

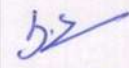
w.e.f. May 2024

Scheme of B. Tech. 3rd Semester

(Common for CSE, CSE with Specialization in Data Science, CSE with specialization in Cloud Technology & Information Security, CSE with specialization in Big Data and Analytics, CSE with specialization in Full Stack Development, CSE with specialization in AI & Machine Learning)

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Basic Science Course	BMAT-003C	Statistical Techniques	3	0	0	3	40	60	-	100
2	Basic Science Course	BMAT-003CL	Statistical Techniques Lab	0	0	2	1	60	-	40	100
3	Professional Core Course	BCSE-502	Data Structure & Algorithms	3	0	0	3	40	60	-	100
4	Professional Core Course	BCSE-502L	Data Structure & Algorithms Lab	0	0	2	1	60	-	40	100
6	Professional Core Course	BCSE-503	Computer Organization & Architecture	3	1	0	4	40	60	-	100
5	Professional Core Course	BCSE-504	Software Engineering & Testing Tools	3	0	0	3	40	60	-	100
7	Professional Core Course	BCSE-504L	Software Engineering & Testing Tools Lab	0	0	2	1	60	-	40	100
8	Professional Core Course	BCSE-505	Business Intelligence & its Tools	2	0	0	2	40	60	-	100
9	Professional Core Course	BCSE-506	Performance Analysis of Programming Languages	3	0	0	3	40	60	-	100
10	Professional Core Course	BCSE-506L	Performance Analysis of Programming Languages Lab	0	0	2	1	60	-	40	100
11	Humanities and Social Sciences including Management Course	BHUM-118	Human Values & Ethics	3	0	0	3	40	60	-	100
12	Project	PR-I	Project-I	0	0	4	2	60	-	40	100
13	Mandatory Course	BET-1	Employability Training-I	0	0	2	0	60	-	40	100
TOTAL				20	1	14	27	640	420	240	1300


Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

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w. e. f. May 2024
Bachelor of Technology in Computer Science & Engineering
4th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-507	Operating Systems	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-507L	Linux Programming Lab	0	0	2	1	60	-	40	100
3	Professional Core Course	BCSE-508	Design and Analysis of Algorithms	3	0	0	3	40	60	-	100
4	Professional Core Course	BCSE-508L	Design and Analysis of Algorithms Lab	0	0	2	1	60	-	40	100
6	Professional Core Course	BCSE-509	Computer Networks	3	0	0	3	40	60	-	100
5	Professional Core Course	BCSE-509L	Computer Networks Lab	0	0	2	1	60	-	40	100
7	Professional Core Course	BCSE-510	Database Management System	3	0	0	3	40	60	-	100
8	Professional Core Course	BCSE-510L	Database Management System Lab	0	0	2	1	60	-	40	100
9	Professional Core Course	BCSE-511	Agile Development	2	0	0	2	40	60	-	100
10	Professional Core Course	BCSE-511L	Agile Development Lab	0	0	2	1	60	-	40	100
11	Professional Core Course	BCSE-512	Design Patterns Lab	0	0	4	2	60	-	40	100
12	Project	PR-II	Project-II	0	0	4	2	60	-	40	100
13	Mandatory Course	BET-II	Employability Training-II	0	0	2	0	60	-	40	100
TOTAL				14	0	20	23	680	300	320	1300

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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w. e. f. May 2024
 Bachelor of Technology in Computer Science & Engineering with Specialization in AI & Machine Learning
 4th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-507	Operating Systems	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-507L	Linux Programming Lab	0	0	2	1	60	-	40	100
3	Professional Core Course	BCSE-508	Design and Analysis of Algorithms	3	0	0	3	40	60	-	100
4	Professional Core Course	BCSE-508L	Design and Analysis of Algorithms Lab	0	0	2	1	60	-	40	100
6	Professional Core Course	BCSE-509	Computer Networks	3	0	0	3	40	60	-	100
5	Professional Core Course	BCSE-509L	Computer Networks Lab	0	0	2	1	60	-	40	100
7	Professional Core Course	BCSE-510	Database Management System	3	0	0	3	40	60	-	100
8	Professional Core Course	BCSE-510L	Database Management System Lab	0	0	2	1	60	-	40	100
9	Professional Core Course	BCSE-801	AI & Machine Learning Foundations	2	0	0	2	40	60	-	100
10	Professional Core Course	BCSE-801L	AI & Machine Learning Foundations Lab	0	0	2	1	60	-	40	100
11	Professional Core Course	BCSE-512	Design Patterns Lab	0	0	4	2	60	-	40	100
12	Project	PR-II	Project-II	0	0	4	2	60	-	40	100
13	Mandatory Course	BET-II	Employability Training-II	0	0	2	0	60	-	40	100
TOTAL				14	0	20	23	680	300	320	1300


Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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 Bachelor of Technology in Computer Science & Engineering with Specialization in Big Data And Analytics
 4th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-507	Operating Systems	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-507L	Linux Programming Lab	0	0	2	1	60	-	40	100
3	Professional Core Course	BCSE-508	Design and Analysis of Algorithms	3	0	0	3	40	60	-	100
4	Professional Core Course	BCSE-508L	Design and Analysis of Algorithms Lab	0	0	2	1	60	-	40	100
6	Professional Core Course	BCSE-509	Computer Networks	3	0	0	3	40	60	-	100
5	Professional Core Course	BCSE-509L	Computer Networks Lab	0	0	2	1	60	-	40	100
7	Professional Core Course	BCSE-510	Database Management System	3	0	0	3	40	60	-	100
8	Professional Core Course	BCSE-510L	Database Management System Lab	0	0	2	1	60	-	40	100
9	Professional Core Course	BCSE-751	Foundation in Hadoop	2	0	0	2	40	60	-	100
10	Professional Core Course	BCSE-751L	Foundation in Hadoop Lab	0	0	2	1	60	-	40	100
11	Professional Core Course	BCSE-512	Design Patterns Lab	0	0	4	2	60	-	40	100
12	Project	PR-II	Project-II	0	0	4	2	60	-	40	100
13	Mandatory Course	BET-II	Employability Training-II	0	0	2	0	60	-	40	100
TOTAL				14	0	20	23	680	300	320	1300

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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Bachelor of Technology in Computer Science & Engineering with Specialization in Cloud Technology & Information Security: 4th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-507	Operating Systems	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-507L	Linux Programming Lab	0	0	2	1	60	-	40	100
3	Professional Core Course	BCSE-508	Design and Analysis of Algorithms	3	0	0	3	40	60	-	100
4	Professional Core Course	BCSE-508L	Design and Analysis of Algorithms Lab	0	0	2	1	60	-	40	100
6	Professional Core Course	BCSE-509	Computer Networks	3	0	0	3	40	60	-	100
5	Professional Core Course	BCSE-509L	Computer Networks Lab	0	0	2	1	60	-	40	100
7	Professional Core Course	BCSE-510	Database Management System	3	0	0	3	40	60	-	100
8	Professional Core Course	BCSE-510L	Database Management System Lab	0	0	2	1	60	-	40	100
9	Professional Core Course	BCSE-651	Cloud Computing Foundations	2	0	0	2	40	60	-	100
10	Professional Core Course	BCSE-651L	Cloud Computing Foundations Lab	0	0	2	1	60	-	40	100
11	Professional Core Course	BCSE-512	Design Patterns Lab	0	0	4	2	60	-	40	100
12	Project	PR-II	Project-II	0	0	4	2	60	-	40	100
13	Mandatory Course	BET-II	Employability Training-II	0	0	2	0	60	-	40	100
TOTAL				14	0	20	23	680	300	320	1300

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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w. e. f. May 2024

