



PROGRAM STRUCTURE

**B.Tech Program in
Computer Science & Engineering (CSE)**

Duration: 4 Years

Batch: 2026–2030

**School of Computer Science Engineering and Technology,
Bennett University**

Year 1 – Semester 1

[illegible]

Year 1 – Semester 2

[illegible]

Year 2 – Semester 3

[illegible]

Year 2 – Semester 4

[illegible]

Year 3 – Semester 5

[illegible]

Year 3 – Semester 6

[illegible]

Year 4 – Semester 7

[illegible]

Year 4 – Semester 8

[illegible]

GE/MDC Electives (Additional courses offered by other Schools of BU will also be included)

[illegible]

Global Pathway Electives

[illegible]

LIST OF ELECTIVE & SPECIALISATION COURSES

Specialization: Artificial Intelligence							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Statistical Machine Learning	AI-1	3	0	2	4
2		Intelligent Model Design using AI	AI-2	3	0	2	4
Specialization Electives: Artificial Intelligence							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Advanced Computer Vision and Video Analytics		2	0	2	3
2		Cognitive Modelling		2	0	2	3
3		Probability and Random Processes		2	0	2	3
4		AI in Healthcare		2	0	2	3
5		Image and Video Processing		2	0	2	3
6		Information Retrieval and Search Engine		2	0	2	3
7		Natural Language Processing		2	0	2	3
8		Social Network Analysis		2	0	2	3
9		Reinforcement Learning		2	0	2	3
10		Special Topics in Artificial Intelligence		2	0	2	3
11		Emerging Topics in Artificial Intelligence		2	0	2	3
12		Introduction to Generative Artificial Intelligence		2	0	2	3
13		Advanced Topics in Generative Artificial Intelligence		2	0	2	3
14		Generative AI and Large Language Models on AWS		2	0	2	3
15		Prompt Engineering for Generative AI		2	0	2	3
Specialization: Blockchain							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Blockchain Foundations	Blockchain-1	3	0	2	4
2		Blockchain Engineering	Blockchain-2	3	0	2	4
Specialization Electives: Blockchain							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Blockchain Technologies: Platforms & Applications		2	0	2	3
2		Smart Contracts and Solidity Programming		2	0	2	3
3		Digital Currencies and Blockchain		2	0	2	3
4		Blockchain Policy: Legal, Social and Economic Impact		2	0	2	3
5		Cyber Security with Blockchain		2	0	2	3
6		Web Development for Blockchain Applications		2	0	2	3
7		Security and Privacy for Big Data Analytics		2	0	2	3
8		Modern Cryptography		2	0	2	3
9		Cloud Infrastructure and Services		2	0	2	3
10		Special Topics in Blockchain		2	0	2	3
11		Emerging Topics in Blockchain		2	0	2	3
Specialization: Cyber Security							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Linux and Shell Programming	Cyber Security-1	3	0	2	4
2		System and Network Security	Cyber Security-2	3	0	2	4
Specialization Electives: Cyber Security							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Cyber Security with Blockchain		2	0	2	3
2		Malware Analysis for Mobile Devices		2	0	2	3
3		Modern Cryptography		2	0	2	3
4		Security and Privacy for Big Data Analytics		2	0	2	3
5		Device Level IoT Security		2	0	2	3
6		Vulnerability Analysis in Network Protocols		2	0	2	3
7		Penetration Testing, Auditing and Ethical Hacking		2	0	2	3
8		Forensics and Cyber Law		2	0	2	3
9		Web Security		2	0	2	3
10		Special Topics in Information Security		2	0	2	3
11		Cloud Security and Compliances		2	0	2	3
12		Emerging Topics in Cyber Security		2	0	2	3
Specialization: Data Science							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Data Analysis using Python	Data Science-1	3	0	2	4
2		Data Mining and Predictive Modelling	Data Science-2	3	0	2	4
Specialization Electives: Data Science							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Digital Marketing and Trend Analysis		2	0	2	3
2		Structural Equation Modelling		2	0	2	3
3		Time Series Analysis		2	0	2	3
4		Data Visualization and Dashboards		2	0	2	3
5		Security and Privacy for Big Data Analytics		2	0	2	3
6		Social Network Analysis		2	0	2	3
7		Big Data Analytics and Business Intelligence		2	0	2	3
8		Advanced Database Management System		2	0	2	3

