC0806	MachineDesignILab	0	0	2	0	1	2	
8	BMEC0807	MachineDesignII Lab	0	0	2	0	1	2	
9	BMEC0808	FluidMachineryLab	0	0	2	0	1	2	
10	BMEC0809	ManufacturingScienceIILab	0	0	2	0	1	2	
		Total					48	58	

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ProgramElective

S. NO.	CODE	SUBJECT	TEACHING SCHEME L	T	P	J	CREDITS	CONTACTS	PRE- REQUISITES
Bouquet: Thermal Engineering									
THEORY									
1	BMEE0001	Refrigeration & Air-Conditioning	3	0	0	0	3	3	AppliedThermodynamics
2	BMEE0002	InternalCombustionEngine	3	0	0	0	3	3	AppliedThermodynamics
3	BMEE0003	AutomobileEngineering	3	0	0	0	3	3	Internal CombustionEngine
4	BMEE0004	PowerPlantEngineering	3	0	0	0	3	3	AppliedThermodynamics
5	BMEE0005	GasDynamics	3	1	0	0	4	4	AppliedThermodynamics
6	BMEE0006	GasTurbineandJetPropulsion	3	1	0	0	4	4	AppliedThermodynamics
7	BMEE0007	AdvancedHeatTransfer	3	0	0	0	3	3	HeatTransfer
8	BMEE0008	SolarEnergy	3	0	0	0	3	3	AppliedThermodynamics
9	BMEE0009	IntroductiontoVehicleDynamics	3	0	0	0	3	4	Automobileengineering
PRACTICALS									
1	BMEE0170	Refrigeration & Air-ConditioningLab	0	0	2	0	1	2	
2	BMEE0171	AutomobileEngineeringLab	0	0	2	0	1	2	
3	BMEE0172	SolarEnergyLab	0	0	2	0	1	2	
4	BMEE0173	VehicleDynamicsLab	0	0	2	0	1	2	
PROJECTS									
1	BMEE0186	ProjectbasedSolarEnergyLab	0	0	0	8	2	8	
Bouquet: Fluids Engineering									
THEORY									

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1	BMEE0101	AdvancedFluidMechanics	3	1	0	0	4	4	FluidMechanics
2	BMEE0102	CompressibleFluidFlow	3	1	0	0	4	4	Advanced FluidMechanic s
3	BMEE0103	Aerodynamics	3	0	0	0	3	3	Advanced FluidMechanic s
4	BMEE0104	TurbulentFlow	3	1	0		4	4	Advanced FluidMechanic s
5	BMEE0105	ComputationalFluidDynamics	3	0	0	0	3	3	Numerical Methods&Turbule ntFlow
		PRACTICALS							
1	BMEE 0189	Project Based CFD Lab	0	0	0	8	2	8	
2	BMEE0175	CFDLab	0	0	2	0	1	2	
		Bouquet: Design Engineering							
		THEORY							
1	BMEE0184	MachineDrawingLab	0	0	2	0	1	2	
2	BMEE0201	ComputerAidedDesign	3	0	0	0	3	3	MachineDesignII
3	BMEE0176	AdvancedSoftwareLab	0	0	2	0	1	2	
4	BMEE0202	ContunuumMechanics	3	1	0	0	4	4	StrengthofMaterial
5	BMEE0203	FiniteElementMethods	3	1	0	0	4	4	ContinuumMechanics
6	BMEE0204	VibrationandNoise	3	1	0	0	4	4	DynamicsofMachine
7	BMEE0205	MachineToolDesign	3	0	0	0	3	3	MachineDesignII&Man ufacturingSc.
		PRACTICALS							
1	BMEE0184	MachineDrawingLab	0	0	2	0	1	2	
2	BMEE0176	AdvancedSoftwareLab	0	0	2	0	1	2	
		Bouquet: Manufacturing Engineering							
		THEORY							
1	BMEE0301	Computer	3	0	0	0	3	3	ManufacturingSciencel

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		AidedManufacturing							I
2	BMEE0302	WeldingScience&Technology	3	0	0	0	3	3	ManufacturingSciencel
3	BMEE0303	CompositeMaterials	3	0	0	0	3	3	MaterialScience
4	BMEE0304	Modern ManufacturingProcess	3	0	0	0	3	3	ManufacturingSciencel I
5	BMEE0305	MetalForming Analysis	3	0	0	0	3	3	ManufacturingSciencel
PRACTICALS									
1	BMEE0178	CAD/CAMLab	0	0	2	0	1	2	
2	BMEE0185	WeldingScience&TechnologyLab	0	0	2	0	1	2	
3	BMEE0179	Modern ManufacturingProcessLab	0	0	2	0	1	2	
PROJECTS									
2	BMEE0193	Project based ModernManufacturingProcess Lab	0	0	0	8	2	8	
3	BMEE0192	ProjectbasedCAD/CAMLab	0	0	0	8	2	8	
Bouquet: Industrial Engineering									
THEORY									
1	BMEE0401	IndustrialEngineering	3	0	0	0	3	3	
2	BMEE0402	Product Development &Design	3	0	0	0	3	3	MachineDesignII
3	BMEE0403	OperationsResearch	3	0	0	0	3	3	IndustrialE ngineering
4	BMEE0404	ValueEngineering	3	0	0	0	3	3	IndustrialE ngineering
5	BMEE0405	SupplyChainManagement	3	0	0	0	3	3	IndustrialE ngineering
6	BMEE0406	AppliedErgonomics	3	0	0	0	3	3	ProductDevelop ment& Design
Robotics & Automation									
THEORY									
1	BMEE0501	Robotics&FMS	3	0	0	0	3	3	IndustrialEngi neering
2	BMEE0502	IndustrialAutomation &ControlSystem	3	0	0	0	3	3	IndustrialEnginee ring

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3	BMEE0503	EngineeringSystemModeling&Simulation	3	0	0	0	3	3	IndustrialEngineering
PRACTICALS									
1	BMEE0182	Robotics&FMSLab	0	0	2	0	1	2	
PROJECTS									
1	BMEE0196	ProjectbasedRobotics&FMSLab	0	0	0	8	2	4	-

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Open Elective (Offer to other Departments)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BMEO0002	EnergyConservation&Management	3	1	0	0	4	4	
2.	BMEO0003	SmartMaterials	3	1	0	0	4	4	
3.	BMEO0004	ProjectManagement	3	1	0	0	4	4	
4.	BMEO0005	ReliabilityandMaintenanceEngineering	3	1	0	0	4	4	
5.	BMEO0006	Mechatronics	3	1	0	0	4	4	
6.	BMEO0007	SixSigma&Applications	3	1	0	0	4	4	

Projects (J)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BME J0950	Mini Project I	0	0	0	4	2	4	
2.	BME J0951	Mini Project II	0	0	0	12	2	4	Mini Project I
3.	BME J0961	Industrial Training I	0	0	2	0	1	2	
4.	BME J0962	Industrial Training II	0	0	2	0	1	2	
5.	BME J0971	Minor Project	0	0	0	12	3	6	
6.	BME J0972	Major Project	0	0	0	32	8	16	Minor Project
		TOTAL	0	0	4	60	17		

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Mandatory Non Graded Course (M)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
		TOTAL	**8**	**0**	**0**	**0**	**0**	**8**	

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Humanities and Social Sciences (H)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
		THEORY							
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purpose – I	2	0	0	0	2	2	
4.	BELH 0004	English for Professional Purpose – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAC0005	Industrial Management	3	0	0	0	3	3	
		PRACTICALS							
7.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
8.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
9.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
10.	BTDH 0302	Soft Skills – II	0	0	2	0	1	2	
11.	BTDH0303	Soft Skills – III	0	0	8	0	4	4	
12.	BTDH0304	Soft Skills – IV	0	0	8	0	4	4	
		TOTAL	**13**	**0**	**24**	**0**	**25**	**37**	

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GLA UNIVERSITY MATHURA

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COURSE STRUCTURE

B.TECH. MECHANICAL ENGINEERING

Specialization

in

Automobile

Under

Choice Based Credit System (CBCS)

Session 2020-21

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S.No.	Department	Program Offered	Credits		Total Credits
1	ME	B.Tech. Mechanical Engineering (Specialization in Automobile Engineering)	HSS	25	184
			BS	24	
			ES	28	
			PC	48	
			PE	26	
			OE	16	
			Proj	17	
			MNG	8 U	

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First Year

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACT HR/WK
			L	T	P		
1	BMEG0001	Basic of Mechanical Engineering	3	1	0	0	4
2	BMEG0002	Applied Mechanics	3	1	0	0	4
PRACTICALS							
3	BMEG0802	Applied Mechanics Lab	0	0	2	0	1
4	BMEG0800	Engineering Workshop Lab	0	0	2	0	1
5	BMEG0801	Engineering Drawing	0	0	2	0	1
6	BMEG0803	CAD Lab	0	0	2	0	1

Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1	BME C0002	Applied Thermodynamics	3	1	0	0	4	4	Basic Mechanical
2	BME C0005	Fluid Mechanics	3	0	0	0	3	3	Engineering
3	BME C0007	Strength of Material	3	0	0	0	3	3	Applied Mechanics
4	BMEC 0008	Kinematics of Machines	3	0	0	0	3	3	Applied Mechanics
5	BMEC 0009	Dynamics of Machine	3	0	0	0	3	3	Kinematics of Machines
6	BME C0010	Machine Design I	3	0	0	0	3	3	Strength of Material
7	BME C0014	Modern Vehicle Technology	3	0	0	0	3	3	
8	BMEC 0016	Fuels and Lubricants	3	0	0	0	3	3	

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9	BMEC 0017	Automotive Petrol and Diesel Engines	3	0	0	0	3	3	Thermodynamics
10	BMEC 0018	Automotive Electrical and Electronics System	3	0	0	0	3	3	Kinematics of Machines, Elements of Electronic Engineering
11	BMEC 0019	Vehicle Body and Dynamics	3	0	0	0	3	3	
12	BMEC 0020	Automotive Chassis and Transmission System	3	0	0	0	3	3	
13	BMEC 0021	Automotive Engg.	3	0	0	0	3	3	Kinematics of Machines, Dynamics of Machines
14	BMEC 0022	Two and Three Wheeler	3	0	0	0	3	3	Automobile System
PRACTICALS									
15	BME C0803	Fluid Mechanics Lab	0	0	2	0	1	2	BME C0005
16	BMEC 0805	Theory of Machine Lab	0	0	2	0	1	2	BMEC 0009
17	BME C0806	Machine Design I Lab	0	0	2	0	1	2	BME C0010
18	BMEC 0810	Automotive Electrical and Electronics System Lab	0	0	2	0	1	2	BMEC 0018
19	BMEC 0811	Automotive Engg. Lab	0	0	2	0	1	2	BMEC 0021
Total			**42**	**1**	**10**	**0**	**48**	**53**	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet:Thermal Automotive									
THEORY									
1.		Vehicle Performance & Testing	3	0	0	0	3	3	
2.		New Generation and Hybrid Vehicles	3	0	0	0	3	3	
3.		Trouble Shooting, Servicing And Maintenance Of Automobiles	3	0	0	0	3	3	
4.		Automobile Air Conditioning	3	0	0	0	3	3	Thermodynamics
5.	BMEE0006	Gas Turbine and Jet Propulsion	3	1	0	0	4	4	Applied Thermodynamics
6.	BMEE 0008	Solar Energy	3	0	0	0	3	3	Applied Thermodynamics
PRACTICALS									
7.	BMEE 0172	Solar Energy Lab	0	0	2	0	1	2	BMEE 0008
8.	BMEE 0186	Project based Solar Energy Lab	0	0	0	8	2	8	BMEE 0008

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME L	T	P	J	CREDITS	CONTACTS HR/WK	PRE- REQUISITES
		Bouquet: Fluids Automotive							
		THEORY							
9.		Alternative Fuels And Pollution control	3	0	0	0	3	3	Chemistry
10.	BMEE0101	Advanced Fluid Mechanics	3	1	0	0	4	4	Fluid Mechanics
11.		Automotive Aerodynamics	3	0	0	0	3	3	
12.	BMEE0105	Computational Fluid Dynamics	3	0	0	0	4	4	Numerical Methods & Turbulent Flow
		PRACTICALS							
13.	BMEE0175	CFD Lab	0	0	2	0	1	2	BMEE0105

Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME L	T	P	J	CREDITS	CONTACTS HR/WK	PRE- REQUISITES
		Bouquet:Design & Safety of Automotive							
		THEORY							
14.	BMEE0203	Finite Element Methods	3	1	0	0	4	4	Continuum Mechanics
15.	BMEE0204	Vibration and Noise	3	1	0	0	4	4	Dynamics of Machine
16.		Off-road Vehicles	3	0	0	0	3	3	Machine Design
17.		Design of Transmission Systems	3	0	0	0	3	3	
18.		Automotive Safety	3	0	0	0	3	3	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet: MANUFACTURING (MFG)									
THEORY									
1.	BMEG0900	Product Design & Development	5	0	0	0	5	5	
2.	BMEG0901	Product Design & Manufacturing	5	0	0	0	5	5	
3.	BMEE0900	Product Design & Development	4	0	0	0	4	4	
4.	BMEE0901	Product Design & Manufacturing	4	0	0	0	4	4	
5.	BMEE0902	Injection Mold Design - 1	4	0	0	0	4	4	
6.	BMEE0903	Injection Mold Design - 2	4	0	0	0	4	4	
7.	BMEE0904	Press Tool Design	4	0	0	0	4	4	
8.	BMEE0905	Press Tool Manufacturing	4	0	0	0	4	4	
9.	BMEE0906	Smart Manufacturing	4	0	0	0	4	4	

Projects (J)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
1.	BEEJ0950	Mini Projects - I	0	0	0	4	1	4	
2.	BEEJ0951	Mini Project - II	0	0	0	12	3	12	
3.	BEEJ0953	Minor Project	0	0	0	12	3	12	
4.	BEEJ0955	Major Project	0	0	0	32	8	0	
5.	BEEJ0991	Industrial Training	0	0	4	0	2	0	
		TOTAL	**0**	**0**	**0**	**60**	**17**		

Mandatory Non Graded Course (M)

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B. Tech. Mechanical Engineering (Specialization in Automobile Engineering)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
		TOTAL	8	0	0	0	0	8	

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Humanities and Social Sciences (H)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
THEORY									
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purpose – I	2	0	0	0	2	2	
4.	BELH 0004	English for Professional Purpose – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAC0005	Industrial Management	3	0	0	0	3	3	
PRACTICALS									
7.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
8.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
9.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
10.	BTDH 0302	Soft Skills – II	0	0	2	0	1	2	
11.	BTDH0303	Soft Skills – III	0	0	8	0	4	4	
12.	BTDH0304	Soft Skills – IV	0	0	8	0	4	4	
TOTAL			**13**	**0**	**24**	**0**	**25**	**37**	

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Basic Sciences (S)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
			THEORY						
1.	BMAS0101	Engineering Mathematics I	3	1	0	0	4	4	
2.	BMAS0102	Engineering Mathematics II	3	1	0	0	4	4	
3.	BMAS0103	Engineering Mathematics III	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
			PRACTICALS						
7.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
8.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
		TOTAL	17	5	4	0	24	26	

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Engineering Sciences (G)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG1001	Basic Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BMEG0001	Basic of Mechanical Engineering	3	1	0	0	4	4	
4.	BEEG0002	Electrical Technology	3	0	0	0	3	3	
5.	BCSC0001	Computer Programming	4	1	0	0	5	5	
PRACTICALS									
6.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
	BEEG0801	Electrical Simulation Lab	0	0	4	0	2	4	
7.	BEEG0802	Electrical technology Lab	0	0	2	0	1	2	
8.	BECG0800	Electronics Lab I	0	0	2	0	1	2	
9.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	
10.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
11.	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	
		TOTAL	16	4	14	0	28	16	

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Open Elective (Offer to other Departments)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEO0090	Electrical Machine & Automatic Control	3	0	0	0	3	3	
2.	BEEO0092	Non-Conventional Energy Resources	4	0	0	0	4	4	
PRACTICALS									
3.	BEEO0900	Electrical Machines & Automatic Control Lab	0	0	2	0	1	2	BEEO0090

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COURSE STRUCTURE

B.TECH. MECHANICAL ENGINEERING

Specialization

in

Smart Manufacturing

Under

Choice Based Credit System (CBCS)

Session 2020-21

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S.No.	Department	Program Offered	Subject Area	Credits	Total Credits
1	ME	B.Tech. Mechanical Engineering with specialization in Smart Manufacturing	Humanities & Social Sciences, Soft Skill and EPP	25	186
			Basic Sciences	24	
			Engineering Sciences	30	
			Program Core	48	
			Program Electives	26	
			Open Electives	16	
			Project Work / Seminars	17	
			Non-Graded Mandatory Courses	0	

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics I	3	1	0	4	4
2.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
3.	BELH0001	English Language Skills for Communication – I	2	0	0	2	2
4.	BECG0001	Electronics Engineering	3	1	0	4	4
5.	BMEG0900	Product Design & Development	5	0	0	5	5
PRACTICALS							
6.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	1	2
7.	BELH0801	English Language Lab – I	0	0	2	1	2
8.	BECG0800	Electronics Lab I	0	0	2	1	2
9.	BMEG0801	Engineering Drawing Lab	0	0	2	1	2
		TOTAL	**17**	**4**	**10**	**23**	**31**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0102	Engineering Mathematics II	3	1	0	4	4
2.	BEEG0001	Electrical Engineering	3	1	0	4	4
3.	BELH0002	English Language Skills for Communication – II	2	0	0	2	2
4.	BMEG0901	Product Design Manufacturing	4	0	0	5	5
5.	BPHS0001	Engineering Physics	3	1	2	5	6
6.	BCSC0001	C Programming	3	0	0	3	
7.	BMEG0002	Applied Mechanics	3	0	0	3	3
PRACTICALS							
7.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
8.	BELH0802	English Language Lab – II	0	0	2	1	2
9.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
10.	BCSC0800	C Programming/Python Lab	0	0	2	1	2
11	BMEG0802	Mechanics Lab	0	0	2	1	2
		TOTAL	**17**	**4**	**10**	**31**	**31**

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ProgramCore

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
		THEORY							
1	BMEC0001	MaterialScience	2	0	0	0	2	2	
2	BMEC0800	MaterialScience&TestingLab	0	0	2	0	1	2	
3	BMEC0002	AppliedThermodynamics	3	1	0	0	4	4	BasicMechanical
4	BMEC0003	Measurement&Metrology	2	0	0	0	2	2	-
5	BMEC0801	Measurement&Metrology Lab	0	0	2	0	1	2	
6	BMEC0004	Heat&MassTransfer	3	0	0	0	3	3	Applied
7	BMEC0802	Heat&MassTransferLab	0	0	2	0	1	2	
8	BMEC0005	FluidMechanics	3	0	0	0	3	3	Engineering
9	BMEC0803	FluidMechanicsLab	0	0	2	0	1	2	
10	BMEC0006	ManufacturingScienceI	3	0	0	0	3	3	MaterialScience
11	BMEC0804	ManufacturingScienceILab	0	0	2	0	1	2	
12	BMEC0007	StrengthofMaterial	3	0	0	0	3	3	AppliedMechanics
13	BMEC0008	KinematicsofMachines	3	0	0	0	3	3	AppliedMechanics
14	BMEC0009	DynamicsofMachine	3	0	0	0	3	3	KinematicsofMachines
15	BMEC0805	TheoryofMachineLab	0	0	2	0	1	2	
16	BMEC0010	MachineDesignI	3	0	0	0	3	3	StrengthofMaterial
17	BMEC0806	MachineDesignILab	0	0	2	0	1	2	
18	BMEC0011	MachineDesignII	3	0	0	0	3	3	MachineDesignI
19	BMEC0807	MachineDesignII Lab	0	0	2	0	1	2	
20	BMEC0012	FluidMachinery	3	0	0	0	3	3	FluidMechanics
21	BMEC0808	FluidMachineryLab	0	0	2	0	1	2	
22	BMEC0013	ManufacturingScienceII	3	0	0	0	3	3	ManufacturingScienceI
23	BMEC0809	ManufacturingScienceIILab	0	0	2	0	1	2	
24	BMEC0014	ModernVehicleTechnology	3	1	0	0	4	4	
25	BMEC0015	AdvanceMaterialScience	3	0	0	0	3	3	

Program Elective

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S. NO.	CODE	SUBJECT	TEACHINGSCHEME				CREDITS	CONTACT SHR/W	PRE-REQUISITES
			L	T	P	J			
		THEORY							
1	BMEE0001	Refrigeration & Air-Conditioning	3	0	0	0	3	3	AppliedThermodynamics
2	BMEE0170	Refrigeration & Air-ConditioningLab	0	0	2	0	1	2	
3	BMEE0002	InternalCombustionEngine	3	0	0	0	3	3	AppliedThermodynamics
4	BMEE0003	AutomobileEngineering	3	0	0	0	3	3	Internal CombustionEngine
5	BMEE0171	AutomobileEngineeringLab	0	0	2	0	1	2	
6	BMEE0004	PowerPlantEngineering	3	0	0	0	3	3	AppliedThermodynamics
7	BMEE0005	GasDynamics	3	1	0	0	4	4	AppliedThermodynamics
8	BMEE0006	GasTurbineandJetPropulsion	3	1	0	0	4	4	AppliedThermodynamics
9	BMEE0007	AdvancedHeatTransfer	3	0	0	0	3	3	HeatTransfer
10	BMEE0008	SolarEnergy	3	0	0	0	3	3	AppliedThermodynamics
11	BMEE0172	SolarEnergyLab	0	0	2	0	1	2	
12	BMEE0186	ProjectbasedSolarEnergyLab	0	0	0	8	2	8	
13	BMEE0009	IntroductiontoVehicleDynamics	3	0	0	0	3	4	Automobileengineering
14	BMEE0173	VehicleDynamicsLab	0	0	2	0	1	2	
15	BMEE0101	AdvancedFluidMechanics	3	1	0	0	4	4	FluidMechanics
16	BMEE0102	CompressibleFluidFlow	3	1	0	0	4	4	Advanced FluidMechanics
17	BMEE0103	Aerodynamics	3	0	0	0	3	3	Advanced FluidMechanics
18	BMEE0104	TurbulentFlow	3	1	0		4	4	Advanced FluidMechanics
19	BMEE0105	ComputationalFluidDynamics	3	0	0	0	3	3	Numerical Methods&TurbulentFlow
20	BMEE0175	CFDLab	0	0	2	0	1	2	
21	BMEE0184	MachineDrawingLab	0	0	2	0	1	2	

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22	BMEE0201	ComputerAidedDesign	3	0	0	0	3	3	MachineDesignII
23	BMEE0176	AdvancedSoftwareLab	0	0	2	0	1	2	
24	BMEE0202	ContunuumMechanics	3	1	0	0	4	4	StrengthofMaterial
25	BMEE0203	FiniteElementMethods	3	1	0	0	4	4	ContinuumMechanics
26	BMEE0204	VibrationandNoise	3	1	0	0	4	4	DynamicsofMachine
27	BMEE0205	MachineToolDesign	3	0	0	0	3	3	MachineDesignII& ManufacturingSc.
28	BMEE0301	Computer AidedManufacturing	3	0	0	0	3	3	ManufacturingScienceII
29	BMEE0178	CAD/CAMLab	0	0	2	0	1	2	
30	BMEE0192	ProjectbasedCAD/CAMLab	0	0	0	8	2	8	
31	BMEE0302	WeldingScience&Technology	3	0	0	0	3	3	ManufacturingScienceI
32	BMEE0185	WeldingScience&Technology Lab	0	0	2	0	1	2	
33	BMEE0303	CompositeMaterials	3	0	0	0	3	3	MaterialScience
34	BMEE0304	Modern ManufacturingProcess	3	0	0	0	3	3	ManufacturingScienceII
35	BMEE0179	Modern ManufacturingProcess Lab	0	0	2	0	1	2	
36	BMEE0193	Project based ModernManufacturingProcessLab	0	0	0	8	2	8	
37	BMEE0305	MetalForming Analysis	3	0	0	0	3	3	ManufacturingScienceI
38	BMEE0401	IndustrialEngineering	3	0	0	0	3	3	
39	BMEE0402	Product Development &Design	3	0	0	0	3	3	MachineDesignII
40	BMEE0403	OperationsResearch	3	0	0	0	3	3	IndustrialEngineering
41	BMEE0404	ValueEngineering	3	0	0	0	3	3	IndustrialEngineering
42	BMEE0405	SupplyChainManagement	3	0	0	0	3	3	IndustrialEngineering
43	BMEE0406	AppliedErgonomics	3	0	0	0	3	3	ProductDevelopment& Design
44	BMEE0501	Robotics&FMS	3	0	0	0	3	3	IndustrialEngineering

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45	BMEE0182	Robotics&FMSLab	0	0	2	0	1	2	
46	BMEE0196	ProjectbasedRobotics&FMS Lab	0	0	0	8	2	4	
47	BMEE0502	IndustrialAutomation &ControlSystem	3	0	0	0	3	3	IndustrialE ngineering
48	BMEE0503	EngineeringSystemMo deling&Simulation	3	0	0	0	3	3	IndustrialE ngineering
49	BMEO0001	TotalQualityManagem ent	3	1	0	0	4	4	-
50	BMEO0002	EnergyConservation& Management	3	1	0	0	4	4	-
51	BMEO0003	SmartMaterials	3	1	0	0	4	4	-
52	BMEO0004	ProjectManagement	3	1	0	0	4	4	-
53	BMEO0005	ReliabilityandMainten anceEngineering	3	1	0	0	4	4	-
54	BMEO0006	Mechatronics	3	1	0	0	4	4	
55	BMEO0007	SixSigma&Application s	3	1	0	0	4	4	
56	BMEE0900	Product Design & Development	4	0	0	0	4	4	
57	BMEE0901	Product Design & Manufacturing	4	0	0	0	4	4	
58	BMEE0902	Injection Mold Design - 1	4	0	0	0	4	4	
59	BMEE0903	Injection Mold Design - 2	4	0	0	0	4	4	
60	BMEE0904	Press Tool Design	4	0	0	0	4	4	
61	BMEE0905	Press Tool Manufacturing	4	0	0	0	4	4	
62	BMEE0906	Smart Manufacturing	4	0	0	0	4	4	

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Credit Structure

S.No.	Department	Program Offered	Credits		Total Credits
1	ME	B.Tech. ME (Specialization in Mechatronics Engineering)	HSS	25	184-194
			BS	24	
			ES	28	
			PC	48	
			PE	26-36	
			OE	16	
			Project	17	
			MNG	8 U	

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics –	3	1	0	4	4
2.	BELH0001	English Language Skills forCommunication I	1	2	0	2	3
3.	BPHS0001	Engineering Physics	3	1	0	4	4
4.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
5.	BEEG1001	Basic Electrical Engineering	3	1	0	4	4
		PRACTICALS					
6.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
7.	BMEG0801	Engineering Drawing	0	0	2	1	2
8.	BEEG0801	Electrical Simulation Lab	0	0	4	2	4
9.	BELH0801	English Language Lab I	0	0	2	1	2
10.	BMEG0801 /BMEG080	Engineering Drawing/Workshop	0	0	2	1	2
11.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
		Total	15	6	14	25	33

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS 0102	Engineering Mathematics – II	2	0	0	4	2
2.	BELH 0002	English Language Skills for Communication – II	1	2	0	2	3
3.	BCHS 0101	Engineering Chemistry	3	1	0	4	3
4.	BCSC 0001	Computer Programming	3	2	0	5	4
5.	B 0001	Electronics Engineering	3	1	0	4	4
6.	BMEG00 02	Applied Mechanics	3	0	0	3	3
		PRACTICALS					
7.	BME G0802	Applied Mechanics Lab	0	0	2	1	2

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8.	BECG 0800	Electronics Lab – I	0	0	2	1	2
9.	BCSC 0800	Computer programming lab	0	0	2	1	4
10.	BELH 0802	English Language Lab – II	0	0	2	1	2
11.	BCHS 0801	Engineering Chemistry Lab	0	0	2	1	2
		TOTAL	15	1	10	27	34

Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
		THEORY							
1.	BMEC0001	MaterialScience	2	0	0	0	2	2	
2.	BMEC0002	AppliedThermodynamics	3	1	0	0	4	4	BasicMechanical
3.	BMEC0003	Measurement&Metrology	2	0	0	0	2	2	-
4.	BMEC0004	Heat&MassTransfer	3	0	0	0	3	3	Applied
5.	BMEC0005	FluidMechanics	3	0	0	0	3	3	Engineering
6.	BMEC0006	ManufacturingScienceI	3	0	0	0	3	3	MaterialScience
7.	BMEC0007	StrengthofMaterial	3	0	0	0	3	3	AppliedMechanics
8.	BMEC0008	KinematicsofMachines	3	0	0	0	3	3	AppliedMechanics
9.	BMEC0009	DynamicsofMachine	3	0	0	0	3	3	KinematicsofMachines
10.	BMEC0010	MachineDesignI	3	0	0	0	3	3	Strengthof Material
11.	BMEC0011	MachineDesignII	3	0	0	0	3	3	MachineDesignI
12.	BMEC0012	FluidMachinery	3	0	0	0	3	3	FluidMechanics
13.	BMEC0013	ManufacturingScienceII	3	0	0	0	3	3	ManufacturingScienceI

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PRACTICALS									
14.	BMEC0800	MaterialScience&TestingLab	0	0	2	0	1	2	
15.	BMEC0801	Measurement&Metrology Lab	0	0	2	0	1	2	
16.	BMEC0802	Heat&MassTransferLab	0	0	2	0	1	2	
17.	BMEC0803	FluidMechanicsLab	0	0	2	0	1	2	
18.	BMEC0804	ManufacturingScienceILab	0	0	2	0	1	2	
19.	BMEC0805	TheoryofMachineLab	0	0	2	0	1	2	
20.	BMEC0806	MachineDesignILab	0	0	2	0	1	2	
21.	BMEC0807	MachineDesignII Lab	0	0	2	0	1	2	
22.	BMEC0808	FluidMachineryLab	0	0	2	0	1	2	
23.	BMEC0809	ManufacturingScienceIILab	0	0	2	0	1	2	
Total							**48**		

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet:Design Engineering									
THEORY									
1.	BME E0201	Computer Aided Design	3	0	0	0	3	3	Machine Design II
2.	BME E0202	Continuum Mechanics	3	1	0	0	4	4	Strength of Material
3.	BME E0203	Finite Element Methods	3	1	0	0	4	4	Continuum Mechanics
4.	BME E0204	Vibration and Noise	3	1	0	0	4	4	Dynamics of Machine
5.	BME E0205	Machine Tool Design	3	0	0	0	3	3	Machine Design II & Manufacturing Sc.
6.	BME E0301	Computer Aided Manufacturing	3	0	0	0	3	3	Manufacturing Science II
7.	BME E0402	Product Development & Design	3	0	0	0	3	3	Machine Design II
8.	BME E0403	Operations Research	3	0	0	0	3	3	Industrial Engineering
9.	BME E0406	Applied Ergonomics	3	0	0	0	3	3	Product Develop ment & Design
10.	BME E0503	Engineering System Modeling & Simulation	3	0	0	0	3	3	Industrial Engineering
11.	BMEE 0306	Additive Manufacturing	3	1	0	0	4	4	
12.	BME E0307	Computer Integrated Manufacturing	3	0	0	0	3	3	
13.	BME E0308	Design for Manufacturing & Assembly	3	0	0	0	3	3	
14.	BME E0206	Mechanical Vibration	3	0	0	0	3	3	
PRACTICALS									
15.	BMEE 0184	Machine Drawing Lab	0	0	2	0	1	2	
16.	BME E0176	Advanced Software Lab	0	0	2	0	1	2	
17.	BME E0178	CAD/CAM Lab	0	0	2	0	1	2	

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18.	BME E0192	Project based CAD/CAM Lab	0	0	0	8	2	8	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Home,IndustrialAutomation and Mechatronics									
THEORY									
19.	BMEE0304	Modern ManufacturingProcess	3	0	0	0	3	3	ManufacturingScienceII
20.	BMEE0305	MetalForming Analysis	3	0	0	0	3	3	ManufacturingScienceI
21.	BMEE0401	IndustrialEngineering	3	0	0	0	3	3	
22.	BMEE0403	OperationsResearch	3	0	0	0	3	3	IndustrialEngineering
23.	BMEE0404	ValueEngineering	3	0	0	0	3	3	IndustrialEngineering
24.	BMEE0405	SupplyChainManagement	3	0	0	0	3	3	IndustrialEngineering
25.	BMEE0501	Robotics&FMS	3	0	0	0	3	3	IndustrialEngineering
26.	BMEE0502	IndustrialAutomation&ControlSystem	3	0	0	0	3	3	IndustrialEngineering
27.	BMEE0503	EngineeringSystemModeling &Simulation	3	0	0	0	3	3	IndustrialEngineering
28.	BMEO0001	TotalQualityManagement	3	1	0	0	4	4	-
29.	BMEO0004	ProjectManagement	3	1	0	0	4	4	-
30.	BMEO0005	ReliabilityandMaintenanceEngineering	3	1	0	0	4	4	-
31.	BME E0307	Computer Integrated Manufacturing	3	0	0	0	3	3	
32.	BME E0505	Fundamentals of Mechatronics and Applications	3	1	0	0	4	4	
33.	BME E0309	Manufacturing Systems Simulation	3	1	0	0	4	4	
34.	BME E0506	Sensors and Actuators	3	1	0	0	4	4	
PRACTICALS									
35.	BMEE0179	Modern ManufacturingProcessLab	0	0	2	0	1	2	
36.	BMEE0193	Project based ModernManufacturingProcessLab	0	0	0	8	2	8	

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37.	BMEE0182	Robotics&FMSLab	0	0	2	0	1	2	
38.	BMEE0196	ProjectbasedRobotics&FMSLab	0	0	0	8	2	4	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet:Fluid and Thermal Engineering									
THEORY									
39.	BMEE0001	Refrigeration & Air-Conditioning	3	0	0	0	3	3	AppliedThermodynamics
40.	BMEE0002	InternalCombustionEngine	3	0	0	0	3	3	AppliedThermodynamics
41.	BMEE0004	PowerPlantEngineering	3	0	0	0	3	3	AppliedThermodynamics
42.	BMEE0005	GasDynamics	3	1	0	0	4	4	AppliedThermodynamics
43.	BMEE0006	GasTurbineandJetPropulsion	3	1	0	0	4	4	AppliedThermodynamics
44.	BMEE0007	AdvancedHeatTransfer	3	0	0	0	3	3	HeatTransfer
45.	BMEE0008	SolarEnergy	3	0	0	0	3	3	AppliedThermodynamics
46.	BMEE0009	IntroductiontoVehicleDynamics	3	0	0	0	3	4	Automobileengineering
47.	BMEE0101	AdvancedFluidMechanics	3	1	0	0	4	4	FluidMechanics
48.	BMEE0102	CompressibleFluidFlow	3	1	0	0	4	4	Advanced FluidMechanics
49.	BMEE0103	Aerodynamics	3	0	0	0	3	3	Advanced FluidMechanics
50.	BMEE0104	TurbulentFlow	3	1	0		4	4	Advanced FluidMechanics
51.	BMEE0105	ComputationalFluidDynamics	3	0	0	0	3	3	Numerical Methods&TurbulentFlow
52.	BMEO0002	EnergyConservation&Management	3	1	0	0	4	4	-
PRACTICALS									
53.	BMEE0170	Refrigeration & Air-ConditioningLab	0	0	2	0	1	2	
54.	BMEE0172	SolarEnergyLab	0	0	2	0	1	2	
55.	BMEE0186	ProjectbasedSolarEnergyLab	0	0	0	8	2	8	
56.	BMEE0175	CFDLab	0	0	2	0	1	2	

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Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BEEJ0950	Mini Projects - I	0	0	0	4	1	4	
2.	BEEJ0951	Mini Project - II	0	0	0	12	3	12	
3.	BEEJ0953	Minor Project	0	0	0	12	3	12	
4.	BEEJ0955	Major Project	0	0	0	32	8	0	
5.	BEEJ0991	Industrial Training	0	0	4	0	2	0	
		TOTAL	0	0	0	60	17		

Mandatory Non-Graded Course (M)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
		TOTAL	8	0	0	0	0	8	

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Under

Choice Based Credit System (CBCS)

Session 2020-21

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Session 2020-21

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M.Tech. (Production Engg./Design Engg.)