Bachelor of Technology in Computer Science & Engineering with Specialization in Data Science
4th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching [®] Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-507	Operating Systems	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-507L	Linux Programming Lab	0	0	2	1	60	-	40	100
3	Professional Core Course	BCSE-508	Design and Analysis of Algorithms	3	0	0	3	40	60	-	100
4	Professional Core Course	BCSE-508L	Design and Analysis of Algorithms Lab	0	0	2	1	60	-	40	100
6	Professional Core Course	BCSE-509	Computer Networks	3	0	0	3	40	60	-	100
5	Professional Core Course	BCSE-509L	Computer Networks Lab	0	0	2	1	60	-	40	100
7	Professional Core Course	BCSE-510	Database Management System	3	0	0	3	40	60	-	100
8	Professional Core Course	BCSE-510L	Database Management System Lab	0	0	2	1	60	-	40	100
9	Professional Core Course	BCSE-600	Data Science Foundations	2	0	0	2	40	60	-	100
10	Professional Core Course	BCSE-600L	Data Science Foundations Lab	0	0	2	1	60	-	40	100
11	Professional Core Course	BCSE-512	Design Patterns Lab	0	0	4	2	60	-	40	100
12	Project	PR-II	Project-II	0	0	4	2	60	-	40	100
13	Mandatory Course	BET-II	Employability Training-II	0	0	2	0	60	-	40	100
TOTAL				14	0	20	23	680	300	320	1300

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

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Bachelor of Technology in Computer Science & Engineering with Specialization in Full Stack Development
4th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-507	Operating Systems	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-507L	Linux Programming Lab	0	0	2	1	60	-	40	100
3	Professional Core Course	BCSE-508	Design and Analysis of Algorithms	3	0	0	3	40	60	-	100
4	Professional Core Course	BCSE-508L	Design and Analysis of Algorithms Lab	0	0	2	1	60	-	40	100
6	Professional Core Course	BCSE-509	Computer Networks	3	0	0	3	40	60	-	100
5	Professional Core Course	BCSE-509L	Computer Networks Lab	0	0	2	1	60	-	40	100
7	Professional Core Course	BCSE-510	Database Management System	3	0	0	3	40	60	-	100
8	Professional Core Course	BCSE-510L	Database Management System Lab	0	0	2	1	60	-	40	100
9	Professional Core Course	BCSE-700	Front-end Development	2	0	0	2	40	60	-	100
10	Professional Core Course	BCSE-700L	Front-end Development Lab	0	0	2	1	60	-	40	100
11	Professional Core Course	BCSE-701	Bootstrap Framework Lab	0	0	4	2	60	-	40	100
12	Project	PR-II	Project-II	0	0	4	2	60	-	40	100
13	Mandatory Course	BET-II	Employability Training-II	0	0	2	0	60	-	40	100
TOTAL				14	0	20	23	680	300	320	1300

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

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w. e. f. May 2024
Bachelor of Technology in Computer Science & Engineering
5th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Humanities and Social Sciences including Management Course	BHUM-004	Economics for Engineers	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-513	Cloud Computing	2	0	0	2	40	60	-	100
3	Professional Core Course	BCSE-513L	Cloud Computing Lab	0	0	3	1.5	60	-	40	100
4	Professional Core Course	BCSE-514	Big Data & Analytics	2	0	0	2	40	60	-	100
6	Professional Core Course	BCSE-514L	Big Data & Analytics Lab	0	0	3	1.5	60	-	40	100
5	Professional Elective Course		Elective-I	2	0	0	2	40	60	-	100
7	Professional Elective Course		Elective-I Lab	0	0	4	2	60	-	40	100
8	Professional Elective Course		Elective-II	3	0	0	3	40	60	-	100
9	Project	IHOT-5 / PR-I	Machine Learning for IIOT / Project-I	0	0	4	2	60	-	40	100
10	Mandatory Course	BHUM-117	Essence of Indian Traditional Knowledge	2	0	0	0	40	60	-	100
11	Mandatory Course	BPD-I	Personality Development Skills-I	0	0	2	0	60	-	40	100
TOTAL				14	0	16	19	540	360	200	1100

Elective-I	Elective-I Lab
BCSE-531: PHP and its Framework	BCSE-531L: PHP and its Framework Lab
BCSE-532: Java and its Framework	BCSE-532L: Java and its Framework Lab
BCSE-533: Python and its Framework	BCSE-533L: Python and its Framework Lab
BCSE-534: JavaScript and its Framework	BCSE-534L: JavaScript and its Framework Lab

Elective-II
BCSE-541: Data Warehousing and Data Mining
BCSE-542: UI / UX Design
BCSE-543: Software Project Management
BCSE-544: Object Oriented Modeling

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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Bachelor of Technology in Computer Science & Engineering with Specialization in Cloud Technology & Information Security: 5th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Humanities and Social Sciences including Management Course	BHUM-004	Economics for Engineers	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-652	Linux Administration	2	0	0	2	40	60	-	100
3	Professional Core Course	BCSE-652L	Linux Administration Lab	0	0	3	1.5	60	-	40	100
4	Professional Core Course	BCSE-653	Virtualization & Scheduling	2	0	0	2	40	60	-	100
6	Professional Core Course	BCSE-653L	Virtualization & Scheduling Lab	0	0	3	1.5	60	-	40	100
5	Professional Elective Course		Elective-I	2	0	0	2	40	60	-	100
7	Professional Elective Course		Elective-I Lab	0	0	4	2	60	-	40	100
8	Professional Elective Course		Elective-II	3	0	0	3	40	60	-	100
9	Professional Elective Course		Elective-II Lab	0	0	2	1	60	-	40	100
10	Project	IHOT-5 / PR-I	Machine Learning for IHOT/ Project-I	0	0	4	2	60	-	40	100
11	Mandatory Course	BHUM-117	Essence of Indian Traditional Knowledge	2	0	0	0	40	60	-	100
12	Mandatory Course	BPD-I	Personality Development Skills-I	0	0	2	0	60	-	40	100
TOTAL				14	0	18	20	600	360	240	1200

Elective-I	Elective-I Lab
BCSE-531: PHP and its Framework	BCSE-531L: PHP and its Framework Lab
BCSE-532: Java and its Framework	BCSE-532L: Java and its Framework Lab
BCSE-533: Python and its Framework	BCSE-533L: Python and its Framework Lab
BCSE-534: JavaScript and its Framework	BCSE-534L: JavaScript and its Framework Lab

Elective-II	Elective-II Lab
BCSE-666: Cloud Infrastructure Deployment	BCSE-666L: Cloud Infrastructure Deployment Lab
BCSE-667: Cloud & Big Data	BCSE-667L: Cloud & Big Data Lab
BCSE-668: Managing Cloud	BCSE-668L: Managing Cloud Lab

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

w.e.f. May 2024

**Bachelor of Technology in Computer Science & Engineering with Specialization in Data Science
5th Semester Scheme**

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Humanities and Social Sciences including Management Course	BHUM-004	Economics for Engineers	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-601	R Programming	2	0	0	2	40	60	-	100
3	Professional Core Course	BCSE-601L	R Programming Lab	0	0	3	1.5	60	-	40	100
4	Professional Core Course	BCSE-514	Big Data & Analytics	2	0	0	2	40	60	-	100
6	Professional Core Course	BCSE-514L	Big Data & Analytics Lab	0	0	3	1.5	60	-	40	100
5	Professional Elective Course		Elective-I	2	0	0	2	40	60	-	100
7	Professional Elective Course		Elective-I Lab	0	0	4	2	60	-	40	100
8	Professional Elective Course		Elective-II	3	0	0	3	40	60	-	100
9	Professional Elective Course		Elective-II Lab	0	0	2	1	60	-	40	100
10	Project	HOT-5 / PR-I	Machine Learning for IHOT / Project-I	0	0	4	2	60	-	40	100
11	Mandatory Course	BHUM-117	Essence of Indian Traditional Knowledge	2	0	0	0	40	60	-	100
12	Mandatory Course	BPD-I	Personality Development Skills-I	0	0	2	0	60	-	40	100
TOTAL				14	0	18	20	600	360	240	1200

