

## BCA PROGRAM STRUCTURE

	<b>Credits</b>
<b>First Semester</b>	
• Programming for Problem Solving	4
• Introduction to Web Technology	4
• Fundamentals of Computer Applications	3
• Digital Electronics	3
• Mathematics for Computer Applications	3
• Fundamentals of Management	2
• Business English for Non-Native Speakers	2
<b>Second Semester</b>	
• Data Structures	4
• Database Management Systems	4
• Computer Networks	3
• Computer Organization and Architecture	3
• Fundamentals of Probability and Statistics	3
• Environmental Studies	2
• The Art of the Job Interview	2
<b>Third Semester</b>	
Core Subjects	
• Design and Analysis of Algorithms	3
• Object Oriented Programming Paradigm in JAVA	4
• Operating System	3
• Fundamentals of Discrete Mathematics	3
• Logical Reasoning for Computer Science	2
<b>Specialization</b>	
• Programme Elective I	3
<b>Fourth Semester</b>	
Core Subjects	
• Basics of Python Programming	4
• Big Data Analysis	4
• Software Engineering	3
• Data Visualization	3
• Introduction to Computer Graphics	3
• Quantitative Aptitude for Computer Science	2
Specialization	
• Programme Elective II	3
<b>Fifth Semester</b>	
Core Subjects	
• Advanced Application Development	4
• Generative AI	3
• Project I	10

Specialization

- Programme Elective III 3

**Sixth Semester**

Core Subjects

- Computer Vision 3
- Digital Image Processing 3
- Project II 16

Specialization

- Programme Elective IV 3
- Programme Elective V 3

Learners will be allowed to select any one specialization during the third semester. Once selected, the same will continue till 6<sup>th</sup> semester

Total Credit= 130

PROGRAMME SPECIALIZATIONS/ PROGRAM ELECTIVES

Specialization	Third Semester	Fourth Semester	Fifth Semester	Sixth Semester
Cyber security	Introduction To Cyber Security	Ethical Hacking Fundamentals	Information Security and Cryptosystems	<ul style="list-style-type: none"> <li>• Cyber Security Incident Response Management</li> <li>• Cyber Forensics</li> </ul>
Data Science	Introduction to Data Science	Inferential Statistics	Business Analytics	<ul style="list-style-type: none"> <li>• Exploratory Data Analysis</li> <li>• Pattern Recognition</li> </ul>
AI/ML	Fundamentals of AI/ML	Inferential Statistics	Deep Learning and Neural Networks	<ul style="list-style-type: none"> <li>• Predictive Analysis</li> <li>• Pattern Recognition</li> </ul>
Cloud & Mobile Computing	Introduction to Cloud Computing	Fundamentals of Mobile Computing	Principles of Virtualization	<ul style="list-style-type: none"> <li>• Security in Mobile and Cloud Environments</li> <li>• Serverless Computing in the Cloud</li> </ul>