Programme Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MME C0002	Simulation, Modeling and Analysis	3	1	0	4	4
2	MME C0802	Simulation, Modeling and Analysis Lab	0	0	2	1	2
3	MME C0003	Advanced Production Technology	3	1	0	4	4
4	MME C0004	Finite Element Method (FEM)	3	1	0	4	4
5	MME C0804	Finite Element Method Lab (FEM)	0	0	2	1	2
6	MME C0005	Optimization for Engineering Design	3	1	0	4	4
7	MME C0006	Computer Aided Manufacturing (CAM)	3	1	0	4	4
8	MME C0007	Theory of Elasticity & Plasticity	3	1	0	4	4
9	MME C0008	Industrial Tribology	3	1	0	4	4

Programme Electives

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HR/WK
			L	T	P		
1	MME E0002	Machine Tool Design	3	1	0	4	4
2	MME E0004	Interfacial Tribology	3	1	0	4	4
3	MME E0005	Energy Conservation and Management	3	1	0	4	4
4	MME E0006	Industrial Automation and Robotics	3	1	0	4	4
5	MME E0007	Advanced Machining	3	1	0	4	4
6	MME E0008	Supply Chain Management	3	1	0	4	4
7	MME E0009	Design of Production Toolings	3	1	0	4	4
8	MME E0011	Rapid Prototyping and Tooling	3	1	0	4	4
9	MME E0012	Nanotechnology and its Applications	3	1	0	4	4
10	MME E0015	Reliability & Maintenance	3	1	0	4	4

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11	MME E0016	Computer-Based Numerical Techniques and Soft Computing	3	1	0	4	4
12	MME E0017	Micro Manufacturing	3	1	0	4	4
13	MME E0018	Concurrent Engineering	3	1	0	4	4
14	MME E0019	Technology of Competitive Manufacturing	3	1	0	4	4

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Under

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Under

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M.Tech. (Production Engg./Design Engg.)

Programme Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	MME C0002	Simulation, Modeling and Analysis	3	1	0	4	4
2	MME C0802	Simulation, Modeling and Analysis Lab	0	0	2	1	2
3	MME C0003	Advanced Production Technology	3	1	0	4	4
4	MME C0004	Finite Element Method (FEM)	3	1	0	4	4
5	MME C0804	Finite Element Method Lab (FEM)	0	0	2	1	2
6	MME C0005	Optimization for Engineering Design	3	1	0	4	4
7	MME C0006	Computer Aided Manufacturing (CAM)	3	1	0	4	4
8	MME C0007	Theory of Elasticity & Plasticity	3	1	0	4	4
9	MME C0008	Industrial Tribology	3	1	0	4	4

Programme Electives

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HR/WK
			L	T	P		
1	MME E0002	Machine Tool Design	3	1	0	4	4
2	MME E0004	Interfacial Tribology	3	1	0	4	4
3	MME E0005	Energy Conservation and Management	3	1	0	4	4
4	MME E0006	Industrial Automation and Robotics	3	1	0	4	4
5	MME E0007	Advanced Machining	3	1	0	4	4
6	MME E0008	Supply Chain Management	3	1	0	4	4
7	MME E0009	Design of Production Toolings	3	1	0	4	4
8	MME E0011	Rapid Prototyping and Tooling	3	1	0	4	4
9	MME E0012	Nanotechnology and its Applications	3	1	0	4	4
10	MME E0015	Reliability & Maintenance	3	1	0	4	4

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11	MME E0016	Computer-Based Numerical Techniques and Soft Computing	3	1	0	4	4
12	MME E0017	Micro Manufacturing	3	1	0	4	4
13	MME E0018	Concurrent Engineering	3	1	0	4	4
14	MME E0019	Technology of Competitive Manufacturing	3	1	0	4	4

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COURSE STRUCTURE

B.TECH. ELECTRICAL & ELECTRONICS ENGINEERING

Under

Choice Based Credit System (CBCS)

Session 2020-21

Head of Department
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PROGRAM STRUCTURE
EN-1400

Sr. No.	Categorization	Credits
1	Humanities & Social Sciences	25
2	Basic Sciences	24
3	Engineering Sciences	28
4	Project Work / Seminars	17
5	Program Core	48
6	Program Electives	26
7	Open Electives	16
8	Non Graded Mandatory Courses	8(2 credits in each sem.)
	Total Credits	186/192(Including MNC)

Project Work / Seminars	Mini Project	4 = (1+3)
	Industrial Training	2
	Minor Project	3
	Major Project	8

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics –	3	1	0	4	4
2.	BELH0001	English Language Skills For Communication I	1	2	0	2	3
3.	BPHS0001	Engineering Physics	3	1	0	4	4
4.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
5.	BEEG1001	Basic Electrical	3	1	0	4	4
		PRACTICALS					
6.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
7.	BMEG0801	Engineering Drawing	0	0	2	1	2
8.	BELH0801	English Language Lab I	0	0	2	1	2
9.	BMEG0801 /BMEG080	Engineering Drawing/Workshop	0	0	2	1	2
10.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
		Total	15	6	14	23	33

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS 0102	Engineering Mathematics – II	2	0	0	4	2
2.	BELH 0002	English Language Skills For Communication – II	1	2	0	2	3
3.	BCHS 0101	Engineering Chemistry	3	1	0	4	3
4.	BCSC 0001	Computer Programming	3	2	0	5	4
5.	BECG	Electronics Engineering	3	1	0	4	4
6.	BEEG 0003	Electrical Measurement & Measuring Instruments	3	0	0	3	3
		PRACTICALS					
7.	BEEG 0803	Electrical Measurement Lab	0	0	2	1	2
8.	BECG	Electronics Lab – I	0	0	2	1	2
9.	BCSC 0800	Computer programming lab	0	0	2	1	4

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10.	BELH 0802	English Language Lab – II	0	0	2	1	2
11.	BCHS 0801	Engineering Chemistry Lab	0	0	2	1	2
		TOTAL	15	1	10	27	34

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Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
THEORY									
1.	BEEC1003	Engineering Circuit Analysis & Synthesis	3	1	0	0	4	4	-
2.	BEEC000	Field Theory &	3	0	0	0	3	3	-
3.	BEEC101	Signals & Systems	3	1	0	0	4	4	-
4.	BEEC0020	Analog & Digital Electronics	3	0	0	0	3	3	-
5.	BEEC0021	Analog & Digital Communication	3	0	0	0	3	3	-
6.	BEEC000	Electrical Machines – I	3	0	0	0	3	3	
7.	BEEC0010	Electrical Machines – II	3	0	0	0	3	3	
8.	BEEC101	Control System	3	1	0	0	4	4	
9.	BEEC0018	Power System Transmission & Distribution	3	0	0	0	3	3	
10.	BEEC0019	Power System Analysis & Protection	3	0	0	0	3	3	
11.	BEEC1014	Power Electronics	3	1	0	0	4	4	
12.	BEEC0015	Microprocessor & Its Applications	3	0	0	0	3	3	
PRACTICALS									
13.	BEEC080	Network Lab	0	0	2	0	1	2	BEEC000
14.	BEEC080	Analog & Digital	0	0	2	0	1	2	BEEC000
15.	BEEC0806	Electrical Machines Lab – I	0	0	2	0	1	2	BEEC0000
16.	BEEC0807	Electrical Machines Lab – II	0	0	2	0	1	2	BEEC0010
17.	BEEC080	Control System Lab	0	0	2	0	1	2	BEEC001
18.	BEEC0812	Power System & Protection Lab	0	0	2	0	1	2	BEEC0013
19.	BEEC081	Power Electronics Lab	0	0	2	0	1	2	BEEC001
20.	BEEC0811	Microprocessor Lab	0	0	2	0	1	2	BEEC0015

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Total	**36**	**4**	**16**	**0**	**48**	**56**	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Power System & Machines									
THEORY									
1.	BEEE0030	Electrical Power Generation	3	0	0	0	3	3	
2.	BEEE0036	Intelligent Techniques In Electrical Engineering	3	0	0	0	3	3	
3.	BEEE0034	Power System Operation & Control	3	1	0	0	4	4	
4.	BEEE0031	High Voltage Engineering	4	0	0	0	4	4	
5.	BEEE0032	Smart Grid	3	0	0	0	3	3	
6.	BEEE0072	Electric Drives	3	0	0	0	3	3	
7.	BEEE0071	Special electric Machines	3	0	0	0	3	3	
8.	BEEE0078	utilization of electric power & traction	3	1	0	0	4	4	
9.	BEEE0076	Electric Vehicles	3	1	0	0	4	4	
PRACTICALS									
10.	BEEE0851	Intelligent Techniques In Electrical Engineering Lab	0	0	2	0	1	2	BEEE 0036
11.	BEEE0870	Electric Drives Lab	0	0	2	0	1	2	BEEE0072
PROJECTS									
12.	BEEJ0966	Electric Vehicles Project	0	0	0	8	2	8	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Renewable Technologies									
THEORY									
1.	BEEE0090	Introduction to Renewable Energy Technologies	3	0	0	0	3	3	
2.	BEEE0099	Design & Installation of Solar PV System	3	1	0	0	4	4	
3.	BEEE0095	Solar Energy System	3	0	0	0	3	3	
4.	BEEE0094	Wind Energy Conversion System	3	0	0	0	3	3	
PRACTICALS									
5.	BEEE0881	Solar Energy System Lab	0	0	2	0	1	2	BEEE0095
6.	BEEE 0882	Design & Installation of Solar PV System Lab	0	0	2	0	1	2	BEEE 0099
PROJECTS (IF EXIST)									
7.	BEEJ0972	Design & Installation of Solar PV System Project	0	0	0	8	2	8	BEEE0099

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Instrumentation & Control									
THEORY									
1.	BEEE0050	Sensors & Transducers	3	0	0	0	3	3	
2.	BEEE0056	PLC & SCADA	3	0	0	0	3	3	
3.	BEEE0052	Advance Control System	3	0	0	0	3	3	CS
4.	BEEE0053	Biomedical Instrumentation	3	0	0	0	3	3	
5.	BEEE0054	Process Control & Advanced Instrumentation	4	0	0	0	4	4	EMMI & CS
6.	BEEE0055	Digital Control System	3	1	0	0	4	4	
7.	BEEE0051	Optimal Control System	3	0	0	0	3	3	CS
PRACTICALS									
8.	BEEE0860	Process Control & Advanced Instrumentation Lab	0	0	2	0	1	2	BEEE0054
9.	BEEE0861	PLC & SCADA Lab	0	0	2	0	1	2	BEEE0056
PROJECTS (IF EXIST)									
10.	BEEJ0961	PLC Based Project	0	0	0	4	1	4	BEEE0056

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Energy Systems									
THEORY									
8.	BEEE0090	Introduction to Renewable Energy Technologies	3	0	0	0	3	3	
9.	BEEE0099	Design & Installation of Solar PV System	3	1	0	0	4	4	
10.	BEEE0100	Illumination Science & Engineering	3	1	0	0	4	4	
11.	BEEE0095	Solar Energy System	3	0	0	0	3	3	
12.	BEEE0094	Wind Energy Conversion System	3	0	0	0	3	3	
PRACTICALS									
13.	BEEE0881	Solar Energy System Lab	0	0	2	0	1	2	BEEE0095
14.	BEEE 0882	Design & Installation of Solar PV System Lab	0	0	2	0	1	2	BEEE 0099
PROJECTS (IF EXIST)									
15.	BEEJ0972	Design & Installation of Solar PV System Project	0	0	0	8	2	8	BEEE0099

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Electronics & Embedded System									
THEORY									
1.	BEEE0112	Digital Signal Processing	3	1	0	0	4	4	
2.	BEEE0110	Biomedical Signal Processing	3	0	0	0	3	3	
3.	BEEE0111	Analog & Digital Communication	3	0	0	0	3	3	
4.	BEEE0115	Medical Image Processing	4	0	0	0	4	4	
5.	BEEC0007	Analog Integrated Circuit	3	0	0	0	3	3	-
6.	BEEC0015	Microprocessor & Its Applications	3	0	0	0	3	3	
PRACTICALS									
7.	BEEE 0890	Medical Image Processing Lab	0	0	2	0	1	2	BEEE 0890
8.	BEEC0811	Microprocessor Lab	0	0	2	0	1	2	BEEC0015

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Projects (J)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BEEJ0950	Mini Projects - I	0	0	0	4	1	4	
2.	BEEJ0951	Mini Project - II	0	0	0	12	3	12	
3.	BEEJ0953	Minor Project	0	0	0	12	3	12	
4.	BEEJ0955	Major Project	0	0	0	32	8	0	
5.	BEEJ0991	Industrial Training	0	0	4	0	2	0	
		TOTAL	**0**	**0**	**0**	**60**	**17**		

Mandatory Non Graded Course (M)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
		TOTAL	**8**	**0**	**0**	**0**	**0**	**8**	

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Humanities and Social Sciences (H)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
		THEORY							
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purpose – I	2	0	0	0	2	2	
4.	BELH 0004	English for Professional Purpose – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAC0005	Industrial Management	3	0	0	0	3	3	
		PRACTICALS							
7.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
8.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
9.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
10.	BTDH 0302	Soft Skills – II	0	0	2	0	1	2	
11.	BTDH0303	Soft Skills – III	0	0	8	0	4	4	
12.	BTDH0304	Soft Skills – IV	0	0	8	0	4	4	
		TOTAL	**13**	**0**	**24**	**0**	**25**	**37**	

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Basic Sciences (S)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BMAS0101	Engineering Mathematics I	3	1	0	0	4	4	
2.	BMAS0102	Engineering Mathematics II	3	1	0	0	4	4	
3.	BMAS0103	Engineering Mathematics III	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
PRACTICALS									
7.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
8.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
TOTAL			**17**	**5**	**4**	**0**	**24**	**26**	

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Engineering Sciences (G)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG1001	Basic Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	
4.	BEEG0002	Electrical Technology	3	0	0	0	3	3	
5.	BCSC0001	Computer Programming	4	1	0	0	5	5	
PRACTICALS									
6.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
	BEEG0801	Electrical Simulation Lab	0	0	4	0	2	4	
7.	BEEG0802	Electrical technology Lab	0	0	2	0	1	2	
8.	BECG0800	Electronics Lab I	0	0	2	0	1	2	
9.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	
10.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
11.	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	
TOTAL			16	4	14	0	28	16	

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Open Elective (Offer to other Departments)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEO0090	Electrical Machine & Automatic Control	3	0	0	0	3	3	
2.	BEEO0092	Non-Conventional Energy Resources	4	0	0	0	4	4	
PRACTICALS									
3.	BEEO0900	Electrical Machines & Automatic Control Lab	0	0	2	0	1	2	BEEO0090

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COURSE STRUCTURE

B.TECH. ELECTRICAL ENGINEERING

Under

Choice Based Credit System (CBCS)

Session 2020-21

Head of Department
Electrical Engg.
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PROGRAM STRUCTURE
EE-1100

Sr. No.	Categorization	Credits
1	Humanities & Social Sciences	25
2	Basic Sciences	24
3	Engineering Sciences	28
4	Project Work / Seminars	17
5	Program Core	48
6	Program Electives	26
7	Open Electives	16
8	Non Graded Mandatory Courses	8(2 credits in each sem.)
	Total Credits	186/192(Including MNC)

Project Work / Seminars	Mini Project	4 = (1+3)
	Industrial Training	2
	Minor Project	3
	Major Project	8

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0101	Engineering Mathematics –	3	1	0	4	4
2.	BELH0001	English Language Skills For Communication I	1	2	0	2	3
3.	BPHS0001	Engineering Physics	3	1	0	4	4
4.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
5.	BEEG1001	Basic Electrical	3	1	0	4	4
		PRACTICALS					
6.	BEEG0800	Electrical Engineering Lab	0	0	2	1	2
7.	BMEG0801	Engineering Drawing	0	0	2	1	2
8.	BELH0801	English Language Lab 1	0	0	2	1	2
9.	BMEG0801 /BMEG080	Engineering Drawing/Workshop	0	0	2	1	2
10.	BPHS0801	Engineering Physics Lab	0	0	2	1	2
		Total	15	6	14	23	33

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS 0102	Engineering Mathematics – II	2	0	0	4	2
2.	BELH 0002	English Language Skills For Communication – II	1	2	0	2	3
3.	BCHS 0101	Engineering Chemistry	3	1	0	4	3
4.	BCSC 0001	Computer Programming	3	2	0	5	4
5.	BECG	Electronics Engineering	3	1	0	4	4
6.	BEEG 0003	Electrical Measurement & Measuring Instruments	3	0	0	3	3
		PRACTICALS					
7.	BEEG 0803	Electrical Measurement Lab	0	0	2	1	2
8.	BECG	Electronics Lab – I	0	0	2	1	2
9.	BCSC 0800	Computer programming lab	0	0	2	1	4

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10.	BELH 0802	English Language Lab – II	0	0	2	1	2
11.	BCHS 0801	Engineering Chemistry Lab	0	0	2	1	2
		TOTAL	15	1	10	27	34

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Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
THEORY									
1.	BEEC1003	Engineering Circuit Analysis & Synthesis	3	1	0	0	4	4	-
2.	BEEC0005	Field Theory &	3	0	0	0	3	3	-
3.	BEEC1006	Basic System Analysis	3	1	0	0	4	4	-
4.	BEEC0008	Digital Electronics & Circuits	3	0	0	0	3	3	
5.	BEEC0009	Electrical Machines – I	3	0	0	0	3	3	-
6.	BEEC0010	Electrical Machines – II	3	0	0	0	3	3	
7.	BEEC1011	Control System	3	1	0	0	4	4	
8.	BEEC0012	Elements Of Power	3	0	0	0	3	3	
9.	BEEC0013	Power System Analysis	3	0	0	0	3	3	
10.	BEEC1014	Power Electronics	3	1	0	0	4	4	
11.	BEEE0078	Utilization Of Electric Power & Traction	3	0	0	0	3	3	
12.	BEEE0035	Switchgear & Protection	3	0	0	0	3	3	
PRACTICALS									
13.	BEEC0803	Network Lab	0	0	2	0	1	2	BEEC000
14.	BEEC0811	Digital Electronics Lab	0	0	2	0	1	2	BEEC000 8
15.	BEEC0806	Electrical Machines Lab – I	0	0	2	0	1	2	BEEC000 9
16.	BEEC0807	Electrical Machines Lab – II	0	0	2	0	1	2	BEEC001 0
17.	BEEC0808	Control System Lab	0	0	2	0	1	2	BEEC001
18.	BEEC0809	Power System Lab	0	0	2	0	1	2	BEEC001 3
19.	BEEC0810	Power Electronics Lab	0	0	2	0	1	2	BEEC001
20.	BEEE0850	Switch Gear & Protection Lab	0	0	2	0	1	2	BEEE003 5
Total			**36**	**4**	**16**	**0**	**48**	**57**	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Power System									
THEORY									
1.	BEEE0030	Electrical Power Generation	3	0	0	0	3	3	
2.	BEEE0036	Intelligent Techniques In Electrical Engineering	3	0	0	0	3	3	
3.	BEEE0037	Computer Methods in Power Systems	3	1	0	0	4	4	
4.	BEEE0031	High Voltage Engineering	4	0	0	0	4	4	
5.	BEEE0034	Power System Operation & Control	3	1	0	0	4	4	
6.	BEEE0032	Smart Grid	3	0	0	0	3	3	
7.	BEEE0038	Power System Dynamics & Stability	3	0	0	0	3	3	
PRACTICALS									
8.	BEEE0851	Intelligent Techniques In Electrical Engineering Lab	0	0	2	0	1	2	BEEE 0036
9.	BEEE0852	Computer Methods in Power Systems Lab	0	0	2	0	1	2	BEEE0037

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Instrumentation & Control									
THEORY									
1.	BEEE0050	Sensors & Transducers	3	0	0	0	3	3	
2.	BEEE0056	PLC & SCADA	3	0	0	0	3	3	
3.	BEEE0052	Advance Control System	3	0	0	0	3	3	CS
4.	BEEE0053	Biomedical Instrumentation	3	0	0	0	3	3	
5.	BEEE0054	Process Control & Advanced Instrumentation	4	0	0	0	4	4	EMMI & CS
6.	BEEE0055	Digital Control System	3	1	0	0	4	4	
7.	BEEE0051	Optimal Control System	3	0	0	0	3	3	CS
PRACTICALS									
8.	BEEE0860	Process Control & Advanced Instrumentation Lab	0	0	2	0	1	2	BEEE0054
9.	BEEE0861	PLC & SCADA Lab	0	0	2	0	1	2	BEEE0056
PROJECTS (IF EXIST)									
10.	BEEJ0961	PLC Based Project	0	0	0	4	1	4	BEEE0056

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Machine & Drives									
THEORY									
1.	BEEE0070	Electrical Engineering Materials	3	0	0	0	3	3	
2.	BEEE0072	Electric Drives	3	0	0	0	3	3	
3.	BEEE0071	Special electric Machines	3	0	0	0	3	3	
4.	BEEE0074	Computer Aided Electric Machine Design	3	0	0	0	3	3	
5.	BEEE0076	Electric Vehicles	3	1	0	0	4	4	
PRACTICALS									
6.	BEEE0870	Electric Drives Lab	0	0	2	0	1	2	BEEE0072
7.	BEEE0871	Computer Aided Electric Machine Design Lab	0	0	2	0	1	2	BEEE0074
PROJECTS									
8.	BEEJ0966	Electric Vehicles Project	0	0	0	8	2	8	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Energy Systems									
THEORY									
1.	BEEE0090	Introduction to Renewable Energy Technologies	3	0	0	0	3	3	
2.	BEEE0099	Design & Installation of Solar PV System	3	1	0	0	4	4	
3.	BEEE0100	Illumination Science & Engineering	3	1	0	0	4	4	
4.	BEEE0095	Solar Energy System	3	0	0	0	3	3	
5.	BEEE0094	Wind Energy Conversion System	3	0	0	0	3	3	
PRACTICALS									
6.	BEEE0881	Solar Energy System Lab	0	0	2	0	1	2	BEEE0095
7.	BEEE 0882	Design & Installation of Solar PV System Lab	0	0	2	0	1	2	BEEE 0099
PROJECTS (IF EXIST)									
8.	BEEJ0972	Design & Installation of Solar PV System Project	0	0	0	8	2	8	BEEE0099

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: Electronics & Embedded System									
THEORY									
1.	BEEE0112	Digital Signal Processing	3	1	0	0	4	4	
2.	BEEE0110	Biomedical Signal Processing	3	0	0	0	3	3	
3.	BEEE0111	Analog & Digital Communication	3	0	0	0	3	3	
4.	BEEE0115	Medical Image Processing	4	0	0	0	4	4	
5.	BEEC0007	Analog Integrated Circuit	3	0	0	0	3	3	-
6.	BEEC0015	Microprocessor & Its Applications	3	0	0	0	3	3	
PRACTICALS									
7.	BEEE 0890	Medical Image Processing Lab	0	0	2	0	1	2	BEEE 0890
8.	BEEC0811	Microprocessor Lab	0	0	2	0	1	2	BEEC0015

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Projects (J)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BEEJ0950	Mini Projects - I	0	0	0	4	1	4	
2.	BEEJ0951	Mini Project - II	0	0	0	12	3	12	
3.	BEEJ0953	Minor Project	0	0	0	12	3	12	
4.	BEEJ0955	Major Project	0	0	0	32	8	0	
5.	BEEJ0991	Industrial Training	0	0	4	0	2	0	
		TOTAL	**0**	**0**	**0**	**60**	**17**		

Mandatory Non Graded Course (M)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
		THEORY							
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	
		TOTAL	**8**	**0**	**0**	**0**	**0**	**8**	

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Humanities and Social Sciences (H)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
		THEORY							
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purpose – I	2	0	0	0	2	2	
4.	BELH 0004	English for Professional Purpose – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAC0005	Industrial Management	3	0	0	0	3	3	
		PRACTICALS							
7.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
8.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
9.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
10.	BTDH 0302	Soft Skills – II	0	0	2	0	1	2	
11.	BTDH0303	Soft Skills – III	0	0	8	0	4	4	
12.	BTDH0304	Soft Skills – IV	0	0	8	0	4	4	
		TOTAL	**13**	**0**	**24**	**0**	**25**	**37**	

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Basic Sciences (S)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BMAS0101	Engineering Mathematics I	3	1	0	0	4	4	
2.	BMAS0102	Engineering Mathematics II	3	1	0	0	4	4	
3.	BMAS0103	Engineering Mathematics III	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
PRACTICALS									
7.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
8.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
TOTAL			**17**	**5**	**4**	**0**	**24**	**26**	

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Engineering Sciences (G)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG1001	Basic Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BMEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	
4.	BEEG0002	Electrical Technology	3	0	0	0	3	3	
5.	BCSC0001	Computer Programming	4	1	0	0	5	5	
PRACTICALS									
6.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
	BEEG0801	Electrical Simulation Lab	0	0	4	0	2	4	
7.	BEEG0802	Electrical technology Lab	0	0	2	0	1	2	
8.	BECG0800	Electronics Lab I	0	0	2	0	1	2	
9.	BMEG0800	Engineering Workshop Practice Lab	0	0	2	0	1	2	
10.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
11.	BCSC0800	Computer Programming Lab	0	0	2	0	1	2	
TOTAL			16	4	14	0	28	16	

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Open Elective (Offer to other Departments)

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEO0090	Electrical Machine & Automatic Control	3	0	0	0	3	3	
2.	BEEO0092	Non-Conventional Energy Resources	4	0	0	0	4	4	
PRACTICALS									
3.	BEEO0900	Electrical Machines & Automatic Control Lab	0	0	2	0	1	2	BEEO0090

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COURSE STRUCTURE

M.TECH.-ELECTRICAL ENGINEERING

Under

Choice Based Credit System (CBCS)

Session 2020-21

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Course Curriculum (2020-21)
M. Tech. Electrical Engineering

SEMESTER I
First year session 2019-20, 2020-21

SR. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACT HRS/WK
			L	T	P		
1.	MEEC0001	Computer Aided Power system analysis	4	0	0	4	4
2.	MEEC1002	Power system Dynamics& Control	4	0	0	4	4
3.	MEEC0003	Advanced Electric Drives	4	0	0	4	4
4.	MEEC0004	Power Electronic Devices & Converters	4	0	0	4	4
5.	MEEC1005	Optimization Techniques	4	0	0	4	4
		PRACTICALS					
6.	MEEC0800	Advanced Simulation Lab.	0	0	2	1	2
		Total	**20**	**0**	**2**	**21**	**22**

SEMESTER II

SR. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT HRS/WK
			L	T	P	J		
1.	MEEC0006	Analog & digital control system	4	0	0	0	4	4
2.	MEEC0007	Advanced Power System Operation & Control	4	0	0	0	4	4
3.	MEEC0008	Microcontroller and Application	4	0	0	0	4	4
4.	MEEE-	Professional Elective –I	4	0	0	0	4	4
5.	MEEE-	Professional Elective –II	4	0	0	0	4	4
6.	MEEJ0801	Minor Project	0	0	0	4	2	4
		TOTAL	20	0	0	4	22	24

SEMESTER III

SR. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT HRS/WK
			L	T	P	J		
1.	MEEE-	Professional Elective -III	4	0	0	0	4	4
2.	MEEE-	Professional Elective -IV	4	0	0	0	4	4
3.	MEEC0802	Seminar	0	0	4	0	2	4
4.	MEEJ0971	Dissertation-I	0	0	0	16	4	16
		TOTAL	20	0	0	16	14	28

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SEMESTER IV

SR. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT HRS/WK
			L	T	P	J		
1.	MEEJ0972	Dissertation-II	0	0	0	56	14	56
		TOTAL	0	0	0	56	14	56

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POWER ELECTRONICS & DRIVES

ELECTIVE I

SR. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT HRS/WK
			L	T	P	J		
1.	MEEE0041	Advanced Power Electronics	4	0	0	0	4	4
2.	MEEE0023	HVDC Transmission & Flexible AC transmission systems	4	0	0	0	4	4

ELECTIVE II

SR. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT HRS/WK
			L	T	P	J		
1.	MEEE0043	Solid State Control of Electric Drives	4	0	0	0	4	4
2.	MEEE0044	Power electronic circuit modeling & Simulation	4	0	0	0	4	4

ELECTIVE III

SR. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT HRS/WK
			L	T	P	J		
3.	MEEE0045	Introduction To Hybrid & Electric Vehicles- (Prerequisite Solid state control of drives)	4	0	0	0	4	4
4.	MEEE0046	High performance AC Drives Prerequisite – (Power Electronic circuit modeling and simulation)	4	0	0	0	4	4

