

# COURSE STRUCTURE

The B.Sc. CSIT curriculum is designed by following the course practiced in accredited international universities. Students of this programme have to study the course of 136 Credit hours dividing the following areas.

S.N.	Courses	Credit Hours
1.	Computer Science Core Courses	84
2.	Natural Science Compulsory Courses	8
3.	Mathematics Courses	12
4.	English Courses	3
5.	Management Courses	3
6.	Computer Science Elective Courses	15
7.	Internship and Project	8
8.	Research Methodology for CS	3
Total		136

The B.Sc. CSIT programme comprises of the following courses :

## Curriculum Schema

### Semester I

Course Code	Course Title	Credit Hours	Full Marks
CSIT. 111	English Grammer & Composition	3	100
CSIT. 112	Information Technology Fundamentals	3	100
CSIT. 113	Calculus and Analytical Geometry	3	100
CSIT. 114	Electronic Principles	3+1	100
CSIT. 115	Programming Fundamentals & C Programming	3	100

### Semester II

Course Code	Course Title	Credit Hours	Full Marks
CSIT. 121	Data Structure & Algorithms	3	100
CSIT. 122	Digital Logic Design	3	100
CSIT. 123	Linear Algebra	3	100
CSIT. 124	Mechanics & Electrodynamics	3+1	100
CSIT. 125	Microprocessor System	3	100

### Semester III

Course Code	Course Title	Credit Hours	Full Marks
CSIT. 211	Computer Organization & architecture	3	100
CSIT. 212	Discrete Structures	3	100
CSIT. 213	Introduction to Management	3	100
CSIT. 214	Object oriented programming with C++	3	100
CSIT. 215	operating system	3	100
CSIT. 216	Statistics and probability	3	100

### Semester IV

Course Code	Course Title	Credit Hours	Full Marks
CSIT. 221	Applied Statistics	3	100
CSIT. 222	Data Communication & Network	3	100
CSIT. 223	Database Management System	3	100
CSIT. 224	Numerical Methods	3	100
CSIT. 225	System Analysis & Design	3	100
CSIT. 226	Theory of Computation	3	100

**Semester V**

Course Code	Course Title	Credit Hours	Full Marks
CSIT. 311	Design & Analysis of Algorithm	3	100
CSIT. 312	Artificial Intelligence	3	100
CSIT. 313	Compiler Design	3	100
CSIT. 314	System Simulation & Modeling	3	100
CSIT. 315	Graphics & Visual Computing	3	100
CSIT. 316	Web Technology I	3	100

**Semester VI**

Course Code	Course Title	Credit Hours	Full Marks
CSIT. 321	Introduction to Cryptography	3	100
CSIT. 322	Java Programming I	3	100
CSIT. 323	Research Methodology for Computer Science	3	100
CSIT. 324	Software Engineering	3	100
CSIT. 325	Web Technology II	3	100
CSIT. 326	Minor Project I	2	100

**Semester VII**

Course Code	Course Title	Credit Hours	Full Marks
CSIT. 411	E- commerce	3	100
CSIT. 412	Advance Java Programming	3	100
CSIT. 413	Object Oriented Analysis & Design	3	100
CSIT. 414	Minor Project II	3	100
<b>Elective I (any one)</b>			
CSIT.415.1	Net Centric Computing	3	100
CSIT.415.2	Database Administration		
CSIT.415.3	System Administration		
CSIT.415.4	Digital Image Processing		
<b>Elective II (any one)</b>			
CSIT.416.1	Data Warehouse & Data Mining	3	100
CSIT.416.2	Geographical Information System		
CSIT.416.3	Management Information System		
CSIT.416.4	Neural Networks		

**Semester VIII**

Course Code	Course Title	Credit Hours	Full Marks
CSIT. 421	Parallel Computing	3	100
CSIT. 422	Internship	4	100
<b>Elective III (any one)</b>			
CSIT.423.1	Enterprise Application Development with Java	3	100
CSIT.423.2	Advanced Database Design		
CSIT.423.3	Network Security		
CSIT.424.4	Real Time Systems		
<b>Elective IV (any one)</b>			
CSIT.424.1	Mobile Applications Development	3	100
CSIT.424.2	Distributed Database Management System		
CSIT.424.3	Wireless Networks		
CSIT.424.4	Cloud Computing		
<b>Elective V (any one)</b>			
CSIT.425.1	Information Retrieval	3	100
CSIT.425.2	E-Governance		
CSIT.425.3	Embedded System Programming		
CSIT.425.4	Human Computer Interaction		
CSIT.426.5	Neural Networks		

**Course Duration:**

The BIT Program Comprises of the Following Courses :

**FIRST SEMESTER**

Course code	Course Title	Course Hours
BIT111	Introduction to Information Technology	3
BIT112	C Programming	3
BIT113	Digital Logic	3
BIT114	Mathematics	3
BIT115	Technology and Society	3
Total		15

**SECOND SEMESTER**

Course code	Course Title	Course Hours
BIT121	Data Structure and Algorithms	3
BIT122	Object Oriented Programming	3
BIT123	Discrete Structure	3
BIT124	Probability and Statistics	3
BIT125	Technical Writing & Communication Skill	3
Total		15