9		Satellite Data Analysis		2	0	2	3
10		Special Topics in Data Science		2	0	2	3
11		Emerging Topics in Data Science		2	0	2	3
Specialization: Gaming							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Graphics and Visual Computing	Gaming-1	3	0	2	4
2		Game Engine and Architecture	Gaming-2	3	0	2	4
Specialization Electives: Gaming							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		VR Gaming		2	0	2	3
2		Augmented Reality		2	0	2	3
3		Game Mechanics and Game Physics		2	0	2	3
4		Game Programming with HTML5		2	0	2	3
5		AI for Games		2	0	2	3
6		Animation and Rendering Techniques		2	0	2	3
7		Pixel and Poly Arts for Games		2	0	2	3
8		Game Design, Development and Programming		2	0	2	3
9		Special Topics in Gaming		2	0	2	3
10		Emerging Topics in Gaming		2	0	2	3

Specialization: Robotic Process Automation							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Robotic Process Automation Essentials	RPA-1	3	0	2	4
2		Digital Bots Development	RPA-2	3	0	2	4
Specialization Electives: Robotic Process Automation							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Digital Process Automation Architecture		1	0	4	3
2		Enterprise Process Automation Frameworks		2	0	2	3
3		Cloud Infrastructure and Services		2	0	2	3
4		Continuous Integration and Deployment in DevOps		2	0	2	3
5		Server-Side Development Frameworks: Express and Spring		2	0	2	3
6		Special Topics in RPA		2	0	2	3
7		Emerging Topics in RPA		2	0	2	3
Specialization: DevOps							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Software Development with DevOps	DevOps-1	3	0	2	4
2		DevOps Practices and Principles	DevOps-2	3	0	2	4
Specialization Electives: DevOps							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Build and Release Management in DevOps		2	0	2	3
2		Cloud Services Development and Operations		2	0	2	3
3		Source and Version Control in DevOps		2	0	2	3
4		Continuous Integration and Deployment in DevOps		2	0	2	3
5		Software Craftsmanship in DevOps		2	0	2	3
6		Software Containerization in DevOps		2	0	2	3
7		System Provisioning and Configuration Management in DevOps		2	0	2	3
8		Test Automation in DevOps		2	0	2	3
9		Cloud Infrastructure and Services		2	0	2	3
10		Special Topics in DevOps		2	0	2	3
11		Emerging Topics in DevOps		2	0	2	3
Specialization: Full Stack							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Full Stack Development	Full Stack-1	3	0	2	4
2		Programming Methodologies for Backend Development	Full Stack-2	3	0	2	4
Specialization Electives: Full Stack							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Front-End Web UI Frameworks and Tools: Bootstrap		2	0	2	3
2		Front-End Web UI Frameworks and Tools: React Native		1	0	4	3
3		Server-Side Development Frameworks: Express and Spring		2	0	2	3
4		Web Development for Blockchain Applications		2	0	2	3
5		Cloud Infrastructure and Services		2	0	2	3
6		Advanced Database Management System		2	0	2	3
7		Front-End UI Frameworks and Tools: Flutter and Django		1	0	4	3
8		Special Topics in Full Stack		2	0	2	3
9		Emerging Topics in Full Stack		2	0	2	3
Specialization: Cloud Computing							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Cloud Computing	Cloud Computing -1	3	0	2	4
2		Design of Cloud Architectural Solutions	Cloud Computing-2	3	0	2	4
Specialization Electives: Cloud Computing							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Cloud Services Development and Operations		2	0	2	3
2		Cloud System Administration and Operations		2	0	2	3
3		Cloud Security and Compliances		2	0	2	3
4		AWS Cloud Support Associate		2	0	2	3
5		Developing Solutions for Microsoft Azure		2	0	2	3
6		Google Associate Cloud Engineer		2	0	2	3
7		Software Containerization in DevOps		2	0	2	3
8		Cloud Infrastructure and Services		2	0	2	3
9		Special Topics in Cloud Computing		2	0	2	3
10		Emerging Topics in Cloud Computing		2	0	2	3