ELECTIVE IV

SR. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT HRS/WK
			L	T	P	J		
1.	MEEE0047	Renewable & Distributed generation systems	4	0	0	0	4	4
2.	MEEE0048	Industrial drives & Automation (Prerequisite Power Electronic devices & converters)	4	0	0	0	4	4

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POWER SYSTEM

ELECTIVE I

SR. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT HRS/WK
			L	T	P	J		
3.	MEEE0021	Power quality and conditioning	4	0	0	0	4	4
4.	MEEE0022	Electrical Insulation in Power apparatus & systems						
5.	MEEE0023	HVDC Transmission & Flexible AC transmission systems	4	0	0	0	4	4

ELECTIVE II

SR. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT HRS/WK
			L	T	P	J		
5.	MEEE0024	Power System Transients	4	0	0	0	4	4
6.	MEEE0025	Advance Protective Relaying	4	0	0	0	4	4

ELECTIVE III

SR. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT HRS/WK
			L	T	P	J		
7.	MEEE0026	Smart grid and phasor Measurement Techniques	4	0	0	0	4	4
8.	MEEE0027	EHV/UHV power transmission engineering (Prerequisite HVDC Transmission & Flexible AC transmission systems)	4	0	0	0	4	4

ELECTIVE IV

SR. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT HRS/WK
			L	T	P	J		
3.	MEEE0028	Power System Restructuring & Deregulation	4	0	0	0	4	4
4.	MEEE0029	Power system Planning & Reliability (Prerequisite Advance Protective relaying)	4	0	0	0	4	4

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B.COM. (HONS.) GLOBAL ACCOUNTING

Under

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Session 2020-21

First Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCCC0001	Principle and Practices of Accounting	CORE	3	1	0	4	5
2	BCCC0002	Principles of Marketing	CORE	4	0	0	4	4
3	BCCC0003	Business Economics and Commercial Knowledge	CORE	4	0	0	4	4
4	BCCC0004	Fundamentals of Management Accounting	CORE	3	1	0	4	5
5	BBAC0015	Fundamentals of Computers and Data Handling	AECC	2	0	0	2	2
6	BCCC0800	Practical on Computer Application in Commerce	SEC	0	0	4	2	4
7	BCCC0801	Commercial Aptitude – I	SEC	0	0	4	2	4
		Total					**22**	**28**

Second Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCCC0005	Advanced Financial Accounting	CORE	3	1	0	4	5
2	BBHC0001	Essentials of Management	CORE	4	0	0	4	4
3	BMAS0251	Commercial Statistics	CORE	3	1	0	4	5
4	BBAO0103	Commercial Aspects of Information Technology	GE	4	0	0	4	4
	BBAO0104	Essentials of E-Commerce						
5	BCHS0102	Environmental Studies	AECC	2	0	0	2	2
6	BCCC0802	Accounting using Tally	SEC	0	0	4	2	4
7	BCCC0803	Commercial Aptitude – II	SEC	0	0	4	2	4
		Total					**22**	**28**

Third Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCCC0006	Fundamentals of Auditing	CORE	3	1	0	4	5
2	BCCC0007	Income Tax & Practices	CORE	3	1	0	4	5
3	BBAC0008	Business Communication	CORE	4	0	0	4	4
4	BCCC0008	Advanced Management Accounting	CORE	4	0	0	4	4
5	BALO0109	Business Laws	GE	4	0	0	4	4
	BALO0103	Patent and Copyright Law						
6	BELO1010	Business Ethics & Values	GE	4	0	0	4	4
	BELO0011	Remedial English						
7	BCCC0804	Commercial Aptitude – III	SEC	0	0	4	2	4
		Total					**26**	**30**

Fourth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBAC0009	Fundamentals of Banking & Insurance	CORE	4	0	0	4	4
2	BCCC0009	Indirect Taxation	CORE	3	1	0	4	5
3	BCCC0010	Introduction of Behaviourial Finance	CORE	3	1	0	4	5
4	BFBC0011	Fundamentals of Business Analytics	CORE	4	0	0	4	4
5	BCMC0013	Research Methodology for Business	CORE	4	0	0	4	4
6	BALO0107	Company Law and Secretarial Practices	GE	4	0	0	4	4
	BALO1108	Consumer Protection Laws						
7	BCCC0805	Commercial Aptitude – IV	SEC	0	0	4	2	4
		Total					**26**	**30**

Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCCC0011	Company Accounts and Practices- I	CORE	3	1	0	4	5
2	BCCC0012	Financial Reporting and Taxation	CORE	3	1	0	4	5
3		Specialization Elective 1 (Group A)	DSE	4	0	0	4	4
4		Specialization Elective 2 (Group A)	DSE	4	0	0	4	4
5		Specialization Elective 1 (Group B)	DSE	4	0	0	4	4
6		Specialization Elective 2 (Group B)	DSE	4	0	0	4	4
7	BCCC0806	Commercial Aptitude – V	SEC	0	0	4	2	4
8	BCCJ0961	Project Report & Presentation	DIE/ PROJ	0	0	0	3	-
		Total					**29**	**30**

Sixth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCCC0013	Company Accounts and Practices- II	CORE	3	1	0	4	5
2	BCMC0016	Management of Working Capital	CORE	3	1	0	4	5
3		Specialization Elective 3 (Group A)	DSE	4	0	0	4	4
4		Specialization Elective 4 (Group A)	DSE	4	0	0	4	4
5		Specialization Elective 3 (Group B)	DSE	4	0	0	4	4
6		Specialization Elective 4 (Group B)	DSE	4	0	0	4	4
7	BCCC0807	Commercial Aptitude – VI	SEC	0	0	4	2	4
8	BCCJO962	Comprehensive Viva	DIE/ PROJ	0	0	0	3	-
		Total					**29**	**30**

ELECTIVES - Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C
		GROUP 1: AUDITING					
1	BCCE0101	Audit & Assurance	DSE	4	0	0	4
2	BCCE0102	Financial Audit	DSE	4	0	0	4
3	BCCE0103	Cost & Management Audit	DSE	4	0	0	4
4	BCCE0104	Drafting, Appearances and Pleadings	DSE	4	0	0	4
		GROUP 2: STOCK MARKET OPERATIONS					
5	BBAE0305	Investment Management	DSE	4	0	0	4
6	BCCE0201	Capital Markets & Securities Laws	DSE	4	0	0	4
7	BCCE0202	Financial Services	DSE	4	0	0	4
8	BCCE0203	Corporate Restructuring, Valuation and Insolvency	DSE	4	0	0	4
		GROUP 3: LAWS					
9	BALO0102	Intellectual Property Laws	DSE	4	0	0	4
10	BALO0113	Property Laws	DSE	4	0	0	4
11	BALO0115	Administrative Laws	DSE	4	0	0	4
12	BALO0112	Environmental Laws	DSE	4	0	0	4
		GROUP 4: BEHAVIOURIAL FINANCE					
13	BCCE0401	Production, Operations & Decision Sciences	DSE	4	0	0	4
14	BCCE0402	Economics for Finance	DSE	4	0	0	4
15	BCCE0403	Global Development in Finance	DSE	4	0	0	4
16	BCCE0404	Organisational Behaviour and Analysis	DSE	4	0	0	4
		GROUP 5: BANKING AND INSURANCE					
17	BCCE0501	Banking theory & Practice	DSE	4	0	0	4
18	BBAE0405	Principles and Practices of General Insurance	DSE	4	0	0	4
19	BCCE0502	Money Banking & Finance	DSE	4	0	0	4
20	BBAE0403	Insurance Laws and Environment	DSE	4	0	0	4
		GROUP 6: BUSINESS ANALYTICS					
21	BCCE0601	Entrepreneurial Development	DSE	4	0	0	4
22	BCCE0602	Operations Management	DSE	4	0	0	4
23	BCCE0603	Business Modeling	DSE	4	0	0	4
24	BCCE0604	Data Management	DSE	4	0	0	4
		GROUP 7: ACCOUNTING AND FINANCE					
25	BBAC0011	Financial Management	DSE	4	0	0	4
26	BCME0305	E-Commerce	DSE	4	0	0	4
27	BCCE1701	Financial Strategy	DSE	4	0	0	4
28	BCMC0015	Cost Accounting	DSE	4	0	0	4
		GROUP 8: INTERNATIONAL BUSINESS					
29	BBAE0301	International Financial Management	DSE	4	0	0	4
30	BCME0302	Mergers and Acquisitions	DSE	4	0	0	4
31	BCCE0801	Competition & Globalisations	DSE	4	0	0	4
32	BCCE0802	International Business Economics	DSE	4	0	0	4

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ECONOMICS

Under

Choice Based Credit System (CBCS)

Session 2020-21

First Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCMC0002	Micro Economics	CORE	3	1	0	4	5
2	BAEC0001	Indian Economic Policy	CORE	3	1	0	4	5
3	BAEC0002	Fundamentals of Indian Economy-I	CORE	3	1	0	4	5
4	BBHC0001	Essentials of Management	CORE	4	0	0	4	4
5	BAEC0800	Competitive Aptitude - I	SEC	0	0	4	2	4
6	BAEC0801	Practical on Economic Aspects - I	SEC	0	0	4	2	4
		Total					**20**	**27**

Second Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCMC0006	Macro Economics	CORE	3	1	0	4	5
2	BMAS0251	Commercial Statistics	CORE	3	1	0	4	5
3	BAEC0003	Fundamentals of Indian Economy-II	CORE	3	1	0	4	5
4	BBAO1102	Human Values & Professional Ethics	GE	4	0	0	4	4
	BELO0011	Remedial English						
5	BAEC0802	Competitive Aptitude - II	SEC	0	0	4	2	4
6	BAEC0803	Practical on Economic Aspects - II	SEC	0	0	4	2	4
		Total					**20**	**27**

Third Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BAEC0004	Banking and Financial Aspects of Economics	CORE	4	0	0	4	4
2	BCME0303	Industrial Economics	CORE	4	0	0	4	4
3	BCME0307	Development Economics	CORE	4	0	0	4	4
4	BALO0103	Patent and Copyright Law	GE	4	0	0	4	4
	BALO0101	Legal and Regulatory Framework of Business						
5	BBAO0103	Commercial Aspects of Information Technology	GE	4	0	0	4	4
	BBAO0104	Essentials of E-Commerce						
6	BCHS0102	Environmental Studies	AECC	2	0	0	2	2
7	BAEC0804	Competitive Aptitude - III	SEC	0	0	4	2	4
8	BAEC0805	Practical on Economic Aspects - III	SEC	0	0	4	2	4
		Total					**26**	**30**

Fourth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BAEC0005	Business Analytics	CORE	4	0	0	4	4
2	BAEC0006	International Economics	CORE	4	0	0	4	4
3	BCME0308	Behavioural Economics	CORE	4	0	0	4	4
4	BBAC0010	Business Research	CORE	4	0	0	4	4
5	BALO1108	Consumer Protection Laws	GE	4	0	0	4	4
	BALO0106	Company Laws						
6	BAEC0009	Understanding Human & Interpersonal Behaviour	AECC	2	0	0	2	2
7	BAEC0806	Competitive Aptitude - IV	SEC	0	0	4	2	4
8	BAEC0807	Practical on Economic Aspects - IV	SEC	0	0	4	2	4
		Total					**26**	**30**

Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BAEC0007	Corporate Governance	CORE	4	0	0	4	4
2		Specialization Elective 1 (Group A)	DSE	4	0	0	4	4
3		Specialization Elective 2 (Group A)	DSE	4	0	0	4	4
4		Specialization Elective 1 (Group B)	DSE	4	0	0	4	4
5		Specialization Elective 2 (Group B)	DSE	4	0	0	4	4
6	BAEC0808	Competitive Aptitude - V	SEC	0	0	4	2	4
7	BAEC0809	Practical on Economic Aspects - V	SEC	0	0	4	2	4
8	BAEJ0961	Summer Training Project & Presentation	DIS/ PROJ	0	0	0	3	-
		Total					**27**	**28**

Sixth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BAEC1008	Econometrics	CORE	4	0	0	4	4
2		Specialization Elective 3 (Group A)	DSE	4	0	0	4	4
3		Specialization Elective 4 (Group A)	DSE	4	0	0	4	4
4		Specialization Elective 3 (Group B)	DSE	4	0	0	4	4
5		Specialization Elective 4 (Group B)	DSE	4	0	0	4	4
6	BAEC0810	Competitive Aptitude - VI	SEC	0	0	4	2	4
	BAEC0811	Practical on Economic Aspects - VI	SEC	0	0	4	2	4
7	BAEJ0962	Comprehensive Viva	DIS/ PROJ	0	0	0	3	-
		Total					**27**	**28**

ELECTIVES - Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C
		GROUP 1: INTERNATIONAL ECONOMICS					
1	BAEE0101	Foreign Trade & Policies	DSE	4	0	0	4
2	BBAE0203	International Marketing	DSE	4	0	0	4
3	BCME0402	International Logistics	DSE	4	0	0	4
4	BCME0403	International Treaties and Conventions	DSE	4	0	0	4
		GROUP 2: BANKING & FINANCE					
5	BBAE1302	Management of Financial Institutions & Services	DSE	3	1	0	4
6	BAEE0201	Taxation Laws & Practices	DSE	4	0	0	4
7	BCME0105	Security Analysis and Portfolio Management	DSE	3	1	0	4
8	BAEE0202	Modern Banking Practices	DSE	4	0	0	4
		GROUP 3: DEVELOPMENT ECONOMICS					
9	BAEE0301	Sustainable Development	DSE	4	0	0	4
10	BAEE0302	Rural Development	DSE	4	0	0	4
11	BAEE0303	Welfare Economics	DSE	4	0	0	4
12	BAEE0304	Health Economics	DSE	4	0	0	4
		GROUP 4: INDUSTRIAL ECONOMICS					
13	BAEE0401	Industrial Finance	DSE	4	0	0	4
14	BAEE0402	Experimental Methods of Economics	DSE	4	0	0	4
15	BAEE0403	Game Theory	DSE	4	0	0	4
16	BAEE0404	Psychological Economics	DSE	4	0	0	4
		GROUP 5: BEHAVIOURAL ECONOMICS					
17	BAEE0501	Production Planning &Behaviour	DSE	4	0	0	4
18	BAEE0502	Resource Economics & Management	DSE	4	0	0	4
19	BAEE0503	Operations Research	DSE	4	0	0	4
20	BAEE0504	Industrial Behavioural Economics	DSE	4	0	0	4
		GROUP 6: BUSINESS ADMINISTRATION AND LAW					
21	BCME0201	Entrepreneurship and Small Business Management	DSE	4	0	0	4
22	BBAE0106	International Human Resource Management	DSE	4	0	0	4
23	BCME0202	Principles of Business Management	DSE	4	0	0	4
24	BBAE0102	Industrial Relations	DSE	4	0	0	4

ELECTIVES - Sixth Semester

S. No.	Code	Subject	Cat	L	T	P	C
		GROUP 1: INTERNATIONAL ECONOMICS					
1	BBAE0301	International Financial Management	DSE	4	0	0	4
2	BAEE0102	Mergers & Acquisitions in Economy	DSE	4	0	0	4
3	BAEE0103	Economic Aspects of Export & Import	DSE	4	0	0	4
4	BFBE0201	International Business Environment	DSE	4	0	0	4
		GROUP 2: BANKING & FINANCE					
5	BBAE0408	Management of Commercial Banks	DSE	4	0	0	4
6	BCME0102	Microfinance	DSE	3	1	0	4
7	BAEE1203	Capital Budgeting	DSE	4	0	0	4
8	BBAE0304	Working Capital Management	DSE	3	1	0	4
		GROUP 3: DEVELOPMENT ECONOMICS					
9	BAEE0305	Urbanization & Development	DSE	4	0	0	4
10	BAEE0306	Economic Growth Models	DSE	4	0	0	4
11	BAEE0307	Environmental Economics	DSE	4	0	0	4
12	BAEE0308	Economic System and Society	DSE	4	0	0	4
		GROUP 4: INDUSTRIAL ECONOMICS					
13	BAEE0405	Supply Chain and Logistics	DSE	4	0	0	4
14	BAEE0406	Industrial Organization	DSE	4	0	0	4
15	BAEE0407	Industrial Development	DSE	4	0	0	4
16	BAEE0408	Multinational Enterprises and Industrial Policies	DSE	4	0	0	4
		GROUP 5: BEHAVIOURAL ECONOMICS					
17	BAEE0505	Professional Aspects of Behavioural Economics	DSE	4	0	0	4
18	BAEE0506	Financial aspects of Consumer Behaviour	DSE	4	0	0	4
19	BAEE0507	Actuarial Economics	DSE	4	0	0	4
20	BAEE0508	Labour Economics	DSE	4	0	0	4
		GROUP 6: BUSINESS ADMINISTRATION AND LAW					
21	BCME0203	Compensation Management	DSE	4	0	0	4
22	BCME0204	New Venture Planning	DSE	4	0	0	4
23	BALO0118	Corporate Governance and Laws	DSE	4	0	0	4
24	BBAE0108	Labour Laws	DSE	4	0	0	4

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First Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBHC0001	Essentials of Management	CORE	4	0	0	4	4
2	BBHC0002	Economic Concepts & Practices	CORE	3	1	0	4	5
3	BFBC0002	Quantitative Aspects of Business	CORE	3	1	0	4	5
4	BBAC1002	Fundamentals of Accounting	CORE	3	1	0	4	5
5	BCHS0102	Environmental Studies	AECC	2	0	0	2	2
6	BBHC0800	Developing Competitive Edge – I	SEC	0	0	4	2	4
7	BBHC0801	Managerial Aptitude – I	SEC	0	0	4	2	4
		Total					**22**	**29**

Second Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBHC0003	Organisation and Administration for Business	CORE	4	0	0	4	4
2	BBHC0004	Managing Equality & Diversity	CORE	4	0	0	4	4
3	BFBC1005	Accounting for Managers	CORE	3	1	0	4	5
4	BBAO1102	Human Values and Professional Ethics	GE	4	0	0	4	4
	BELO0011	Remedial English						
5	BBAC0015	Fundamentals of Computers and Data Handling	AECC	2	0	0	2	2
6	BBHC0802	Developing Competitive Edge – II	SEC	0	0	4	2	4
7	BBHC0803	Managerial Aptitude – II	SEC	0	0	4	2	4
		Total					**22**	**27**

Third Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBAC0006	Marketing Management	CORE	4	0	0	4	4
2	BBAC1012	Human Resource Management	CORE	4	0	0	4	4
3	BFBC0008	Financial Management of Business	CORE	3	1	0	4	5
4	BFBC0009	Entrepreneurship & Management of Family Business	CORE	4	0	0	4	4
5	BBAC0010	Business Research	CORE	4	0	0	4	
6	BALO0105	Mercantile Law	GE	4	0	0	4	4
	BALO0103	Patent and Copyright Law						
7	BBHC0804	Developing Competitive Edge - III	SEC	0	0	4	2	4
8	BBHC0805	Managerial Aptitude – III	SEC	0	0	4	2	4
		Total					**28**	**29**

Fourth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBHC0005	Hospitality Management	CORE	4	0	0	4	4
2	BBAC0013	International Business Management	CORE	4	0	0	4	4
3	BBHC0006	Event Management	CORE	4	0	0	4	4
4	BBHC0007	Mass Communication	CORE	4	0	0	4	4
5	BALO0106	Company Laws	GE	4	0	0	4	4
	BALO1108	Consumer Protection Laws						
6	BBAO0101	Internet & E-Commerce	GE	4	0	0	4	4
	BBAO0105	Management Information System						
7	BBHC0806	Developing Competitive Edge – IV	SEC	0	0	3	2	3
8	BBHC0807	Managerial Aptitude – IV	SEC	0	0	3	2	3
		Total					**28**	**30**

Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBHC0008	Business Analytics	CORE	4	0	0	4	4
2		Specialization Elective 1 (Group A)	DSE	4	0	0	4	4
3		Specialization Elective 2 (Group A)	DSE	3	1	0	4	5
4		Specialization Elective 1 (Group B)	DSE	4	0	0	4	4
5		Specialization Elective 2 (Group B)	DSE	3	1	0	4	5
6	BBHC0808	Developing Competitive Edge – V	SEC	0	0	4	2	4
7	BBHC0809	Managerial Aptitude – V	SEC	0	0	4	2	4
8	BBHJ0961	Summer Training Project Report & Presentation	DIS/ PROJ	0	0	0	3	-
		Total					**27**	**30**

Sixth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBHC0009	Business Policy and Strategic Management	CORE	4	0	0	4	4
2		Specialization Elective 3 (Group A)	DSE	4	0	0	4	4
3		Specialization Elective 4 (Group A)	DSE	4	1	0	4	5
4		Specialization Elective 3 (Group B)	DSE	4	0	0	4	4
5		Specialization Elective 4 (Group B)	DSE	4	1	0	4	5
6	BBHC0810	Developing Competitive Edge - VI	SEC	0	0	4	2	4
7	BBHC0811	Managerial Aptitude – VI	SEC	0	0	4	2	4
8	BBHJ0962	Research Project Report & Presentation	DIS/ PROJ	0	0	0	3	-
		Total					**27**	**30**

ELECTIVES - Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C
		GROUP 1: HUMAN RESOURCE					
1	BBAE0101	Training & Development	DSE	4	0	0	4
2	BBAE0102	Industrial Relations	DSE	4	0	0	4
3	BBAE0103	Group Dynamics & Team Building	DSE	4	0	0	4
4	BBAE0104	Compensation & Reward Management	DSE	4	0	0	4
		GROUP 2: MARKETING					
5	BBAE0201	Sales & Distribution Management	DSE	4	0	0	4
6	BBAE0202	Rural Marketing	DSE	4	0	0	4
7	BBAE0203	International Marketing	DSE	4	0	0	4
8	BBAE0204	Digital Marketing	DSE	4	0	0	4
		GROUP 3: FINANCE					
9	BBAE0301	International Financial Management	DSE	3	1	0	4
10	BBAE1302	Management of Financial Institutions & Services	DSE	3	1	0	4
11	BBAE0303	Cost Accounting for Business Managers	DSE	3	1	0	4
12	BBAE0304	Working Capital Management	DSE	3	1	0	4
		GROUP 4: ENTREPRENEURSHIP & FAMILY BUSINESS					
13	BFBE0301	Managing Small & Family Business	DSE	4	0	0	4
14	BFBE0302	Project Planning & Management	DSE	4	0	0	4
15	BFBE0303	e-Business	DSE	4	0	0	4
16	BFBE0304	Modern Office Management	DSE	4	0	0	4
		GROUP 5: BANKING & INSURANCE					
17	BBAE0401	Principles and Practices of Life Insurance	DSE	4	0	0	4
18	BBAE0402	Functional Aspects of Banking	DSE	4	0	0	4
19	BBAE0403	Insurance Laws and Environment	DSE	4	0	0	4
20	BBAE0404	e-Banking	DSE	4	0	0	4
		GROUP 6: INTERNATIONAL BUSINESS					
21	BFBE0201	International Business Environment	DSE	4	0	0	4
22	BCME0401	Management of International Trade	DSE	4	0	0	4
23	BCME0402	International Logistics	DSE	4	0	0	4
24	BCME0403	International Treaties and Conventions	DSE	4	0	0	4
		GROUP 7: HOSPITALITY MANAGEMENT					
25	BBHE0101	Emerging Trends in Hospitality	DSE	4	0	0	4
26	BBHE1102	Legal & Social Practices in Hospitality	DSE	4	0	0	4
27	BBHE0103	Hospitality Marketing & Sales	DSE	4	0	0	4
28	BBHE0104	Strategic Hospitality Management	DSE	4	0	0	4
		GROUP 8: EVENT MANAGEMENT					
29	BBHE0201	Event Management Planning	DSE	4	0	0	4
30	BBHE0202	Event Production Process	DSE	4	0	0	4
31	BBHE0203	Event Cost Accounting & Finance Management	DSE	4	0	0	4
32	BBHE0204	Event Marketing & Sponsorship	DSE	4	0	0	4

ELECTIVES - Sixth Semester

S. No.	Code	Subject		L	T	P	C
		GROUP 1: HUMAN RESOURCE					
1	BBAE0105	Negotiation & Counseling	DSE	4	0	0	4
2	BBAE0106	International Human Resource Management	DSE	4	0	0	4
3	BBAE0107	Leadership Skills & Change Management	DSE	4	0	0	4
4	BBAE0108	Labour Laws	DSE	4	0	0	4
		GROUP 2: MARKETING					
5	BBAE0205	Marketing of Services	DSE	4	0	0	4
6	BBAE0206	Retail Management	DSE	4	0	0	4
7	BBAE0207	Product & Brand Management	DSE	4	0	0	4
8	BBAE0208	Customer Relationship Management	DSE	4	0	0	4
		GROUP 3: FINANCE					
9	BBAE0305	Investment Management	DSE	3	1	0	4
10	BBAE0306	Taxation Laws	DSE	3	1	0	4
11	BBAE0307	Personal Financial Planning	DSE	3	1	0	4
12	BBAE0308	Corporate Accounting	DSE	3	1	0	4
		GROUP 4: ENTREPRENEURSHIP & FAMILY BUSINESS					
13	BFBE0305	Creativity & Innovation	DSE	4	0	0	4
14	BFBE0306	Materials Management	DSE	4	0	0	4
15	BFBE0307	Social Responsibility of Business	DSE	4	0	0	4
16	BFBE0308	Export Procedure and Documentation	DSE	4	0	0	4
		GROUP 5: BANKING & INSURANCE					
17	BBAE0405	Principles and Practices of General Insurance	DSE	4	0	0	4
18	BBAE0406	Banking Laws & Environment	DSE	4	0	0	4
19	BBAE0407	Marketing of Financial Products and Services	DSE	4	0	0	4
20	BBAE0408	Management of Commercial Bank	DSE	4	0	0	4
		GROUP 6: INTERNATIONAL BUSINESS					
21	BCME0404	Cross Cultural Issues in International Business	DSE	4	0	0	4
22	BCME0405	International Ethical and Legal Issues	DSE	4	0	0	4
23	BBAE0203	International Marketing	DSE	4	0	0	4
24	BFBE0202	International HR & Strategic Issues	DSE	4	0	0	4
		GROUP 7: HOSPITALITY MANAGEMENT					
25	BBHE0105	Tourism & Travel Management	DSE	4	0	0	4
26	BBHE0106	Hotel & Catering Management	DSE	4	0	0	4
27	BBHE0107	Leisure Management	DSE	4	0	0	4
28	BBHE0108	Health & Wellness Management	DSE	4	0	0	4
		GROUP 8: EVENT MANAGEMENT					
29	BBHE0205	Managing Special Events	DSE	4	0	0	4
30	BBHE0206	Event Team & Crew Management	DSE	4	0	0	4
31	BBHE0207	Event Resource Management	DSE	4	0	0	4
32	BBHE0208	Event Hospitality & Media Management	DSE	4	0	0	4

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First Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBAC0001	Management Concepts & Practices	CORE	4	0	0	4	5
2	BBAC1002	Fundamentals of Accounting	CORE	3	1	0	4	5
3	BBAC0003	Managerial Economics	CORE	3	1	0	4	5
4	BMAS0201	Business Mathematics	CORE	3	1	0	4	5
5	BBAC0015	Fundamentals of Computer & Data Handling	AECC	2	0	0	2	2
6	BBAC0800	Business Acumen – I	SEC	0	0	4	2	4
		Total					**20**	**26**

Second Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBAC0004	Organizational Behaviour	CORE	4	0	0	4	4
2	BBAC0005	Management Accounting	CORE	3	1	0	4	5
3	BMAS0202	Business Statistics	CORE	3	1	0	4	5
4	BELO1010	Business Ethics & Values	GE	4	0	0	4	4
	BELO0011	Remedial English						
5	BBAC0801	Practical on Computer Application	SEC	0	0	4	2	4
6	BBAC0802	Business Acumen – II	SEC	0	0	4	2	4
		Total					**20**	**26**

Third Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBAC0006	Marketing Management	CORE	4	0	0	4	5
2	BBAC0007	Production & Operation Management	CORE	3	1	0	4	5
3	BBAC0008	Business Communication	CORE	4	0	0	4	5
4	BALO0103	Patent and Copyright Law	GE	4	0	0	4	5
	BALO0101	Legal and Regulatory Framework of Business						
5	BCHS0102	Environmental Studies	AECC	2	0	0	2	2
6	BBAC0803	Business Acumen – III	SEC	0	0	4	2	4
		Total					**20**	**26**

Fourth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBAC0009	Fundamentals of Banking and Insurance	CORE	4	0	0	4	5
2	BBAC0010	Business Research	CORE	4	0	0	4	5
3	BBAC0011	Financial Management	CORE	3	1	0	4	5
4	BBAC1012	Human Resource Management	CORE	4	0	0	4	5
5	BALO1108	Consumer Protection Laws	GE	4	0	0	4	4
	BALO0106	Company Laws						
6	BBAC0804	Business Acumen – IV	SEC	0	0	4	2	4
		Total					**22**	**28**

Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBAC0013	International Business Management	CORE	4	0	0	4	4
2		Specialization Elective 1 (Group A)	DSE	4	0	0	4	5
3		Specialization Elective 2 (Group A)	DSE	3	1	0	4	5
4		Specialization Elective 1 (Group B)	DSE	4	0	0	4	5
5		Specialization Elective 2 (Group B)	DSE	3	1	0	4	5
6	BBAC0805	Business Acumen – V	SEC	0	0	4	2	4
7	BBAJ0961	Project Report (Summer Training- based) & Presentation	DIS/ PROJ	0	0	0	3	-
		Total					**25**	**28**

Sixth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBAC0014	Corporate Strategic Management	CORE	4	0	0	4	4
2		Specialization Elective 3 (Group A)	DSE	4	0	0	4	5
3		Specialization Elective 4 (Group A)	DSE	3	1	0	4	5
4		Specialization Elective 3 (Group B)	DSE	4	0	0	4	5
5		Specialization Elective 4 (Group B)	DSE	3	1	0	4	5
6	BBAC0806	Business Acumen – VI	SEC	0	0	4	2	4
7	BBAJ0962	Comprehensive Viva	DIS/ PROJ	0	0	0	3	-
		Total					**25**	**28**

ELECTIVES - Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C
		GROUP 1: HUMAN RESOURCE					
1	BBAE0101	Training & Development	DSE	4	0	0	4
2	BBAE0102	Industrial Relations	DSE	4	0	0	4
3	BBAE0103	Group Dynamics & Team Building	DSE	4	0	0	4
4	BBAE0104	Compensation & Reward Management	DSE	4	0	0	4
		GROUP 2: MARKETING					
5	BBAE0201	Sales & Distribution Management	DSE	4	0	0	4
6	BBAE0202	Rural Marketing	DSE	4	0	0	4
7	BBAE0203	International Marketing	DSE	4	0	0	4
8	BBAE0204	Digital Marketing	DSE	4	0	0	4
		GROUP 3: FINANCE					
9	BBAE0301	International Financial Management	DSE	3	1	0	4
10	BBAE1302	Management of Financial Institutions & Services	DSE	3	1	0	4
11	BBAE0303	Cost Accounting for Business Managers	DSE	3	1	0	4
12	BBAE0304	Working Capital Management	DSE	3	1	0	4
		GROUP 4: BANKING & INSURANCE					
13	BBAE0401	Principles and Practices of Life Insurance	DSE	4	0	0	4
14	BBAE0402	Functional Aspects of Banking	DSE	4	0	0	4
15	BBAE0403	Insurance Laws and Environment	DSE	4	0	0	4
16	BBAE0404	e-Banking	DSE	4	0	0	4
		GROUP 5: ENTREPRENEURSHIP & FAMILY BUSINESS					
17	BFBE0301	Managing Small & Family Business	DSE	4	0	0	4
18	BFBE0302	Project Planning & Management	DSE	4	0	0	4
19	BFBE0303	e-Business	DSE	4	0	0	4
20	BFBE0304	Modern Office Management	DSE	4	0	0	4

