

**STUDY & EVALUATION SCHEME**  
**INTEGRATED B.TECH+M.TECH: COMPUTER SCIENCE &**  
**ENGINEERING**  
**I YEAR: I SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	HOURS PER WEEK			CREDIT
			L	T	P	
1	----/ BCY1701	Physics/Chemistry	3	1	3	5.5
	BPH1701- CS	Physics (for CS)				
	BPH1701- EC	Physics (for EC)				
	BPH1701- EE	Physics (for EE)				
	BPH1701- CE	Physics (for CE)				
	BPH1701- ME	Physics (for ME)				
2	BMA1001- CS	Mathematics-I (for CS)	3	1	0	4
	BMA1001- EC	Mathematics-I (for EC)				
	BMA1001- EE	Mathematics-I (for EE)				
	BMA1001- CE	Mathematics-I (for CE)				
	BMA1001- ME	Mathematics-I (for ME)				
3	BEE1701/ BCS1701	Basic Electrical Engineering/Programming for Problem Solving	3	1	2	5
4	BME1701/ BME1702	Engineering Graphics and Design/ Workshop Practices	1	0	4	3
5	XESX601/ BHU701	Environmental Science*/Design	2/2	0/0	0/2	0/3
<b>TOTAL</b>			<b>12/12</b>	<b>3/3</b>	<b>9/11</b>	<b>17.5/21.5</b>

\* - Mandatory Non—Credit Course

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**I YEAR: II SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	HOURS PER WEEK			CREDIT
			L	T	P	
1	BCY2701/ -----	Chemistry/ Physics	3	1	3	5.5
	BPH2701- CS	Physics (for CS)				
	BPH2701- EC	Physics (for EC)				
	BPH2701- EE	Physics (for EE)				
	BPH2701- CE	Physics (for CE)				
	BPH2701- ME	Physics (for ME)				
2	BMA2001- CS	Mathematics-II (for CS)	3	1	0	4
	BMA2001- EC	Mathematics-II (for EC)				
	BMA2001- EE	Mathematics-II (for EE)				
	BMA2001- CE	Mathematics-II (for CE)				
	BMA2001- ME	Mathematics-II (for ME)				
3	BCS2701/ BEE2701	Programing for Problem Solving/ Basic Electrical Engineering	3	1	2	5
4	BME2702/ BME2701	Workshop Practices / Engineering Graphics and Design	1	0	4	3
5	BHU2701/ XESX601	English/ Environmental Science*	2/2	0/0	2/0	3/0
<b>TOTAL</b>			<b>12/12</b>	<b>3/3</b>	<b>11/9</b>	<b>20.5/17.5</b>

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**II YEAR: III SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
1	BCS3014	Data Structures and Algorithms	3	1	-	40	60	100	4
2	BCS3513	Data Structures and Algorithms Lab	-	-	2	80	20	100	1
3	BCS3015	Software Engineering	3	-	-	40	60	100	3
4	BCS3514	Software Engineering Lab	-	-	2	80	20	100	1
5	BMA3011	Discrete Mathematics	3	1	-	40	60	100	4
6	BEC3017	Digital Electronics	3	-	-	40	60	100	3
7	BEC3506	Digital Electronics Lab	-	-	2	80	20	100	1
8	BEC3018	Analog Electronics Circuits	3	-	-	40	60	100	3
9	BEC3513	Analog Electronics Circuits Lab	-	-	2	80	20	100	1
10	BHU3038	Effective Technical Communication	3	-	-	40	60	100	3
<b>TOTAL</b>			<b>18</b>	<b>2</b>	<b>8</b>	<b>560</b>	<b>440</b>	<b>1000</b>	<b>24</b>

