B.Sc. IT in Dual Specialisation (3/4* year) Programme
Study Scheme

First Semester												
S. No	**Course Type**	**Course Name**	**Course Code**	**L**	**T**	**P**	**Total**	**Int marks**	**Ext marks**	**Total**	**Duration of Exam**	**Credits**
1	Core	Python Programming	BSCIT-DS-101	3			3	100	100	200	3	3
2	Core	Operating System	BSCIT-DS-102	3			3	100	100	200	3	3
3	Fundamentals	Linear Algebra and Statistical Techniques	BSCIT-DS-103	3			3	100	100	200	3	3
4	Fundamentals	Placement Competency Enhancement-I	CDC-111		4		4	50	50	100	3	2
5	Core	Python Programming Lab	BSCIT-DS-151			4	4	50	50	100	3	2
Total Credits												**13**

Second Semester												
S. No	**Course Type**	**Course Name**	**Course Code**	**L**	**T**	**P**	**Total**	**Int marks**	**Ext marks**	**Total**	**Duration of Exam**	**Credits**
1	Core	Data Structure & Algorithm	BSCIT-DS-201	3			3	100	100	200	3	3
2	Core	Web Applications Development	BSCIT-DS-202	3			3	100	100	200	3	3
3	Core	Database Management System	BSCIT-DS-203	3			3	100	100	200	3	3
4	Fundamentals	Environmental Studies	CH-202B	3	1		4	100	100	200	3	3+1*
5	Core	Data Structure & Algorithm Lab	BSCIT-DS-251			4	4	50	50	100	3	2
6	Core	Web Applications Development Lab	BSCIT-DS-252			4	4	50	50	100	3	2
7	Core	Database Management System Lab	BSCIT-DS-253			4	4	50	50	100	3	2
8	Core	Placement Competency Enhancement-II	CDC-112		4		4	50	50	100	3	2
Total Credits												**21**

Third Semester												
S.No	**Course Type**	**Course Name**	**Course Code**	**L**	**T**	**P**	**Total**	**Int marks**	**Ext marks**	**Total**	**Duration of Exam**	**Credits**
1	Core	Object Oriented Programming using Java	BSCIT-DS- 301	3			3	100	100	200	3	3
2	Core	Computer Networks	BSCIT-DS- 302	3			3	100	100	200	3	3
3	Core	Computer Architecture & Organization	BSCIT-DS- 303	3			3	100	100	200	3	3
4	Fundamentals	Placement Competency Enhancement-III	CDC- 211		4		4	50	50	100	3	2
5	Core	Research Innovation Catalyst- I	BSCIT-RIC- I		1		1	50	-	50	3	0.5
6	Core	Object Oriented Programming using Java Lab	BSCIT-DS- 351			4	4	50	50	100	3	2
7	Domain Elective	Elective-I		2			2	100	100	200	3	2
8	Domain Elective	Elective-II		2			2	100	100	200	3	2
9	Core	System Programming	BSCIT-DS-304	3			3	100	100	200	3	3
Total Credit												**20.5**

	CC/IoT	**CS/ Blockchain**	**FSD/DevOps**	**MM/ Gaming**	**MC/ Networking**
	Cloud Computing	**Cyber Security**	**FSD**	**Multimedia**	**Mobile Computing**

Elective-I	Cloud Fundamentals (BSCIT-CC-001)	Introduction to Cyber Security (BSCIT-CS-001)	Beginner Full Stack Web Development: HTML, CSS, React and Node (BSCIT-FSD-001)	Introduction to Graphic Design (BSCIT-MM-001)	Basics of Communication Technology (BSCIT-MC-001)
	Virtualisation Concepts (BSCIT-CC-002)	Cyber Security for Everyone (BSCIT-CS-002)	FSD and Social Network: PHP, MySQL, JS (BSCIT-FSD-002)	2D and 3D Animation (BSCIT-MM-002)	Introduction to Mob

					ile Computing and Wireless Computing (BSCIT-MC-002)
	IoT	**BlockChain**	**DevOps**	**Gaming with AR VR**	**Networking**
Elective-II	Basics of Networking (BSCIT-IOT-001)	Introduction to Blockchain (BSCIT-BC-001)	Introduction to DevSecOps (BSCIT-DO-001)	Game Art and Design Fund	Introduc

				amentals (BSCIT-AR-001)	tion to Data Communications (BSCIT-CN-001)
	Introduction to Internet of Things (BSCIT-IOT-002)	Blockchain Foundations and Use Cases (BSCIT-BC-002)	DevOps Foundations: Software Development Optimization (BSCIT-DO-002)	Game Engine (BSCIT-AR-002)	Basics of Computer Networki