Specialization: Drones							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Unmanned Aerial Vehicles	Drones-1	3	0	2	4
2		Drone Remote Sensing	Drones-2	3	0	2	4
Specialization Electives: Drones							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Drone Communication		2	0	2	3
2		Drone Applications, Components and Assembly		2	0	2	3
3		UAV Simulation		2	0	2	3
4		Drone Swarming		2	0	2	3
5		UAV Mission Planning and Deployments		2	0	2	3
6		Auto Pilot and Flight Control		2	0	2	3
7		Special Topics in Drone Technology		2	0	2	3
8		Emerging Topics in Drone Technology		2	0	2	3
Specialization: Quantum Computing							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Quantum Computing Foundations	Quantum Computing-1	3	0	2	4
2		Machine Learning with Quantum Computing	Quantum Computing-2	3	0	2	4
Specialization Electives: Quantum Computing							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Quantum Computing for Data Analysis		2	0	2	3
2		Quantum Information Theory		2	0	2	3
3		Quantum Computer Architecture		2	0	2	3
4		Quantum Cryptography		2	0	2	3
5		Special Topics in Quantum Computing		2	0	2	3
6		Cloud Infrastructure and Services		2	0	2	3
7		Security and Privacy for Big Data Analytics		2	0	2	3
8		Emerging Topics in Quantum Computing		2	0	2	3
Specialization: IoT and Robotics							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Microcontrollers, Robotics & Embedded Systems	IOT-1	3	0	2	4
2		IoT Networks and Protocols	IOT-2	3	0	2	4
Specialization Electives: IoT and Robotics							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Robotics: Dynamics and Controls		2	0	2	3
2		IoT Analytics		2	0	2	3
3		IoT: Security and Attacks		2	0	2	3
4		Device Level IoT Security		2	0	2	3
5		Humanoids		2	0	2	3
6		Mobile IoT Networks		2	0	2	3
7		Special Topics in IoT		2	0	2	3
8		Emerging Topics in IoT and Robotics		2	0	2	3
Specialization: Augmented & Virtual Reality							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Augmented Reality Foundations	AR & VR -1	3	0	2	4
2		VR and 360 Video Production	AR & VR -2	3	0	2	4
Specialization Electives: Augmented & Virtual Reality							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Augmented Reality and ARCore		2	0	2	3
2		Animation and Rendering Techniques		2	0	2	3
3		3D Models for Augmented and Virtual Reality		2	0	2	3
4		Building Social VR with 3D Characters		2	0	2	3
5		Virtual Reality: Interface, Application and Design		2	0	2	3
6		Special Topics in AR and VR		2	0	2	3
7		Emerging Topics in Augmented & Virtual Reality		2	0	2	3

Specialization: Product Design Technology							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Product Design Principles and Practices	PDT-1	3	0	2	4
2		Product Design Architecture and Delivery	PDT-2	3	0	2	4
Specialization Electives: Product Design Technology							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Art, Craft and Design		2	0	2	3
2		3D Models for Augmented and Virtual Reality		2	0	2	3
3		Agile Software Development		2	0	2	3
4		Product Design Technologies and Tools		0	0	6	3
5		Animation and Rendering Techniques		2	0	2	3
6		Special Topics in Product Design Technology		2	0	2	3
7		Design and Manufacturing for Digital Products		2	0	2	3
8		Fashion Design Technology		2	0	2	3
9		Furniture Design		2	0	2	3
10		Emerging Topics in Product Design Technology		2	0	2	3
Specialization: Mobile Technologies							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		Fundamentals in Swift Programming	Mobile Technology - 1	3	0	2	4
2		Advance Swift Programming	Mobile Technology - 2	3	0	2	4
Specialization Electives: Mobile Technologies							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		iOS Application Development		2	0	2	3
2		Mobile Application Development		2	0	2	3
3		Design Patterns and UI Testing		2	0	2	3
4		iOS Machine Learning		0	0	6	3
5		Backend in iOS		2	0	2	3
6		Front-End Web UI Frameworks and Tools: Bootstrap		2	0	2	3
7		Special Topics in Mobile Technologies		2	0	2	3
8		Emerging Topics in Mobile Technologies		2	0	2	3
Specialization: UI/UX							
Specialization Core							
S.No.	Code	Title	Specialization	L	T	P	Cr
1		UX Design Foundations	UI/UX -1	3	0	2	4
2		UI/UX Design for Human Computer Interface	UI/UX -2	3	0	2	4
Specialization Electives: UI/UX							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		User Centered Design		2	0	2	3
2		Strategic UI/UX Design: From Concept to Market Success		2	0	2	3
3		UX Research and Data Analytics		2	0	2	3
4		UI/UX Design Testing and Evaluation		2	0	2	3
5		Product Management for UX Designers		2	0	2	3
6		Special Topics in Full Stack		2	0	2	3
7		Build and Release Management in DevOps		2	0	2	3
8		Source and Version Control in DevOps		2	0	2	3
9		Continuous Integration and Deployment in DevOps		2	0	2	3
General Electives (Elective II, IV, V)							
S.No.	Code	Title	Pre-requisite	L	T	P	Cr
1		Current Technology Project		2	0	2	3
2		Information Retrieval		2	0	2	3
3		User Centered Design		2	0	2	3
4		Secure Coding		2	0	2	3
5		Compiler Construction		2	0	2	3
6		Software Project Management		2	0	2	3
7		Digital Communication		2	0	2	3
8		Soft Computing		2	0	2	3
9		Embedded Systems		2	0	2	3
10		Distributed Computing		2	0	2	3
11		Engineering Optimization		2	0	2	3
12		Wireless Networks		2	0	2	3
13		Combinatorics		2	0	2	3
14		Mobile and Networked Embedded Systems		2	0	2	3
15		Problem Solving using C		2	0	2	3
16		Programming using C++		2	0	2	3
17		Deep Learning		2	0	2	3
18		Bioinformatics and Computational Genomics		2	0	2	3
19		Augmented Reality		2	0	2	3
20		Computational Geometry		2	0	2	3
21		Advances in AI		2	0	2	3
22		Advanced Computer Vision and Video Analytics		2	0	2	3