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**II YEAR: IV SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
1	BCS4017	Computer Organization and Architecture	3	1	-	40	60	100	4
2	BCS4518	Computer Organization and Architecture Lab	-	-	2	80	20	100	1
3	BCS4022	Operating Systems	3	1	-	40	60	100	4
4	BCS4519	Operating Systems Lab	-	-	2	80	20	100	1
5	BCS4023	Formal Language and Automata Theory	3	1		40	60	100	4
6	BCS4520	IT Workshop	1	-	2	80	20	100	2
7	BMA4012-CS	Mathematics-III	2	-	-	40	60	100	2
8	BMG4008	Organizational Behaviour	3	-	-	40	60	100	3
9	XLAX601	Constitution of India	2	-	-	Satisfactory/Unsatisfactory		0	
10	XCSX601	Industrial Visit-I	-	-	-	Satisfactory/Unsatisfactory		0	
<b>TOTAL</b>			<b>17</b>	<b>3</b>	<b>6</b>	<b>440</b>	<b>360</b>	<b>800</b>	<b>21</b>

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**III YEAR: V SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
1	BCS5016	Database Management Systems	3	1	-	40	60	100	4
2	BCS5515	Database Management Systems Lab	-	-	2	80	20	100	1
3	BCS5001	Design and Analysis of Algorithms	3	1	-	40	60	100	4
4	BCS5501	Design and Analysis of Algorithms Lab	-	-	2	80	20	100	1
5	BCS5017	Object Oriented Programming	2	1	-	40	60	100	3
6	BCS5516	Object Oriented Programming Lab	-	-	2	80	20	100	1
7	BEC5015	Signals and Systems	3	-	-	40	60	100	3
8	-----	Open Elective – I	3	-	-	40	60	100	3
9	-----	Elective – I	3	-	-	40	60	100	3
10	XHUX602	Essence of Indian Traditional Knowledge	2	-	-	Satisfactory/Unsatisfactory			0
11	BAP5501	Aptitude and Reasoning and Online Test	-	-	2	Satisfactory/Unsatisfactory			0
<b>TOTAL</b>			<b>19</b>	<b>3</b>	<b>8</b>	<b>480</b>	<b>420</b>	<b>900</b>	<b>23</b>

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**III YEAR: VI SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
1	BCS6014	Compiler Design	3	1	-	40	60	100	4
2	BCS6515	Compiler Design Lab	-	-	2	80	20	100	1
3	BCS6001	Computer Networks	3	1	-	40	60	100	4
4	BCS6501	Computer Networks Lab	-	-	2	80	20	100	1
5	-----	Elective –II	3	-	-	40	60	100	3
6	-----	Elective –III	3	-	-	40	60	100	3
7	BSS6001	Soft- Skill and Interpersonal Communication	2	-	-	100	-	100	2
8	BCS6505	Seminar	-	-	2	100	-	100	1
9	BAP6501	Aptitude and Reasoning and Online Test	-	-	2	Satisfactory/Unsatisfactory		0	
<b>TOTAL</b>			<b>14</b>	<b>2</b>	<b>8</b>	<b>520</b>	<b>280</b>	<b>900</b>	<b>19</b>

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**IV YEAR: VII SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
1	MCS7002	Advanced Data Structures and Algorithms Techniques	4	2	-	40	60	100	6
2	MCS7003	Advanced Software Engineering	4	2	-	40	60	100	6
3	BBT7010	Biology	2	-	-	40	60	100	2
4	BCS7503	Summer Training	-	-	2	100	-	100	1
5	MCS7004	Architecture of High-Performance Computers	4	2	0	40	60	100	6
6	MCS7005	High Speed Networks	4	2	0	40	60	100	6
7	MCS7503	Software Systems Lab	0	0	2	80	20	100	1
<b>TOTAL</b>			<b>18</b>	<b>8</b>	<b>4</b>	<b>380</b>	<b>320</b>	<b>700</b>	<b>28</b>

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**IV YEAR: VIII SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
1	-----	Elective –IV	4	2	-	40	60	100	6
2	-----	Elective –V	4	2	-	40	60	100	6
3	BHU8001	Professional Ethics	2	0	0	40	60	100	2
4	MCS8006	Information Storage Management	4	2	-	40	60	100	6
5	MCS8007	Operating System Design	4	2	-	40	60	100	6
6	MCS8501	Network Simulation Lab	0	0	4	80	20	100	2
<b>TOTAL</b>			<b>18</b>	<b>8</b>	<b>4</b>	<b>280</b>	<b>320</b>	<b>600</b>	<b>28</b>