					ng (BSCIT-CN-002)							
Fourth Semester												
S.No	**Course Type**	**Course Name**	**Course Code**	**L**	**T**	**P**	**Total**	**Int marks**	**Ext marks**	**Total**	**Duration of Exam**	**C**
1	Core	Software engineering	BSCIT-DS-401	3			3	100	100	200	3	
2	Core	Cloud Computing	BSCIT-DS-402	3			3	100	100	200	3	
3	Core	Relational Database Management system	BSCIT-DS-403	3			3	100	100	200	3	
4	Fundamentals	Placement Competency Enhancement-IV	CDC- 212		4		4	50	50	100	3	
5	Core	Cloud Computing Lab	BSCIT-DS-452			4	4	50	50	100	3	
6	Core	Relational Database Management System Lab	BSCIT-DS-453			4	4	50	50	100	3	
7	Domain Elective	**Elective-III**		2			2	100	100	200	3	
8	Domain Elective	**Elective-IV**		2			2	100	100	200	3	
9	Core	Research Innovation Catalyst-II	BSCIT-RIC-II		1		1	50	-	50	3	
10	Core	Vocational Training (6 Weeks)	BSCIT-DS-454					200	-	200	3	
11	Core	Data Mining	BSCIT-DS-404	3			3	100	100	200	3	
Total Credit												

	CC/IoT	**CS/ Blockchain**	**FSD/ DevOps**	**MM/ Gaming**	**MC/ Networking**
	Cloud Computing	**Cyber Security**	**FSD**	**Multimedia**	**Mobile Computing**
Elective-III	Cloud Architecture (BSCIT-CC-003)	IT fundamentals for Cyber Security (BSCIT-CS-003)	FSD with Django (BSCIT-FSD-003)	Visual Effects (BSCIT-MM-003)	Mobile Ad-hoc Networks (BSCIT-MC-003)
	Cloud & Machine Learning (BSCIT-CC-004)	Cyber Security Tools and Cyber Attacks (BSCIT-CS-004)	FSD with Angular (BSCIT-FSD-004)	Multimedia and web Design (BSCIT-MM-004)	Programming Mobile Devices (BSCIT-MC-004)

	IoT	BlockChain	DevOps	Gaming with AR VR	Networking
Elective-IV	IoT Architecture (BSCIT-IOT-003)	Blockchain Architecture (BSCIT-BC-003)	DevOps on AWS (BSCIT-DO-003)	Understanding AR concepts and Technologies (BSCIT-AR-003)	Network Troubleshooting Standards and Practices (BSCIT-CN-003)
	IoT Protocols (BSCIT-IOT-004)	Bitcoin and Crypto currency Technologies (BSCIT-BC-004)	DevOps and Cloud Virtualization (BSCIT-DO-004)	Understanding VR concepts and Technologies (BSCIT-AR-004)	Introduction to Computer Network Security (BSCIT-CN-004)

Fifth Semester												
S.No	**Course Type**	**Course Name**	**Course Code**	**L**	**T**	**P**	**Total**	**Int marks**	**Ext marks**	**Total**	**Duration of Exam**	**Credits**
1	Core	Big Data Analytics	BSCIT-DS- 501	3			3	100	100	200	3	3
2	Core	System Administration and Maintenance	BSCIT-DS- 502	3			3	100	100	200	3	3
3	Core	Big Data Analytics Lab	BSCIT-DS- 551			4	4	50	50	100	3	2
4	Core	Research Innovation Catalyst-III	BSCIT-RIC- III			2	2	100	-	100	3	1
5	Domain Elective	**Elective-V**		2			2	100	100	200	3	2
6	Domain Elective	**Elective-VI**		2			2	100	100	200	3	2
7	Core	Mobile Applications Development	BSCIT-DS- 504	3			3	100	100	200	3	3
8	Core	Mobile Applications Development Lab	BSCIT-DS- 554			4	4	50	50	100	3	2
Total Credits												**18**

	CC/IoT	CS/ Blockchain	DevOps/FSD	MM/ Gaming	MC/ Networking
	Cloud Computing	**Cyber Security**	**FSD**	**Multimedia**	**Mobile Computing**
Elective-V	Private and Public Cloud Environment (BSCIT-CC-005)	CyberSecurity in Cloud (BSCIT -CS-005)	Gaming Technology-I (BSCIT -FSD-005)	Multimedia Technologies and Digital Photography (BSCIT-MM-005)	Mobile Commerce (BSCIT-MC-005)
	IoT Cloud Infrastructure	CyberSecurity Analyst	Spring Framework	Multimedia Technologies	Distributed Systems

	(BSCIT-CC-006)	Fundamentals (BSCIT-CS-006)	(BSCIT-FSD-006)	and Typography (BSCIT-MM-006)	(BSCIT-MC-006)
	IoT	**Block Chain**	**DevOps**	**Gaming with AR VR**	**Networking**
Elective VI	IoT Security (BSCIT-IOT-005)	Blockchain and Smart Contracts (BSCIT-BC-005)	Linux Cloud and DevOps (BSCIT-DO-005)	Gaming and Virtual Reality (BSCIT-AR-005)	Networking Services (BSCIT-CN-005)
	Iot and Arduino (BSCIT-IOT-006)	Blockchain Platforms (BSCIT-BC-006)	DevOps, Cloud & Agile Foundations (BSCIT-DO-006)	Gaming and Augmented Reality (BSCIT-AR-006)	Computer Networks and Cloud (BSCIT-CN-006)