Elective-I	Elective-I Lab
BCSE-531: PHP and its Framework	BCSE-531L: PHP and its Framework Lab
BCSE-532: Java and its Framework	BCSE-532L: Java and its Framework Lab
BCSE-533: Python and its Framework	BCSE-533L: Python and its Framework Lab
BCSE-534: JavaScript and its Framework	BCSE-534L: JavaScript and its Framework Lab

Elective-II	Elective-II Lab
BCSE-611: Sampling Methods	BCSE-611L: Sampling Methods Lab
BCSE-612: Optimization Techniques	BCSE-612L: Optimization Techniques Lab
BCSE-613: Linear Algebra	BCSE-613L: Linear Algebra Lab

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

w. e. f. May 2024

Bachelor of Technology in Computer Science & Engineering with Specialization in Full Stack Development
5th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Humanities and Social Sciences including Management Course	BHUM-004	Economics for Engineers	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-702	Software Craftsmanship	2	0	0	2	40	60	-	100
3	Professional Core Course	BCSE-702L	Software Craftsmanship Lab	0	0	3	1.5	60	-	40	100
4	Professional Core Course	BCSE-703	Advanced JavaScript	2	0	0	2	40	60	-	100
5	Professional Core Course	BCSE-703L	Advanced JavaScript Lab	0	0	3	1.5	60	-	40	100
6	Professional Elective Course		Elective-I	2	0	0	2	40	60	-	100
7	Professional Elective Course		Elective-I Lab	0	0	4	2	60	-	40	100
8	Professional Elective Course		Elective-II	3	0	0	3	40	60	-	100
9	Professional Elective Course		Elective-II Lab	0	0	2	1	60	-	40	100
10	Project	IHOT-5 / PR-I	Machine Learning for IIOT / Project-I	0	0	4	2	60	-	40	100
11	Mandatory Course	BHUM-117	Essence of Indian Traditional Knowledge	2	0	0	0	40	60	-	100
12	Mandatory Course	BPD-I	Personality Development Skills-I	0	0	2	0	60	-	40	100
TOTAL				14	0	18	20	600	360	240	1200

Elective-I	Elective-I Lab
BCSE-711: Backend Development with NodeJS	BCSE-711L: Backend Development with NodeJS Lab
BCSE-712: Backend Development with Java	BCSE-712L: Backend Development with Java Lab
BCSE-713: Backend Development with PHP	BCSE-713L: Backend Development with PHP
BCSE-714: Backend Development using Python with OOPS	BCSE-714L: Backend Development with Python with OOPS Lab

Elective-II	Elective-II Lab
BCSE-717: Devops Engineering	BCSE-717L: Devops Engineering Lab
BCSE-542: UI/UX Design	BCSE-542L: UI/UX Design Lab

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

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Bachelor of Technology in Computer Science & Engineering
6th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Humanities and Social Sciences including Management Course	BHUM-005	Principle of Management	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-515	Formal Language & Automata Theory	3	1	0	4	40	60	-	100
3	Professional Core Course	BCSE-516	Mobile Application Development	2	0	0	2	40	60	-	100
4	Professional Core Course	BCSE-516L	Mobile Application Development Lab	0	0	4	2	60	-	40	100
5	Professional Elective Course		Elective-III	2	0	0	2	40	60	-	100
6	Professional Elective Course		Elective-III Lab	0	0	2	1	60	-	40	100
7	Open Elective Course		Open Elective-I	3	0	0	3	40	60	-	100
8	Project	HOT-6 / PR-II	Artificial Intelligence / Project-II	0	0	4	2	60	-	40	100
9	Mandatory Course	BHUM-116	Indian Constitution	2	0	0	0	40	60	-	100
10	Mandatory Course	BPD-II	Personality Development Skills-II	0	0	2	0	60	-	40	100
TOTAL				15	1	12	19	480	360	160	1000

Elective-III	Elective-III Lab
BCSE-551: Advanced Java Programming	BCSE-551L: Advanced Java Programming Lab
BCSE-552: Game Designing	BCSE-552L: Game Designing Lab
BCSE-553: Robotic Process Automation Design & Development	BCSE-553L: Robotic Process Automation Design & Development Lab
BCSE-554: .Net Technologies	BCSE-554L: .Net Technologies Lab

Open Elective-I
BCIV-080: Disaster Management BMAT-011: Operational Research BECE-531: Embedded Systems BELE -529: Measurements and Instrumentation

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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w. e. f. May 2024

Bachelor of Technology in Computer Science & Engineering with Specialization in Cloud Technology & Information Security: 6th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Humanities and Social Sciences including Management Course	BHUM-005	Principle of Management	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-515	Formal Language & Automata Theory	3	1	0	4	40	60	-	100
3	Professional Core Course	BCSE-654	Cyber Security and Digital Forensic	4	0	0	4	40	60	-	100
4	Professional Elective Course		Elective-III	2	0	0	2	40	60	-	100
6	Professional Elective Course		Elective-III Lab	0	0	2	1	60	-	40	100
5	Open Elective Course		Open Elective-I	3	0	0	3	40	60	-	100
7	Project	HOT-6 / PR-II	Artificial Intelligence / Project-II	0	0	4	2	60	-	40	100
8	Mandatory Course	BHUM-116	Indian Constitution	2	0	0	0	40	60	-	100
9	Mandatory Course	BPD-II	Personality Development Skills-II	0	0	2	0	60	-	40	100
TOTAL				17	1	8	19	420	360	120	900

Elective-III	Elective-III Lab
BCSE-671: Application Security	BCSE-671L: Application Security Lab
BCSE-672: Security Architecture	BCSE-672L: Security Architecture Lab
BCSE-673: Database Security	BCSE-673L: Database Security Lab

Open Elective-I
BCIV-080: Disaster Management
BMAT-011: Operational Research
BECE-531: Embedded Systems
BELE -529: Measurements and Instrumentation

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

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w. e. f. May 2024
Bachelor of Technology in Computer Science & Engineering with Specialization in Data Science
6th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Humanities and Social Sciences including Management Course	BHUM-005	Principle of Management	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-515	Formal Language & Automata Theory	3	1	0	4	40	60	-	100
3	Professional Core Course	BCSE-602	NOSQL Database	2	0	0	2	40	60	-	100
4	Professional Core Course	BCSE-602L	NOSQL Database Lab	0	0	4	2	60	-	40	100
6	Professional Elective Course		Elective-III	2	0	0	2	40	60	-	100
5	Professional Elective Course		Elective-III Lab	0	0	2	1	60	-	40	100
7	Open Elective Course		Open Elective-I	3	0	0	3	40	60	-	100
8	Project	HOT-6 / PR-II	Artificial Intelligence / Project-II	0	0	4	2	60	-	40	100
9	Mandatory Course	BHUM-116	Indian Constitution	2	0	0	0	40	60	-	100
10	Mandatory Course	BPD-II	Personality Development Skills-II	0	0	2	0	60	-	40	100
TOTAL				15	1	12	19	480	360	160	1000

Elective-III	Elective-III Lab
BCSE-621: Statistical Inference	BCSE-621L: Statistical Inference Lab
BCSE-622: Time series Analysis	BCSE-622L: Time series Analysis Lab
BCSE-623: Design and Analysis of Experiments	BCSE-623L: Design and Analysis of Experiments Lab

Open Elective-I
BCIV-080: Disaster Management
BMAT-011: Operational Research
BECE-531: Embedded Systems
BELE -529: Measurements and Instrumentation

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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w. e. f. May 2024