ELECTIVES - Sixth Semester

S. No.	Code	Subject	Cat	L	T	P	C
		GROUP 1: HUMAN RESOURCE					
1	BBAE0105	Negotiation & Counseling	DSE	4	0	0	4
2	BBAE0106	International Human Resource Management	DSE	4	0	0	4
3	BBAE0107	Leadership Skills & Change Management	DSE	4	0	0	4
4	BBAE0108	Labour Laws	DSE	4	0	0	4
		GROUP 2: MARKETING					
5	BBAE0205	Marketing of Services	DSE	4	0	0	4
6	BBAE0206	Retail Management	DSE	4	0	0	4
7	BBAE0207	Product & Brand Management	DSE	4	0	0	4
8	BBAE0208	Customer Relationship Management	DSE	4	0	0	4
		GROUP 3: FINANCE					
9	BBAE0305	Investment Management	DSE	3	1	0	4
10	BBAE0306	Taxation Laws	DSE	3	1	0	4
11	BBAE0307	Personal Financial Planning	DSE	3	1	0	4
12	BBAE0308	Corporate Accounting	DSE	3	1	0	4
		GROUP 4: BANKING & INSURANCE					
13	BBAE0405	Principles and Practices of General Insurance	DSE	4	0	0	4
14	BBAE0406	Banking Laws & Environment	DSE	4	0	0	4
15	BBAE0407	Marketing of Financial Products and Services	DSE	4	0	0	4
16	BBAE0408	Management of Commercial Bank	DSE	4	0	0	4
		GROUP 5: ENTREPRENEURSHIP & FAMILY BUSINESS					
17	BFBE0305	Creativity & Innovation	DSE	4	0	0	4
18	BFBE0306	Materials Management	DSE	4	0	0	4
19	BFBE0307	Social Responsibility of Business	DSE	4	0	0	4
20	BFBE0308	Export Procedure and Documentation	DSE	4	0	0	4

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Session 2020-21

First Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BFBC0001	Economics for Managers	CORE	4	0	0	4	4
2	BFBC0002	Quantitative Aspects of Business	CORE	3	1	0	4	5
3	BFBC0003	Business Organization	CORE	4	0	0	4	4
4	BCMC0003	Business Communication and Commercial Knowledge	CORE	4	0	0	4	4
5	BBAC1002	Fundamentals of Accounting	CORE	3	1	0	4	5
6	BFBC0800	Practical on Technological Aspects of Business	SEC	0	0	4	2	4
7	BFBC0801	Business Wisdom-I	SEC	0	0	4	2	4
		Total					**24**	**30**

Second Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BFBC0004	Analysis & Design of Business System	CORE	4	0	0	4	4
2	BFBC1005	Accounting for Managers	CORE	3	1	0	4	5
3	BFBC0006	Management Principles & Practices	CORE	4	0	0	4	4
4	BFBC0007	Organisational Behaviour & Culture	CORE	4	0	0	4	4
5	BELO1010	Business Ethics & Values	GE	4	0	0	4	4
	BELO0011	Remedial English						
6	BCMC0800	Practical on Computer Application in Accounting	SEC	0	0	4	2	4
7	BFBC0802	Business Wisdom-II	SEC	0	0	4	2	4
		Total					**24**	**29**

Third Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BFBC0008	Financial Management of Business	CORE	3	1	0	4	5
2	BFBC0009	Entrepreneurship & Management of Family Business	CORE	4	0	0	4	4
3	BFBC0010	Marketing Management & Consumer Behavior	CORE	4	0	0	4	4
4	BBAC1012	Human Resource Management	CORE	4	0	0	4	4
		GROUP 1: LEGAL ASPECTS OF BUSINESS						
5	BALO0105	Mercantile Law	GE	4	0	0	4	4
	BALO0110	Banking and Insurance Laws						
	BALO0111	International Law and Human Rights						
	BALO0112	Environmental Laws						
6	BCHS0102	Environmental Studies	AECC	2	0	0	2	2
7	BFBC0803	Business Wisdom-III	SEC	0	0	4	2	4
		Total					**24**	**27**

Fourth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCMC0012	Functional Aspect of International Business	CORE	4	0	0	4	4
2	BFBC0011	Fundamentals of Business Analytics	CORE	3	1	0	4	5
3	BBAC0010	Business Research	CORE	4	0	0	4	4
		GROUP 1: LEGAL ASPECTS OF BUSINESS						
4	BALO0106	Company Laws	GE	4	0	0	4	4
	BALO0103	Patent & Copyright Law						
	BALO0102	Intellectual Property Law						
	BALO1108	Consumer Protection Laws						
5	BFBC0013	Management of Business Ambiance & Etiquettes	AECC	2	0	0	2	4
6	BCMC0801	Communication Techniques & Presentation Skills	SEC	0	0	4	2	4
7	BFBC0804	Business Wisdom-IV	SEC	0	0	4	2	4
		Total					**22**	**29**

Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BFBC0012	Management of Business Inventiveness & Advancement	CORE	4	0	0	4	4
2		Specialization Elective 1 (Group A)	DSE	4	0	0	4	4
3		Specialization Elective 1 (Group B)	DSE	3	1	0	4	5
4	BFBC0805	Business Wisdom-V	SEC	0	0	4	2	4
5	BFBC0806	Practical on Managerial Aptitude-I	SEC	0	0	4	2	4
6	BFBJ0961	Summer Training Project Presentation	DIS/ PROJ	0	0	0	3	-
		Total					**19**	**21**

Sixth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BBAC0014	Corporate Strategic Management	CORE	4	0	0	4	4
2		Specialization Elective 2 (Group A)	DSE	4	0	0	4	4
3		Specialization Elective 2 (Group B)	DSE	3	1	0	4	5
4	BFBC0807	Business Wisdom-VI	SEC	0	0	4	2	4
5	BFBC0808	Practical on Managerial Aptitude-II	SEC	0	0	4	2	4
6	BFBJ0962	Practical on Development of Business Plan	DIS/ PROJ	0	0	4	3	4
		Total					**19**	**25**

ELECTIVES - Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C
		GROUP 2: HUMAN RESOURCE					
1	BBAE0101	Training & Development	DSE	4	0	0	4
2	BBAE0102	Industrial Relations	DSE	4	0	0	4
3	BBAE0103	Group Dynamics & Team Building	DSE	4	0	0	4
4	BBAE0104	Compensation & Reward Management	DSE	4	0	0	4
		GROUP 3: MARKETING					
5	BBAE0201	Sales & Distribution Management	DSE	4	0	0	4
6	BBAE0202	Rural Marketing	DSE	4	0	0	4
7	BBAE0203	International Marketing	DSE	4	0	0	4
8	BBAE0204	Digital Marketing	DSE	4	0	0	4
		GROUP 4: FINANCE					
9	BBAE0301	International Financial Management	DSE	3	1	0	4
10	BBAE1302	Management of Financial Institutions & Services	DSE	3	1	0	4
11	BBAE0303	Cost Accounting for Business Managers	DSE	3	1	0	4
12	BBAE0304	Working Capital Management	DSE	3	1	0	4
		GROUP 5: BUSINESS ANALYTICS					
13	BFBE0101	HR Analytics	DSE	4	0	0	4
14	BFBE0102	Marketing Analytics	DSE	4	0	0	4
15	BCME0104	Financial Analytics	DSE	4	0	0	4
16	BFBE0103	Socio Technical Analytics	DSE	4	0	0	4
		GROUP 6: INTERNATIONAL BUSINESS					
17	BFBE0201	International Business Environment	DSE	4	0	0	4
18	BCME0401	Management of International Trade	DSE	4	0	0	4
19	BCME0402	International Logistics	DSE	4	0	0	4
20	BCME0403	International Treaties and Conventions	DSE	4	0	0	4
		GROUP 7: ENTREPRENEURSHIP & FAMILY BUSINESS					
21	BFBE0301	Managing Small & Family Business	DSE	4	0	0	4
22	BFBE0302	Project Planning & Management	DSE	4	0	0	4
23	BFBE0303	e-Business	DSE	4	0	0	4
24	BFBE0304	Modern Office Management	DSE	4	0	0	4
		GROUP 8: BUSINESS LOGISTICS & SUPPLY CHAIN MANAGEMENT					
25	BFBE0401	Logistics Management	DSE	4	0	0	4
26	BFBE0402	Recent Trends in E-Commerce	DSE	4	0	0	4
27	BFBE0403	Store Keeping and Warehousing	DSE	4	0	0	4
28	BFBE0404	Purchasing and Inventory Management	DSE	4	0	0	4

ELECTIVES - Sixth Semester

S. No.	Code	Subject	Cat	L	T	P	C
		GROUP 2: HUMAN RESOURCE					
1	BBAE0105	Negotiation & Counseling	DSE	4	0	0	4
2	BBAE0106	International Human Resource Management	DSE	4	0	0	4
3	BBAE0107	Leadership Skills & Change Management	DSE	4	0	0	4
4	BBAE0108	Labour Laws	DSE	4	0	0	4
		GROUP 3: MARKETING					
5	BBAE0205	Marketing of Services	DSE	4	0	0	4
6	BBAE0206	Retail Management	DSE	4	0	0	4
7	BBAE0207	Product & Brand Management	DSE	4	0	0	4
8	BBAE0208	Customer Relationship Management	DSE	4	0	0	4
		GROUP 4: FINANCE					
9	BBAE0305	Investment Management	DSE	3	1	0	4
10	BBAE0306	Taxation Laws	DSE	3	1	0	4
11	BBAE0307	Personal Financial Planning	DSE	3	1	0	4
12	BBAE0308	Corporate Accounting	DSE	3	1	0	4
		GROUP 5: BUSINESS ANALYTICS					
13	BFBE0104	Logistics & Supply Chain Analytics	DSE	4	0	0	4
14	BFBE0105	Big Data Analysis	DSE	4	0	0	4
15	BFBE0106	Data Environment and Management	DSE	4	0	0	4
16	BFBE0107	Business Intelligence	DSE	4	0	0	4
		GROUP 6: INTERNATIONAL BUSINESS					
17	BCME0404	Cross Cultural Issues in International Business	DSE	4	0	0	4
18	BCME0405	International Ethical and Legal Issues	DSE	4	0	0	4
19	BBAE0203	International Marketing	DSE	4	0	0	4
20	BFBE0202	International HR & Strategic Issues	DSE	4	0	0	4
		GROUP 7: ENTREPRENEURSHIP & FAMILY BUSINESS					
21	BFBE0305	Creativity & Innovation	DSE	4	0	0	4
22	BFBE0306	Materials Management	DSE	4	0	0	4
23	BFBE0307	Social Responsibility of Business	DSE	4	0	0	4
24	BFBE0308	Export Procedure and Documentation	DSE	4	0	0	4
		GROUP 8: BUSINESS LOGISTICS & SUPPLY CHAIN MANAGEMENT					
25	BFBE0405	Green Supply chain Management	DSE	4	0	0	4
26	BFBE0406	Strategic and Implementation Issues in SCM	DSE	4	0	0	4
27	BFBE0407	Performance Metrics and Modeling	DSE	4	0	0	4
28	BFBE0408	Enterprise Resource Planning	DSE	4	0	0	4

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First Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCMC0001	Essentials of Accounting	CORE	3	1	0	4	5
2	BCMC0002	Micro Economics	CORE	3	1	0	4	5
3	BCMC0003	Business Communication and Commercial Knowledge	CORE	3	1	0	4	5
4	BCMC1004	Business Organization & Management	CORE	3	1	0	4	5
5	BBAC0015	Fundamentals of Computers and Data Handling	AECC	2	0	0	2	2
6	BBAC0801	Practical on Computer Application	SEC	0	0	4	2	5
		Total					**20**	**27**

Second Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCMC0005	Advanced Accounting	CORE	3	1	0	4	5
2	BCMC0006	Macro Economics	CORE	3	1	0	4	5
3	BMAS0251	Commercial Statistics	CORE	3	1	0	4	5
4	BALO0103	Patent and Copyright Law	GE	4	0	0	4	5
	BALO0105	Mercantile Law						
5	BCHS0102	Environmental Studies	AECC	2	0	0	2	2
6	BCMC0800	Practical on Computer Applications in Accounting	SEC	0	0	4	2	5
		Total					**20**	**27**

Third Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCMC0007	Corporate Accounting – I	CORE	3	1	0	4	5
2	BCMC1008	Taxation Laws & Practices – I	CORE	3	1	0	4	5
3	BBAC0009	Fundamentals of Banking & Insurance	CORE	4	0	0	4	4
4	BBAC1012	Human Resource Management	CORE	4	0	0	4	4
5	BELO1010	Business Ethics & Values	GE	4	0	0	4	4
	BELO0011	Remedial English						
6	BCMC0009	Qualitative Aspects of Business Economics	CORE	4	0	0	4	4
7	BCMC0801	Communication Techniques and Presentation Skill	SEC	0	0	4	2	4
		Total					**26**	**30**

Fourth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCMC0010	Corporate Accounting – II	CORE	3	1	0	4	5
2	BCMC0011	Taxation Laws & Practices – II	CORE	3	1	0	4	5
3	BBAC0011	Financial Management	CORE	3	1	0	4	5
4	BCMC0012	Functional Aspects of International Business	CORE	4	0	0	4	4
5	BALO1108	Consumer Protection Laws	GE	4	0	0	4	4
	BALO0104	Corporate Laws						
6	BCMC0013	Research Methodology for Business	CORE	4	0	0	4	4
7	BCMC0802	Virtual Trading in Stock Market	SEC	0	0	4	2	3
		Total					**26**	**30**

Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCMC0014	Accounting for Management	CORE	3	1	0	4	5
2	BCMC0015	Cost Accounting	CORE	3	1	0	4	5
3		Specialization Elective 1 (Group A)	DSE	3	1	0	4	5
4		Specialization Elective 2 (Group A)	DSE	3	1	0	4	5
5		Specialization Elective 1 (Group B)	DSE	3	1	0	4	5
6		Specialization Elective 2 (Group B)	DSE	3	1	0	4	5
7	BCMJ0961	Project Report & Presentation	DIS/ PROJ	0	0	0	3	-
		Total					**27**	**30**

Sixth Semester

S. No.	Code	Subject	Cat	L	T	P	C	Contacts Hrs/Wk
1	BCMC0016	Management of Working Capital	CORE	3	1	0	4	5
2	BCMC0017	Auditing	CORE	3	1	0	4	5
3		Specialization Elective 3 (Group A)	DSE	3	1	0	4	5
4		Specialization Elective 4 (Group A)	DSE	3	1	0	4	5
5		Specialization Elective 3 (Group B)	DSE	3	1	0	4	5
6		Specialization Elective 4 (Group B)	DSE	3	1	0	4	5
7	BCMJ0962	Comprehensive Viva	DIS/ PROJ	0	0	0	3	-
		Total					**27**	**30**

ELECTIVES - Fifth Semester

S. No.	Code	Subject	Cat	L	T	P	C
		GROUP 1: ACCOUNTING AND FINANCE					
1	BBAE1302	Management of Financial Institutions & Services	DSE	3	1	0	4
2	BCME0101	Public Finance	DSE	3	1	0	4
3	BCME0102	Microfinance	DSE	3	1	0	4
4	BBAE0301	International Financial Management	DSE	3	1	0	4
		GROUP 2: BUSINESS ADMINISTRATION AND LAW					
5	BCME0201	Entrepreneurship and Small Business Management	DSE	4	0	0	4
6	BBAE0106	International Human Resource Management	DSE	4	0	0	4
7	BCME0202	Principles of Business management	DSE	4	0	0	4
8	BBAE0102	Industrial Relations	DSE	4	0	0	4
		GROUP 3: APPLIED BUSINESS ECONOMICS					
9	BCME0301	Business & Economic Environment	DSE	4	0	0	4
10	BCME0302	Mergers and Acquisitions	DSE	4	0	0	4
11	BCME0303	Industrial Economics	DSE	4	0	0	4
12	BCME0304	Indian Economics	DSE	4	0	0	4
		GROUP 4: BANKING AND INSURANCE					
13	BBAE0401	Principles and Practices of Life Insurance	DSE	3	1	0	4
14	BBAE0402	Functional Aspects of Banking	DSE	3	1	0	4
15	BBAE0403	Insurance Laws and Environment	DSE	3	1	0	4
16	BBAE0404	e-Banking	DSE	3	1	0	4
		GROUP 5: INTERNATIONAL BUSINESS					
17	BBAC0013	International Business Management	DSE	4	0	0	4
18	BCME0401	Management of International Trade	DSE	4	0	0	4
19	BCME0402	International Logistics	DSE	4	0	0	4
20	BCME0403	International Treaties and Convention	DSE	4	0	0	4

ELECTIVES - Sixth Semester

S. No.	Code	Subject	Cat	L	T	P	C
		GROUP 1: ACCOUNTING AND FINANCE					
1	BBAE0305	Investment Management	DSE	3	1	0	4
2	BCME0103	Financial Reporting and Analysis	DSE	3	1	0	4
3	BCME0104	Financial Analytics	DSE	3	1	0	4
4	BCME0105	Security Analysis and Portfolio Management	DSE	3	1	0	4
		GROUP 2: BUSINESS ADMINISTRATION AND LAW					
5	BCME0203	Compensation Management	DSE	4	0	0	4
6	BCME0204	New Venture Planning	DSE	4	0	0	4
7	BALO0118	Corporate Governance and Laws	DSE	4	0	0	4
8	BBAE0108	Labour Laws	DSE	4	0	0	4
		GROUP 3: APPLIED BUSINESS ECONOMICS					
9	BCME0305	e-Commerce	DSE	4	0	0	4
10	BCME0306	Economics and Regulations of Exchange Markets	DSE	4	0	0	4
11	BCME0307	Development Economics	DSE	4	0	0	4
12	BCME0308	Behaviourial Economics	DSE	4	0	0	4
		GROUP 4: BANKING AND INSURANCE					
13	BBAE0405	Principles and Practices of General Insurance	DSE	3	1	0	4
14	BBAE0406	Banking Laws and Environment	DSE	3	1	0	4
15	BBAE0407	Marketing of Financial Product and Services	DSE	3	1	0	4
16	BBAE0408	Management of Commercial Bank	DSE	3	1	0	4
		GROUP 5: INTERNATIONAL BUSINESS					
17	BCME0404	Cross Cultural Issues in International Business	DSE	4	0	0	4
18	BCME0405	International Ethical and Legal Issues	DSE	4	0	0	4
19	BBAE0203	International Marketing	DSE	4	0	0	4
20	BCME0406	Emerging Aspects of Foreign Trade Policy	DSE	4	0	0	4

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DEPARTMENT OF MANAGEMENT (PG), INSTITUTE OF BUSINESS MANAGEMENT

ABOUT THE PROGRAM

The Institute of Business Management offers two-year full time MBA in Financial Markets and Banking (MBA-FMB). This course is designed to cater the growing need of management professionals for Financial Markets and Banking industry. The Financial markets and banking services have been growing in an integrated manner across the globe and within India that requires professionals and experts to manage different types of financial transactions to co-integrate the increased corporate financial needs through innovative financial instruments. The very objective of this program is to develop high quality management professionals equipped with technical and managerial competency with global mindset. The focus of program is to develop a holistic and integrative approach of management of Financial Markets and Banking services industry.

Program Objective

- To develop conceptual and technical skills with managerial competency focusing on financial markets and banking industry.
- To cater the growing demand for risk management professionals in various banking and securities markets transactions with global managerial mind set
- To develop an understanding about global financial system and regulatory structure of Financial Markets and Banking Services
- To hone analytical and problem solving approach for risk management and operations of Financial markets and Banking
- To build capacity for product development and distribution of Financial Markets and Banking products and services

Program Highlights:

- IBM, GLA University has been approved as Examination Center by National Institute of Securities Markets (NISM) Mumbai, an institute promoted by Securities & Exchange Board of India (SEBI), Government of India.
- The students of this program will be given opportunity to complete a minimum of FIVE Modules of Securities Markets during the MBA program being offered and certificated by the NISM.
- The students will have opportunity for obtaining Certification on two core areas of banking operations from Indian Institute of Banking & Finance, Mumbai.
- Selected students will be provided opportunity for Internship at NISM, Mumbai subject to fulfilling minimum requirements of NISM.
- The majority of course will have practical exposure from Professionals and Experts of financial markets, Securities Markets and Banks involving top Banks' executives, Officials of SEBI, Mutual Funds and NISM.
- The Two month Internship will be provided at reputed securities markets organizations, Mutual Funds and Banks.

Institute of Business Management

MBA (FINANCIAL MARKETS & BANKING)

Session: 2018-19

S.No.	Trimester	Code	Subject	L	T	P	Credits
1	I	MFMC0001	Business Environment and Management Practices	3	0	0	3
2		MBAC0007	Financial Accounting	3	0	0	3
3		MFMC0003	Financial and Securities Markets	3	0	0	3
4		MFMC0004	Marketing of Securities and Banking Services	3	0	0	3
5		MBAC0011	Computer Applications in Management	3	0	0	3
6		MFMC0006	HR Practices in Banking and Financial Services	3	0	0	3
7		MFMC0007	Managerial Aptitude – I	3	0	0	1
			Total				**19**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	II	MBAC0014	Macro Economics	3	0	0	3
2		MBAC0015	Cost & Management Accounting	3	0	0	3
3		MFMC0010	Commercial Bank Management	3	0	0	3
4		MFMC0011	Research Methods and Data Analytics	3	0	0	3
5		MFMC0012	Business Analytics & Financial Modelling	3	0	0	3
6		MFMC0013	Legal & Regulatory Environment for Banking and Financial Services	3	0	0	3
7		MFMC0014	Managerial Aptitude – II	3	0	0	1
			Total				**19**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	III	MFMC0015	Retail Banking	3	0	0	3
2		MBAC0023	Operations Research	3	0	0	3
3		MBAE0020	Financial Management	3	0	0	3
4		MFMC0017	Securities Operations and Risk Management	3	0	0	3
5		MFMC0018	Personal Financial Planning and Wealth Management	3	0	0	3
6		MFMC0019	Investment and Portfolio Management	3	0	0	3
7		MFMC0020	Managerial Aptitude – III	3	0	0	1
			Total				**19**

S.No.	Trimester	Code	Subject	L	T	P	Credits
1	IV	MBAE0010	Business Analysis and Valuation	3	0	0	3
2		MFMC0022	Contemporary Banking: Merchant, Investment & International Banking	3	0	0	3
3		-	Elective – 1	3	0	0	3
4		-	Elective – 2	3	0	0	3
5		-	Elective – 3	3	0	0	3
6		MFMC0023	Managerial Aptitude - IV	3	0	0	1
7		MFMJ0001	Summer Training Report	0	0	0	6
			Total				**22**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	V	MBAC0032	Corporate Governance and Business Ethics	3	0	0	3
2		MFMC0025	Treasury & Foreign Exchange Management	3	0	0	3
3		-	Elective – 1	3	0	0	3
4		-	Elective – 2	3	0	0	3
5		-	Elective – 3	3	0	0	3
6		MFMC0026	Managerial Aptitude – V	3	0	0	1
			Total				**16**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	VI	MFMC0027	Strategic Financial Management	3	0	0	3
2		MBAE0049	Financial Analytics	3	0	0	3
3		-	Elective – 1	3	0	0	3
4		-	Elective – 2	3	0	0	3
5		-	Elective – 3	3	0	0	3
6		MFMC0029	Managerial Aptitude – VI	3	0	0	1
7		MFMJ0002	Research Project Report	0	0	0	3
			Total				**19**
			Total Credits				**114**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	VII	MFME0010	Concepts of Life & General Insurance*	3	0	0	3
2		MFME0001	Portfolio Management & Behavioural Finance	3	0	0	3
3		MFME0011	Securities Intermediaries Compliance & Depository*	3	0	0	3
4		MFME0002	Principles & Practices of Insurance	3	0	0	3
5		MFME0007	Indirect Taxes: Goods & Service Tax & Custom	3	0	0	3

GLA UNIVERSITY MATHURA

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COURSE STRUCTURE

MBA INTEGRATED

Under

Choice Based Credit System (CBCS)

Session 2020-21

DEPARTMENT OF MANAGEMENT (PG), INSTITUTE OF BUSINESS MANAGEMENT

ABOUT THE PROGRAM

The Institute of Business Management offers two-year full time MBA in Financial Markets and Banking (MBA-FMB). This course is designed to cater the growing need of management professionals for Financial Markets and Banking industry. The Financial markets and banking services have been growing in an integrated manner across the globe and within India that requires professionals and experts to manage different types of financial transactions to co-integrate the increased corporate financial needs through innovative financial instruments. The very objective of this program is to develop high quality management professionals equipped with technical and managerial competency with global mindset. The focus of program is to develop a holistic and integrative approach of management of Financial Markets and Banking services industry.

Five Years Integrated Programme in Management

Duration: Five Years

About the Program:

Today's business environment is characterized by dynamic uncertainties and complexities, which makes the work of managers and organizational leaders extremely challenging. There are new products, services and business processes that are being engineered to meet contemporary requirements of the industry. Corporate world's scenario is changing rapidly in last few years and there has been a dynamic upsurge in demand of professionals who can handle the complex and challenging work profiles effectively and efficiently.

Thus, those who aspire to secure their future with the help of management education need to acquire specialized knowledge, skills and attitude along with multi-tasking ability in order to understand and analyze complex business situations. In pursuit of this goal, the management programme of GLA University, nurtures leaders capable of contributing to different sectors.

This course is for all eligible class XII pass-outs, aspiring for a career in business management. The syllabus is directional in scope and permits the much desirable flexibility to keep pace with the ever – growing body of knowledge, experience and explorations in different domains. The course structure is carefully designed so that students get an edge in dealing with diverse situations when they step into the corporate world.

Need of Program:

Institute of Business Management has been striving to the best of its potential to deliver in the spectrum of various domains of management discipline. However, there has been a lot of surge from alumni as well as corporate world to introduce a specific course which can deliver best to those who are, right after their 12th examinations, having a clear vision to acquire management education and then a suitable career with the help of the same. This course hence will prepare the professionals to meet the contemporary requirement of the industry and to grab the best opportunity available.

Integrated Management Programme is meant for young students with managerial and leadership aspirations. The programme offers comprehensive management education combined with in-depth specific domain.

Institute of Business Management has been striving to the best of its potential to deliver in the spectrum of various domains of management discipline. However, there has been a lot of surge from alumni as well as corporate world to introduce a specific course which can deliver the best to those who are, right after their 12th examinations, having a clear vision to acquire management education and then a suitable career with the help of the same. This course hence will prepare the professionals to meet the contemporary requirement of the industry and to grab the best opportunity available.

Course Duration: 5 Years

Year	Trimester	Code	Subject	L	T	P	Credits	
I	I	MBIC1001	Management Thoughts and Thinkers	3	0	0	3	English Classes / Industrial Exposure Visits
		MBIC1002	Fundamentals of Accounting	3	0	0	3	
		MBIC1003	Business Economics	3	0	0	3	
		MBIC1004	Mathematics for Managers-I	3	0	0	3	
		MBIC1005	Professional Communication	3	0	0	3	
		MBIC1006	Computer Application in Management	3	0	0	3	
			Total				18	
	Trimester	Code	Subject	L	T	P	Credits	
	II	MBIC1007	Cost and Management Accounting	3	0	0	3	
		MBIC1008	Mathematics for Managers-II	3	0	0	3	
		MBIC1009	Organization and Administration for Business	3	0	0	3	
		MBIC1010	Basic Managerial Functions	3	0	0	3	
		MBIC1011	Macro Economics	3	0	0	3	
		MBIC1012	Managerial Aptitude and Personality Development	3	0	0	3	
			Total				18	
	Trimester	Code	Subject	L	T	P	Credits	
	III	MBIC1013	Operations Management	3	0	0	3	
		MBIC1014	Organizational Behaviour	3	0	0	3	
		MBIC1015	Marketing Management	3	0	0	3	
		MBIC1016	Human Resource Management	3	0	0	3	
		MBIC1017	Financial Management	3	0	0	3	
		MBIC1018	Business Law	3	0	0	3	
			Total				18	
			NPTEL/SWAYAM/MOOC/NISM/IIBF Certification					
Year	Trimester	Code	Subject	L	T	P	Credits	
II	IV	MBIC1019	Professional Ethics & Values	3	0	0	3	Foreign Language Classes /Industrial Exposure Visits
		MBIC1020	Operations Research	3	0	0	3	
		MBIC1021	Team Building & Leadership	3	0	0	3	
		MBIC1022	Business Environment	3	0	0	3	
		MBIC1023	Mass Communication & Media Management	3	0	0	3	
		MBIC1024	Basic MS Office applications for managers	3	0	0	3	
			Total				18	
	Trimester	Code	Subject	L	T	P	Credits	
	V	MBIC1025	Entrepreneurship Development	3	0	0	3	
		MBIC1026	Sales and Distribution Management	3	0	0	3	
		MBIC1027	Company Law	3	0	0	3	
		MBIC1028	Micro Finance	3	0	0	3	
		MBIC1029	International Business Management	3	0	0	3	
		MBIC1030	Econometrics	3	0	0	3	
			Total				18	
	Trimester	Code	Subject	L	T	P	Credits	
	VI	MBIC1031	Supply Chain Management	3	0	0	3	

		MBIC1032	Project Management	3	0	0	3
		MBIC1033	International Financial Management	3	0	0	3
		MBIC1034	Research Methodology	3	0	0	3
		MBIC1035	Strategic Management	3	0	0	3
			Total				**15**
			MOOC/NPTEL/SWAYAM/NISM /IIBF Certification				
Year	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
III	VII	MBIC1036	Basics of Tax Planning	3	0	0	3
		MBIC1037	Change Management	3	0	0	3
		MBIC1038	Start-up Planning	3	0	0	3
		MBIC1039	Banking and Insurance	3	0	0	3
		MBIC1040	Retail Management	3	0	0	3
		MBIC1050	Managerial Aptitude – I	3	0	0	1
			Total				**16**
			MOOC/ NPTEL/ SWAYAM/ NISM/ IIBF Certification				
	Trimester	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
	VIII	MBIC1041	International Trade	3	0	0	3
		MBIC1042	Business Analytics	3	0	0	3
		MBIC1043	Investment Management	3	0	0	3
		MBIC1044	Industrial Relations & Labour Law	3	0	0	3
		MBIC1045	Corporate Governance	3	0	0	3
		MBIC1051	Managerial Aptitude – II	3	0	0	1
			Total				**16**
	Trimester	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
	IX	MBIC1046	Sustainability Management	3	0	0	3
			Open Elective-1	3	0	0	3
			Open Elective-2	3	0	0	3
			Open Elective-3	3	0	0	3
			Open Elective-4	3	0	0	3
		MBIC1052	Managerial Aptitude – III	3	0	0	1
			Total				**16**

*Open Electives from the basket as follows:
MBIO1001 Management of Public private partnership
MBIO1002 Event Management
MBIO1003 Management for rural development
MBIO1004 Management Information System
MBAO0025Digital Marketing
MBAO0007Database Management System
MBAO0018 Data Mining

Foreign Exposure & Educational Tour

Year	Trimester	Code	Subject	L	T	P	Credits
IV	X	MBIC1047	Advance Research Techniques	3	0	0	3
			Elective I	3	0	0	3
			Elective II	3	0	0	3
			Elective III	3	0	0	3
			Elective IV	3	0	0	3
		MBIC1053	Managerial Aptitude – IV	3	0	0	1
		MBIJ0981	**Summer Internship**	0	0	0	6
			Total				22
	Trimester	Code	Subject	L	T	P	Credits
	XI	MBIC1048	Business Modeling with Spreadsheet	3	0	0	3
			Elective I	3	0	0	3
			Elective II	3	0	0	3
			Elective III	3	0	0	3
			Elective IV	3	0	0	3
		MBIC1054	Managerial Aptitude – V	3	0	0	1
		MBIJ0982	**Research Project**	0	0	0	6
			Total				22
	Trimester	Code	Subject	L	T	P	Credits
	XII	MBIC1049	Mathematical Modelling	3	0	0	3
			Elective I	3	0	0	3
			Elective II	3	0	0	3
			Elective III	3	0	0	3

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COURSE STRUCTURE

MASTER OF BUSINESS ADMINISTRATION

Under

Choice Based Credit System (CBCS)