23		Cognitive Modelling		2	0	2	3
24		Probability and Random Processes		2	0	2	3
25		AI in Healthcare		2	0	2	3
26		Image and Video Processing		2	0	2	3
27		Information Retrieval and Search Engine		2	0	2	3
28		Natural Language Processing		2	0	2	3
29		Social Network Analysis		2	0	2	3
30		Reinforcement Learning		2	0	2	3
31		Special Topics in Artificial Intelligence		2	0	2	3
32		Blockchain Technologies: Platforms & Applications		2	0	2	3
33		Smart Contracts and Solidity Programming		2	0	2	3
34		Digital Currencies and Blockchain		2	0	2	3
35		Blockchain Policy: Legal, Social and Economic Impact		2	0	2	3
36		Cyber Security with Blockchain		2	0	2	3
37		Web Development for Blockchain Applications		2	0	2	3
38		Security and Privacy for Big Data Analytics		2	0	2	3
39		Modern Cryptography		2	0	2	3
40		Cloud Infrastructure and Services		2	0	2	3
41		Special Topics in Blockchain		2	0	2	3
42		Malware Analysis for Mobile Devices		2	0	2	3
43		Device Level IoT Security		2	0	2	3
44		Vulnerability Analysis in Network Protocols		2	0	2	3
45		Penetration Testing, Auditing and Ethical Hacking		2	0	2	3
46		Forensics and Cyber Law		2	0	2	3
47		Web Security		2	0	2	3
48		Special Topics in Information Security		2	0	2	3
49		Digital Marketing and Trend Analysis		2	0	2	3
50		Structural Equation Modelling		2	0	2	3
51		Time Series Analysis		2	0	2	3
52		Data Visualization and Dashboards		2	0	2	3
53		Big Data Analytics and Business Intelligence		2	0	2	3
54		Advanced Database Management System		2	0	2	3
55		Satellite Data Analysis		2	0	2	3
56		Special Topics in Data Science		2	0	2	3
57		VR Gaming		2	0	2	3
58		3D Models for Augmented and Virtual Reality		2	0	2	3
59		Game Mechanics and Game Physics		2	0	2	3
60		Game Programming with HTML5		2	0	2	3
61		AI for Games		2	0	2	3
62		Animation and Rendering Techniques		2	0	2	3
63		IoT: Security and Attacks		2	0	2	3
64		Humanoids		2	0	2	3
65		Mobile IoT Networks		2	0	2	3
66		Special Topics in IoT		2	0	2	3
67		Augmented Reality and ARCore		2	0	2	3
68		Building Social VR with 3D Characters		2	0	2	3
69		Virtual Reality: Interface, Application and Design		2	0	2	3
70		Special Topics in AR and VR		2	0	2	3
71		Network Drivers and Protocols		2	0	2	3
72		Digital Signal Processing		2	0	2	3
73		Special Topics in Computer Science		2	0	2	3
74		Advanced Microprocessor		2	0	2	3
75		Design and Manufacturing for Digital Products		2	0	2	3
76		Art, Craft and Design		2	0	2	3
77		Fashion Design Technology		2	0	2	3
78		Furniture Design		2	0	2	3
79		Product Design Technologies and Tools		2	0	2	3
80		Special Topics in Product Design Technology		2	0	2	3
81		Pixel and Poly Arts for Games		2	0	2	3
82		Game Design, Development and Programming		2	0	2	3
83		Special Topics in Gaming		2	0	2	3
84		Digital Process Automation Architecture		1	0	4	3
85		Enterprise Process Automation Frameworks		2	0	2	3
86		Continuous Integration and Deployment in DevOps		2	0	2	3
87		Server-Side Development Frameworks: Express and Spring		2	0	2	3
88		Special Topics in RPA		2	0	2	3
89		Build and Release Management in DevOps		2	0	2	3
90		Cloud Services Development and Operations		2	0	2	3
91		Source and Version Control in DevOps		2	0	2	3
92		Software Craftsmanship in DevOps		2	0	2	3
93		Software Containerization in DevOps		2	0	2	3
94		System Provisioning and Configuration Management in DevOps		2	0	2	3
95		Test Automation in DevOps		2	0	2	3