Bachelor of Technology in Computer Science & Engineering with Specialization in Full Stack Development
6th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Humanities and Social Sciences including Management Course	BIUM-005	Principle of Management	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-515	Formal Language & Automata Theory	3	1	0	4	40	60	-	100
3	Professional Core Course	BCSE-704	Database Engineer : MongoDB	2	0	0	2	40	60	-	100
4	Professional Core Course	BCSE-704L	Database Engineer : MongoDB Lab	0	0	4	2	60	-	40	100
6	Professional Elective Course		Elective-III	2	0	0	2	40	60	-	100
5	Professional Elective Course		Elective-III Lab	0	0	2	1	60	-	40	100
7	Open Elective Course		Open Elective-I	3	0	0	3	40	60	-	100
8	Project	IHOT-6 / PR-II	Artificial Intelligence / Project-II	0	0	4	2	60	-	40	100
9	Mandatory Course	BHUM-116	Indian Constitution	2	0	0	0	40	60	-	100
10	Mandatory Course	BPD-II	Personality Development Skills-II	0	0	2	0	60	-	40	100
TOTAL				15	1	12	19	480	360	160	1000

Elective-III	Elective-III Lab
BCSE-721: ReactJS Framework	BCSE-721L: ReactJS Framework Lab
BCSE-722: Spring Boot Framework	BCSE-722L: Spring Boot Framework Lab
BCSE-723: Laravel Framework	BCSE-723L: Laravel Framework Lab
BCSE-724: Django Framework	BCSE-724L: Django Framework Lab

Open Elective-I
BCIV-080: Disaster Management
BMAT-011: Operational Research
BECE-531: Embedded Systems
BELE -529: Measurements and Instrumentation

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

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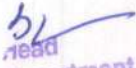
w. e. f. May 2024
Bachelor of Technology in Computer Science & Engineering
7th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-517	Programming Languages	3	0	0	3	40	60	-	100
2	Professional Elective Course		Elective-IV	3	0	0	3	40	60	-	100
3	Professional Elective Course		Elective-V	3	0	0	3	40	60	-	100
4	Open Elective Course		Open Elective-II	3	0	0	3	40	60	-	100
5	Open Elective Course		Open Elective-III	3	0	0	3	40	60	-	100
6	Project	BCSE-518	Integrated Project-I	0	0	2	1	60	-	40	100
TOTAL				15	0	2	16	260	300	40	600

Elective-IV	Elective-V
BCSE-561: Blockchain Technology	BCSE-571: Modeling & Simulation
BCSE-562: Quantum Computing	BCSE-572: Soft Computing
BCSE-563: Adhoc & Sensor Network	BCSE-573 : Natural Language Processing
BCSE-634 : Information Security and IPR	BCSE-574 : Compiler Design

Open Elective-II	Open Elective-III
BCIV-084: Rural Technology & Community Development	BECE-550: Internet of Things
BELE-537: Wind & Solar Energy System	BCIV-082: General Principles of Building Construction
BT-401: Bioinformatics	BCIV-085: Infrastructure System-Planning
BECE-517: Digital Signal Processing	BELE-529: Measurements & Instrumentation

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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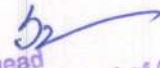
Bachelor of Technology in Computer Science & Engineering with Specialization in Cloud Technology & Information Security: 7th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-634	Information Security and IPR	3	0	0	3	40	60	-	100
2	Professional Elective Course		Elective-IV	3	0	0	3	40	60	-	100
3	Professional Elective Course		Elective-V	3	0	0	3	40	60	-	100
4	Open Elective Course		Open Elective-II	3	0	0	3	40	60	-	100
5	Open Elective Course		Open Elective-III	3	0	0	3	40	60	-	100
6	Project	BCSE-518	Integrated Project-I	0	0	2	1	60	-	40	100
TOTAL				15	0	2	16	260	300	40	600

Elective-IV	Elective-V
BCSE-676: Advanced Cloud Architecture	BCSE-681: Privacy and Security of Online Social Media Networks
BCSE-677: Cloud Security and Data Protection	BCSE-682: Server Security
BCSE-678: OpenStack	BCSE-683: Mobile Wireless and VOIP Security

Open Elective-II	Open Elective-III
BCIV-084: Rural Technology & Community Development	BECE-550: Internet of Things
BELE-537: Wind & Solar Energy System	BCIV-082: General Principles of Building Construction
BT-401: Bioinformatics	BCIV-085: Infrastructure System-Planning
BECE-517: Digital Signal Processing	BELE-529: Measurements & Instrumentation

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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w. e. f. May 2024
Bachelor of Technology in Computer Science & Engineering with Specialization in Data Science
7th Semester Scheme

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-603	Advanced Machine Learning	3	0	0	3	40	60	-	100
2	Professional Elective Course		Elective-IV	3	0	0	3	40	60	-	100
3	Professional Elective Course		Elective-V	3	0	0	3	40	60	-	100
4	Open Elective Course		Open Elective-II	3	0	0	3	40	60	-	100
5	Open Elective Course		Open Elective-III	3	0	0	3	40	60	-	100
6	Project	BCSE-518	Integrated Project-I	0	0	2	1	60	-	40	100
TOTAL				15	0	2	16	260	300	40	600

Elective-IV	Elective-V
BCSE-561: Blockchain Technology	BCSE-636: Social Media Analytics using R
BCSE-631: Big Data Analytics on Cloud	BCSE-637: Predictive Analysis using Python
BCSE-632: Real Time Data Processing	BCSE-638: Data Visualization Techniques
BCSE-633: Data Analytics using SQL	BCSE-639: Advanced Big Data Analytics

Open Elective-II	Open Elective-III
BCIV-084: Rural Technology & Community Development	BECE-550: Internet of Things
BELE-537: Wind & Solar Energy System	BCIV-082: General Principles of Building Construction
BT-401: Bioinformatics	BCIV-085: Infrastructure System-Planning
BECE-517: Digital Signal Processing	BELE-529: Measurements & Instrumentation

Note: Student can earn 6 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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w. e. f. May 2024
Bachelor of Technology in Computer Science & Engineering
8th Semester Scheme

***Scheme 1 (Internship Based)**

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Project	BCSE-522	Industrial Project / In-house training	0	0	0	8	100	-	200	300
TOTAL				0	0	0	8	100	-	200	300

OR***Scheme 2 (Non-Internship Based)**

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-519	Distributed Operating System	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-520	High Performance Computing	3	0	0	3	40	60	-	100
3	Project	BCSE-521	Inteegrated Project-II	0	0	4	2	60	-	40	100
TOTAL				6	0	4	8	140	120	40	300

* Students can opt any scheme as per college Internship policy after due approval from Internship Committee.


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Bachelor of Technology in Computer Science & Engineering with Specialization in Cloud Technology & Information Security: 8th Semester Scheme

*Scheme 1 (Internship Based)


Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Project	BCSE-522	Industrial Project / In-house training	0	0	0	8	100	-	200	300
TOTAL				0	0	0	8	100	-	200	300

OR

*Scheme 2 (Non-Internship Based)

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-656	Hybrid Cloud Computing	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-657	Advanced Cloud Service Models	3	0	0	3	40	60	-	100
3	Project	BCSE-521	Inteegrated Project-II	0	0	4	2	60	-	40	100
TOTAL				6	0	4	8	140	120	40	300

* Students can opt any scheme as per college Internship policy after due approval from Internship Committee.