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**V YEAR: IX SEMESTER**

S. NO.	SUBJECT CODE	SUBJECT	L	T	P	CIE	ESE	TOTAL	C
1	-----	Elective –VI	4	2	-	40	60	100	6
2	-----	Elective –VII	4	2	-	40	60	100	6
3	MCS9505	Colloquium	0	0	4	100	-	100	2
4	MCS9506	Dissertation-I	0	0	6	100	-	100	3
<b>TOTAL</b>			<b>8</b>	<b>4</b>	<b>10</b>	<b>280</b>	<b>120</b>	<b>400</b>	<b>17</b>

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**V YEAR: X SEMESTER**

<b>S. NO.</b>	<b>SUBJECT CODE</b>	<b>SUBJECT</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>CIE</b>	<b>ESE</b>	<b>TOTAL</b>	<b>C</b>
1	MCS0504	Dissertation –II	0	0	18	80	20	100	9
2	MCS0505	Comprehensive Viva	0	0	0	100	-	100	2
<b>TOTAL</b>			<b>0</b>	<b>0</b>	<b>18</b>	<b>180</b>	<b>20</b>	<b>200</b>	<b>11</b>

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**LIST OF ELECTIVES**

<b><u>Elective-I</u></b>			<b>V Semester</b>
1	BCS5001 – DE1	Ecommerce	
2	BCS5002 – DE1	Graph Theory	
3	BCS5003 – DE1	Management Information Systems	
4	BCS5004 – DE1	Computer Graphics	
<b><u>Elective-II</u></b>			<b>VI Semester</b>
1	BCS6004 – DE2	MOOC: Operations Research	
2	BCS6001 – DE2	Computer Based Numerical and Statistical Techniques	
3	BCS6002 – DE2	Geographical Information System	
4	BCS6003 – DE2	Artificial Intelligence	
<b><u>Elective-III</u></b>			<b>VI Semester</b>
1	BCS6001 – DE3	Digital Image Processing	
2	BCS6002 – DE3	Information Security and Cyber Law	
3	BCS6003 – DE3	Cryptography and Network Security	
4	BCS6005 – DE3	MOOC: Cloud Computing	
5	BCS6004 – DE3	Machine Learning	
<b><u>Elective-IV</u></b>			<b>VIII Semester</b>
1	MCS8115	Organization Technique	
2	MCS8116	Machine Learning	
3	MCS8117	Information Retrieval Tools and Techniques	
4	MCS8118	Network Programming	
5	MCS8119	Parallel Processing: Architectures and Algorithm	
6	MCS8120	Real Time Systems	
<b><u>Elective-V</u></b>			<b>VIII Semester</b>
1	MCS8207	Digital Signal Processing	
2	MCS8208	Image Processing Techniques	
3	MCS8209	Research Methodology	
4	MCS8210	System Modeling and Simulation	
5	MCS8211	Wireless Networks and Mobile Computing	
6	MCS8212	Requirement Engineering	
<b><u>Elective-VI</u></b>			<b>IX Semester</b>
1	MCS9113	Computer Vision	
2	MCS9114	Information Security	
3	MCS9115	Big Data	
4	MCS9116	Ad Hoc Networks	

5	MCS9117	Metrics and Models	
6	MCS9118	Software Reliability and Formal Specification	
<b>Elective-VII</b>			<b>IX Semester</b>
1	MCS9213	TCP/IP Design and Implementation	
2	MCS9214	Natural Language Processing	
3	MCS9215	Remote Sensing	
4	MCS9216	Quality Assurance and Testing	
5	MCS9217	Robotics	

**List of Open Electives**

<b><u>Open Elective –I</u></b>			<b>Department Offered</b>	<b>V Semester</b>
1	BMG5302	Principles of Management	MGMT	
2	BMG5301	Economics	MGMT	