96		Agile Software Development		2	0	2	3
97		Special Topics in DevOps		2	0	2	3
98		Front-End Web UI Frameworks and Tools: Bootstrap		2	0	2	3
99		Front-End Web UI Frameworks and Tools: React Native		1	0	4	3
100		Front-End UI Frameworks and Tools: Flutter and Django		1	0	4	3
101		Special Topics in Full Stack		2	0	2	3
102		Cloud System Administration and Operations		2	0	2	3
103		Cloud Security and Compliances		2	0	2	3
104		AWS Cloud Support Associate		2	0	2	3
105		Developing Solutions for Microsoft Azure		2	0	2	3
106		Google Associate Cloud Engineer		2	0	2	3
107		Special Topics in Cloud Computing		2	0	2	3
108		Drone Communication		2	0	2	3
109		Drone Applications, Components and Assembly		2	0	2	3
110		UAV Simulation		2	0	2	3
111		Drone Swarming		2	0	2	3
112		UAV Mission Planning and Deployments		2	0	2	3
113		Auto Pilot and Flight Control		2	0	2	3
114		Special Topics in Drone Technology		2	0	2	3
115		Quantum Computing for Data Analysis		2	0	2	3
116		Quantum Information Theory		2	0	2	3
117		Quantum Computer Architecture		2	0	2	3
118		Quantum Cryptography		2	0	2	3
119		Special Topics in Quantum Computing		2	0	2	3
120		Robotics: Dynamics and Controls		2	0	2	3
121		IoT Analytics		2	0	2	3
122		Android Application using Kotlin		2	0	2	3
123		Modern and Contemporary Application in CS		2	0	2	3
124		Latest Advances in Engineering and Technology		2	0	2	3
125		Emerging Topics in Artificial Intelligence		2	0	2	3
126		Emerging Topics in Blockchain		2	0	2	3
127		Emerging Topics in Cyber Security		2	0	2	3
128		Emerging Topics in Data Science		2	0	2	3
129		Emerging Topics in Gaming		2	0	2	3
130		Emerging Topics in RPA		2	0	2	3
131		Emerging Topics in DevOps		2	0	2	3
132		Emerging Topics in Full Stack		0	0	6	3
133		Emerging Topics in Cloud Computing		2	0	2	3
134		Emerging Topics in Drone Technology		2	0	2	3
135		Emerging Topics in Quantum Computing		2	0	2	3
136		Emerging Topics in IoT and Robotics		2	0	2	3
137		Emerging Topics in Augmented & Virtual Reality		2	0	2	3
138		Emerging Topics in Product Design Technology		2	0	2	3
139		iOS Application Development		2	0	2	3
140		Mobile Application Development		2	0	2	3
141		Design Patterns and UI Testing		0	0	6	3
142		iOS Machine Learning		2	0	2	3
143		Backend in iOS		2	0	2	3
144		Special Topics in Mobile Technologies		2	0	2	3
145		Emerging Topics in Mobile Technologies		2	0	2	3
146		Computational topo-geometrical data analysis		2	0	2	3
147		MLOps		2	0	2	3
148		Full Stack Blockchain Practices		2	0	2	3