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w. e. f. May 2024

Bachelor of Technology in Computer Science & Engineering with Specialization in Data Science
8th Semester Scheme***Scheme 1 (Internship Based)**

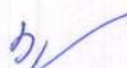
Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Project	BCSE-522	Industrial Project / In-house training	0	0	0	8	100	-	200	300
TOTAL				0	0	0	8	100	-	200	300

OR

***Scheme 2 (Non-Internship Based)**

Sr. No.	Category	Course Code	Course Title	Teaching Schedule (Hours per week)			Credits	Examination Marks			
				L	T	P		Internal	Theory	Practical	Total
1	Professional Core Course	BCSE-603	Reinforcement Learning	3	0	0	3	40	60	-	100
2	Professional Core Course	BCSE-604	Artificial Neural Networks	3	0	0	3	40	60	-	100
3	Project	BCSE-521	Integerated Project-II	0	0	4	2	60	-	40	100
TOTAL				6	0	4	8	140	120	40	300

* Students can opt any scheme as per college Internship policy after due approval from Internship Committee.



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Semester III [Second year]

Branch/Course: Electronics and Communication Engineering

S. No	Course No.	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	TOTAL		
1.	BECE-502	Program Core Course	Analog Circuits	3	0	0	3	60	40	0	100	3	3
2.	BECE-503	Program Core Course	Network Theory	3	1	0	4	60	40	0	100	4	4
3.	BECE-504	Program Core Course	Analog & Digital Communication	3	0	0	3	60	40	0	100	3	3
4.	BMAT-003	General	Maths III (Probability and Statistics)	3	1	0	4	60	40	0	100	4	4
5.	BMAT-004	Mandatory Course	Indian Constitution	2	0	0	2	60	40	0	100	2	0
6.	BECE-505	Program Core Course	Analog Circuits Lab	0	0	2	2	0	60	40	100	2	1
7.	BECE-506	Program Core Course	Analog & Digital Communication Lab	0	0	2	2	0	60	40	100	2	1
8.	BECE-507	ESC	MATLab Programming Lab	0	0	2	2	0	60	40	100	2	1
9.	BECE-508	Program Core Course	Virtual Instrumentation Lab	0	0	2	2	0	60	40	100	2	1
10.	IIoT-3	Project/ Training	Industrial Connectivity for IIOT	0	0	4	4	0	60	40	100	4	2
TOTAL				14	2	12	28				1000	28	20

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.



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Semester IV [Second year]

Branch/Course: Electronics and Communication Engineering

S. No	Course No.	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	TOTAL		
1.	BECE-509	Program Core Course	Signals and Systems	3	1	0	4	60	40	0	100	4	4
2.	BECE-510	Program Core Course	Digital System Design	3	1	0	4	60	40	0	100	4	4
3.	BECE-511	Program Core Course	Computer Organization and Architecture	3	1	0	4	60	40	0	100	4	4
4.	BECE-512	Program Core Course	Probability Theory & Stochastic Processes	3	1	0	4	60	40	0	100	4	4
5.	BHUM-117	Mandatory Course	Essence of Indian Traditional Knowledge	2	0	0	2	60	40	0	100	2	0
6.	HSMC-051	Humanities And Social Sciences Including Management	Universal Human Values	3	0	0	3	60	40	0	100	3	3
7.	BECE-513	Program Core Course	Digital System Design Lab	0	0	2	2	0	60	40	100	2	1
8	IIoT-4	Project/ Training	Data Analytics for IIOT	0	0	4	4	0	60	40	100	4	2
Total				17	4	6	27				800	27	22

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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Semester V [Third year]

Branch/Course: Electronics and Communication Engineering

S. No	Course Code	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	Total		
1	BECE-515	Program Core Course	Electromagnetic Field Theory	3	1	0	4	60	40	0	100	4	4
2	BECE-516	Program Core Course	Microprocessors & Microcontrollers	3	0	0	3	60	40	0	100	3	3
3	BECE-517	Program Core Course	Digital Signal Processing	3	0	0	3	60	40	0	100	3	3
4	BECE*	Specialization	Program Elective – 1	3	0	0	3	60	40	0	100	3	3
5		Interdisciplinary	OE-1	3	0	0	3	60	40	0	100	3	3
6	BHUM-004	Mandatory	Economics for Engineers	3	0	0	3	60	40	0	100	3	3
7	BECE-518	Program Core Course	Digital Signal Processing Lab	0	0	2	2	0	60	40	100	2	1
8	BECE-519	Program Core Course	Microprocessors & Microcontrollers Lab	0	0	2	2	0	60	40	100	2	1
9	IIoT-5/ BECE-561	Project/ Training	Machine Learning for IIOT/Project-3	0	0	4	4	0	60	40	100	4	2
10	BPD - I	Mandatory Course	Personality Development Skills-I	0	0	2	2	0	40	60	100	2	0
Total				18	01	10	29	360	460	180	1000	29	23

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

	Course Name	Course Title
Program Elective-I	BECE-521	Information Theory and Coding
	BECE-522	Nano Electronics
	BECE-523	Introduction to MEMS

	Course Name	Course Title
Open Elective-I	BCSE-503	Data Structure & Algorithm
	BCSE-512	Database Management System
	BCIV-080	Disaster Management


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Semester VI [Third year]

Branch/Course: Electronics and Communication Engineering

S. No.	Course Code	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	Total		
1	BECE-524	Program Core Course	Control Systems	3	1	0	4	60	40	0	100	4	4
2	BECE-525	Program Core Course	Computer Network	3	0	0	3	60	40	0	100	3	3
3		Specialization	Program Elective -2	3	0	0	3	60	40	0	100	3	3
4		Interdisciplinary	OE-2	3	0	0	3	60	40	0	100	3	3
5	BHUM-005	General	Principles of Management	3	0	0	3	60	40	0	100	3	3
6	BECE-526	Program Core Course	Computer Networks Lab	0	0	2	2	0	60	40	100	2	1
7	BECE-558	Program Core Course	Electronic Design Lab	0	0	2	2	0	60	40	100	2	1
8	IIoT-6/ BECE-562	Project/ Training	Artificial Intelligence / Project-4	0	0	4	4	0	60	40	100	4	2
9	BPD - II	Mandatory Course	Personality Development Skills – II	0	0	2	2	0	40	60	100	2	0
Total				15	1	10	26	300	420	180	900	26	20

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

	Course Name	Course Title
Program Elective-II	BECE-529	Power Electronics
	BECE-530	Adaptive Signal Processing
	BECE-531	Embedded system
	BECE-554	Arduino & Raspberry Pi
	BECE-555	VHDL

	Course Name	Course Title
Open Elective-II	BELE-529	Measurements and Instrumentation
	BCSE-522	Cryptography & Network Security
	BCIV-081	Project Management
	BELE-570	Linear Integrated Circuits and Applications


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Semester VII (Fourth year)
Branch/Course Electronics & Communication Engineering

S. No.	Course Code	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	Total		
1		Specialization	Program Elective -3	3	0	0	3	60	40	0	100	3	3
2		Specialization	Program Elective -4	3	0	0	3	60	40	0	100	3	3
3		Specialization	Program Elective -5	3	0	0	3	60	40	0	100	3	3
4		Interdisciplinary	OE-3	3	0	0	3	60	40	0	100	3	3
5		Interdisciplinary	OE-4	3	0	0	3	60	40	0	100	3	3
6	BECE-532	Program Core Course	Simulation Lab	0	0	4	4	0	60	40	100	4	2
7	BECE-533	Program Core Course	Project Stage I	0	0	4	4	0	60	40	100	4	2
8	BECE-564	Training	Training Viva -II	0	0	0	0	0	100	0	100	0	1.5
Total				15	0	8	23	300	420	80	800	23	20.5

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

	Course Name	Course Title
Program Elective-III	BECE-534	Microwave Theory & Techniques
	BECE-535	Digital Image and Video Processing
	BECE-536	Bio Medical Electronics
Program Elective-IV	BECE-537	Mobile Communication and Network
	BECE-538	Wireless Sensor Networks
	BECE-539	CMOS Design
Program Elective-V	BECE-540	Antenna and Wave Propagation
	BECE-541	High Speed Electronics
	BECE-542	Wavelets
	BECE-557	Drone Technology

	Course Name	Course Title
Open Elective-III	BELE-540	HVDC Transmission System
	BCIV-183	Planning for Sustainable Development
	BCSE-541	Mobile App Development
	BCSE-572	Soft Computing
Open Elective IV	BCSE-532	Cloud Computing
	BELE-537	Wind and Solar Energy Systems
	BCSE-604	Artificial Neural Network

OR

*** Scheme 2 (Internship Based)**

S. No.	Course Code	Category	Course Title	Hours Per Week			Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	TH	SES	P/V	Total		
1	BECE-564	Training	Training Viva- II	0	0	0	0	100	0	100	0	1.5
2	BECE-565	Internship	Industrial Internship	0	0	32	0	0	700	700	32	19
Total				0	0	32	0	100	700	800	32	20.5

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Professor & Head
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M. M. Engg. College
Mullana, Ambala.