Session 2020-21

S.No.	Trimester	Code	Subject	L	T	P	Credits
1	I	MBAC0006	Business Environment	3	0	0	3
2		MBAC0007	Financial Accounting	3	0	0	3
3		MBAC0008	Micro Economics	3	0	0	3
4		MBAC0009	Principles and Practices of Management	3	0	0	3
5		MBAC0010	Quantitative Techniques	3	0	0	3
6		MBAC0011	Computer Applications in Management	3	0	0	3
7		MBAC0038	Managerial Communication	3	0	0	3
8		MBAC0012	Managerial Aptitude – I	3	0	0	1
			Total				**22**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	II	MBAC0013	Business Law	3	0	0	3
2		MBAC0014	Macro Economics	3	0	0	3
3		MBAC0015	Cost and Management Accounting	3	0	0	3
4		MBAC0016	Organizational Behaviour	3	0	0	3
5		MBAC0017	Research Methodology	3	0	0	3
6		MBAC0018	Business Statistics	3	0	0	3
7		MBAC0019	Managerial Aptitude – II	3	0	0	1
			Total				**19**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	III	MBAE0020	Financial Management	3	0	0	3
2		MBAC0021	Human Resource Management	3	0	0	3
3		MBAE0022	International Business Management	3	0	0	3
4		MBAC0023	Operations Research	3	0	0	3
5		MBAC0024	Marketing Management	3	0	0	3
6		MBAE0025	Operations Management	3	0	0	3
7		MBAE0026	Business Analytics	3	0	0	3
8		MBAE0027	Fundamentals of Banking and Insurance	3	0	0	3
9		MBAC0028	Managerial Aptitude – III	3	0	0	1
			Total				**19**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	IV	MBAC0029	Strategic Management	3	0	0	3
2		MBAC0030	Supply Chain Management	3	0	0	3
3			Elective – 1	3	0	0	3
4			Elective – 2	3	0	0	3
5			Elective – 3	3	0	0	3
6			Elective – 4	3	0	0	3
7		MBAJ0001	Summer Training Report	0	0	0	6
8		MBAC0031	Managerial Aptitude – IV	3	0	0	1
			Total				**25**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	V	MBAC0032	Corporate Governance and Business Ethics	3	0	0	3

2		MBAC0033	Project Management	3	0	0	3
3			Elective – 1	3	0	0	3
4			Elective – 2	3	0	0	3
5			Elective – 3	3	0	0	3
6			Elective – 4	3	0	0	3
7		MBAC0034	Managerial Aptitude – V	3	0	0	1
			Total				**19**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	VI	MBAC0035	Entrepreneurship Management	3	0	0	3
2		MBAC0036	Innovating for Sustainability	3	0	0	3
3			Elective – 1	3	0	0	3
4			Elective – 2	3	0	0	3
5			Open Elective – 1	3	0	0	3
6			Open Elective – 2	3	0	0	3
7		MBAJ0002	Research Project Report	0	0	0	3
8		MBAC0037	Managerial Aptitude – VI	3	0	0	1
			Total				**22**
			Total Credits				**126**
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	Group 1: Marketing	MBAE0002	Consumer Behavior	3	0	0	3
2		MBAE0004	Marketing of Services	3	0	0	3
3		MBAO0025	Digital Marketing	3	0	0	3
4		MBAE0090	Fundamentals of Retail Management	3	0	0	3
5		MBAE0056	Marketing Research*	3	0	0	3
6		MBAE0003	Sales and Distribution Management	3	0	0	3
7		MBAE0092	Business to Business Marketing	3	0	0	3
8		MBAO0001	Rural Marketing Management	3	0	0	3
9		MBAE0055	Product and Brand Management *	3	0	0	3
10		MBAE0057	Advertising Management*	3	0	0	3
11		MBAE0091	Customer Relationship Management	3	0	0	3
12		MBAE0019	International Marketing	3	0	0	3
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	GROUP 2: HUMAN RESOURCE	MBAE0009	Labour and Social Security Legislations*	3	0	0	3
2		MBAO0002	Leadership and Team Building	3	0	0	3
3		MBAE0005	Performance Management and Competency Mapping	3	0	0	3
4		MBAE0059	Industrial Relations and Trade Union*	3	0	0	3
5		MBAE0090	Organizational Change and Development	3	0	0	3
6		MBAE0007	Managerial Counseling and Stress Management	3	0	0	3
7		MBAE0058	Training and Development*	3	0	0	3

8		MBAE0008	Conflict Management and Negotiation	3	0	0	3
9		MBAO0003	International and Strategic Dimensions of Human Resource	3	0	0	3
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	GROUP 3: FINANCE MANAGEMENT	MBAE0010	Business Analysis and Valuation	3	0	0	3
2		MBAE0061	Investment and Portfolio Management*	3	0	0	3
3		MBAO0004	Mergers, Acquisition and Corporate Restructuring	3	0	0	3
4		MBAE0011	Working Capital Management	3	0	0	3
5		MBAE0012	Financial Derivatives	3	0	0	3
6		MBAO0005	Micro Finance	3	0	0	3
7		MBAE0062	Management of Financial Services and Institutions*	3	0	0	3
8		MBAE0013	Tax Planning	3	0	0	3
9		MBAE0014	International Financial Management	3	0	0	3
10		MBAE0015	Risk and Insurance Management	3	0	0	3
11		MBAE0063	Wealth Management and Personal Financial Planning*	3	0	0	3
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	GROUP 4: International Business Management	MBAE0016	Global Business Environment	3	0	0	3
2		MBAE0064	International Trade*	3	0	0	3
3		MBAO0006	International Treaties and Conventions	3	0	0	3
4		MBAE0017	Global Strategic Management	3	0	0	3
5		MBAE0065	Export- Import Procedures and Documentation*	3	0	0	3
6		MBAE0018	International Logistics	3	0	0	3
7		MBAE0066	Cross Cultural Issues in International Management*	3	0	0	3
8		MBAO0003	International and Strategic Dimensions of Human Resource	3	0	0	3
9		MBAE0019	International Marketing	3	0	0	3
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	GROUP 5: Information Technology Management	MBAE0067	Business Intelligence and Data Mining*	3	0	0	3
2		MBAO0007	Database Management System	3	0	0	3
3		MBAE0092	Internet Programming and Visual Basics	3	0	0	3
4		MBAE0068	E-Business*	3	0	0	3

5		MBAE0021	Strategic Information System Planning	3	0	0	3
6		MBAE0022	System Analysis and Design	3	0	0	3
7		MBAE0069	Data Communication Networks*	3	0	0	3
8		MBAO0008	Software Management	3	0	0	3
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	GROUP 6: Retail Management	MBAE0023	Finance in Retail Operations	3	0	0	3
2		MBAE0070	Fundamentals of Retail Management*	3	0	0	3
3		MBAE0024	Shoppers' Behaviour and Selling Skills	3	0	0	3
4		MBAE0025	Legal issues in Retail	3	0	0	3
5		MBAE0026	Retail Store Operation	3	0	0	3
6		MBAE0071	Store Design Layout and Visual Merchandising*	3	0	0	3
7		MBAO0009	Retail Information Systems	3	0	0	3
8		MBAO0010	Retail Merchandising	3	0	0	3
9		MBAE0072	Retail Supply Chain Management and Vendor Development*	3	0	0	3
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	GROUP 7: Development Management	MBAE0027	Environmental Management for Rural Development	3	0	0	3
2		MBAE0073	Inclusive Growth for Sustainable Development*	3	0	0	3
3		MBAO0011	Non-Government Organizations Management	3	0	0	3
4		MBAE0028	Developmental Projects and Impact assessment	3	0	0	3
5		MBAO0005	Micro Finance*	3	0	0	3
6		MBAO0001	Rural Marketing Management	3	0	0	3
7		MBAE0029	Livelihood System and Promotion	3	0	0	3
8		MBAE0030	Participatory Research Methods	3	0	0	3
9		MBAE0074	Public Policy and Health*	3	0	0	3
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	GROUP 8: Strategy & Technology Management	MBAO0012	Management of Innovation and Research and Development.	3	0	0	3
2		MBAO0004	Mergers, Acquisition and Corporate Restructuring	3	0	0	3
3		MBAE0075	Technology Policy *	3	0	0	3
4		MBAE0083	Business Intelligence	3	0	0	3
5		MBAO0013	Knowledge management Techniques for Technology Management	3	0	0	3
6		MBAE0076	Management of Intellectual Property Rights*	3	0	0	3

7		MBAE0033	Change Management	3	0	0	3
8		MBAE0077	Strategy Implementation and Control*	3	0	0	3
9		MBAE0034	Technology Forecasting	3	0	0	3
10		MBAE0035	Management of Technology Transfer and Adaption	3	0	0	3
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	GROUP 9: Operations Management	MBAE0036	Advance Project Management	3	0	0	3
2		MBAE0078	Demand and Business Forecasting*	3	0	0	3
3		MBAO0014	Operations Strategy	3	0	0	3
4		MBAE0037	Advanced Inventory Control	3	0	0	3
5		MBAE0038	Manufacturing System	3	0	0	3
6		MBAO0015	Total Quality Management*	3	0	0	3
7		MBAE0039	Service Operations Management	3	0	0	3
8		MBAO0021	Total Productivity Management	3	0	0	3
9		MBAE0079	Purchase Management*	3	0	0	3
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	GROUP 10: Banking & Financial Services	MBAE0080	Management of Commercial Banks and Retail Banking*	3	0	0	3
2		MBAE0040	Security Analysis and Portfolio Management	3	0	0	3
3		MBAO0016	Investment Banking	3	0	0	3
4		MBAE0081	Financial Markets and Institutions*	3	0	0	3
5		MBAE0041	Risk Management in Banks and Derivatives	3	0	0	3
6		MBAE0042	Rural Banking and Micro Finance	3	0	0	3
7		MBAE0082	Principles and Practices of Life Insurance*	3	0	0	3
8		MBAE0043	Fundamentals of General Insurance	3	0	0	3
9		MBAO0017	International Banking	3	0	0	3
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	GROUP 11: Business Analytics	MBAE0044	Business Modeling with Spreadsheets	3	0	0	3
2		MBAE0045	Data Environment and Management	3	0	0	3
3		MBAE0083	Business Intelligence*	3	0	0	3
4		MBAO0018	Data Mining	3	0	0	3
5		MBAE0084	Data Visualization*	3	0	0	3
6		MBAE0046	Big Data Analysis	3	0	0	3
7		MBAE0047	Predictive Modeling	3	0	0	3
8		MBAE0048	Marketing Analytics	3	0	0	3
9		MBAE0049	Financial Analytics	3	0	0	3
10		MBAE0050	Human resource Analytics	3	0	0	3
11		MBAE0085	Social and web analytics*	3	0	0	3

12		MBAE0086	Programming for Analytics	3	0	0	3
S.No.	**Group**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	GROUP 12: Supply chain management	MBAE0087	Logistics Management*	3	0	0	3
2		MBAO0019	Recent Trends in E-Commerce	3	0	0	3
3		MBAE0051	Store Keeping and Warehousing	3	0	0	3
4		MBAe0088	Purchasing and Inventory Management*	3	0	0	3
5		MBAE0052	Green Supply chain Management	3	0	0	3
6		MBAO0020	Strategic and Implementation Issues in SCM	3	0	0	3
7		MBAE0053	Performance Metrics and Modeling	3	0	0	3
8		MBAE0089	Enterprise Resource Planning*	3	0	0	3
9		MBAE0054	Supply chain Analytics	3	0	0	3

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COURSE STRUCTURE

MASTER OF BUSINESS ADMINISTRATION

Specialization

in

Logistics and Supply Chain Management

Under

Choice Based Credit System (CBCS)

Session 2020-21

DEPARTMENT OF MANAGEMENT (PG), INSTITUTE OF BUSINESS MANAGEMENT

Course Curriculum

GLA UNIVERSITY
MATHURA
Recognised by UGC Under Section 2(f)

Accredited with A Grade by NAAC

Master of Business Administration
in
Logistics & Supply Chain Management
(8411)

Session 2020-21

Institute of Business Management

INSTITUTE OF BUSINESS MANAGEMENT

MBA In Logistics and SCM

S.No.	Trimester	Code	Subject	L	T	P	Credits
1	I	MLSC0019	Core concepts of SCM	3	0	0	3
2		MLSC0002	Accounting For Managers	3	0	0	3
3		MLSC0003	Managerial Economics	3	0	0	3
4		MLSC0004	Management Concepts and Applications	3	0	0	3
5		MLSC0005	Managerial Communication	3	0	0	3
6		MLSC0006	Workshop on basics of Supply Chain Management	3	0	0	3
7		MLSC0007	Computer Applications in Business Management	3	0	0	3
8		MLSC0008	Managerial Aptitude – I	3	0	0	1
			Total				**22**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	II	MLSC0009	Legal Aspects of Business	3	0	0	3
2		MLSC0010	Workshop on recent trends in Logistics and SCM	3	0	0	3
3		MLSC0011	Cost and Managerial Accounting	3	0	0	3
4		MLSC0029	Procurement and Inventory Management	3	0	0	3
5		MLSC0013	Business Research Methods	3	0	0	3
6		MLSC0014	Statistical Analysis for Supply Chain Management	3	0	0	3
7		MLSC0021	Fundamentals of Marketing Management	3	0	0	3
8		MLSC0016	Managerial Aptitude – II	3	0	0	1
			Total				**22**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	III	MLSC0017	Finance for Managers	3	0	0	3
2		MLSC0018	Management of Human Resource	3	0	0	3
3		MLSC0030	Work shop on Indirect Tax and Documentation	3	0	0	3
4		MLSC0020	Optimization in Operations Research	3	0	0	3
5		MLSC0031	Principles of ERP	3	0	0	3
6		MLSC0022	Production and Operations Management	3	0	0	3
7		MLSC0023	Logistics in Business Efficiency	3	0	0	3

8		MLSC0024	Managerial Aptitude – III	3	0	0	1
			Total				**22**
S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	IV	MLSC0032	Analytics For Supply Chain	3	0	0	3
2		MLSC0033	Strategic Supply Chain Management	3	0	0	3
3		MLSC0034	Warehouse Management	3	0	0	3
4		MLSO0001	Recent trends in Supply Chain Management	3	0	0	3
5		MLSO0002	Strategic and Operational issues in Supply Chain Management	3	0	0	3
6		MLSO0003	Supply Chain Performance Metrics & Modeling	3	0	0	3
7		MLSO0005	Liner Shipping Business	3	0	0	3
8		MLSJ0001	Summer Internship Report#	0	0	0	6
9		MLSC0028	Managerial Aptitude – IV#	3	0	0	1
			Total				**25**

* Any six papers

S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	V	MLSJ0002	Term assignment	0	0	0	6
2		MLSO0006	Recent Trends in E-Commerce	3	0	0	3
3		MLSC0025	Ethics and Governance in Business	3	0	0	3
4		MLSC0027	International Business	3	0	0	3
			Total				**15**

S.No.	**Trimester**	**Code**	**Subject**	**L**	**T**	**P**	**Credits**
1	VI	MLSJ0004	Comprehensive Viva Voce	0	0	0	3
2		MLSC0035	Global Logistics	3	0	0	3
3		MLSC0036	Commercial Geography	3	0	0	3
4		MLSO0004	Global Trade Operations and Forwarding	3	0	0	3
5		MLSJ0005	Dissertation Report	0	0	0	6
			Total				18
			Gross Total				124

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COURSE STRUCTURE

B. SC. (HONS.) BIOTECHNOLOGY

Under

Choice Based Credit System (CBCS)

Session 2020-21

Dr. S.V. Singh
Professor & Head, Dept. of Biotechnology
GLA University, Mathura (U.P.), INDIA

First Semester

S. NO.	CODE	SUBJECT	CORE/ELECTIVES	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	BSBC 0001	Chemistry I	Core	4	0	0	4	4
2.	BSBC 0002	Cell Biology	Core	4	0	0	4	4
3.	BELH 0005	Remedial English	AECC1	2	2	0	3	4
4.	BMAS 0501 BSBO 0001	Biostatistics Remedial Biology	GE1	4	0	0	4	4
PRACTICALS								
5.	BSBC 0801	Chemistry I Lab	Core Lab	0	0	3	2	3
6.	BSBC 0802	Cell Biology Lab	Core Lab	0	0	3	2	3
7.	BSBO 0801	Environmental Biotechnology Lab	GE1 Lab	0	0	3	2	3
TOTAL				14	02	09	21	25

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Second Semester

S. NO.	CODE	SUBJECT	CORE/ELECTIVES	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	BSBC 0003	Biomolecules	Core	4	0	0	4	4
2.	BSBC 0004	Chemistry II	Core	4	0	0	4	4
3.	BSBC 0005	Environmental Science	AECC2	2	2	0	3	4
4.	BSBO 0002	Computer Fundamentals and Applications	GE2	4	0	0	4	4
PRACTICALS								
5.	BSBC 0803	Biomolecules Lab	Core Lab	0	0	3	2	3
6.	BSBC 0804	Chemistry II Lab	Core Lab	0	0	3	2	3
7.	BSBO 0802	Computer Application in Biotechnology Lab	GE2 Lab	0	0	3	2	3
TOTAL				14	02	09	21	25

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Third Semester

S. NO.	CODE	SUBJECT	CORE/ELECTIVES	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	BSBC 0006	Molecular Biology	Core	4	0	0	4	4
2.	BSBC 0007	Plant Science I	Core	4	0	0	4	4
3.	BSBC 0008	Biochemistry	Core	4	0	0	4	4
4.	BSBC 0009	Stem Cell Technology	SEC1	2	0	0	2	2
5.	BSBO 0003	Bioinformatics	GE3	4	0	0	4	4
PRACTICALS								
6.	BSBC 0805	Molecular Biology Lab	Core Lab	0	0	3	2	3
7.	BSBC 0806	Plant Science I Lab	Core Lab	0	0	3	2	3
8.	BSBC 0807	Biochemistry Lab	Core Lab	0	0	3	2	3
9.	BSBO 0803	Bioinformatics Lab	GE3 Lab	0	0	3	2	3
TOTAL				18	00	12	26	30

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Fourth Semester

S. NO.	CODE	SUBJECT	CORE/ELECTIVES	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	BSBC 0010	Instrumentation and Bio - Analytical Techniques	Core	4	0	0	4	4
2.	BSBC 0011	Microbiology	Core	4	0	0	4	4
3.	BSBC 0012	Immunology	Core	4	0	0	4	4
4.	BSBC 0013	Drug Discovery & Development	SEC2	2	0	0	2	2
5.	BSBO 0004	Clinical Microbiology	GE4	4	0	0	4	4
PRACTICALS								
6.	BSBC 0808	Instrumentation and Bio - Analytical Techniques Lab	Core Lab	0	0	3	2	3
7.	BSBC 0809	Microbiology Lab	Core Lab	0	0	3	2	3
8.	BSBC 0810	Immunology Lab	Core Lab	0	0	3	2	3
9.	BSBO 0804	Clinical Microbiology lab	GE4 Lab	0	0	3	2	3
TOTAL				18	00	12	26	30

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Fifth Semester

S. NO.	CODE	SUBJECT	CORE/ELECTIVES	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	BSBC 0014	Plant Biotechnology	Core	4	0	0	4	4
2.	BSBC 0015	Recombinant DNA Technology	Core	4	0	0	4	4
3.	DSE1	Discipline Specific Elective 1	Elective	4	0	0	4	4
4.	DSE2	Discipline Specific Elective 2	Elective	4	0	0	4	4
PRACTICALS								
5.	BSBC 0811	Plant Biotechnology Lab	Core Lab	0	0	3	2	3
6.	BSBC 0812	Recombinant DNA Technology Lab	Core Lab	0	0	3	2	3
7.	DSE1	Discipline Specific Elective 1 Lab	Elective Lab	0	0	3	2	3
8.	DSE2	Discipline Specific Elective 2 Lab	Elective Lab	0	0	3	2	3
TOTAL				16	00	12	24	28

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Six Semester

S. NO.	CODE	SUBJECT	CORE/ELECTIVES	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	BSBC 0016	Animal Biotechnology	Core	4	0	0	4	4
2.	BSBC 0017	Genomics & Proteomics	Core	4	0	0	4	4
3.	DSE1	Discipline Specific Elective 1	Elective	4	0	0	4	4
4.	DSE2	Discipline Specific Elective 2	Elective	4	0	0	4	4
PRACTICALS								
5.	BSBC 0813	Animal Biotechnology Lab	Core Lab	0	0	3	2	3
6.	BSBC 0814	Genomics & Proteomics Lab	Core Lab	0	0	3	2	3
7.	DSE1	Discipline Specific Elective 1 Lab	Elective Lab	0	0	3	2	3
8.	DSE2	Discipline Specific Elective 2 Lab	Elective Lab	0	0	3	2	3
9.	BSBC 0815	Project Training		For two month			5	35
TOTAL				16	00	12	29	63

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DETAILS OF DISCIPLINE SPECIFIC ELECTIVE (DSE)

Fifth Semester

S. NO.	CODE	SUBJECT	CORE/ELECTIVES	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	BSBE 0004	Chemistry-III	Elective	4	0	0	4	4
2.	BSBE 0005	Genetics	Elective	4	0	0	4	4
3.	BSBE 0006	Plant Science II	Elective	4	0	0	4	4
4.	BSBE 0007	Food and Industrial Biotechnology	Elective	4	0	0	4	4
5.	BSBE 0008	Enzymology	Elective	4	0	0	4	4
6.	BSBE 0009	Evolution and Ecology	Elective	4	0	0	4	4
PRACTICALS								
7.	BSBE 0804	Chemistry-III Lab	Elective Lab	0	0	3	2	3
8.	BSBE 0805	Genetics Lab	Elective Lab	0	0	3	2	3
9.	BSBE 0806	Plant Science II Lab	Elective Lab	0	0	3	2	3
10.	BSBE 0807	Food and Industrial Biotechnology Lab	Elective Lab	0	0	3	2	3
11	BSBE 0808	Enzymology Lab	Elective Lab	0	0	3	2	3
12.	BSBE 0809	Evolution and Ecology Lab	Elective Lab	0	0	3	2	3

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DETAILS OF DISCIPLINE SPECIFIC ELECTIVE (DSE)

Six Semester

S. NO.	CODE	SUBJECT	CORE/ELECTIVES	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	BSBE 0010	Fermentation Technology	Elective	4	0	0	4	4
2.	BSBE 0011	Role of Biotechnology in Forensic Science	Elective	4	0	0	4	4
3.	BSBE 0012	Developmental Biology	Elective	4	0	0	4	4
4.	BSBE 0013	Human Physiology	Elective	4	0	0	4	4
5.	BSBE 0014	Environmental Biotechnology	Elective	4	0	0	4	4
6.	BSBE 0015	Clinical Biochemistry	Elective	4	0	0	4	4
PRACTICALS								
5.	BSBE 0810	Fermentation Technology Lab	Elective Lab	0	0	3	2	3
6.	BSBE 0811	Role of Biotechnology in Forensic Science Lab	Elective Lab	0	0	3	2	3
7.	BSBE 0812	Developmental Biology Lab	Elective Lab	0	0	3	2	3
8.	BSBE 0813	Human Physiology Lab	Elective Lab	0	0	3	2	3
9.	BSBE 0814	Environmental Science Lab	Elective Lab	0	0	3	2	3
10.	BSBE 0815	Clinical Biochemistry Lab	Elective Lab	0	0	3	2	3

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S. No.	Category	Subject	Credit	Total Credits
1	Core (Theory)	14	4	56
2	Core (Lab)	14	2	28
3	AECC	2	3	6
4	SEC	2	2	4
5	DSE (Theory)	4	4	16
6	DSE (Lab)	4	2	8
7	GE (Theory)	4	4	16
8	GE (Lab)	4	2	8
9	Project Training	1	5	5
	Total Credits			147

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COURSE STRUCTURE

B.TECH. BIOTECHNOLOGY

Under

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Session 2020-21

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS 0130 BBTS 0001	Elementary Mathematics-I/ Introduction to Biology	3	1	0	4	4
2.	BCHS0101	Engineering Chemistry	3	1	0	4	4
3.	BELH0001	English Language skill for communication-I	2	0	0	2	2
4.	BEEG0001	Electrical Engineering	3	1	0	4	4
5.	BCSG0001	Python programming	4	1	0	5	5
PRACTICALS							
6	BCHS0801	Engineering Chemistry Lab	0	0	2	1	2
7	BELH0801	English Language Lab -I	0	0	2	1	2
8	BEEG0800	Electrical Engineering Lab-I	0	0	2	1	2
9	BCSG0800	Python programming Lab	0	0	2	1	2
10	BMEG0801	Engineering Drawing Lab	0	0	2	1	2
		TOTAL	**15**	**4**	**10**	**24**	**29**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BMAS0131	Elementary Mathematics II	3	1	0	4	4
2.	BPHS0001	Engineering Physics	3	1	0	4	4
3.	BBTC0002	Animal and plant physiology	3	1	0	4	4
4.	BELH0002	English Language skill for communication-II	2	0	0	2	2
5.	BECG001	Electronics Engineering	3	1	0	4	4
6.	BMEG0001	Basic Mechanical Engineering	3	1	0	4	4
PRACTICALS							
7	BPHS0801	Engineering Physics Lab	0	0	2	1	2
8	BELH0802	English Language Lab II	0	0	2	1	2
9	BECG0800	Electronics engineering Lab I	0	0	2	1	2
10	BMEG0800	Engineering Workshop Practice Lab	0	0	2	1	2
11	BBTTC0801	Animal and plant physiology Lab	0	0	2	1	2
		TOTAL	**17**	**5**	**10**	**27**	**32**

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Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
THEORY									
1.	BBTC 0003	Cell Biology	3	0	0	0	3	3	
2.	BBTC 0004	Biomolecule & Biochemistry	3	0	0	0	3	3	
3.	BBTC 0005	Food Technology	3	0	0	0	3	3	
4.	BBTC 0006	Bioanalytical techniques	3	1	0	0	4	4	
5.	BBTC 0007	Microbiology	3	0	0	0	3	3	
6.	BBTC 0008	Genetics and Molecular Biology	3	0	0	0	3	3	
7.	BBTC 0009	Recombinant DNA Technology	3	0	0	0	3	3	
8.	BBTC 0010	Immunology	3	1	0	0	4	4	
9.	BBTC 0011	Biochemical and Bioprocess Engineering	3	0	0	0	3	3	
10.	BBTC 0012	Genomics and Proteomics	3	1	0	0	4	4	
11.	BBTC 0013	Animal Biotechnology	3	0	0	0	3	3	
12.	BBTC 0014	Plant Biotechnology	3	0	0	0	3	3	
13.	BBTC 0015	Bioethics and IPR	3	0	0	0	3	3	
PRACTICALS									
14.	BBTC 0802	Biochemistry Lab	0	0	2	0	1	2	
15,	BBTC 0803	Bioanalytical techniques Lab	0	0	2	0	1	2	
16.	BBTC 0804	Microbiology and Immunology Lab	0	0	2	0	1	2	
17..	BBTC 0805	RDT and Molecular Biology Lab	0	0	2	0	1	2	
18.	BBTC 0806	Animal Biotechnology Lab	0	0	2	0	1	2	
19.	BBTC0807	Plant Biotechnology Lab	0	0	2	0	1	2	
Total			**39**	**3**	**12**	**0**	**48**	**54**	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME L	T	P	J	CREDITS	CONTACTS HR/WK	PRE-REQUISITES
Bouquet: Genetic Engineering									
THEORY									
1.	BBTE0006	Nano-biotechnology	3	0	0	0	3	3	
2.	BBTE0007	Microbial Biotechnology	3	0	0	0	3	3	
3.	BBTE0008	Protein Engineering	3	0	0	0	3	3	
4.	BBTE0009	Molecular Therapeutics and Vaccinology	3	0	0	0	3	3	
5.	BBTE0010	Virology and Cancer Biology	3	0	0	0	3	3	
6.	BBTE0011	Molecular Diagnostics	3	0	0	0	3	3	
PRACTICALS									
7.	BBT0813	Nano-biotechnology Lab	0	0	2	0	1	2	
8.	BBT0814	Microbial Biotechnology Lab	0	0	2	0	1	2	
9.	BBT0815	Molecular Diagnostics and Therapeutics Lab	0	0	2	0	1	2	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet: INDUSTRIAL BIOTECHNOLOGY									
THEORY									
1.	BBTE0012	Industrial Enzymology	3	0	0	0	3	3	
2.	BBTE0013	Food Biotechnology	3	0	0	0	3	3	
3.	BBTE0014	Industrial Waste Management	3	0	0	0	3	3	
4.	BBTE0015	Fermenter and Bioreactor Designing	3	0	0	0	3	3	
5.	BBTE0016	Downstream Processing	3	0	0	0	3	3	
6.	BBTE0017	Biopharmaceuticals	3	0	0	0	3	3	
PRACTICALS									
7.	BBT0816	Fermenter, Bioreactor designing and Downstream Processing Lab	0	0	2	0	1	2	
8.	BBT0817	Food and Industrial Enzymology Lab	0	0	2	0	1	2	
9.	BBT0818	Biopharmaceutical and Industrial waste management Lab	0	0	2	0	1	2	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet: BIOINFORMATICS									
THEORY									
1.	BBTE0001	Computer Aided Drug Designing	3	0	0	0	3	3	
2.	BBTE0002	Algorithms for Bioinformatics	3	0	0	0	3	3	
3.	BBTE0003	Computational Molecular Biology	3	0	0	0	3	3	
4.	BBTE0004	Biological Data Mining	3	0	0	0	3	3	
5.	BBTE0005	Bio python	3	0	0	0	3	3	
6.	BBTE0006	Proteomics & Transcriptomics	3	0	0	0	3	3	
PRACTICALS									
7.	BBT0810	Computer Aided Drug Designing Lab	0	0	2	0	1	2	
8.	BBT0811	Computational Molecular Biology Lab	0	0	2	0	1	2	
9.	BBT0812	Bio python Lab	0	0	2	0	1	2	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
Bouquet: COMPUTER AND INFORMATION TECHNOLOGY									
THEORY									
1.	BCSC0006	Data Structures & Application	3	0	0	0	3	3	
2.	BCSO0003	Essentials of Information Technology	3	0	0	0	3	3	
3.	BCSE0105	Introduction to Machine Learning	3	0	0	0	3	3	
4.	BCSE0155	Big Data Analytics	3	0	0	0	3	3	
5.	BCSE0157	Natural Language Processing	3	0	0	0	3	3	
PRACTICALS									
6	BCSC0805	Data Structures & Application Lab	0	0	2	0	1	2	
7	BCSO0072	Information Technology lab	0	0	2	0	1	2	
8.	BCSE0182	Big Data Analytics Project	0	0	2	0	1	2	

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Projects

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
1.	BBTJ001	Mini Project – I	0	0	0	0	2	0	
2.	BBTJ002	Mini Project – II	0	0	0	0	2	0	
3.	BBTJ003	Project – Part I	0	0	0	0	3	0	
4.	BBTJ004	Project – Part II	0	0	0	0	8	0	
5.	BBTJ0801	Industrial Training	0	0	0	0	2	0	

Mandatory Non Graded Course

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCSM0001	Introduction to Cyber Security	2	0	0	0	0	2	
2.	BCHM0101	Disaster Management	2	0	0	0	0	2	
3.	MBAM0001	Basic Course in Entrepreneurship	2	0	0	0	0	2	
4.	MBAM0002	Leadership And Organizational Behavior	2	0	0	0	0	2	

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Humanities and Social Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BELH0001	English Language Skills for Communication – I	2	0	0	0	2	2	
2.	BELH0002	English Language Skills for Communication – II	2	0	0	0	2	2	
3.	BELH0003	English for Professional Purposes – I	2	0	0	0	2	2	
4.	BELH0004	English for Professional Purposes – II	2	0	0	0	2	2	
5.	BELH0006	Ethics & Values	2	0	0	0	2	2	
6.	MBAH0005	Industrial Management	3	0	0	0	3	3	
PRACTICALS									
1.	BELH0801	English Language Lab – I	0	0	2	0	1	2	
2.	BELH0802	English Language Lab – II	0	0	2	0	1	2	
3.	BTDH0301	Soft Skills – I	0	0	2	0	1	2	
4.	BTDH0302	Soft Skills – II	0	0	2	0	1	2	
5.	BTDH0303	Soft Skills – III	0	0	8	0	4	8	
6.	BTDH0304	Soft Skills – IV	0	0	8	0	4	8	
TOTAL			**13**	**0**	**24**	**0**	**25**	**37**	

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Basic Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACT S HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	DHM100/ BBTC0001	Applied Mathematics – I/ Introduction to Biology	3	1	0	0	4	4	
2.	DHM2001	Applied Mathematics – II	3	1	0	0	4	4	
3.	BMAS0501	Biostatistics	3	1	0	0	4	4	
4.	BCHS0101	Engineering Chemistry	3	1	0	0	4	4	
5.	BPHS0001	Engineering Physics	3	1	0	0	4	4	
6.	BCHS0201	Environmental Studies	2	0	0	0	2	2	
PRACTICALS									
6.	BCHS0801	Engineering Chemistry Lab	0	0	2	0	1	2	
7.	BPHS0801	Engineering Physics Lab	0	0	2	0	1	2	
TOTAL			**17**	**5**	**4**	**0**	**24**	**26**	

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Engineering Sciences

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BEEG0001	Electrical Engineering	3	1	0	0	4	4	
2.	BECG0001	Electronics Engineering	3	1	0	0	4	4	
3.	BCSG0001	Python programming	4	1	0	0	5	5	
4.	BCEG0001	Basic Mechanical Engineering	3	1	0	0	4	4	
5.	BBTC0002	Animal and Plant Physiology	3	1	0	0	4	4	
PRACTICALS									
6.	BEEG0800	Electrical Engineering Lab	0	0	2	0	1	2	
7.	BECG0800	Electronics Lab	0	0	2	0	1	2	
8.	BCSG0800	Python programming Lab	0	0	2	0	1	2	
9.	BMEG0800	Engineering Workshop Practise Lab	0	0	2	0	1	2	
10.	BMEG0801	Engineering Drawing Lab	0	0	2	0	1	2	
11,	BBTC0802	Animal & Plant Physiology Lab	0	0	2	0	1	2	
Total			**16**	**5**	**13**	**0**	**28**	**27**	

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Open Elective (Offer to other Departments)

For interdisciplinary knowledge, 16 Credits of Open Electives subjects shall be taken by the students of B. Tech. (Biotech.). These electives shall be offered by other departments of University.

