

### Department Required Courses (41 Credit Hours)

No.	Course Code	Course Name	Credit Hours	Pre-requisite
1.	INFO 2302	Web Technologies	3	-
2.	CSC 2104	Data Structures and Algorithms I	3	CSC 1103
3.	CSC 2201	Computer Networking	3	CSC 1707
4.	CSC 2401	Digital Systems Fundamentals	3	CSC 1401
5.	CSC 2602	Principles of IT Security	3	CSC 2201
6.	CSC 2301	Intelligent Systems	3	CSC 2706
7.	CSC 3402	Computer Architecture and Assembly Language	3	CSC 2401
8.	CSC 3102	Data Structures and Algorithms II	3	CSC 2104
9.	CSC 2706	Mathematics for Computing II	3	CSC 1707
10.	CSC 4101	Computation and Complexity	3	CSC 3102
11.	CSC 3701	Mathematics for Computing III	3	CSC 2706
12.	CSC 4903	Final Year Project I	4	Earned credit hours $\geq 78$
13.	CSC 4904	Final Year Project II	4	CSC 4903
14.	CSC 4905	Industrial Attachment	9	CSC 4904

### Elective/Specialization Courses (41 Credit Hours)

- There are 4 groups of elective courses:
  1. **Software Engineering**
  2. **Network and Security**
  3. **Data Science and Computational Intelligence**
  4. **No Specialization/General**
- For groups 1 to 3, students must take 4 core courses under a specific specialization and 3 elective courses from any specializations to be considered as a bachelor degree with a specialization.
- For group 4, students can take any 7 courses listed in all specializations; core and/or elective courses.

#### GROUP 1 : SOFTWARE ENGINEERING

No.	Course Code	Course Name	Credit Hours	Pre-requisite
<b><i>CORE</i></b>				
1.	CSC 3503	Software Testing	3	CSC 1501
2.	CSC 3504	Project Management in Software Engineering	3	CSC 1501, INFO 2401
3.	CSC 3505	Software Design and Architecture	3	CSC 1501, INFO 2401
4.	CSC 3506	Requirements Engineering	3	CSC 1501
<b><i>SPECIALIZATION ELECTIVES: OWN</i></b>				
1.	CSC 4507	Database Application Development	3	CSC 1501, INFO 1103
2.	CSC 4501	Software Quality Assurance	3	CSC 1501
3.	CSC 4508	Empirical Methods in Software Engineering	3	CSC 1501

<b><i>SPECIALIZATION ELECTIVES: NETWORK AND SECURITY</i></b>				
1.	CSC 4201	Network and Systems Administration	3	CSC 2201
2.	CSC 4607	Security in Computing	3	CSC 2602, CSC 3401
3.	CSC 4606	Network Security	3	CSC 4210, CSC 4605
<b><i>SPECIALIZATION ELECTIVES: DATA SCIENCE AND COMPUTATIONAL INTELLIGENCE</i></b>				
1.	CSC 4310	Introduction to Affective Computing	3	CSC 2301
2.	CSC 4311	Computational Modelling and Simulation	3	CSC 3701
3.	CSC 4312	Bio-Inspired Computing	3	CSC 3304
4.	INFO 2103	Database Programming	3	INFO 1103
5.	INFO 3102	Data Warehousing	3	INFO 2103
6.	INFO 4101	Data Mining	3	INFO 2103
<b><i>SPECIALIZATION ELECTIVES: OTHERS</i></b>				
1.	CSC 4102	Introduction to Quantum Computing	3	CSC 3701
2.	CSC 4506	Mobile Application Development	3	CSC 1103

**GROUP 2: NETWORK AND SECURITY**

<b>No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Credit Hours</b>	<b>Pre-requisite</b>
<b><i>CORE</i></b>				
1.	CSC 4210	Networking Concepts and Practices	3	CSC 1707, CSC 2201

2.	CSC 4209	Enterprise Network	3	CSC 1707, CSC 2201
3.	CSC 4605	Digital Evidence Forensics	3	CSC 2602, CSC 3401, CSC 3402
4.	CSC 4604	Cryptography	3	CSC 2706
<b><i>SPECIALIZATION ELECTIVES: OWN</i></b>				
1.	CSC 4201	Network and Systems Administration	3	CSC 2201
2.	CSC 4607	Security in Computing	3	CSC 2602, CSC 3401
3.	CSC 4606	Network Security	3	CSC 4210, CSC 4605
<b><i>SPECIALIZATION ELECTIVES: SOFTWARE ENGINEERING</i></b>				
1.	CSC 4507	Database Application Development	3	CSC 1501, INFO 1103
2.	CSC 4501	Software Quality Assurance	3	CSC 1501
3.	CSC 4508	Empirical Methods in Software Engineering	3	CSC 1501
<b><i>SPECIALIZATION ELECTIVES: DATA SCIENCE AND COMPUTATIONAL INTELLIGENCE</i></b>				
1.	CSC 4310	Introduction to Affective Computing	3	CSC 2301
2.	CSC 4311	Computational Modeling and Simulation	3	CSC 3701
3.	CSC 4312	Bio-Inspired Computing	3	CSC 3304
4.	INFO 2103	Database Programming	3	INFO 1103
5.	INFO 3102	Data Warehousing	3	INFO 2103
6.	INFO 4101	Data Mining	3	INFO 2103
<b><i>SPECIALIZATION ELECTIVES: OTHERS</i></b>				