Semester VIII (Fourth year]**Branch/Course Electronics & Communication Engineering**

S No	Category	Course Code	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	Total		
1	Specialization		Program Elective -6	3	0	0	3	60	40	0	100	3	3
2	Specialization		Program Elective -7	3	0	0	3	60	40	0	100	3	3
3	Project	BECE-550	Project Stage II	0	0	4	4	0	60	40	100	4	2
Total				6	0	4	10					10	8

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

Program Elective-6	BECE-543	Fiber Optic Communication
	BECE-544	Mixed Signal Design
	BECE-545	Speech and Audio Processing
	BECE-552	Robotics
	BECE-553	Embedded C & Interfacing
Program Elective-7	BECE-546	Satellite Communication
	BECE-547	Error Correcting Codes
	BECE-548	Scientific Computing
	BECE-549	Internet of Things
	BECE-556	VLSI

OR

Semester VIII [Fourth year]**Branch/Course: Electronics and Communication Engineering**

S. No.	Course Code	Category	Course Title	Hours Per Week			Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	TH	SES	P/V	Total		
1	BECE-551	Core	Project Stage-III/ Internship	0	0	16	0	0	200	200	16/8 weeks	8


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Semester III [Second year]

Branch/Course: Electronics and Communication Engineering

S. No	Course No.	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	TOTAL		
1.	BECE-502	Program Core Course	Analog Circuits	3	0	0	3	60	40	0	100	3	3
2.	BECE-503	Program Core Course	Network Theory	3	1	0	4	60	40	0	100	4	4
3.	BECE-504	Program Core Course	Analog & Digital Communication	3	0	0	3	60	40	0	100	3	3
4.	BMAT-003	General	Maths III (Probability and Statistics)	3	1	0	4	60	40	0	100	4	4
5.	BMAT-004	Mandatory Course	Indian Constitution	2	0	0	2	60	40	0	100	2	0
6.	BECE-505	Program Core Course	Analog Circuits Lab	0	0	2	2	0	60	40	100	2	1
7.	BECE-506	Program Core Course	Analog & Digital Communication Lab	0	0	2	2	0	60	40	100	2	1
8.	BECE-507	ESC	MATLab Programming Lab	0	0	2	2	0	60	40	100	2	1
9.	BECE-508	Program Core Course	Virtual Instrumentation Lab	0	0	2	2	0	60	40	100	2	1
10	IIoT-3/ BECE-559	Project/ Training	Industrial Connectivity for IIOT/ Project-1	0	0	4	4	0	60	40	100	4	2
11	BET-1	Mandatory Course	Employability Training-1	0	0	2	2	0	60	40	100	2	0
TOTAL				14	2	14	30	300	560	240	1100	30	20

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


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 Professor & Head,
 Dept. of Electronics & Comm. Engg.
 M. M. Engg. College
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Semester IV [Second year]
Branch/Course: Electronics and Communication Engineering

S. No	Course No.	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)			Total Contact Hours	Credits	
				L	T	P	Total	TH	SES	P/V			TOTAL
1.	BECE-509	Program Core Course	Signals and Systems	3	1	0	4	60	40	0	100	4	4
2.	BECE-510	Program Core Course	Digital System Design	3	1	0	4	60	40	0	100	4	4
3.	BECE-511	Program Core Course	Computer Organization and Architecture	3	1	0	4	60	40	0	100	4	4
4.	BECE-512	Program Core Course	Probability Theory & Stochastic Processes	3	1	0	4	60	40	0	100	4	4
5.	BHUM-117	Mandatory Course	Essence of Indian Traditional Knowledge	2	0	0	2	60	40	0	100	2	0
6.	HSMC-051	Humanities And Social Sciences Including Management	Universal Human Values	3	0	0	3	60	40	0	100	3	3
7.	BECE-513	Program Core Course	Digital System Design Lab	0	0	2	2	0	60	40	100	2	1
8	IIoT-4/ BECE-560	Project/ Training	Data Analytics for IIOT/Project-2	0	0	4	4	0	60	40	100	4	2
9	BET-II	Mandatory Course	Employability Training - II	0	0	2	2	0	60	40	100	2	0
Total				17	4	8	29	360	420	120	900	29	22

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.


 Professor & Head
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 M. M. Engg. College
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Semester V [Third year]

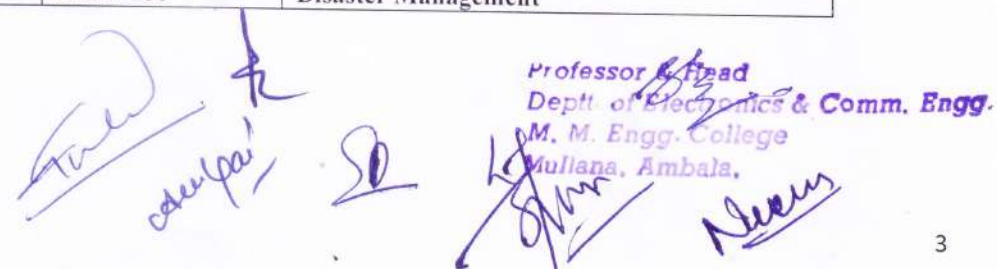
Branch/Course: Electronics and Communication Engineering

S. No	Course Code	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits	
				L	T	P	Total	TH	SES	P/V	Total			
1	BECE-515	Program Course	Core	Electromagnetic Field Theory	3	1	0	4	60	40	0	100	4	4
2	BECE-516	Program Course	Core	Microprocessors & Microcontrollers	3	0	0	3	60	40	0	100	3	3
3	BECE-517	Program Course	Core	Digital Signal Processing	3	0	0	3	60	40	0	100	3	3
4	BECE*	Specialization		Program Elective – 1	3	0	0	3	60	40	0	100	3	3
5		Interdisciplinary		OE-1	3	0	0	3	60	40	0	100	3	3
6	BHUM-004	Mandatory		Economics for Engineers	3	0	0	3	60	40	0	100	3	3
7	BECE-518	Program Course	Core	Digital Signal Processing Lab	0	0	2	2	0	60	40	100	2	1
8	BECE-519	Program Course	Core	Microprocessors & Microcontrollers Lab	0	0	2	2	0	60	40	100	2	1
9	IIoT-5/ BECE-561	Project/ Training		Machine Learning for IIOT/Project-3	0	0	4	4	0	60	40	100	4	2
10	BECE-563	Training		Training Viva I	0	0	0	0	0	100	0	100	0	1.5
11	BET-III	Mandatory Course		Employability Training - III	0	1	0	1	0	100	0	100	1	0
Total					18	2	8	28	360	620	120	1100	28	24.5

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

	Course Name	Course Title
Program Elective-I	BECE-521	Information Theory and Coding
	BECE-522	Nano Electronics
	BECE-523	Introduction to MEMS

	Course Name	Course Title
Open Elective-I	BCSE-503	Data Structure & Algorithm
	BCSE-512	Database Management System
	BCIV-180	Disaster Management