However, following are the detail of Open Elective subjects to be offered from Bio-Technology department

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
THEORY									
1.	BCHO0101	Nonmaterial &Nanotechnology	3	2	0	0	4	5	Programming
2.	BCHO0106	Toxicology	3	0	0	0	3	3	Programming
3.	BBTO0001	Introduction to Health-IT	4	0	0	0	4	4	Object Oriented Programming
4.	BCHO0105	Sociological Impact of Medicinal chemistry	3	0	2	0	3	4	

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GLA UNIVERSITY MATHURA

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COURSE STRUCTURE

M. SC. BIOTECHNOLOGY

Under

Choice Based Credit System (CBCS)

Session 2020-21

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First Semester

S. NO.	CODE	SUBJECT	CORE/ELECTIVES	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1	MMAS 0501	Advanced Biostatistics	GE	3	1	0	4	4
2.	MSBC0001	Biochemistry	Core	4	0	0	4	4
3.	MSBC 0002	Cell Biology	Core	4	0	0	4	4
4.	MSBC 0003	Bioinformatics	Core	4	0	0	4	4
5.	MSBC 0004	Biophysical Techniques	Core	4	0	0	4	4
PRACTICALS								
6.	MSBC 0801	Biostatistics & Biochemistry Lab	Core	0	0	3	2	3
7.	MSBC 0802	Bioinformatics Lab	Core	0	0	3	2	3
8.	MSBC 0803	Biophysical Techniques & Cell Biology Lab	Core	0	0	3	2	3
Total				**19**	**1**	**9**	**26**	**29**

Second Semester

S. NO.	CODE	SUBJECT	CORE/ELECTIVES	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	MSBC 0005	Immunology	Core	4	0	0	4	4
2.	MSBC 0006	Genetics & Molecular Biology	Core	4	0	0	4	4
3.	MSBC 0007	Microbiology	Core	4	0	0	4	4
4.	MSBC 0008	Environmental Biotechnology	Core	4	0	0	4	4
5.	BELH 0012	Introduction to Gender & Women's studies	GE	4	0	0	4	4
PRACTICALS								
6.	MSBC 0804	Microbiology Lab	Core	0	0	3	2	3
7.	MSBC 0805	Immunology Lab	Core	0	0	3	2	3
8.	MSBC 0806	Genetics and Molecular Biology Lab	Core	0	0	3	2	3
Total				**20**	**0**	**9**	**26**	**29**

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Third Semester

S. NO.	CODE	SUBJECT	CORE/ELECTIVES	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	MSBC 0009	Animal Biotechnology	Core	4	0	0	4	4
2.	MSBC 0010	Bioprocess Engineering & Fermentation Technology	Core	4	0	0	4	4
3.	MSBC 0011	RDT, Genomics & Proteomics	Core	4	0	0	4	4
4.	MSBC 0012	Plant Biotechnology	Core	4	0	0	4	4
ELECTIVES (Select any Two)								
5.	MSBE 0001	Nanobiotechnology	Elective	4	0	0	4	4
6.	MSBE 0002	Enzyme Technology	Elective	4	0	0	4	4
7.	MSBE 0003	Clinical Research in Medicinal Plants	Elective	4	0	0	4	4
8.	MSBE 0004	Clinical Immunology	Elective	4	0	0	4	4
ELECTIVES (Select any One)								
9.	MSBE 0005	Nutritional Biochemistry	Elective	4	0	0	4	4
10.	MSBE 0006	Drug Discovery and Development	Elective	4	0	0	4	4
11.	MSBE 0007	IPR, Patent, Trademarks & Bioethics	Elective	4	0	0	4	4
PRACTICALS								
12.	MSBC 0807	Plant Biotechnology and Bioprocess Engineering & Fermentation Technology Lab	Core	0	0	3	2	3
13.	MSBC 0808	Animal Biotechnology, RDT and Genomics & Proteomics Lab	Core	0	0	3	2	3
PRACTICALS BASED ON ELECTIVES (Select any Two)								
14.	MSBE 0801	Nanobiotechnology Lab	Generic Elective	0	0	3	2	2
15.	MSBE 0802	Enzyme Technology Lab	Generic Elective	0	0	3	2	2
16.	MSBE 0803	Clinical Research in Medicinal Plants Lab	Generic Elective	0	0	3	2	2
17.	MSBE 0804	Clinical Immunology Lab	Generic Elective	0	0	3	2	2
Total				**28**	**0**	**12**	**36**	**40**

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Fourth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACT HR/WK
			L	T	P		
1.	MSBJ 0971	Project Work	-	-	-	16	-
Total			0	0	0	16	-

S. No.	Category	Subject	Credit	Total Credits
1	Core (Theory)	12	4	48
2	Core (Practical)	8	2	16
3	GE	2	4	8
4	Electives (Theory)	2	4	8
5	Electives (Practicals)	2	2	4
6	Elective	1	4	4
7	Project	1	16	16
8	Total Credits			104

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COURSE STRUCTURE

M. SC. MICROBIOLOGY & IMMUNOLOGY

Under

Choice Based Credit System (CBCS)

Session 2020-21

Dr. S.V. Singh
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First Semester

S. NO.	CODE	SUBJECT	CORE/ ELECTIVE	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	MSMC 0001	General Microbiology	Core	4	0	0	4	4
2.	MMAS 0501	Advanced Biostatistics	GE	3	1	0	4	4
3.	MSBC 0001	Biochemistry	Core	4	0	0	4	4
4.	MSBC 0004	Biophysical Techniques	Core	4	0	0	4	4
5.	MSBC 0003	Bioinformatics	Core	4	0	0	4	4
PRACTICALS								
6.	MSMC 0801	General Microbiology & Biostatistics Lab	Core	0	0	3	2	3
7.	MSMC 0802	Biochemistry & Biophysical Techniques Lab	Core	0	0	3	2	3
8.	MSBC 0802	Bioinformatics Lab	Core	0	0	3	2	3
Total				**19**	**1**	**9**	**26**	**29**

Second Semester

S. NO.	CODE	SUBJECT	CORE/ ELECTIVE	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	MSMC 0002	Systemic Bacteriology and Mycology	Core	4	0	0	4	4
2.	MSMC 0003	Systemic Virology	Core	4	0	0	4	4
3.	MSBC 0005	Immunology	Core	4	0	0	4	4
4.	MSBC 0006	Genetics & Molecular Biology	Core	4	0	0	4	4
5.	BELH 0012	Introduction to Gender and Womens studies	GE	4	0	0	4	4
PRACTICALS								
6.	MSMC 0803	Bacteriology & Mycology Lab	Core	0	0	3	2	3
7.	MSBC 0805	Immunology Lab	Core	0	0	3	2	3
8.	MSMC 0804	Genetics, Molecular Biology and Virology Lab	Core	0	0	3	2	3
Total				**20**	**0**	**9**	**26**	**29**

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Third Semester

S. NO.	CODE	SUBJECT	CORE/ ELECTIVE	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	MSMC 0004	Fermentation Technology and Industrial Microbiology	Core	4	0	0	4	4
2.	MSMC 0005	Food, Dairy and Agricultural Microbiology	Core	4	0	0	4	4
3.	MSBC 0011	RDT, Genomics & Proteomics	Core	4	0	0	4	4
4.	MSMC 0006	Advanced Immunology	Core	4	0	0	4	4
Electives (Select any Two)								
5.	MSME 0001	Environmenmental Microbiology	Elective	4	0	0	4	4
6.	MSBE 0001	Nanobiotechnology	Elective	4	0	0	4	4
7.	MSBE 0002	Enzyme Technology	Elective	4	0	0	4	4
8	MSBE 0003	Clinical Research in Medicinal Plants	Elective	4	0	0	4	4
9	MSME 0002	Animal Cell Culture	Elective	4	0	0	4	4
Electives (Select any One)								
10	MSBE 0005	Nutritional Biochemistry	Elective	4	0	0	4	4
11	MSBE 0006	Drug Discovery and Development	Elective	4	0	0	4	4
12	MSBE 0007	IPR, Patent, Trademarks & Bioethics	Elective	4	0	0	4	4
PRACTICALS								
13.	MSMC 0805	Fermentation Technology, RDT & Genomics & Proteomics Lab	Core	0	0	3	2	3
14.	MSMC 0806	Food, Dairy, Agricultural Microbiology & Advanced Immunology Lab	Core	0	0	3	2	3
PRACTICALS BASED ON ELECTIVES (Select any Two)								
15.	MSME 0801	Environmental Microbiology Lab	Elective	0	0	3	2	3
16.	MSBE 0801	Nanobiotechnology Lab	Elective	0	0	3	2	3
17.	MSBE 0802	Enzyme Technology Lab	Elective	0	0	3	2	3
18.	MSBE 0803	Clinical Research in Medicinal Plants Lab	Elective	0	0	3	2	3
19	MSME 0802	Animal Cell Culture Lab	Elective	0	0	3	2	3
		Total		**28**	**0**	**12**	**36**	**40**

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Fourth Semester

S. NO.	CODE	SUBJECT	CORE/ ELECTIVE	TEACHING SCHEME			CREDITS	CONTACT HR/WK
				L	T	P		
1.	MSMJ0971	Project Work (Six Months)		0	0	0	16	-
Total				**0**	**0**	**0**	**16**	**-**

S. No.	Category	Subject	Credit	Total Credits
1	Core (Theory)	12	4	48
2	Core (Practical)	8	2	16
3	GE	2	4	8
4	Electives (Theory)	2	4	8
5	Electives (Practicals)	2	2	4
6	Elective	1	4	4
7	Project	1	16	16
8	Total Credits			104

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B. PHARM.
COURSE CURRICULUM
(W.E.F 2020-21)

INSTITUTE OF
PHARMACEUTICAL RESEARCH

Table-I: Course of study for semester I

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP101T	Human Anatomy and Physiology I– Theory	3	1	4
BP102T	Pharmaceutical Analysis I – Theory	3	1	4
BP103T	Pharmaceutics I – Theory	3	1	4
BP104T	Pharmaceutical Inorganic Chemistry – Theory	3	1	4
BP105T	Communication skills – Theory *	2	-	2
BP106RBT BP106RMT	Remedial Biology/ Remedial Mathematics – Theory*	2	-	2
BP107P	Human Anatomy and Physiology – Practical	4	-	2
BP108P	Pharmaceutical Analysis I – Practical	4	-	2
BP109P	Pharmaceutics I – Practical	4	-	2
BP110P	Pharmaceutical Inorganic Chemistry – Practical	4	-	2
BP111P	Communication skills – Practical*	2	-	1
BP112RBP	Remedial Biology – Practical*	2	-	1
	Total	**32/34$^{\$}$/36$^{\#}$**	**4**	**27/29$^{\$}$/30$^{\#}$**

$^{\#}$Applicable ONLY for the students who have studied Mathematics / Physics / Chemistry at HSC and appearing for Remedial Biology (RB)course.

$^{\$}$Applicable ONLY for the students who have studied Physics / Chemistry / Botany / Zoology at HSC and appearing for Remedial Mathematics (RM)course.

* Non University Examination (NUE)

Meenakshi

Table-II: Course of study for semester II

Course Code	Name of the course	No. of hours	Tutorial	Credit points
BP201T	Human Anatomy and Physiology II – Theory	3	1	4
BP202T	Pharmaceutical Organic Chemistry I – Theory	3	1	4
BP203T	Biochemistry – Theory	3	1	4
BP204T	Pathophysiology – Theory	3	1	4
BP205T	Computer Applications in Pharmacy – Theory *	3	-	3
BP206T	Environmental sciences – Theory *	3	-	3
BP207P	Human Anatomy and Physiology II –Practical	4	-	2
BP208P	Pharmaceutical Organic Chemistry I– Practical	4	-	2
BP209P	Biochemistry – Practical	4	-	2
BP210P	Computer Applications in Pharmacy – Practical*	2	-	1
	Total	**32**	**4**	**29**

*Non University Examination (NUE)

Table-III: Course of study for semester III

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP301T	Pharmaceutical Organic Chemistry II – Theory	3	1	4
BP302T	Physical Pharmaceutics I – Theory	3	1	4
BP303T	Pharmaceutical Microbiology – Theory	3	1	4
BP304T	Pharmaceutical Engineering – Theory	3	1	4
BP305P	Pharmaceutical Organic Chemistry II – Practical	4	-	2
BP306P	Physical Pharmaceutics I – Practical	4	-	2
BP307P	Pharmaceutical Microbiology – Practical	4	-	2
BP 308P	Pharmaceutical Engineering –Practical	4	-	2
	Total	**28**	**4**	**24**

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Table-IV: Course of study for semester IV

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP401T	Pharmaceutical Organic Chemistry III– Theory	3	1	4
BP402T	Medicinal Chemistry I – Theory	3	1	4
BP403T	Physical Pharmaceutics II – Theory	3	1	4
BP404T	Pharmacology I – Theory	3	1	4
BP405T	Pharmacognosy and Phytochemistry I– Theory	3	1	4
BP406P	Medicinal Chemistry I – Practical	4	-	2
BP407P	Physical Pharmaceutics II – Practical	4		2
BP408P	Pharmacology I – Practical	4	-	2
BP409P	Pharmacognosy and Phytochemistry I – Practical	4	-	2
	Total	**31**	**5**	**28**

Table-V: Course of study for semester V

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP501T	Medicinal Chemistry II – Theory	3	1	4
BP502T	Formulative Pharmacy– Theory	3	1	4
BP503T	Pharmacology II – Theory	3	1	4
BP504T	Pharmacognosy and Phytochemistry II– Theory	3	1	4
BP505T	Pharmaceutical Jurisprudence – Theory	3	1	4
BP506P	Formulative Pharmacy – Practical	4	-	2
BP507P	Pharmacology II – Practical	4	-	2
BP508P	Pharmacognosy and Phytochemistry II – Practical	4	-	2
	Total	**27**	**5**	**26**

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Table-VI: Course of study for semester VI

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP601T	Medicinal Chemistry III – Theory	3	1	4
BP602T	Pharmacology III – Theory	3	1	4
BP603T	Herbal Drug Technology – Theory	3	1	4
BP604T	Biopharmaceutics and Pharmacokinetics – Theory	3	1	4
BP605T	Pharmaceutical Biotechnology – Theory	3	1	4
BP606T	Quality Assurance –Theory	3	1	4
BP607P	Medicinal chemistry III – Practical	4	-	2
BP608P	Pharmacology III – Practical	4	-	2
BP609P	Herbal Drug Technology – Practical	4	-	2
	Total	**30**	**6**	**30**

Table-VII: Course of study for semester VII

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP701T	Instrumental Methods of Analysis – Theory	3	1	4
BP702T	Industrial Pharmacy – Theory	3	1	4
BP703T	Pharmacy Practice – Theory	3	1	4
BP704T	Novel Drug Delivery System – Theory	3	1	4
BP705P	Instrumental Methods of Analysis – Practical	4	-	2
BP706PS	Practice School*	12	-	6
	Total	**28**	**5**	**24**

* Non University Examination (NUE)

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Table-VIII: Course of study for semester VIII

Course code	Name of the course	No. of hours	Tutorial	Credit points
BP801T	Biostatistics and Research Methodology	3	1	4
BP802T	Social and Preventive Pharmacy	3	1	4
BP803ET	Pharmaceutical Marketing	3 + 3 = 6	1 + 1 = 2	4 + 4 = 8
BP804ET	Pharmaceutical Regulatory Science			
BP805ET	Pharmacovigilance			
BP806ET	Quality Control and Standardizations of Herbals			
BP807ET	Computer Aided Drug Design			
BP808ET	Cell and Molecular Biology			
BP809ET	Cosmetic Science			
BP810ET	Experimental Pharmacology			
BP811ET	Advanced Instrumentation Techniques			
BP812PW	Project Work	12	-	6
	Total	**24**	**4**	**22**

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Head
Institute of Pharmaceutical Research
GLA University, Mathura (UP)

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Established vide U.P. Act 21 of 2010.

M. PHARM (PHARMACOLOGY)
COURSE STRUCTURE

(w.e.f. Session 2020-21)

INSTITUTE OF
PHARMACEUTICAL RESEARCH

Table 1: M. Pharm (Pharmacology)

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
Semester I					
MPL 101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPL 102T	Advanced Pharmacology-I	4	4	4	100
MPL 103T	Pharmacological and Toxicological Screening Methods-I	4	4	4	100
MPL 104T	Cellular and Molecular Pharmacology	4	4	4	100
MPL 105P	Pharmacology Practical I	12	6	12	150
-	Seminar Assignment	7	4	7	100
Total		35	26	35	650
Semester II					
MPL 201T	Advanced Pharmacology II	4	4	4	100
MPL 202T	Pharmacological and Toxicological Screening Methods-II	4	4	4	100
MPL 203T	Principles of Drug Discovery	4	4	4	100
MPL 204T	Experimental Pharmacology practical- II	4	4	4	100
MPL 205P	Pharmacology Practical II	12	6	12	150
-	Seminar Assignment	7	4	7	100
	Total	35	26	35	650

Table 2: M. Pharm (Pharmacology)

Course Code	Course	Credit Hours	Credit Points
MRM 301T	Research Methodology and Biostatistics*	4	4
MRM 302T	Journal club	1	1
MRM 303T	Discussion / Presentation (Proposal Presentation)	2	2
-	Research Work	28	14
Total		35	21

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Course Structure

ELECTIVES

TABLE 3: ELECTIVES (M. PHARM)

Semester	Core Courses			DSE			Open elective courses			Total Credits
	No.of papers	Credits(L+T/P)	Totalc redits	No.of papers	Credits(L+T/P)	Totalc redits	No.of papers	Credits(L+T/P)	Totalc redits	
I	4	16+2(P)	18	0	0	0	2	4+1	5	**23**
II	4	16+6(P)	22	0	0	0	0	0	0	**22**
III	3	12+4(P)	16	1	4	4		2(P)	2	**22**
IV	2	8	8	2	8+8(P)	16	0	0		**24**
Totalcreditsforthecourse			**64**			**20**			**7**	**91**

Discipline Specific Elective Papers: DSE

S.No.	CourseName	Code	L-T-P	Credit	Contact Hrs.
SEM III	(Pharmacology)				
1	Enzyme Technology	MSBE 0002	4-0-0	4	24
2	Clinical Immunology	MSBE 0004	4-0-0	4	24
3	Food Science and Biotechnology	MCHE0304	3-1-0	4	48
4	Chemical, Electro chemical cells and Biosensor	MCHE0404	3-1-0	4	48

Meenakshi

Head
Institute of Pharmaceutical Research
GLA University, Mathura (UP)

GLA UNIVERSITY
MATHURA
Established vide U.P. Act 21 of 2010.

M. PHARM (PHARMACEUTICS) COURSE STRUCTURE

(w.e.f. Session 2020-21)

INSTITUTE OF PHARMACEUTICAL RESEARCH

Table 1: M. Pharm (Pharmaceutics)

Course Code	Course	Credit Hours	Credit Points	Hrs./wk	Marks
Semester I					
MPH101T	Modern Pharmaceutical Analytical Techniques	4	4	4	100
MPH102T	Drug Delivery System	4	4	4	100
MPH103T	Modern Pharmaceutics	4	4	4	100
MPH104T	Regulatory Affair	4	4	4	100
MPH105P	Pharmaceutics Practical I	12	6	12	150
-	Seminar/Assignment	7	4	7	100
Total		35	26	35	650
Semester II					
MPH201T	Molecular Pharmaceutics (Nano Tech and Targeted DDS)	4	4	4	100
MPH202T	Advanced Biopharmaceutics & Pharmacokinetics	4	4	4	100
MPH203T	Computer Aided Drug Delivery System	4	4	4	100
MPH204T	Cosmetic and Cosmeceuticals	4	4	4	100
MPH205P	Pharmaceutics Practical II	12	6	12	150
-	Seminar/Assignment	7	4	7	100
	Total	35	26	35	650

Table 2: M. Pharm (Pharmaceutics)

Course Code	Course	Credit Hours	Credit Points
MRM 301T	Research Methodology and Biostatistics*	4	4
MRM 302T	Journal club	1	1
MRM 303T	Discussion / Presentation (Proposal Presentation)	2	2
-	Research Work	28	14
Total		35	21

Meenakshi

Course Structure

ELECTIVES

TABLE 3: ELECTIVES (M. PHARM)

Semester	Core Courses			DSE			Open elective courses			Total Credits
	No.of papers	Credits(L+T/P)	Totalc redits	No.of papers	Credits(L+T/P)	Totalc redits	No.of papers	Credits(L+T/P)	Totalc redits	
I	4	16+2(P)	18	0	0	0	2	4+1	5	**23**
II	4	16+6(P)	22	0	0	0	0	0	0	**22**
III	3	12+4(P)	16	1	4	4		2(P)	2	**22**
IV	2	8	8	2	8+8(P)	16	0	0		**24**
Totalcreditsforthecourse			**64**			**20**			**7**	**91**

Discipline Specific Elective Papers: DSE

S.No.	CourseName	Code	L-T-P	Credit	Contact Hrs.
SEM III	(Pharmaceutics)				
1	Enzyme Technology	MSBE 0002	4-0-0	4	24
2	Clinical Immunology	MSBE 0004	4-0-0	4	24
3	Food Science and Biotechnology	MCHE0304	3-1-0	4	48
4	Chemical, Electro chemical cells and Biosensor	MCHE0404	3-1-0	4	48

Meenakshi

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COURSE STRUCTURE

BACHELOR OF EDUCATION

(B.Ed.)

Credits Distributions

Sr. No.	Category	No. of Credits
1	Core Course	30
2	EPC	26
3	Program Core	38
	Total	**94**

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First Semester

S. NO.	COURSE CATEGORY	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
				L	T	P		
1	CC	EDB 1001	Childhood & Growing Up	4	1	0	5	5
2	CC	EDB1002	Contemporary India & Education	4	1	0	5	5
3	PC	EDB1003	Language Across The Curriculum	4	1	0	5	5
4	PC	EDB 1004	Understanding Disciplines And Subjects	3	0	0	2	3
			PRACTICALS					
5	EPC	EDB 1080	Drama, Art & Aesthetics	0	0	2	2	4
6	EPC	EDB 1081	Health and Physical Education	0	0	2	2	4
7	EPC	EDB 1082	Strengthening Language Proficiency	0	0	2	2	4
8	EPC	EDB 1083	Understanding ICT and Its Application-I	0	0	3	3	6
			TOTAL	**15**	**3**	**9**	**26**	**36**

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Second Semester

S. NO.	COURSE CATEGORY	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
				L	T	P		
1	CC	EDB 2001	Knowledge and Curriculum	4	1	0	5	5
2	CC	EDB 2002	Learning and Teaching	4	1	0	5	5
	PC		**Pedagogy of School subjects- (Choose any two)**				**6**	**6**
3	PC	EDB 2003	Pedagogy of Hindi	3	0	0	3	3
4	PC	EDB 2004	Pedagogy of English	3	0	0	3	3
5	PC	EDB 2005	Pedagogy of Sanskrit	3	0	0	3	3
6	PC	EDB 2006	Pedagogy of Science	3	0	0	3	3
7	PC	EDB 2007	Pedagogy of Biology	3	0	0	3	3
8	PC	EDB 2008	Pedagogy of Mathematics	3	0	0	3	3
9	PC	EDB 2009	Pedagogy of Social Science – I (History, Civics)	3	0	0	3	3
10	PC	EDB 2010	Pedagogy of Social Science – II (Economics, Geography)	3	0	0	3	3
11	PC	EDB 2011	Pedagogy of Commerce	3	0	0	3	3
12	PC	EDB 2012	Pedagogy of Home Science	3	0	0	3	3
			PRACTICALS					
13	EPC	EDB 2080	Reading & Reflecting Text	0	0	2	2	4
14	EPC	EDB 2081	Scouting & Guiding	0	0	2	2	4
15	EPC	EDB 2082	Understanding ICT and Its Application-II	0	0	3	3	6
16	EPC	EDB 2083	Yoga Education	0	0	2	2	4
			TOTAL	**14**	**2**	**9**	**25**	**34**

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Third Semester

S. NO.	COURSE CATEGORY	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
				L	T	P		
PRACTICALS								
1	PC	EDB 3080	School Internship				18	96/16
			Total				**18**	**96/16**

Fourth Semester

S. NO.	COURSE CATEGORY	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
				L	T	P		
1	CC	EDB 4001	Creating an Inclusive School	4	1	0	5	5
2	CC	EDB 4002	Gender, School & Society	4	1	0	5	5
3	PC	EDB 4003	Assessment for Learning	4	1	0	5	5
	PC		**Optional Course (Choose anyone from the following)**	**3**	**0**	**0**	**2**	**3**
4		EDB 4004	Environmental Education	3	0	0	2	3
5		EDB 4005	Peace Education	3	0	0	2	3
6		EDB 4006	Population Education	3	0	0	2	3
7		EDB 4007	School Administration and Management	3	0	0	2	3
8		EDB 4008	Value Education	3	0	0	2	3
PRACTICALS								
9	EPC	EDB 4080	Soft Skills & Personality Development	0	0	6	3	6
10	EPC	EDB 4081	Understanding ICT and Its Application-III	0	0	6	3	6
11	EPC	EDB 4082	Working with Community	0	0	4	2	4
			TOTAL	**15**	**3**	**16**	**25**	**34**

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Program Core

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE-REQUISITES
			L	T	P	J			
THEORY									
1	EDB 1001	Childhood & Growing Up	4	1	0		5	5	
2	EDB1002	Contemporary India & Education	4	1	0		5	5	
3	EDB 2001	Knowledge and Curriculum	4	1	0		5	5	
4	EDB 2002	Learning and Teaching	4	1	0		5	5	
5	EDB 4001	Creating an Inclusive School	4	1	0		5	5	
6	EDB 4002	Gender, School & Society	4	1	0		5	5	
Total			**24**	**6**	**0**	**-**	**30**	**30**	

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Program Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME				CREDITS	CONTACTS HR/WK	PRE- REQUISITES
			L	T	P	J			
Bouquet:									
THEORY									
1	EDB 4004	Environmental Education	3	0	0		2	3	
2	EDB 4005	Peace Education	3	0	0		2	3	
3	EDB 4006	Population Education	3	0	0		2	3	
4	EDB 4007	School Administration and Management	3	0	0		2	3	
5	EDB 4008	Value Education	3	0	0		2	3	
		Total	**3**	**0**	**0**		**2**	**3**	

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COURSE STRUCTURE

BACHELOR OF ARTS LLB (HONS.)

Under

Choice Based Credit System (CBCS)

Session 2020-21

COURSE STRUCTURE

FOR

B.A.LLB. (Hons.)

Prof. (Dr.) Avinash Dadhich
LL.M (France), Ph.D (HRT) & ILVP Fellow (USA)
Dean and Professor of Law
Institute of Legal Studies and Research
GLA University, Mathura

First Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 0001	1.	Constitutional Law of India – I	4	2	2	6	8
BALC 0002	2.	Law of Torts including MV & Consumer Protection Laws	4	2	2	6	8
BALC 0006	3.	Political Science- 1	4	1	1	5	6
BELH 0010	4.	General English – I	4	1	1	5	6
		TOTAL	**16**	**6**	**6**	**22**	**28**

Second Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 0007	1	Constitutional Law of India-II	4	2	2	6	8
BALC 0005	2.	History(Legal History-I)	4	1	1	5	6
BALC 0004	3.	Sociology(Essentials of Sociology-I)	4	1	1	5	6
BELH 0011	4.	General English – II	4	1	1	5	6
		TOTAL	**16**	**5**	**5**	**21**	**26**

Third Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 0011	1.	Political Science-II	4	1	1	5	6
BALC 0009	2.	Sociology-II	4	1	1	5	6

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BALC 1010	3.	History – II	4	1	1	5	6
BCLC 0006	4.	Legal Language & Communication Skills	4	2	2	6	8
		TOTAL	**16**	**5**	**5**	**21**	**26**

Fourth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 1002	1.	Law of Contract-I	4	2	2	6	8
BALC 1001	2.	Jurisprudence-I	4	2	2	6	8
BALC 1003	3.	Family Law-I	4	2	2	6	8
BALC 1106	4.	Political Science: Political System and Governance - I	4	1	1	5	6
		TOTAL	**16**	**7**	**7**	**23**	**30**

Fifth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 2002	1.	Law of Contract-II	4	2	2	6	8
BALC 2001	2.	Jurisprudence-II	4	2	2	6	8
BALC 2003	3.	Family Law-II	4	2	2	6	8
BALC 1005	4.	History – III(European History and the World)	4	1	1	5	6
		TOTAL	16	7	7	23	30

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Sixth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 2004	1.	Interpretation of Statutes	4	2	2	6	8
BALC 1012	2.	Sociology-III	4	1	1	5	6
BALC 2011	3.	Political Science: Political System and Governance - II	4	1	1	5	6
BALC 2005	4.	Legal Hindi	4	1	1	5	6
		TOTAL	**16**	**5**	**5**	**21**	**26**

Four weeks' internship during the academic year except during the class test(s) and the examinations (Total Credit - 02)

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Seventh Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 3001	1.	Law of Crimes-I	4	2	2	6	8
BALC 3003	2.	Labour Law-I	4	2	2	6	8
BALC 3002	3.	Property Law & Easement	4	2	2	6	8
BALC 3004	4.	Political Science – (Public Administration)	4	1	1	5	6
		TOTAL	**16**	**7**	**7**	**23**	**30**

Eighth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 4001	1.	Law of Crimes-II	4	2	2	6	8
BALC 4003	2.	Labour Law-II	4	2	2	6	8
BALC 4002	3.	Administrative Law	4	2	2	6	8
BALC 4004	4.	Political Science- VI	4	1	1	5	6
		TOTAL	**16**	**7**	**7**	**23**	**30**

Ninth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 4005	1.	Criminal Procedure Code- I	4	2	2	6	8
BALC 4006	2.	Civil Procedure Code-I	4	2	2	6	8
BALC 4007	3.	Company Law	4	2	2	6	8
BALC 4008	4.	Laws of Taxation	4	2	2	6	8

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		TOTAL	16	8	8	24	32

Four weeks' internship during the academic year except during the class test(s) and the examinations (Total Credit - 02)

Tenth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 5005	1.	Criminal Procedure Code - II	4	2	2	6	8
BALC 5006	2.	Civil Procedure Code-II	4	2	2	6	8
BALC 5007	3.	Public International Law	4	2	2	6	8
BALC 5008	4.	Environmental Law	4	2	2	6	8
		TOTAL	16	8	8	24	32

Eleventh Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 6001	1.	Law of Evidence- I	4	2	2	6	8
BALC 6002	2.	Sports Law	4	2	2	6	8
BALC 6003	3.	Anti-Corruption Money Laundering Laws	4	2	2	6	8
BALC 6004	4.	Cyber Law	4	2	2	6	8
		TOTAL	16	8	8	24	32

Twelfth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		

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	1.	Law of Evidence- II	4	2	2	6	8
	2.	Elective- III	4	2	2	6	8
	3.	Elective- IV	4	2	2	6	8
	4.	Honours-II	4	2	2	6	8
		TOTAL	**16**	**8**	**8**	**24**	**32**

Four weeks' internship during the academic year except during the class test(s) and the examinations (Total Credit - 02)

Thirteenth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
	1.	Elective- V	4	2	2	6	8
	2.	Elective- VI	4	2	2	6	8
	3.	Honours-III	4	2	2	6	8
	4.	Honours-IV	4	2	2	6	8
		TOTAL	**16**	**8**	**8**	**24**	**32**

Fourteenth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
	1.	Honours- V	4	2	2	6	8
	2.	Honours-VI	4	2	2	6	8
	3.	Clinical-I (Drafting's&Pleadings)	4	2	2	6	8
	4.	Clinic-II (Alternative Dispute Resolution)	4	2	2	6	8
		TOTAL	**16**	**8**	**8**	**24**	**32**

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Four weeks' internship during the academic year except during the class test(s) and the examinations (Total Credit - 02)

Fifteenth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
	1.	Honours- VII	4	2	2	6	8
	2.	Honours-VIII	4	2	2	6	8
	3.	Clinical-III (Professional Ethics)	4	2	2	6	8
	4.	Clinical-IV (Moot Court)	4	2	2	6	8
		TOTAL	**16**	**8**	**8**	**24**	**32**

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Honour's Courses

1. **Constitutional Law**
   - H-I Legal and Constitutional History of India
   - H-II Comparative Constitution,US, India and UK
   - H-III Local Self-Governments, Gram Panchayat and Municipal Administration
   - H-IV Law on Education and Religion
   - H-V Right to Information
   - H-VI Legislative Drafting
   - H-VIIIndian Federalism and Judicial Independence
   - H-VIII Election Laws

2. **Corporate & Business Law Group**
   - H-I Law of Aviation
   - H-II Domestic Insurance Law
   - H-III Law of Mergers and Acquisitions
   - H-IV International Contracts Law
   - H-V Cyber Law
   - H-VI Intellectual Property Law
   - H-VII Alternative Dispute Resolution

H-VIII Banking Law

3. **International Law**

H-I Law relating to Regional Trade Agreements
H-II Tran boundary Exports, Imports and Anti-dumping Law
H-III WTO and GATS
H-IV Law of the Sea
H-V Law of the Aviation
H-VI International Environmental Law
H-VII International Labor Organization and Labor Law
H-VIII International Criminal Law and Criminal Court

4. **Intellectual Property Rights**

H-I Evolution IPR Treaties and Convention
H-II Copyright Law
H-III Law of Patents
H-IV Law of Trademarks and Service Marks
H-V Traditional Knowledge, GI and Farmer Rights
H-VI Other Intellectual Property
H-VII IPR Valuation and Management
H-VIII IPR Protection and Technology

ELECTIVE COURSES

Elective - I

- Citizenship & Emigration Law
- Legislative Practices and procedures in India

Elective - II

- Private International Law
- International Business Dispute Resolution Mechanisms.