Sixth Semester												
S.No	**Course Type**	**Course Name**	**Course Code**	**L**	**T**	**P**	**Total**	**Int marks**	**Ext marks**	**Total**	**Duration of Exam**	**Credits**
1	Core	PHP Programming	BSCIT-DS- 601	3			3	100	100	200	3	3
2	Core	Internet Technologies	BSCIT-DS- 602	3			3	100	100	200	3	3
3	Core	PHP Programming Lab	BSCIT-DS- 651			4	4	50	50	100	3	2
4	Core	Internet Technologies Lab	BSCIT-DS- 652			4	4	50	50	100	3	2
5	Domain Elective	**Elective-VII**		2			2	100	100	200	3	2
6	Domain Elective	**Elective-VIII**		2			2	100	100	200	3	2
7	Core	Software Testing	BSCIT-DS- 603	3			3	100	100	200	3	3
8	Core	Software Testing Lab	BSCIT-DS- 653			4	4	50	50	100	3	2
Total Credits												**19**

	CC/IoT	**CS/ Blockchain**	**FSD/ DevOps**	**MM/ Gaming**	**MC/ Networking**
	Cloud Computing	**Cyber Security**	**FSD**	**Multimedia**	**Mobile Computing**
Elective-VII	Cloud DevOpSec (BSCIT-CC-007)	CyberSecurity, IDS, Firewalls and HoneyPots (BSCIT-CS-007)	Gaming Technology-II (BSCIT-FSD-007)	Multimedia and Game Development (BSCIT-MM-007)	Security in Wireless and Mobile Systems (BSCIT-MC-007)
	Agile Cloud Automation (BSCIT-CC-008)	CyberSecurity Forensics (BSCIT-CS-008)	Advanced Web Technologies (BSCIT-FSD-008)	Multimedia and Visual Communication (BSCIT-MM-008)	Wireless Sensor Networks (BSCIT-MC-008)

	IoT	Block Chain	DevOps	Gaming with AR VR	Networking
Elective-VII	Cloud and IoT Integration (BSCIT-IOT-007)	Introduction to Cryptography (BSCIT-BC-007)	DevOps and Cloud (BSCIT-DO-007)	Immersive Technology and Media (AR/VR) (BSCIT-AR-007)	Network Management (BSCIT-CN-007)
	IoT and Embedded Systems (BSCIT-IOT-008)	Theory of Computation (BSCIT-BC-008)	DevOps Culture and Mindset (BSCIT-DO-008)	Game Design Document: Define the Art & Concepts (BSCIT-AR-008)	Network Architecture and Solutions (BSCIT-CN-008)

* Students on exit shall be awarded Bachelor of Information Technology (3 years) (in the Field of Study/ Discipline) after securing the requisite 136 credits (104 as core in addition to 16 credits as domain electives and 16 credits as MOOC/Open elective courses) on completion of Semester VI.

Seventh Semester												
S.No	**Course Type**	**Course Name**	**Course Code**	**L**	**T**	**P**	**Total**	**Int marks**	**Ext marks**	**Total**	**Duration of Exam**	**Credits**
1	Core	Digital Marketing	BSCIT-DS- 701	2			2	100	100	200	3	2
2	Core	Advanced Computer Architecture	BSCIT-DS- 702	2			2	100	100	200	3	2
3	Core	**Entrepreneurship/ Dissertation (Minor)/Academic Project on CC/AI/CS/FSD/MM/MC**	BSCIT-DS- 703					100	100	200	3	10
Total Credits												**14**

Eight Semester												
S.No	**Course Type**	**Course Name**	**Course Code**	**L**	**T**	**P**	**Total**	**Int marks**	**Ext marks**	**Total**	**Duration of Exam**	**Credits**
1	Core	Deep Learning	BSCIT-DS- 801	2			2	100	100	200	3	2
2	Core	Network Management System	BSCIT-DS- 802	2			2	100	100	200	3	2
3	Core	**Entrepreneurship/ Dissertation (Major)/Academic Project on IoT/DS/BC/DO/AR/CN**	BSCIT-DS- 803					100	200	300	3	12
Total Credits												**16**

Note: For Successful completion of the 3-year BSc IT degree, the students need to earn 104 credits of compulsory courses, 16 credits of MOOC courses and Open Electives and 16 credits of Specialization Courses.

***The eligible students with 7.5 CGPA in the programme can go for 4th year of the programme and can pursue for 4 year Degree programme (Honours/Research) by earning additional 30 credits in 4th year of the programme. Such students shall be at par with level 8 as per NEP 2020 and can further pursue one year of the programme.**