**THIRD SEMESTER**

Course code	Course Title	Course Hours
BIT211	Computer Architecture	3
BIT212	Web Technology 1	3
BIT213	Database Management System	3
BIT214	Computer Graphics	3
BIT215	Principles of Management	3
Total		15

**FOURTH SEMESTER**

Course code	Course Title	Course Hours
BIT221	System Analysis and Design	3
BIT222	Data Communication and Networking	3
BIT223	Operating System	3
BIT224	Web Technology II	3
BIT225	Numerical Methods	3
Total		15

**FIFTH SEMESTER**

Course code	Course Title	Course Hours
BIT311	Information Security	3
BIT312	Software Engineering	3
BIT313	Python Programming	3
BIT314	Artificial Intelligence	3
BIT315	Project 1	2
Total		14

**SIXTH SEMESTER**

Course code	Course Title	Course Hours
BIT321	Cloud Computing	3
BIT322	Cyber Security	3
BIT323	Data Science	3
BIT324	Research Methodology	3
BIT325	NET Development	3
Total		15

**SEVENTH SEMESTER**

Course code	Course Title	Course Hours
BIT411	E-commerce & Digital marketing	3
BIT412	Dev Ops	3
BIT413	Database Administration	3
BIT414	Project II	3
BIT415	Elective I	3
Total		15

## EIGHTH SEMESTER

Course code	Course Title	Course Hours
BIT421	Data Warehousing and Data Mining	3
BIT422	Mobile App Development	3
BIT423	Elective II	3
BIT424	Internship	6
Total		18

**TOTAL CREDIT HOURS : 121**

### List of Elective Subjects

1. Geographical Information System
2. DSS and Expert System
3. Simulation and Modeling
4. Image processing
5. Network Security
6. Internet of Things
7. Wireless Communication
8. Multimedia System
9. Big Data and Analytics
10. System and Network Administration
11. Health Information System
12. Management Information System
13. Business Intelligence
14. Digital Governance
15. IT Ethics & Policies
16. Blockchain Technology



# COURSE STRUCTURE

Master of Science in Computer Science and Information Technology

The entire course is of four semesters (Two academic years)

## FIRST SEMESTER

Course code	Course Title	Course Hours
CSIT.511	Advanced Operating System	3
CSIT.512	Object Oriented Software Engineering	3
CSIT.513	Computational Complexity	3
CSIT.514	Python for Data Science	3
CSIT.515	Research Methodology for Computer Science	3
CSIT.516	Seminar I	1
<b>Total</b>		<b>16</b>

## SECOND SEMESTER

Course code	Course Title	Course Hours
CSIT.521	Compiler Optimization	3
CSIT.522	Soft Computing	3
CSIT.523	Machine Learning	3
CSIT.524	System Programming	3
CSIT.525	Principles of Programming Language	3
CSIT.526	Seminar II	1
<b>Total</b>		<b>16</b>

## THIRD SEMESTER

Course code	Course Title	Course Hours
CSIT.611	Cyber Security and Ethical Hacking	3
CSIT.612	Deep Learning	3
	Elective I	3
	Elective II	3
	Extra Elective I	3
CSIT.613	Term paper 1	2
<b>Total</b>		<b>16</b>

#### **FOURTH SEMESTER**

<b>Course code</b>	<b>Course Title</b>	<b>Course Hours</b>
<b>CSIT.621</b>	<b>Web Intelligence</b>	<b>3</b>
	<b>Extra Elective II</b>	<b>3</b>
<b>CSIT.622</b>	<b>Dissertation</b>	<b>8</b>
<b>Total</b>		<b>14</b>

### **Elective Subjects**

<b>CSITE.651</b>	<b>Quantum Computing</b>	<b>3</b>
<b>CSITE.652</b>	<b>Natural Language Processing</b>	<b>3</b>
<b>CSITE.653</b>	<b>Data Warehousing and Data Mining</b>	<b>3</b>
<b>CSITE.654</b>	<b>Multi-media Computing</b>	<b>3</b>
<b>CSITE.655</b>	<b>Image Processing</b>	<b>3</b>
<b>CSITE.656</b>	<b>Computational Geometry</b>	<b>3</b>
<b>CSITE.657</b>	<b>Cloud and Distributed Computing</b>	<b>3</b>
<b>CSITE.658</b>	<b>Big Data Analytics</b>	<b>3</b>
<b>CSITE.659</b>	<b>Embedded Systems</b>	<b>3</b>
<b>CSITE.660</b>	<b>Digital Governance</b>	<b>3</b>
<b>CSITE.661</b>	<b>Digital Marketing and Digital Economy</b>	<b>3</b>
<b>CSITE.662</b>	<b>Information and Coding Theory</b>	<b>3</b>
<b>CSITE.663</b>	<b>Advanced Computer Architecture</b>	<b>3</b>
<b>CSITE.664</b>	<b>Advanced Database Management Systems</b>	<b>3</b>
<b>CSITE.665</b>	<b>Internet of things</b>	<b>3</b>
<b>CSITE.666</b>	<b>Block chain Technology</b>	<b>3</b>