1.	CSC 4102	Introduction to Quantum Computing	3	CSC 3701
2.	CSC 4506	Mobile Application Development	3	CSC 1103

**GROUP 3 : DATA SCIENCE AND COMPUTATIONAL INTELLIGENCE**

No.	Course Code	Course Name	Credit Hours	Pre-requisite
<b><i>CORE</i></b>				
1.	CSC 3304	Machine Learning	3	CSC 2301
2.	CSC 3303	Big Data Analytics	3	CSC 2301
3.	CSC 4309	Natural Language Processing	3	CSC 2301
4.	CSC 3305	Data Science	3	CSC 2301
<b><i>SPECIALIZATION ELECTIVES: OWN</i></b>				
1.	CSC 4310	Introduction to Affective Computing	3	CSC 2301
2.	CSC 4311	Computational Modeling and Simulation	3	CSC 3701
3.	CSC 4312	Bio-Inspired Computing	3	CSC 3304
4.	INFO 2103	Database Programming	3	INFO 1103
5.	INFO 3102	Data Warehousing	3	INFO 2103
6.	INFO 4101	Data Mining	3	INFO 2103
<b><i>SPECIALIZATION ELECTIVES: SOFTWARE ENGINEERING</i></b>				
1.	CSC 4507	Database Application Development	3	CSC 1501, INFO 1103
2.	CSC 4501	Software Quality Assurance	3	CSC 1501

3.	CSC 4508	Empirical Methods in Software Engineering	3	CSC 1501
<b><i>SPECIALIZATION ELECTIVES: NETWORK AND SECURITY</i></b>				
1.	CSC 4201	Network and Systems Administration	3	CSC 2201
2.	CSC 4607	Security in Computing	3	CSC 2602, CSC 3401
3.	CSC 4606	Network Security	3	CSC 4210, CSC 4605
<b><i>SPECIALIZATION ELECTIVES: OTHERS</i></b>				
1.	CSC 4102	Introduction to Quantum Computing	3	CSC 3701
2.	CSC 4506	Mobile Application Development	3	CSC 1103

**GROUP 4: NO SPECIALIZATION/GENERAL**

No.	Course Code	Course Name	Credit Hours	Pre-requisite
<b><i>CORE</i></b>				
1.	CSC 3503	Software Testing	3	CSC 1501
2.	CSC 3504	Project Management in Software Engineering	3	CSC 1501, INFO 2401
3.	CSC 3505	Software Design and Architecture	3	CSC 1501, INFO 2401
4.	CSC 3506	Requirements Engineering	3	CSC 1501
5.	CSC 4210	Networking Concepts and Practices	3	CSC 1707, CSC 2201
6.	CSC 4209	Enterprise Network	3	CSC 1707, CSC 2201
7.	CSC 4210	Networking Concepts and Practices	3	CSC 1707, CSC 2201

8.	CSC 4209	Enterprise Network	3	CSC 1707, CSC 2201
9.	CSC 4605	Digital Evidence Forensics	3	CSC 2602, CSC 3401, CSC 3402
10.	CSC 4604	Cryptography	3	CSC 2706
11.	CSC 3302	Machine Learning	3	CSC 2301
12.	CSC 3303	Big Data Analytics	3	CSC 2301
<b><i>ELECTIVES</i></b>				
1.	CSC 4507	Database Application Development	3	CSC 1501, INFO 1103
2.	CSC 4501	Software Quality Assurance	3	CSC 1501
3.	CSC 4508	Empirical Methods in Software Engineering	3	CSC 1501
4.	CSC 4201	Network and Systems Administration	3	CSC 2201
5.	CSC 4607	Security in Computing	3	CSC 2602, CSC 3401
6.	CSC 4606	Network Security	3	CSC 4210, CSC 4605
7.	CSC 4310	Introduction to Affective Computing	3	CSC 2301
8.	CSC 4311	Computational Modeling and Simulation	3	CSC 3701
9.	CSC 4312	Bio-Inspired Computing	3	CSC 3304
10.	INFO 2103	Database Programming	3	INFO 1103
11.	INFO 3102	Data Warehousing	3	INFO 2103
12.	INFO 4101	Data Mining	3	INFO 2103
13.	CSC 4506	Mobile Application Development	3	CSC 1103