 Professor *[Signature]*
 Dept. of Electronics & Comm. Engg.
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 Mullana, Ambala,

Semester VI [Third year]

Branch/Course: Electronics and Communication Engineering

S. No.	Course Code	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	Total		
1	BECE-524	Program Core Course	Control Systems	3	1	0	4	60	40	0	100	4	4
2	BECE-525	Program Core Course	Computer Network	3	0	0	3	60	40	0	100	3	3
3		Specialization	Program Elective -2	3	0	0	3	60	40	0	100	3	3
4		Interdisciplinary	OE-2	3	0	0	3	60	40	0	100	3	3
5	BHUM-005	General	Principles of Management	3	0	0	3	60	40	0	100	3	3
6	BECE-526	Program Core Course	Computer Networks Lab	0	0	2	2	0	60	40	100	2	1
7	BECE-558	Program Core Course	Electronic Design Lab	0	0	2	2	0	60	40	100	2	1
8	IIoT-6/ BECE-562	Project/ Training	Artificial Intelligence/ Project-4	0	0	4	4	0	60	40	100	4	2
9	BET - IV	Mandatory Course	Employability Training - IV	0	1	0	1	0	100	0	100	1	0
Total				15	2	8	25	300	480	120	900	25	20

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

	Course Name	Course Title
Program Elective-II	BECE-529	Power Electronics
	BECE-530	Adaptive Signal Processing
	BECE-531	Embedded system
	BECE-554	Arduino & Raspberry Pi
	BECE-555	VHDL

	Course Name	Course Title
Open Elective-II	BELE-529	Measurements and Instrumentation
	BCSE-522	Cryptography & Network Security
	BCIV-181	Project Management
	BELE-570	Linear Integrated Circuits Design

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Semester VII (Fourth year)
Branch/Course Electronics & Communication Engineering

S. No.	Course Code	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	Total		
1		Specialization	Program Elective -3	3	0	0	3	60	40	0	100	3	3
2		Specialization	Program Elective -4	3	0	0	3	60	40	0	100	3	3
3		Specialization	Program Elective -5	3	0	0	3	60	40	0	100	3	3
4		Interdisciplinary	OE-3	3	0	0	3	60	40	0	100	3	3
5		Interdisciplinary	OE-4	3	0	0	3	60	40	0	100	3	3
6	BECE-532	Program Core Course	Simulation Lab	0	0	4	4	0	60	40	100	4	2
7	BECE-533	Program Core Course	Project Stage I	0	0	4	4	0	60	40	100	4	2
8	BECE-564	Training	Training Viva- II	0	0	0	0	0	100	0	100	0	1.5
Total				15	0	8	23	300	420	80	800	23	20.5

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

	Course Name	Course Title
Program Elective-III	BECE-534	Microwave Theory & Techniques
	BECE-535	Digital Image and Video Processing
	BECE-536	Bio Medical Electronics
Program Elective-IV	BECE-537	Mobile Communication and Network
	BECE-538	Wireless Sensor Networks
	BECE-539	CMOS Design
Program Elective-V	BECE-540	Antenna and Wave Propagation
	BECE-541	High Speed Electronics
	BECE-542	Wavelets
	BECE-557	Drone Technology

	Course Name	Course Title
Open Elective-III	BELE-540	HVDC Transmission System
	BCIV-183	Planning for Sustainable Development
	BCSE-541	Mobile App Development
	BCSE-572	Soft Computing
Open Elective IV	BCSE-532	Cloud Computing
	BELE-537	Wind and Solar Energy Systems
	BCSE-604	Artificial Neural Network

OR

*** Scheme 2 (Internship Based)**

S. No.	Course Code	Category	Course Title	Hours Per Week			Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	TH	SES	P/V	Total		
1	BECE-564	Training	Training Viva- II	0	0	0	0	100	0	100	0	1.5
2	BECE-565	Internship	Industrial Internship	0	0	32	0	0	700	700	32	19
Total				0	0	32	0	100	700	800	32	20.5

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Semester VIII (Fourth year]
Branch/Course Electronics & Communication Engineering

S No	Category	Course Code	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	Total		
1	Specialization		Program Elective -6	3	0	0	3	60	40	0	100	3	3
2	Specialization		Program Elective -7	3	0	0	3	60	40	0	100	3	3
3	Project	BECE-550	Project Stage II	0	0	4	4	0	60	40	100	4	2
Total				6	0	4	10	120	140	40	300	10	8

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

Program Elective-6	BECE-543	Fiber Optic Communication
	BECE-544	Mixed Signal Design
	BECE-545	Speech and Audio Processing
	BECE-552	Robotics
	BECE-553	Embedded C & Interfacing
Program Elective-7	BECE-546	Satellite Communication
	BECE-547	Error Correcting Codes
	BECE-548	Scientific Computing
	BECE-549	Internet of Things
	BECE-556	VLSI

OR

Semester VIII [Fourth year]
Branch/Course: Electronics and Communication Engineering

S. No.	Course Code	Category	Course Title	Hours Per Week			Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	TH	SES	P/V	Total		
1	BECE-551	Core	Project Stage-III/ Internship	0	0	16	0	0	300	300	16/8 weeks	8

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Mullana, Ambala.

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Semester III [Second year]

Branch/Course: Electronics and Communication Engineering

S. No	Course No.	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	TOTAL		
1.	BECE-502	Program Core Course	Analog Circuits	3	0	0	3	60	40	0	100	3	3
2.	BECE-503	Program Core Course	Network Theory	3	1	0	4	60	40	0	100	4	4
3.	BECE-504	Program Core Course	Analog & Digital Communication	3	0	0	3	60	40	0	100	3	3
4.	BMAT-003	General	Maths III (Probability and Statistics)	3	1	0	4	60	40	0	100	4	4
5.	BMAT-004	Mandatory Course	Indian Constitution	2	0	0	2	60	40	0	100	2	0
6.	BECE-505	Program Core Course	Analog Circuits Lab	0	0	2	2	0	60	40	100	2	1
7.	BECE-506	Program Core Course	Analog & Digital Communication Lab	0	0	2	2	0	60	40	100	2	1
8.	BECE-507	ESC	MATLab Programming Lab	0	0	2	2	0	60	40	100	2	1
9.	BECE-508	Program Core Course	Virtual Instrumentation Lab	0	0	2	2	0	60	40	100	2	1
10	IIoT-3/ BECE-559	Project/ Training	Industrial Connectivity for IIOT/ Project-1	0	0	4	4	0	60	40	100	4	2
11	BET-1	Mandatory Course	Employability Training-1	0	1	0	1	0	100	0	100	1	0
TOTAL				14	3	12	29	300	600	200	1100	29	20

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

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Semester IV [Second year]

Branch/Course: Electronics and Communication Engineering

S. No	Course No.	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	TOTAL		
1.	BECE-509	Program Core Course	Signals and Systems	3	1	0	4	60	40	0	100	4	4
2.	BECE-510	Program Core Course	Digital System Design	3	1	0	4	60	40	0	100	4	4
3.	BECE-511	Program Core Course	Computer Organization and Architecture	3	1	0	4	60	40	0	100	4	4
4.	BECE-566	Program Core Course	Microelectronics Circuits	3	1	0	4	60	40	0	100	4	4
5.	BHUM-117	Mandatory Course	Essence of Indian Traditional Knowledge	2	0	0	2	60	40	0	100	2	0
6.	BHUM-118	Humanities And Social Sciences Including Management	Human Values & Ethics	3	0	0	3	60	40	0	100	3	3
7.	BECE-513	Program Core Course	Digital System Design Lab	0	0	2	2	0	60	40	100	2	1
8.	IIoT-4/ BECE-560	Project/ Training	Data Analytics for IIOT/Project-2	0	0	4	4	0	60	40	100	4	2
9.	BET-II	Mandatory Course	Employability Training - II	0	1	0	1	0	100	0	100	1	0
Total				17	5	6	28	360	460	80	900	28	22