Elective-III

- Competition Law
- Criminology and Penology

Elective-IV

- Comparative Criminal Law
- Law of Infrastructure Development and Real Estate

Elective-V

- Media Law
- Trust, Equity and Fiduciary Relationships

Elective-VI

- International Commercial Arbitration
- Right to Information and Public Accountability

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NOTE: 1. Any of the Honours/Elective subjects may not be offered to the students if the teaching facility for such a subject is not available or does not exist at IUD campus.

2. No student shall be allowed to change his/ her honours/Elective subject except during the two weeks of commencement of teaching.

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COURSE STRUCTURE

BACHELOR COMMERCE LLB (HONS.)

Under

Choice Based Credit System (CBCS)

Session 2020-21

COURSE STRUCTURE

FOR

B.Com LL.B. (Hons.)

First Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 0001	1.	Constitutional Law-I	4	2	2	6	8
BALC 0002	2.	Law of Torts including MV & Consumer Protection Laws	4	2	2	6	8
BCLC 0001	3.	Principles of Management	4	1	1	5	6
BELH 0010	4.	General English – I	4	1	1	5	6
		TOTAL	**16**	**6**	**6**	**22**	**28**

Second Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 0007	1	Constitutional Law-II	4	2	2	6	8
BCLC 0002	2.	Financial Accounting	4	1	1	5	6
BCLC 0003	3.	Management Accounting	4	1	1	5	6
BELH 0011	4.	General English – II	4	1	1	5	6
		TOTAL	**16**	**5**	**5**	**21**	**26**

Third Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BCLC 0004	1.	Auditing	4	1	1	5	6
BCLC 2005	2.	Business Statistics	4	1	1	5	6

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BCLC 2006	3.	Corporate Accounting – I	4	1	1	5	6
BCLC 0006	4.	Legal Language & Communication Skills	4	2	2	6	8
		TOTAL	16	5	5	21	26

Fourth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 1002	1.	Law of Contract-I	4	2	2	6	8
BALC 1001	2.	Jurisprudence-I	4	2	2	6	8
BALC 1003	3.	Family Law-I	4	2	2	6	8
BCLC 2007	4.	Corporate Accounting – II	4	1	1	5	6
		TOTAL	16	7	7	23	30

Fifth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 2002	1.	Law of Contract-II	4	2	2	6	8
BALC 2001	2.	Jurisprudence-II	4	2	2	6	8
BALC 2003	3.	Family Law-II	4	2	2	6	8
BCLC 1008	4.	Managerial Economics – I	4	1	1	5	6
		TOTAL	16	7	7	23	30

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Sixth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 2004	1.	Interpretation of Statutes	4	2	2	6	8
BCLC 2009	2.	Principles of Taxation	4	1	1	5	6
BCLC 2008	3.	Managerial Economics-II	4	1	1	5	6
BALC 2005	4.	Legal Hindi	4	1	1	5	6
		TOTAL	16	5	5	21	26

Seventh Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 3001	1.	Law of Crimes-I	4	2	2	6	8
BALC 3003	2.	Labour Law-I	4	2	2	6	8
BALC 3002	3.	Property & Easement Law	4	2	2	6	8
BCLC 3001	4.	Cost Accounting	4	1	1	5	6
		TOTAL	16	7	7	23	30

Eighth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 4001	1.	Law of Crimes-II	4	2	2	6	8
BALC 4003	2.	Labour Law-II	4	2	2	6	8
BALC 4002	3.	Administrative Law	4	2	2	6	8

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BCLC 4004	4.	Principles and Practices of Banking and Insurance	4	1	1	5	6
		TOTAL	16	7	7	23	30

Ninth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 4005	1.	Criminal Procedure Code- I	4	2	2	6	8
BALC 4006	2.	Civil Procedure Code-I	4	2	2	6	8
BALC 4007	3.	Company Law	4	2	2	6	8
BALC 4008	4.	Laws of Taxation	4	2	2	6	8
		TOTAL	16	8	8	24	32

Tenth Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 5005	1.	Criminal Procedure Code- II	4	2	2	6	8
BALC 5006	2.	Civil Procedure Code-II	4	2	2	6	8
BALC 5007	3.	Public International Law	4	2	2	6	8
BALC 5008	4.	Environmental Law	4	2	2	6	8
		TOTAL	16	8	8	24	32

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Eleventh Trimester

SUBJECT CODE	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
BALC 6001	1.	Law of Evidence- I	4	2	2	6	8
BALC 6002	2.	Sports Law	4	2	2	6	8
BALC 6003	3.	Anti-Corruption Money Laundering Laws	4	2	2	6	8
BALC 6004	4.	Cyber Law	4	2	2	6	8
		TOTAL	16	8	8	24	32

Twelfth Trimester

	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
	1.	Law of Evidence- II	4	2	2	6	8
	2.	Elective- III	4	2	2	6	8
	3.	Elective- IV	4	2	2	6	8
	4.	Honours-II	4	2	2	6	8
		TOTAL	16	8	8	24	32

Thirteenth Trimester

	S. NO	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
	1.	Elective- V	4	2	2	6	8
	2.	Elective- VI	4	2	2	6	8
	3.	Honours-III	4	2	2	6	8

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	4.	Honours-IV	4	2	2	6	8
		TOTAL	16	8	8	24	32

Fourteenth Trimester

S. NO		SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
	1.	Honours- V	4	2	2	6	8
	2.	Honours-VI	4	2	2	6	8
	3.	Clinical-I (Drafting's&Pleadings)	4	2	2	6	8
	4.	Clinic-II (Alternative Dispute Resolution)	4	2	2	6	8
		TOTAL	16	8	8	24	32

Fifteenth Trimester

S. NO		SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
	1.	Honours- VII	4	2	2	6	8
	2.	Honours-VIII	4	2	2	6	8
	3.	Clinical-III (Professional Ethics)	4	2	2	6	8
	4.	Clinical-IV (Moot Court)	4	2	2	6	8
		TOTAL	16	8	8	24	32

Honour's Courses

1. **Corporate & Business Law Group**
   - H-I Cyber Law
   - H-II Data Privacy

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H-III Intellectual Property Law- I
H-IV Intellectual Property Law- II
H-V Law of Mergers and Acquisitions
H-VI Banking Law
H-VII Insurance Law
H-VIII Finance Law

ELECTIVE COURSES

Elective - I

- Sports Law

Elective - II

- Anti- Corruption and Money Laundering Laws

Elective-III

- Competition Law

Elective-IV

- Law of Infrastructure Development and Real Estate

Elective-V

- Media Law

Elective-VI

- International Commercial Arbitration

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COURSE STRUCTURE

B. SC. (HONS.) AGRICULTURE

Under

Choice Based Credit System (CBCS)/Elective Course System (ECS)

Session 2020-21

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	BAGC 0103	Fundamentals of Horticulture	1	0	1	2	3
2	BAGS 0101	Fundamentals of Plant Biochemistry and Biotechnology	2	0	1	3	4
3	BAGC 0102	Fundamentals of Soil Science	2	0	1	3	4
5	BAGC 0101	Fundamentals of Agronomy	3	0	1	4	5
6	BAGS 0105	Rural Sociology & Educational Psychology	2	0	0	2	2
7	BAGC 0105	Agricultural Heritage	1	0	0	1	1
8	BAGS 0106	Human Values & Ethics	1	0	0	1	1
9	BAGS 0102	Comprehension & Communication Skills in English	1	0	1	2	3
10	BAGS 0103	Introductory Biology	1	0	1	2	3
11	BAGS 0104	Elementary Mathematics	2	0	0	2	2
12	BAGS 0107	NSS	0	0	2	2	4
13	BAGS 0108	NCC	0	0	2	2	4
14	BAGS 0109	Physical Education &Yoga Practices	0	0	2	2	4
Total			**17**	**0**	**13**	**30**	**43**

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S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	BAGC 0106	Fundamentals of Genetics	2	0	1	3	4
2	BAGC 0107	Agricultural Microbiology	1	0	1	2	3
3	BAGC 0108	Soil and Water Conservation Engineering	1	0	1	2	3
4	BAGC 0109	Fundamentals of Agricultural Economics	2	0	0	2	2
5	BAGC 0110	Fundamentals of Plant Pathology	3	0	1	4	5
6	BAGS 0110	Fundamentals of Crop Physiology	1	0	1	2	3
7	BAGC 0111	Fundamentals of Entomology	3	0	1	4	5
8	BAGC 0112	Fundamentals of Agricultural Extension Education	2	0	1	3	4
9	BAGS 0111	Communication Skills and Personality Development	1	0	1	2	3
Total			**16**	**0**	**8**	**24**	**32**

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S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	BAGC 0113	Crop Production Technology – I (Kharif Corps)	1	0	1	2	3
2	BAGC 0114	Fundamentals of Plant Breeding	2	0	1	3	4
3	BAGC 0115	Problematic Soils and their Management	2	0	0	2	2
4	BAGC 0116	Diseases of Field and Horticultural Crops and their Management – I	2	0	1	3	4
5	BAGC 0117	Farm Machinery and Power	1	0	1	2	3
6	BAGC 0118	Production Technology for Vegetables and Spices	1	0	1	2	3
7	BAGC 0119	Livestock and Poultry Management	3	0	1	4	5
8	BAGS 0112	Environmental Studies and Disaster Management	2	0	1	3	4
9	BAGS 0113	Statistical Methods	1	0	1	2	3
Total			**15**	**0**	**8**	**23**	**31**

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S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	BAGC 0120	Crop Production Technology – II (Rabi Crops)	1	0	1	2	3
2	BAGC 0121	Production Technology for Ornamental Crops, MAP and Landscaping	1	0	1	2	3
3	BAGC 0122	Agri-Informatics	1	0	1	2	3
4	BAGC 0124	Production Technology for Fruit and Plantation Crops	1	0	1	2	3
5	BAGC 0127	Agricultural Marketing Trade & Prices	2	0	1	3	4
6	BAGC 0125	Principles of Seed Technology	1	0	2	3	4
7	BAGC 0126	Farming System & Sustainable Agriculture	1	0	0	1	1
8	BAGC 0128	Introductory Agro - meteorology & Climate	1	0	1	2	3
9	BAGC 0142	Renewable Energy and Green Technology	1	0	1	2	3
Total			**10**	**0**	**09**	**19**	**27**

VSP

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ELECTIVE COURSES

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1	BAGE 0101	Agri-business Management	2	0	1	3	4
2	BAGE 0102	Agrochemicals	2	0	1	3	4
3	BAGE 0103	Commercial Plant Breeding	2	0	1	3	4
4	BAGE 0104	Landscaping	2	0	1	3	4
5	BAGE 0105	Food Safety and Standards	2	0	1	3	4
6	BAGE 0106	Biopesticides & Biofertilizers	2	0	1	3	4
7	BAGE 0107	Protected Cultivation	2	0	1	3	4
8	BAGE 0108	Micro propagation Technologies	2	0	1	3	4
9	BAGE 0109	Hi-tech. Horticulture	2	0	1	3	4
10	BAGE 0110	Weed Management	2	0	1	3	4
11	BAGE 0111	System Simulation and Agro-advisory	2	0	1	3	4
12	BAGE 0112	Agricultural Journalism	2	0	1	3	4

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COURSE STRUCTURE

B. SC. (HONS.) CHEMISTRY

Under

Choice Based Credit System (CBCS)

Session 2020-21

DEPARTMENT OF CHEMISTRY, INSTITUTE OF APPLIED SCIENCES & HUMANITIES

Credits Distributions as per CBCS

Sr. No.	Category	Minimum Credits	Maximum Credits
1	Core Courses (C)	84	88
2	Generic Electives (GE)	24	24
3	Discipline Specific Electives (DSE)	24	32
4	Ability Enhancement Compulsory (AEC)	4	8
5	Skill Enhancement Courses (SEC)	4	8
6	Mandatory Non-Credit Courses (MNC) (4 Courses)	-	-
	Total	**140**	**160**

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First Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
1.	BCHC 0001	Physical Chemistry-I	3	1	0	4	4
2.	BCHC 1002	General Chemistry-I	3	1	0	4	4
3	BMAS 1504	Applied Mathematics for Chemists (GE)	3	1	0	4	4
	BSBE 0001	Remedial Biology (GE)	3	1	0		
4	BPHS 1005	Ancillary Physics Course-I (GE)	3	1	0	4	4
5	BCSO 0005	Fundamentals of Computer (SEC)	2	0	0	2	2
6	BELH 0007	English Language and Skills–I (AEC)	3	0	0	3	3
PRACTICALS							
8	BPHS 1805	Physics Lab – I	0	0	4	2	4
9	BCHC 1901	Chemistry Lab-I	0	0	4	2	4
10	BCSO 0074	Fundamentals of Computer Lab (SEC)	0	0	2	1	2
						26	**31**

Second Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BCHC 0003	Organic Chemistry-I	3	1	0	4	4
2.	BCHC 1004	General Chemistry-II	3	1	0	4	4
3.	BMAS 0505	Statistics and Numerical methods (GE)	3	1	0	4	4
	BSBC 0011	Microbiology (GE)	3	1	0		
4.	BPHS 1006	Ancillary Physics Course-II (GE)	3	1	0	4	4
5.	BELH 0008	English Language and Skills-II (GE)	3	0	0	3	3
6.	BCHS 0201	Environmental Studies (AEC)	2	0	0	2	2
7.	BCTH 0101	Soft Skills – I (SEC)	1	0	0	1	1
PRACTICALS							
1.	BPHS 1806	Physics Lab II	0	0	4	2	4
2.	BCHC 1902	Chemistry Lab-II	0	0	4	2	4
3.	BELH 0802	English Language Lab – II (GE5)	0	0	2	1	2
						27	**32**

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Third Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BCHC0005	Physical Chemistry-II	3	1	0	4	4
2.	BCHC1006	Organic Chemistry-II	3	1	0	4	4
3.	BCHC1007	Inorganic Chemistry –I	3	1	0	4	4
4.	-	DSE-1	3	1	0	4	4
5	BCTH 0102	Soft Skills – II (SEC)	2	0	0	2	2
PRACTICALS							
6.	BCHC0903	Chemistry Lab-III	0	0	4	2	4
7.	BCHC0904	Chemistry Lab-IV	0	0	4	2	4
8.	BCHC0905	Chemistry Lab-V	0	0	4	2	4
						24	30

Fourth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACTS HRS/WK
			L	T	P		
1.	BCHC0008	Physical Chemistry-III	3	1	0	4	4
2.	BCHC0009	Organic Chemistry-III	3	1	0	4	4
3.	BCHC1010	Inorganic Chemistry –II	3	1	0	4	4
4.	-	DSE-2	3	1	0	4	4
5.	BCTH 0103	Soft Skills – II (SEC)	2	0	0	2	2
PRACTICALS							
6	BCHC0906	Chemistry Lab-VI	0	0	4	2	4
7	BCHC0907	Chemistry Lab-VII	0	0	4	2	4
8	BCHC0908	Chemistry Lab-VIII	0	0	4	2	4
						24	30

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Fifth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACT S HRS/WK
			L	T	P		
1.	BCHC0011	Physical Chemistry-IV	3	1	0	4	4
2.	BCHC0013	Inorganic Chemistry –III	3	1	0	4	4
3.	BCHC1015	Organic Chemistry –V	3	1	0	4	4
4.	-	DSE-3	3	1	0	4	4
PRACTICALS							
6.	BCHC0909	Chemistry Lab-IX	0	0	4	2	4
7.	BCHC0910	Chemistry Lab-X	0	0	4	2	4
8.	BCHC0911	Chemistry Lab-XI	0	0	4	2	4
						22	28

Sixth Semester

S. NO.	CODE	SUBJECT	TEACHING SCHEME			CREDITS	CONTACT S HRS/WK
			L	T	P		
1.	BCHC1014	Physical Chemistry-V	3	1	0	4	4
2.	BCHC0012	Organic Chemistry-IV	3	1	0	4	4
3.	-	DSE-4	3	1	0	4	4
4.	-	DSE-5	3	1	0	4	4
PRACTICALS							
5.	BCHC0912	Chemistry Lab-XII	0	0	4	2	4
6.	BCHE 0951	PROJECT (DSE-6)	0	0	8	4	8
						22	28

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I. CORE COURSES

S. NO.	CODE	SUBJECT	TEACHING SCHEME L-T-P	CREDITS	CONTACTS HR/WK	PRE-REQUISITES
1.	BCHC 0001	Physical Chemistry - I	3-1-0	4	4	
2.	BCHC 2002	General Chemistry – I	3-1-0	4	4	
3.	BCHC 1003	Organic Chemistry - I	3-1-0	4	4	
4.	BCHC 2004	General Chemistry - II	3-1-0	4	4	
5.	BCHC 0005	Physical Chemistry – II	3-1-0	4	4	
6.	BCHC 1006	Organic Chemistry - II	3-1-0	4	4	
7.	BCHC 0007	Inorganic Chemistry - I	3-1-0	4	4	
8.	BCHC 0008	Physical Chemistry – III	3-1-0	4	4	
9.	BCHC 0009	Organic Chemistry - III	3-1-0	4	4	
10.	BCHC 1010	Inorganic Chemistry - II	3-1-0	4	4	
11.	BCHC 0011	Physical Chemistry – IV	3-1-0	4	4	
12.	BCHC 0012	Organic Chemistry - IV	3-1-0	4	4	
13.	BCHC 0013	Inorganic Chemistry - III	3-1-0	4	4	
14.	BCHC 1014	Physical Spectroscopy	3-1-0	4	4	
15.	BCHC 1015	Organic Chemistry – V	3-1-0	4	4	
PRACTICALS						
1.	BCHC 1901	Chemistry Lab 1	0-0-4	2	4	
2.	BCHC 2902	Chemistry Lab 2	0-0-4	2	4	
3.	BCHC 0903	Chemistry Lab 3	0-0-4	2	4	
4.	BCHC 0904	Chemistry Lab 4	0-0-4	2	4	
5.	BCHC 0905	Chemistry Lab 5	0-0-4	2	4	
6.	BCHC 0906	Chemistry Lab 6	0-0-4	2	4	
7.	BCHC 0907	Chemistry Lab 7	0-0-4	2	4	
8.	BCHC 0908	Chemistry Lab 8	0-0-4	2	4	
9.	BCHC 0909	Chemistry Lab 9	0-0-4	2	4	
10.	BCHC 0910	Chemistry Lab 10	0-0-4	2	4	
11.	BCHC 0911	Chemistry Lab 11	0-0-4	2	4	
12.	BCHC 0912	Chemistry Lab 12	0-0-4	2	4	
			TOTAL	84		

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II. ELECTIVE COURSES

IIA. Discipline Specific Elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME L-T-P-J	CREDITS	CONTACTS HR/WK	PRE- REQUISITES
1.	BCHE 1001	Fundamentals of Chemical Analysis	3-1-0-0	4	4	
2.	BCHE 1002	Organic Spectroscopic techniques	3-1-0-0	4	4	
3.	BCHE 1003	Chromatographic Techniques	3-1-0-0	4	4	
4.	BCHE 1004	Electroanalytical and Radioanalytical techniques	3-1-0-0	4	4	
5.	BCHE 0005	Fuel Cell Technology	3-1-0-0	4	4	
6.	BCHE 0006	Green Chemistry and Corrosion Science	3-1-0-0	4	4	
7.	BCHE 0009	Inorganic Spectroscopic techniques	3-1-0-0	4	4	
8.	BCHO 0101	Nanomaterials and Nanotechnology	3-1-0-0	4	4	
9.	BCHO 0102	Technology of Surface Coating	3-1-0-0	4	4	
10.	BCHO 0103	Material Science & Engineering	3-1-0-0	4	4	
11.	BCHO 0104	Introduction to Biophysical Chemistry	3-1-0-0	4	4	
12.	BCHE 0008	Industrial Chemicals & Environment	3-1-0-0	4	4	
13.	BCHE 0951	Project**	0-0-0-8	4	8	
Minimum 24 Credit are required including **						

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II B. Generic elective

S. NO.	CODE	SUBJECT	TEACHING SCHEME L-T-P	CREDITS	CONTACTS HR/WK	PRE- REQUISITES
1.	BMAS 1504	Applied Mathematics for Chemists	3-1-0	4	4	
2.	BMAS 0505	Statistics and Numerical Methods	3-1-0	4	4	
3.	BPHS 1005	Ancillary Physics Course-I	3-1-0	4	4	
4.	BPHS 1006	Ancillary Physics Course-II	3-1-0	4	4	
5.	BSBC 0011	Microbiology	4-0-0	4	4	
6.	BSBE 0001	Remedial Biology	3-1-0	4	4	
7.	BCSO0006	Introduction to Programming	3-0-0	3	3	
8.	BELH 0008	English Language Skills-II	3-0-0	3	3	
PRACTICALS						
1	BPHS 1805	Physics Lab – 1	0-0-4	2	4	
2	BPHS 1806	Physics Lab – 2	0-0-4	2	4	
3	BCSO 0075	Programming Lab	0-0-2	1	2	
4	BELH 0802	English Language Lab - II	0-0-2	1	2	
Minimum 24 Credit are required						

III ABILITY ENHANCEMENT COMPULSORY

S. NO.	CODE	SUBJECT	TEACHING SCHEME L-T-P	CREDITS	CONTACTS HR/WK	PRE- REQUISITES
1.	BELH 0007	English Language Skills-I	3-0-0	3	3	
2.	BCHS 0201	Environmental Studies	2-0-0	2	2	
			Total	5	5	
Minimum 4 Credit are required						

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IV SKILL ENHANCEMENT COURSES

S. NO.	CODE	SUBJECT	TEACHING SCHEME L-T-P	CREDITS	CONTACTS HR/WK	PRE- REQUISITES
1.	BCSO 0005 BCSO 0074	Fundamentals of Computer Fundamentals of Computer Lab	2-0-0 0-0-2	2 1	2 2	
2.	BCTH 0101	Soft Skills - I	1-0-0	1	1	
3.	BCTH 0102	Soft Skills - II	1-0-0	1	1	
4.	BCTH 0103	Soft Skills - III	2-0-0	2	2	
5.	BCTH 0104	Soft Skills - IV	2-0-0	2	2	
			Total	9	10	
Minimum 4 credits are required						

S. NO.	CODE	SUBJECT	TEACHING SCHEME L-T-P	CREDITS	CONTACTS HR/WK	PRE- REQUISITES
1.	BCHS0101	Engineering Chemistry	3-1-0	4	4	
2.	BCHS0102	Chemical Science	3-1-0	4	4	
3.	BCHS 0103	Material Chemistry	3-1-0	4	4	
4.	BCHS0201	Environmental Studies	3-1-0	4	4	
5.	BCHS0202	Environmental Science	3-1-0	4	4	
6.	BCHM0201	Disaster Management	3-1-0	4	4	
7.	BCHO0101	Nanomaterials and Nanotechnology	3-1-0	4	4	
8.	BCHO0102	Technology of Surface Coating	3-1-0	4	4	
9.	BCHO0103	Material Science & Engineering	3-1-0	4	4	
10.	BCHO0104	Introduction to Biophysical Chemistry	3-1-0	4	4	
			Total	40	40	

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COURSE STRUCTURE

M. SC. CHEMISTRY

Under

Choice Based Credit System (CBCS)

Session 2020-21

DEPARTMENT OF CHEMISTRY, INSTITUTE OF APPLIED SCIENCES & HUMANITIES

COURSE STRUCTURE

First Semester

S. No.	Code	Subject	L-T-P	Credits
1.	MCHC0101	**Inorganic Chemistry -I**	3-1-0	4
2.	MCHC0102	**Organic Chemistry-I**	3-1-0	4
3.	MCHC0103	**Physical Chemistry-I**	3-1-0	4
4.	MCHC0104	**Analytical Chemistry**	3-1-0	4
5.	MMAS0502 MCHS0101	**(a) Mathematics for Chemists (GE1)** **(b) Biology for Chemists(GE1)**	2-0-0	2
6.	BCSO00005	**Fundamentals of Computer (GE2)**	2-0-0	2
PRACTICALS				
7.	BCSO00074	**Fundamentals of Computer Lab (GE2)**	0-0-2	1
8.	MCHC0801	**Advanced Chemistry Lab**	0-0-4	2
			18-0-6	23

Second Semester

S. No.	Code	Subject	L-T-P	Credits
1.	MCHC0201	**Inorganic Chemistry-II**	3-2-0	4
2.	MCHC0202	**Organic Chemistry-II**	3-2-0	4
3.	MCHC0203	**Physical Chemistry-II**	3-2-0	4
4.	MCHC0204	**Spectroscopy-I**	3-2-0	4
PRACTICALS				
5.	MCHC0802	**Physical Chemistry Lab**	0-0-4	2
6.	MCHC0803	**Inorganic Chemistry Lab-I**	0-0-4	2
7.	MCHC0804	**Organic Chemistry Lab-I**	0-0-4	2
			16-0-12	22

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Third Semester

S. No.	Code	Subject	L-T-P	Credits
1.	MCHC0301	Spectroscopy- II	3-2-0	4
2.	MCHC0302	Nano Science and Nanotechnology	3-2-0	4
3.	MCHC0303	Heterocyclic Chemistry	3-2-0	4
4.	MCHE0316	Corrosion Chemistry	3-2-0	4
PRACTICALS				
5.	MCHC0805	Inorganic Chemistry Lab-II	0-0-4	2
6.	MCHC0806	Organic Chemistry Lab-II	0-0-4	2
7.	MCHJ0960	Graduate Seminar (AEC-1)	0-0-2	2
			16-0-8	22

Fourth Semester

S. No.	Code	Subject	T-P	Credits
1.	MCHC0401	Polymer Chemistry	3-2-0	4
2.	MCHC0402	Environmental and Green Chemistry	3-2-0	4
3.	MCHE0401	Chemistry of Selected Natural Products	3-2-0	4
4.	MCHE0402	Methods in Organic Synthesis	3-2-0	4
PROJECT				
5.	MCHJ0971	Dissertation	0-0-8	8
				24

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Course Structure

Semester	Core Courses			Discipline Specific Elective			Open elective courses			Total Credits
	No. of papers	Credits (L+T/P)	Total credits	No. of papers	Credits (L+T/P)	Total credits	No. of papers	Credits (L+T/P)	Total credits	
I	4	16+2(P)	18	0	0	0	2	4+1	5	**23**
II	4	16+6(P)	22	0	0	0	0	0	0	**22**
III	3	12+4(P)	16	1	4	4		2(P)	2	**22**
IV	2	8	8	2	8+8(P)	16	0	0		**24**
Total credits for the course			**64**			**20**			**7**	**91**

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Semester	Core Course (C)	Ability Enhancement Compulsory Course (AECC)	Ability Enhancement Elective Course (AEEC) (2) + Lab (1) (Skill Based)	Elective: Discipline Specific DSE	Elective: Generic (GE)
I	Inorganic Chemistry-I Organic Chemistry-I Physical Chemistry-I Analytical Chemistry Advanced Chemistry Lab		**Fundamentals of Computer SEC-1:** Theory (2) + Lab (1)		**Mathematics for Chemists (GE-1)** for PCB students at UG level **Biology for Chemists (GE-2)** for PCM students at UG level
II	Inorganic Chemistry-II Organic Chemistry-II Physical Chemistry-II Spectroscopy-I Inorganic Chemistry Lab-1 Organic Chemistry Lab-1 Physical Chemistry Lab				
III	Spectroscopy –II Nano Science and Nanotechnology Heterocyclic Chemistry Inorganic Chemistry Lab-2 Organic Chemistry Lab-2	**Graduate Seminar (AEC-1)**		**DSE-1**	
IV	Polymer Chemistry Environmental & Green Chemistry	**Dissertation (AEC-2)**		**DSE-2** **DSE-3**	

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Core Courses (C)

S. No.	Course Name	Code	L-T-P	Credit	Min. Contact Hrs.
1.	Inorganic Chemistry-I	MCHC0101	3-2-0	4	48
2.	Organic Chemistry-I	MCHC0102	3-2-0	4	48
3.	Physical Chemistry-I	MCHC0103	3-2-0	4	48
4.	Analytical Chemistry	MCHC0104	3-2-0	4	48
5.	Inorganic Chemistry-II	MCHC0201	3-2-0	4	48
6.	Organic Chemistry-II	MCHC0202	3-2-0	4	48
7.	Physical Chemistry-II	MCHC0203	3-2-0	4	48
8.	Spectroscopy-I	MCHC0204	3-2-0	4	48
9.	Spectroscopy –II	MCHC0301	3-2-0	4	48
10.	Nano Science and Nanotechnology	MCHC0302	3-2-0	4	48
11.	Heterocyclic Chemistry	MCHC0303	3-2-0	4	48
12.	Polymer Chemistry	MCHC0401	3-2-0	4	48
13.	Environmental and Green Chemistry	MCHC0402	3-2-0	4	48
14.				52	

Core Courses Lab

S. No.	Course Name	Code	L-T-P	Credit	Contact Hrs.
1.	Advanced Chemistry Lab	MCHC0801	0-0-4	2	30
2.	Physical Chemistry Lab	MCHC0802	0-0-4	2	30
3.	Inorganic Chemistry Lab-1	MCHC0803	0-0-4	2	30
4.	Organic Chemistry Lab-1	MCHC0804	0-0-4	2	30
5.	Inorganic Chemistry Lab-2	MCHC0805	0-0-4	2	30
6.	Organic Chemistry Lab-2	MCHC0806	0-0-4	2	30
7.				12	