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

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Mullana, Ambala

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Semester V [Third year]

Branch/Course: Electronics and Communication Engineering

S. No	Course Code	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	Total		
1	BECE-515	Program Core Course	Electromagnetic Field Theory	3	1	0	4	60	40	0	100	4	4
2	BECE-516	Program Core Course	Microprocessors & Microcontrollers	3	0	0	3	60	40	0	100	3	3
3	BECE-517	Program Core Course	Digital Signal Processing	3	0	0	3	60	40	0	100	3	3
4	BECE*	Specialization	Program Elective – 1	3	0	0	3	60	40	0	100	3	3
5		Interdisciplinary	OE-1	3	0	0	3	60	40	0	100	3	3
6	BHUM-004	Mandatory	Economics for Engineers	3	0	0	3	60	40	0	100	3	3
7	BECE-518	Program Core Course	Digital Signal Processing Lab	0	0	2	2	0	60	40	100	2	1
8	BECE-519	Program Core Course	Microprocessors & Microcontrollers Lab	0	0	2	2	0	60	40	100	2	1
9	IIoT-5/ BECE-561	Project/ Training	Machine Learning for IIoT/Project-3	0	0	4	4	0	60	40	100	4	2
10	BECE-563	Training	Training Viva 1	0	0	0	0	0	100	0	100	0	1.5
11	BET-III	Mandatory Course	Employability Training - III	0	1	0	1	0	100	0	100	1	0
Total				18	2	6	28	360	620	120	1100	28	24.5

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

	Course Name	Course Title
Program Elective-I	BECE-521	Information Theory and Coding
	BECE-522	Nano Electronics
	BECE-523	Introduction to MEMS

	Course Name	Course Title
Open Elective-I	BCSE-503	Data Structure & Algorithm
	BCSE-512	Database Management System
	BCIV-180	Disaster Management

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Professor & Head
Dept. of Electronics & Comm. Engg.
M. M. Engg. College
Mullana, Ambala,
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Semester VI [Third year]

Branch/Course: Electronics and Communication Engineering


S. No.	Course Code	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	Total		
1	BECE-524	Program Course Core	Control Systems	3	1	0	4	60	40	0	100	4	4
2	BECE-525	Program Course Core	Computer Network	3	0	0	3	60	40	0	100	3	3
3		Specialization	Program Elective -2	3	0	0	3	60	40	0	100	3	3
4		Interdisciplinary	OE-2	3	0	0	3	60	40	0	100	3	3
5	BHUM-005	General	Principles of Management	3	0	0	3	60	40	0	100	3	3
6	BECE-526	Program Course Core	Computer Networks Lab	0	0	2	2	0	60	40	100	2	1
7	BECE-558	Program Course Core	Electronic Design Lab	0	0	2	2	0	60	40	100	2	1
8	IIoT-6/ BECE-562	Project/ Training	Artificial Intelligence/ Project-4	0	0	4	4	0	60	40	100	4	2
9	BET - IV	Mandatory Course	Employability Training-IV	0	1	0	1	0	100	0	100	1	0
Total				15	2	8	25	300	480	120	900	25	20

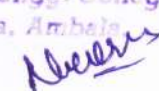
Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

	Course Name	Course Title
Program Elective-II	BECE-529	Power Electronics
	BECE-530	Adaptive Signal Processing
	BECE-531	Embedded system
	BECE-554	Arduino & Raspberry Pi
	BECE-555	VHDL

	Course Name	Course Title
Open Elective-II	BELE-529	Measurements and Instrumentation
	BCSE-522	Cryptography & Network Security
	BCIV-181	Project Management
	BELE-570	Linear Integrated Circuits Design

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Semester VII (Fourth year)
Branch/Course Electronics & Communication Engineering

S. No.	Course Code	Category	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	Total		
1		Specialization	Program Elective -3	3	0	0	3	60	40	0	100	3	3
2		Specialization	Program Elective -4	3	0	0	3	60	40	0	100	3	3
3		Specialization	Program Elective -5	3	0	0	3	60	40	0	100	3	3
4		Interdisciplinary	OE-3	3	0	0	3	60	40	0	100	3	3
5		Interdisciplinary	OE-4	3	0	0	3	60	40	0	100	3	3
6	BECE-532	Program Core Course	Simulation Lab	0	0	4	4	0	60	40	100	4	2
7	BECE-533	Program Core Course	Project Stage I	0	0	4	4	0	60	40	100	4	2
8	BECE-564	Training	Training Viva- II	0	0	0	0	0	100	0	100	0	1.5
Total				15	0	8	23	300	420	80	800	23	20.5

Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

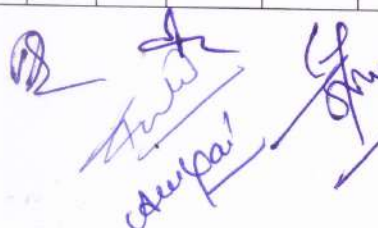
	Course Name	Course Title
Program Elective-III	BECE-534	Microwave Theory & Techniques
	BECE-535	Digital Image and Video Processing
	BECE-536	Bio Medical Electronics
Program Elective-IV	BECE-537	Mobile Communication and Network
	BECE-538	Wireless Sensor Networks
	BECE-539	CMOS Design
Program Elective-V	BECE-540	Antenna and Wave Propagation
	BECE-541	High Speed Electronics
	BECE-542	Wavelets
	BECE-557	Drone Technology

	Course Name	Course Title
Open Elective-III	BELE-540	HVDC Transmission System
	BCIV-183	Planning for Sustainable Development
	BCSE-541	Mobile App Development
	BCSE-572	Soft Computing
Open Elective IV	BCSE-532	Cloud Computing
	BELE-537	Wind and Solar Energy Systems
	BCSE-604	Artificial Neural Network

OR

*** Scheme 2 (Internship Based)**

S. No.	Course Code	Category	Course Title	Hours Per Week			Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	TH	SES	P/V	Total		
1	BECE-564	Training	Training Viva- II	0	0	0	0	100	0	100	0	1.5
2	BECE-565	Internship	Industrial Internship	0	0	32	0	0	700	700	32	19
Total				0	0	32	0	100	700	800	32	20.5



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Neeraj

Semester VIII (Fourth year]
Branch/Course Electronics & Communication Engineering

S No	Category	Course Code	Course Title	Teaching Schedule				Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	Total	TH	SES	P/V	Total		
1	Specialization		Program Elective -6	3	0	0	3	60	40	0	100	3	3
2	Specialization		Program Elective -7	3	0	0	3	60	40	0	100	3	3
3	Project	BECE-550	Project Stage II	0	0	4	4	0	60	40	100	4	2
Total				6	0	4	10	120	140	40	300	10	8





Note: Student can earn 3 credits through MOOC / Swayam courses in a semester which can be used in place of any subject having same credit value in that semester only.

Program Elective-6	BECE-543	Fiber Optic Communication
	BECE-544	Mixed Signal Design
	BECE-545	Speech and Audio Processing
	BECE-552	Robotics
	BECE-553	Embedded C & Interfacing
Program Elective-7	BECE-546	Satellite Communication
	BECE-547	Error Correcting Codes
	BECE-548	Scientific Computing
	BECE-549	Internet of Things
	BECE-556	VLSI

OR

Semester VIII [Fourth year]
Branch/Course: Electronics and Communication Engineering

S. No.	Course Code	Category	Course Title	Hours Per Week			Exam Scheme (Marks)				Total Contact Hours	Credits
				L	T	P	TH	SES	P/V	Total		
1	BECE-551	Core	Project Stage-III/ Internship	0	0	16	0	0	300	300	16/8 weeks	8

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