Discipline Specific Elective Papers: DSE

S. No.	Course Name	Code	L-T-P	Credit	Contact Hrs.
SEM III					
1	Bioinorganic Chemistry	MCHE0301	3-2-0	4	48
2	Chemistry of Biological Components	MCHE0302	3-2-0	4	48
3	Corrosion Chemistry	MCHE0316	3-2-0	4	48
4	Food Science and biotechnology	MCHE0304	3-2-0	4	48
5	Fertilizers, Cement, Ceramic, Glass and paint	MCHE0305	3-2-0	4	48
SEM IV					
6	Chemistry of Selected Natural Products	MCHE0401	3-2-0	4	48
7	Methods in Organic Synthesis	MCHE0402	3-2-0	4	48
8	Pharmaceutical Chemistry	MCHE0403	3-2-0	4	48
9	Chemical, Electrochemical cells and Biosensor	MCHE0404	3-2-0	4	48
10	Chemical Sugar and Pulp Industry	MCHE0405	3-2-0	4	48
11	Petroleum Chemistry and agrochemicals	MCHE0406	3-2-0	4	48
12	Soil and Water chemistry	MCHE0407	3-2-0	4	48
13	Material Science	MCHE0408	3-2-0	4	48

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Discipline Specific Lab

S. No.	Course Name	Code	L-T-P	Credit	Contact Hrs.
1	Dissertation	MCHJ0971		8	

General Elective (Other Discipline) GE

S. No.	Course Name	Code	L-T-P	Credit	Contact Hrs.
1.	Mathematics for Chemists	MMAS0502	2-0-0	2	30
2.	Biology for Chemists	MCHS0101	2-0-0	2	30

Skill Enhancement Courses (SEC)

S. No.	Course Name	Code	L-T-P	Credit	Contact Hrs.
1.	Fundamentals of Computer	BCSO0005	2-0-0	2	24
2.	Fundamentals of Computer Lab	BCSO0074	0-0-2	1	24

Ability Enhancement Compulsory (AEC)

S. No.	Course Name	Code	L-T-P	Credit	Contact Hrs.
1	Graduate seminar	MCHJ0960		2	

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COURSE STRUCTURE

M.SC. MATHEMATICS

Under

Choice Based Credit System (CBCS)

Session 2020-21

DEPARTMENT OF MATHEMATICS, INSTITUTE OF APPLIED SCIENCES & HUMANITIES

First Semester

Paper No.	Code	Title	L-T-P-J	Credits
Paper-I	MMAC0001	Real Analysis	3-1-0-0	4
Paper-II	MMAC0002	Abstract Algebra	3-1-0-0	4
Paper-III	MMAC0003	Ordinary Differential Equations	3-1-0-0	4
Paper-IV	MMAC0004	Linear Algebra	3-1-0-0	4
Paper-V	MCAC0016	Programming in Python (SEC)	3-0-0-0	3
PRACTICALS				
Paper-VI	MCAC0810	Python Programming Lab (SEC)	0-0-4-0	2
				21

Second Semester

Paper No.	Code	Subject	L-T-P-J	Credits
Paper-I	MMAC 0005	Statistical Analysis	3-1-0-0	4
Paper-II	MMAC 0006	Operational Research-I	3-1-0-0	4
Paper-III	BCSC 0003/ MMAC 0007	Database Management System/ Topology	3-0-0-0/ 3-1-0-0	3/4
Paper-IV	BCSO 0007/ MMAC 0008	Data Mining for Business Analytics /Complex Analysis-I	4-0-0-0/ 3-1-0-0	4
Paper-V	MMAC 0101/ MMAC 0009	Probability and Stochastic Processes /Functional Analysis	3-1-0-0	4
Paper-VI	MELH 0006	Technical Writing (AECC)	4-0-0-0	4
PRACTICALS				
Paper-VII	MMAK 0801	Statistical Analysis Lab with R-Programming (SEC)	0-0-2-0	1
Paper- VIII	BCSC 0802	Database Management System Lab	0-0-2-0	1
				25

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Third Semester

Paper No.	Code	Subject	L-T-P-J	Credits
Paper-I	MMAC 0010	Partial Differential Equations-I	3-1-0-0	4
Paper-II	MMAC 0011	Operational Research-II	3-1-0-0	4
Paper-III	BCSO 0008/ MMAC 0012	Predictive Analytics for Data Analyst /Complex Analysis- II	4-0-0-0/ 3-1-0-0	4
Paper-IV	BCSE 0556, BCSE 0106, MMAE 0009, MMAE 0011 BCSO0009-0012/ MMAE0001-0015	Discipline Specific Elective I (DSE I)	3-0-0-0/ 3-1-0-0/ 4-0-0-0	3/4
Paper-V	BCSE 0556, BCSE 0106, MMAE 0009, MMAE 0011 BCSO0009-0012/ MMAE0001-0015	Discipline Specific Elective II (DSE II)	3-0-0-0/ 3-1-0-0/ 4-0-0-0	3/4
Paper-VI	BELH 0006/ BCHS 0201	Open Elective (OE I)	2-0-0-0	2
PRACTICALS *				
*Subject to the choice of discipline specific elective (s).				
				22*

Fourth Semester

Paper No.	Code	Subject	L-T-P-J	Credits
Paper-I	BCSE 0556, BCSE 0106, MMAE 0009, MMAE 0011 BCSO 0009-0012/ MMAE0001-0015	Discipline Specific Elective III (DSE III)	3-0-0-0/ 3-1-0-0/ 4-0-0-0	3/4
Paper-II	MMAC 0013	Numerical Analysis	4-0-0-0	4
Paper-III	BELH 0006/ BCHS 0201	Open Elective (OE II)	2-0-0-0	2
PROJECT				
Paper-IV	MMAJ 0961	Dissertation (AECC)	0-0-0-12	12
PRACTICAL *				
*Subject to the choice of discipline specific elective (s).				
				22*

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Semester	Core Courses (including SEC and AECC)			Discipline Specific Electives			Open Electives			Total Credits
	No. of Papers	Credits (L+T/P)	Total Credits	No. of Papers	Credits (L+T/P)	Total Credits	No. of Papers	Credits (L+T/P)	Total Credits	
I	5	4/3+2(P)	21	0	0	0	0	0	0	**21**
II	7	4/3+1(P)	25	0	0	0	0	0	0	**25**
III	3	4	12	2	4	8	1	2	2	**22**
IV	1	4 +12(J)	16	1	4	4	1	2	2	**22**
Total credits of the course			**74**			**12**			**4**	**90**

Core Courses © – Theory

S. No.	Course Name	Code	L-T-P-J	Credit	Contact Hrs.
1.	Real Analysis	MMAC 0001	3-1-0-0	4	40
2.	Abstract Algebra	MMAC 0002	3-1-0-0	4	40
3.	Ordinary Differential Equations	MMAC 0003	3-1-0-0	4	40
4.	Linear Algebra	MMAC 0004	3-1-0-0	4	40
5.	Statistical Analysis	MMAC 0005	3-1-0-0	4	40
6.	Operational Research-I	MMAC 0006	3-1-0-0	4	40
7.	Topology	MMAC 0007	3-1-0-0	4	40
8.	Complex Analysis-I	MMAC 0008	3-1-0-0	4	40
9.	Functional Analysis	MMAC 0009	3-1-0-0	4	40
10.	Partial Differential Equations-I	MMAC 0010	3-1-0-0	4	40
11.	Operations Research- II	MMAC 0011	3-1-0-0	4	40
12.	Complex Analysis -II	MMAC 0012	3-1-0-0	4	40
13.	Numerical Analysis	MMAC 0013	3-1-0-0	4	40
14.	Database Management System	BCSC 0003	3-0-0-0	3	30
15.	Data Mining for Business Analytics	BCSO 0007	4-0-0-0	4	40
16.	Probability and Stochastic Processes	MMAC 0101	3-1-0-0	4	40
17.	Predictive Analytics for Data Analyst	BCSO 0008	4-0-0-0	4	40

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Core Courses © – Practical

S. No.	Lab Name	Code	L-T-P-J	Credit	Contact Hrs.
1.	Database Management System Lab	BCSC 0802	0-0-2-0	1	24

Discipline Specific Elective Papers: DSE (Theory)

BOUQUET (For Data Analytics)

S. No.	Course Name	Code	L-T-P-J	Credit	Contact Hrs.
1.	Hadoop and Big Data Analytics	BCSE 0556	3-0-0-0	3	30
2.	Machine Learning and its Applications	BCSE 0106	3-0-0-0	3	30
3.	Social Web and Mobile Analytics	BCSO 0009	4-0-0-0	4	40
4.	Introduction to Virtualization and Cloud Computing	BCSO 0010	4-0-0-0	4	40
5.	Digital Marketing and Transformation	BCSO 0011	4-0-0-0	4	40
6.	Data Warehouse	BCSO 0012	4-0-0-0	4	40
7.	Discrete Mathematics	MMAE 0009	4-0-0-0	4	40
8.	Optimization Techniques	MMAE 0011	4-0-0-0	4	40

Discipline Specific Elective Papers: DSE (Practical)

BOUQUET (For Data Analytics)

S. No.	Course Name	Code	L-T-P-J	Credit	Contact Hrs.
1.	Hadoop and Big Data Analytics Lab	BCSE 0585	0-0-2-0	1	20
2.	Machine Learning Lab	BCSE 0133	0-0-2-0	1	20

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BOUQUET (For Mathematics)

S. No.	Course Name	Code	L-T-P-J	Credit	Contact Hrs.
	Bouquet 1: Relativity and Cosmology				
1.	Differential Geometry	MMAE 0001	4-0-0-0	4	40
2.	Special Relativity and Tensor Calculus	MMAE 0002	4-0-0-0	4	40
3.	General Relativity and Cosmology	MMAE 0003	4-0-0-0	4	40
	Bouquet 2: Applied Mathematics				
1.	Special Functions	MMAE 0004	4-0-0-0	4	40
2.	Number Theory	MMAE 0005	4-0-0-0	4	40
3.	Partial Differential Equations -II	MMAE 0006	4-0-0-0	4	40
4.	Fluid Dynamics – I	MMAE 0007	4-0-0-0	4	40
5.	Fluid Dynamics - II	MMAE 0008	4-0-0-0	4	40
6.	Discrete Mathematics	MMAE 0009	4-0-0-0	4	40
7.	Integral Equations and Calculus of Variations	MMAE 0010	4-0-0-0	4	40
8.	Optimization Techniques	MMAE 0011	4-0-0-0	4	40
9.	Non-Linear Programming	MMAE 0012	4-0-0-0	4	40
	Bouquet 3: Analysis				
1.	Operator Theory	MMAE 0013	4-0-0-0	4	40
2.	Measure Theory and Integration	MMAE 0014	4-0-0-0	4	40
3.	Fixed Point Theory	MMAE 0015	4-0-0-0	4	40

Skill Enhancement Courses (SEC)

S. No.	Course Name	Code	L-T-P-J	Credit	Contact Hrs.
1.	Programming in Python	MCAC 0016	3-0-0-0	3	36
2.	Programming in Python Lab	MCAC 0810	0-0-4-0	2	24
3.	Statistical Analysis Lab with R-Programming	MMAK 0801	0-0-2-0	1	20

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Ability Enhancement Compulsory (AECC)

S. No.	Course Name	Code	L-T-P-J	Credit	Contact Hrs.
1.	Technical Writing	MELH 0006	**4-0-0-0**	4	40
2.	Dissertation	MMAJ 0961	**0-0-0-12**	12	---

Open Elective Courses (OE)

S. No.	Course Name	Code	L-T-P-J	Credit	Contact Hrs.
1.	Ethics and Values	BELH 0006	**2-0-0-0**	2	20
2.	Environmental Studies	BCHS 0201	**2-0-0-0**	2	20

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COURSE STRUCTURE

B. SC. (HONS.) PHYSICS

Under

Choice Based Credit System (CBCS)

Session 2020-21

DEPARTMENT OF PHYSICS, INSTITUTE OF APPLIED SCIENCES & HUMANITIES

Minimum Requirement as per UGC CBCS System

1. Core Courses © Total Credit = 84

A. Theory Papers:

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	BPHS0011	Mechanics and Relativity	3	2	0	4
2.	BPHS1005	Ancillary Physics - I	3	2	0	4
3.	BPHS0012	Heat and thermodynamics	3	2	0	4
4.	BPHS1006	Ancillary Physics -II	4	0	0	4
5.	BPHS0013	Basic Electronics	3	2	0	4
6.	BPHS0014	Electricity and Magnetism	3	2	0	4
7.	BPHS0015	Modern Physics	3	2	0	4
8.	BPHS0017	Elementary Solid State Physics	3	2	0	4
9.	BPHS0018	Elementary Quantum Mechanics	3	2	0	4
10.	BPHS0019	Atomic Physics	3	2	0	4
11.	BPHS0021	Mathematical Physics	4	0	0	4
12.	BPHS0022	Classical Mechanics	4	0	0	4
13.	BPHS0023	Quantum Mechanics	4	0	0	4
14.	BPHS0025	Electromagnetic theory	4	0	0	4
15.	BPHS0026	Statistical Mechanics	4	0	0	4
16.	BPHS0027	Solid State Physics	4	0	0	4
17.	BPHS0028	Nuclear Physics	4	0	0	4
18.	BPHS0031	Astrophysics and Astronomy (Optional)	4	0	0	4
19.	BPHS0032	Classical Dynamics (Optional)	4	0	0	4
20.	BPHS0033	Quantum Optics (Optional)	4	0	0	4
21.	BPHS0034	Atmospheric Physics (Optional)	4	0	0	4
		TOTAL CREDITS				**68**

B. Laboratories:

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	BPHS1805	Physics Lab-I	0	0	4	2
2.	BPHS1806	Physics Lab-II	0	0	4	2
3.	BPHS0807	Electronics Lab	0	0	4	2
4.	BPHS0808	Electrical Lab	0	0	4	2
5.	BPHS0809	Solid State Physics Lab	0	0	4	2
6.	BPHS0810	Optics Lab	0	0	4	2
7.	BPHS0811	Modern Physics Lab - I	0	0	4	2
8.	BPHS0812	Modern Physics Lab - II	0	0	4	2
9.	BPHS0813	Advanced Physics lab	0	0	4	2
		TOTAL CREDITS				**18**

Professor & Head Department of Physics

2. Elective Courses © Total Credit = 48

A. Discipline Specific Elective Papers (DSE) Min Credit =24 Max Credit = 32

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	BPHS0016	Elementary Statistical Mechanics & Thermal Physics	3	2	0	4
2.	BPHS0020	Elements of Nuclear Physics	3	2	0	4
3.	BPHS0024	Electronic Devices And Circuits	4	0	0	4
4.	BPHS0050	Project - I	0	0	0	3
5.	BPHS0051	Project - II	0	0	0	3
6.	BPHS0052	Project - III	0	0	0	3
7.	BPHS0053	Project – IV	0	0	0	3
8.	BPHO0006	Lasers and its application (Optional)	4	0	0	4
9.	BPHO0007	Nano Science and Materials (Optional)	4	0	0	4
10.	BPHO0008	Space Physics (Optional)	4	0	0	4
		TOTAL CREDITS				**24**

B. Generic Elective (Other Discipline) Min Credit =24 Max Credit = 32

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	BMAS0502	Algebra & Calculus	3	0	0	3
2.	BCHC1002	General Chemistry - I	3	2	0	4
3.	BCHC1004	General Chemistry-II	3	2	0	4
4.	BMAS0503	Applied Mathematics and Statistics	3	0	0	3
5.	BELH0007	English Language Skills-I	3	0	0	3
6.	BCHS0201	Environmental Studies	2	0	0	2
7.	BCHC1901	Chemistry Lab-I	0	0	4	2
8.	BCHC1902	Chemistry Lab-II	0	0	4	2
9.	BCSO0075	Programming Lab-II	0	0	2	1
		TOTAL CREDITS				**24**

3. Ability Enhancement Compulsory Courses (AECC) © Min Credit = 4

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	BELH0008	English Language Skills-II	3	0	0	3
2.	BCSO0074	Fundamentals of Computer Lab	0	0	2	1
		TOTAL CREDITS				**4**

4. Skill Enhancement Courses (SEC) © Min Credit = 4

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	BCSO0005	Fundamentals of Computers	2	0	0	2
2.	BCSO0006	Introduction to Programming	2	0	0	2
		TOTAL CREDITS				**4**

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Professor & Head Department of Physics
GLA University, Mathura

GLA UNIVERSITY MATHURA

Accredited with A Grade by NAAC

COURSE STRUCTURE

M. SC. PHYSICS

Under

Choice Based Credit System (CBCS)

Session 2020-21

DEPARTMENT OF PHYSICS, INSTITUTE OF APPLIED SCIENCES & HUMANITIES

Minimum Requirement as per UGC CBCS System

1. Core Courses © Total Credit = 52

A. Theory Papers:

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	MPHS0001	Mathematical Physics	4	0	0	4
2.	MPHS0002	Classical Mechanics	4	0	0	4
3.	MPHS0003	Statistical Mechanics	4	0	0	4
4.	MPHS0007	Nuclear Physics	4	0	0	4
5.	MPHS0008	Solid State Physics	4	0	0	4
6.	MPHS0011	Classical Electrodynamics	4	0	0	4
7.	MPHS0013	Atomic and Molecular Physics	4	0	0	4
8.	MPHS0022	Quantum Field Theory (Optional)	4	0	0	4
9.	MPHS0023	General Relativity and Cosmology (Optional)	4	0	0	4
		TOTAL CREDITS				**28**

B. Laboratories:

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	MPHS0801	General Physics Lab. -1	0	0	12	6
2.	MPHS0802	General Physics Lab. -2	0	0	12	6
3.	MPHS0803	Electronics Lab-1	0	0	12	6
4.	MPHS0804	Electronics Lab-2	0	0	12	6
		TOTAL CREDITS				**24**

2. Elective Courses © Total Credit = 26

A. Discipline Specific Elective Papers (DSE) Min Credit =18 Max Credit = 22

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	MPHS0005	Electronics-I	4	0	0	4
2.	MPHS0010	Electronics-II	4	0	0	4
3.	MPHS0024	Quantum Computation and Quantum Information Theory (Optional)	4	0	0	4
4.	MPHS0950	Dissertation	0	0	0	10
		TOTAL CREDITS				**18**

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B. Generic Elective (Other Discipline) Min Credit =8 Max Credit = 12

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	MPHO0009	Introduction to Linear and digital integrated circuits-I (Elective-I)	4	0	0	4
2.	MPHO0014	Introduction to Linear and digital integrated circuits-II (Elective - II)	4	0	0	4
TOTAL CREDITS						8

3. Ability Enhancement Compulsory Courses (AECC) © Min Credit = 4

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	MPHS0012	Computational Physics and Programming	4	0	0	4
TOTAL CREDITS						4

4. Skill Enhancement Courses (SEC) © Min Credit = 4

S. NO.	CODE	COURSE NAME	TEACHING SCHEME			CREDITS
			L	T	P	
1.	MPHS0004	Quantum Mechanics – I	4	0	0	4
2.	MPHS0006	Quantum Mechanics – II	4	0	0	4
3.	MPHS0805	SCI-Lab (Optional)	4	0	0	4
TOTAL CREDITS						8

Professor & Head Department of Physics
GLA University, Mathura

COURSE STRUCTURE

PH.D. COMPUTER SCIENCE & ENGINEERING

(Session 2020-21)

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

INSTITUTE OF ENGINEERING & TECHNOLOGY

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PCSE0001	Theory of Computation	4	0	0	4
2.	PCSE0002	Software Engineering Methodologies	4	0	0	4
3.	PCSE0003	Advanced Concepts in Data Mining	4	0	0	4
4.	PCSE0004	Advanced Concepts in Networking	4	0	0	4
5.	PCSE0005	Probability and Stochastic Processes	4	0	0	4
6.	PCSE0006	Mobile Ad-hoc Networks	4	0	0	4
7.	PCSE0007	Intelligent Systems	4	0	0	4
8.	PCSE0008	Information Retrieval	4	0	0	4
9	PCSE0009	Image Processing and Analysis	4	0	0	4
10	PCSE0010	Design of Distributed Systems	4	0	0	4
11	PCSE0011	Computer Vision	4	0	0	4
12	PCSE0012	Wireless Sensor Networks	4	0	0	4
13	PCSE0013	Software and Service Oriented Architecture	4	0	0	4
14	PCSE0014	Pattern Recognition	4	0	0	4
15	PCSE0015	High Performance Computing	4	0	0	4
16	PCSE0016	Web Mining	4	0	0	4
17	PCSE0017	Machine Learning	4	0	0	4
18	PMG1001	Research Methodology	4	0	0	4

19	PREC0010	Research and Publication Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. COMPUTER APPLICATION

(Session 2020-21)

DEPARTMENT OF COMPUTER ENGINEERING & APPLICATION

INSTITUTE OF ENGINEERING & TECHNOLOGY

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PCSE0001	Theory of Computation	4	0	0	4
2.	PCSE0002	Software Engineering Methodologies	4	0	0	4
3.	PCSE0003	Advanced Concepts in Data Mining	4	0	0	4
4.	PCSE0004	Advanced Concepts in Networking	4	0	0	4
5.	PCSE0005	Probability and Stochastic Processes	4	0	0	4
6.	PCSE0006	Mobile Ad-hoc Networks	4	0	0	4
7.	PCSE0007	Intelligent Systems	4	0	0	4
8.	PCSE0008	Information Retrieval	4	0	0	4
9	PCSE0009	Image Processing and Analysis	4	0	0	4
10	PCSE0010	Design of Distributed Systems	4	0	0	4
11	PCSE0011	Computer Vision	4	0	0	4
12	PCSE0012	Wireless Sensor Networks	4	0	0	4
13	PCSE0013	Software and Service Oriented Architecture	4	0	0	4
14	PCSE0014	Pattern Recognition	4	0	0	4
15	PCSE0015	High Performance Computing	4	0	0	4
16	PCSE0016	Web Mining	4	0	0	4
17	PCSE0017	Machine Learning	4	0	0	4
18	PMG1001	Research Methodology	4	0	0	4

19	PREC0010	Research and Publication Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. ELECTRONICS & COMMUNICATION ENGINEERING

(Session 2020-21)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

INSTITUTE OF ENGINEERING & TECHNOLOGY

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PECE0001	Adaptive Signal Processing	4	0	0	4
2.	PECE0002	Communication Techniques	4	0	0	4
3.	PECE0003	CMOS Analog IC Design	4	0	0	4
4.	PECE0004	Digital Hardware Design	4	0	0	4
5.	PECE0005	Image Processing	4	0	0	4
6.	PECE0006	Low Power VLSI Design	4	0	0	4
7.	PECE0007	Intelligent Systems and Control	4	0	0	4
8.	PECE0008	RF and Microwave Techniques	4	0	0	4
9	PECE0009	Embedded Systems	4	0	0	4
10	PECE0010	Information Theory and Coding	4	0	0	4
11	PECE0011	Application Specific Integrated Circuits	4	0	0	4
12	PECE0012	Wireless Communication and Networks	4	0	0	4
13	PECE0013	Digital Satellite Communication	4	0	0	4
14	PECE0014	Advanced Data Network	4	0	0	4
15	PECE0015	Speech Processing	4	0	0	4
16	PECE0016	CMOS RF Integrated Circuits	4	0	0	4
17	PECE0017	Optoelectronic Devices	4	0	0	4
18	PECE0018	VLSI Testing and Testability	4	0	0	4
19	PECE0019	Biomedical Signal Processing	4	0	0	4

20	PECE0020	Optimal Control System	4	0	0	4
21	PECE0021	CAD for VLSI Circuits	4	0	0	4
22	PECE0024	Deep Learning	4	0	0	4
23	PECE0026	Memory Design and Testing	4	0	0	4
24	PMG1001	Research Methodology	4	0	0	4
25	PREC0010	Research and Publication Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. CIVIL ENGINEERING

(Session 2020-21)

DEPARTMENT OF CIVIL ENGINEERING

INSTITUTE OF ENGINEERING & TECHNOLOGY

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PCEC0004	Numerical Methods and Applied Statistics	4	0	0	4
2.	PCEC0005	Environmental Impact and Risk Assessment	4	0	0	4
3.	PCEC0001	Non Conventional Construction Materials &	4	0	0	4
4.	PCEC0002	Advanced Concrete Technology	4	0	0	4
5.	PMG1001	Research Methodology	4	0	0	4
6.	PREC0010	Research And Publication Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. MECHANICAL ENGINEERING

(Session 2020-21)

DEPARTMENT OF MECHANICAL ENGINEERING

INSTITUTE OF ENGINEERING & TECHNOLOGY

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PMEE-0001	Competitive Manufacturing Strategies	4	0	0	4
2.	PMEE-0002	Numerical Techniques and Soft Computing	4	0	0	4
3.	PMEE-0003	Metal Working Tribology	4	0	0	4
4.	PMEE-0004	Production Toolings	4	0	0	4
5.	PMEE-0005	Accuracy Inspection and Measurements	4	0	0	4
6.	PMEE-0006	Value Engineering & Cost Control	4	0	0	4
7.	PMEE-0007	Optimization Techniques	4	0	0	4
8.	PMEE-0008	Advanced Mechanics of Solids	4	0	0	4
9	PMEE-0009	Nano Technology & its Applications	4	0	0	4
10	PMEE-0010	Reliability & Maintenance	4	0	0	4
11	PMEE-0011	Advanced Heat Transfer Processes	4	0	0	4
12	PMEE-0012	Composite Materials & its Applications	4	0	0	4
13	PMEE-0013	Advanced Welding Processes And	4	0	0	4
14	PMEE-0014	Industrial Automation and Robotics	4	0	0	4
15	PREC-0001	Research Methodology	4	0	0	4
16	PREC-0010	Research Publication & Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. ELECTRICAL ENGINEERING

(Session 2020-21)

DEPARTMENT OF ELECTRICAL ENGINEERING

INSTITUTE OF ENGINEERING & TECHNOLOGY

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PEEE0001	POWER SYSTEM DYNAMICS	4	0	0	4
2.	PEEE0006	POWER ELECTRONIC DEVICES & CONVERTERS	4	0	0	4
3.	PREC0001	RESEARCH METHODOLOGY	4	0	0	4
4.	PREC0010	RESEARCH AND PUBLICATION ETHICS	4	0	0	4

COURSE STRUCTURE

PH.D. MANAGEMENT

(Session 2020-21)

INSTITUTE OF BUSINESS MANAGEMENT

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PMG1001	Research Methodology	4	0	0	4
2.	PMG1006	Applied Data Analysis & Research	4	0	0	4
3.	PMG1007	Advance Management for Research	4	0	0	4
4	PREC0010	Research And Publication Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. PHARMACY

(Session 2020-21)

INSTITUTE OF PHARMACEUTICAL & RESEARCH

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PMG1001	Research Methodology	4	0	0	4
2.	PBS1002	Bioinformatics & Instrumentation	4	0	0	4
3.	PPS1003	Advances in Pharmaceutical Sciences	4	0	0	4
4.	PPS1001	Advances in Organic Chemistry	4	0	0	4
5.	PPS1002	Approaches in Advanced Pharmacological Research	4	0	0	4
6.	PPS1004	Pharmacognosy & Phytochemistry	4	0	0	4
7.	PREC0010	Research and Publications Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. ENGLISH

(Session 2020-21)

DEPARTMENT OF ENGLISH

INSTITUTE OF APPLIED SCIENCES & HUMANITIES

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PELE0001	Advanced Topics of Research: Approaches to Literary/Non-literary	4	0	0	4
2.	PELE0002	Advanced Topics of Research in Language Studies	4	0	0	4
3.	PELE0003	Advanced Topics of Research in Translation Studies	4	0	0	4
4.	PELH0004	Current Approaches to English Studies: (I) LITERARY STUDIES (II) LANGUAGE STUDIES (III) TRANSLATION STUDIES	4	0	0	4
5.	PMG1001	Research Methodology	4	0	0	4
6.	PREC0010	Research and Publication Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. PHYSICS

(Session 2020-21)

DEPARTMENT OF PHYSICS

INSTITUTE OF APPLIED SCIENCES & HUMANITIES

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PPHS0001	Solid Earth geophysics and Siemo	4	0	0	4
2.	PPHS0002	Instrumentation and signal processing	4	0	0	4
3.	PPHS0003	Advanced Solid State Physics	4	0	0	4
4.	PPHS0004	Nanoscience and Technology	4	0	0	4
5.	PPHS0005	Radiation Physics	4	0	0	4
6.	PPHS0006	Radiation Therapy	4	0	0	4
7.	PPHS0007	Plasma Electrodynamics	4	0	0	4
8.	PPHS0008	Non linear Phenomena in Plasma	4	0	0	4
9	PPHS0009	Advanced Cosmology	4	0	0	4
10	PPHS0010	General Relativity	4	0	0	4
11	PPHS0011	Advanced Nuclear Physics-I	4	0	0	4
12	PPHS0012	Advanced Nuclear Physics-II	4	0	0	4
13	PMG 1001	Research Methodology	4	0	0	4
14	PREC 0010	Research and publication Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. CHEMISTRY

(Session 2020-21)

DEPARTMENT OF CHEMISTRY

INSTITUTE OF APPLIED SCIENCES & HUMANITIES

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PAC9001	Recent Advances in Chemistry	4	0	0	4
2.	PAC9002	Spectroscopic and Analytical Techniques	4	0	0	4
3.	PMG 1001	Research Methodology	4	0	0	4
4.	PREC 0010	Research and publication Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. MATHEMATICS

(Session 2020-21)

DEPARTMENT OF MATHEMATICS

INSTITUTE OF APPLIED SCIENCES & HUAMNITIES

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PMAE0010	Computer Skills, Tensor and Riemannian Geometry	4	0	0	4
2.	PMAE0011	Relativity and Cosmology	4	0	0	4
3.	PMAE0020	Inventory Modeling	4	0	0	4
4.	PMAE0021	Random Variables and Software Tools	4	0	0	4
5.	PMAE0030	Partial Differential Equations : Methods & Applications	4	0	0	4
6.	PMAE0040	Computer based Numerical Techniques and Soft Computing	4	0	0	4
7.	PMAE0041	Applies Statistics and Optimization Techniques	4	0	0	4
8.	PMAE0050	Differential Geometry of Manifolds	4	0	0	4
9	PMAE0051	Riemann-Finsler Geometry	4	0	0	4
10	PMAE0060	Computer Skills and Fluid Dynamics	4	0	0	4
11	PMAE0061	Computational Methods for Fluid Dynamics	4	0	0	4
12	PMAE0070	Foundations of Comples Analysis I	4	0	0	4
13	PMG 1001	Research Methodology	4	0	0	4
14	PREC 0010	Research and publication Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. LAW

(Session 2020-21)

INSTITUTE OF LEGAL STUDIES & RSERARCH

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PREC0010	Research and Publication Ethics	4	0	0	4
2.	PMG1001	Research methodology	4	0	0	4
3.	PLAC0020	Law and social transformation in India	4	0	0	4
4.	PLAC0021	Emerging challenges in law	4	0	0	4

COURSE STRUCTURE

PH.D. EDUCATION

(Session 2020-21)

FACULTY OF EDUCATION

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PED1001	Philosophical and Sociological basis of Educational Research	4	0	0	4
2.	PED1002	Recent Development in India: Policy Directive and Programme	4	0	0	4
3.	PMG1001	Research Methodology	4	0	0	4
4.	PREC0010	Research and Publication Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. MICROBIOLOGY & IMMUNOLOGY

(Session 2020-21)

DEPARTMENT OF BIO-TECHNOLOGY

INSTITUTE OF APPLIED SCIENCES & HUMANITIES

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PMG1001	Research Methodology	4	0	0	4
2.	PBS1002	Bioinformatics & Instrumentation	4	0	0	4
3.	PBS1003	Biological Chemistry	4	0	0	4
4.	PREC0010	Research & Publication Ethics	4	0	0	4

COURSE STRUCTURE

PH.D. BIOTECHNOLOGY

(Session 2020-21)

DEPARTMENT OF BIO-TECHNOLOGY

INSTITUTE OF APPLIED SCIENCES & HUMANITIES

LIST OF ELECTIVE COURSES

S.NO.	COURSE CODE	COURSE NAME	LECTURE	TUTORIALS	PRACTICALS	CREDIT
1.	PMG1001	Research Methodology	4	0	0	4
2.	PBS1002	Bioinformatics & Instrumentation	4	0	0	4
3.	PBS1003	Biological Chemistry	4	0	0	4
4.	PREC0010	Research & Publication Ethics	4	0	0	4