

### 3 COURSES

The curriculum comprises of core courses, elective courses, mini projects and internship/project. The credit requirements for the degree are summarized below.

<b>Requirement</b>	<b>Credits</b>
Core Courses	27
Elective Courses	18
Mini Projects	04
Internship/Project	18
<b>Total Credits</b>	<b>72</b>

#### 3.1 Core Courses

The student is required to earn 27 credits from the following 9 core courses:

1. ISMS2101 Number Theory and Algebra
2. ISMS2102 Computer Networks, Security and Cyber Crimes
3. ISMS2103 Computer Architecture and Organization
4. ISMS2104 Object Oriented Programming in JAVA
5. ISMS2201 Cryptography
6. ISMS2202 Operating Systems
7. ISMS2203 Data Structures and Algorithms
8. ISMS2301 Database Management Systems and Security
9. ISMS2302 Information Systems Control and Audit

#### 3.2 Elective Courses

The elective courses are offered in the 1<sup>st</sup>, 2<sup>nd</sup> and the 3<sup>rd</sup> semesters. A student is required to earn 18 credits in 6 elective courses from the following list of 24 elective courses:

1. ISMS2001 Advanced Topics in Cryptography
2. ISMS2002 Cryptanalysis
3. ISMS2003 Secure Internet Programming
4. ISMS2004 Pattern Recognition for Computer Security
5. ISMS2005 Biometrics for Security
6. ISMS2006 Steganography, Digital Watermarking and DRM
7. ISMS2007 Theory of Computation
8. ISMS2008 Statistical Methods
9. ISMS2009 Scientific Computing
10. ISMS2010 High Performance Computing
11. ISMS2011 Digital Signal Processing
12. ISMS2012 Artificial Intelligence
13. ISMS2013 Software Engineering
14. ISMS2014 Soft Computing
15. ISMS2015 Web Technology
16. ISMS2016 Object Oriented Analysis and Design
17. ISMS2017 Principles of Management
18. ISMS2018 Computational Linguistics

19. ISMS2019 Embedded Systems
20. ISMS2020 Security in Distributed Environments
21. ISMS2021 Data Analytics
22. ISMS2022 Digital Image Processing and Pattern Recognition
23. ISMS2023 Autonomic and Context-Aware Computing
24. ISMS2024 Cryptography Standards

### 3.3 Mini Projects

A student is required to do one mini project related to *Information Security* or *Computer Science* each during the Semester 2 and Semester 3 independently under the guidance of any faculty member of the institute. This facilitates the student to get familiarize with the latest research and development trends in the field. At the end of the semester the student is required to submit a report of the mini project and give an oral presentation of the mini project carried out by him/her. The project report and the oral presentation will be evaluated by a 3 member committee comprising of the faculty members of the institute including the project guide. The project report and the oral presentation carries 25 marks each. **There will not be any external evaluation for the mini projects.** The mini-project in all semesters carry 2 credit each. The following are the mini-projects:

1. ISMS2206 Mini Project 1 (Semester 2)
2. ISMS2306 Mini Project 2 (Semester 3)

### 3.4 Core Labs

A student is required to do two labs in the first semester and one in each of the second and third semester. The lab report and lab examination carries 25 marks each. There will not be any external evaluation for the labs. The lab in all the semesters carry one or two credits each.

1. ISMS2106 Java Programming (Semester 1)
2. ISMS2107 Network Security Lab (Semester 1)
3. ISMS2207 Cryptology Lab (Semester 2)
4. ISMS2307 Cyber Forensics Lab (Semester 3)

### 3.5 Project/Internship

A student is required to do a project related to *Information Security* during the Semester 4, independently under the guidance of any faculty member of the institute or as an internship project in an industry or any reputed academic/research institute. If a student is opting for an internship project in an industry or any other reputed academic/research institute, he is required to have an internal guide from the institute. The project/internship aims to provide the student an opportunity to participate and work in a major research/development activity. Typically, the industry internship helps the student to learn about work culture, business processes, technologies, marketing strategies, etc. At the end of the semester the student is required to submit a report of the project/internship and give an oral presentation of the project/internship carried out by him/her. The project report and the oral presentation will be evaluated by both an internal committee comprising of the faculty members of the institute including the project guide as well as an external committee constituted by the university. The internal and external evaluation of the project report and the oral presentation carries 250 marks each. The project/internship carries 18 credits.

The projects/internship is:

1. ISMS2401 Project/Internship

## Semester-wise Breakup of Courses for 2 Years

For graduation, the student must satisfy all the requirements as per university rules.

### Semester I

No	C.Code	Course Title	Credits	Lect	Lab	IE	UE	Tot
1	ISMS2101	Number Theory and Algebra	3	3	0	40	60	100
2	ISMS2102	Computer Networks, Security and Cyber Crimes	3	3	0	40	60	100
3	ISMS2103	Computer Architecture and Organization	3	3	0	40	60	100
4	ISMS2104	Object Oriented Programming in JAVA	3	3	0	40	60	100
5	ISMS2EL1	Elective 1	3	3	0	40	60	100
6	ISMS2106	Java Programming Lab	1	0	3	50	*	50
7	ISMS2107	Network Security Lab	2	0	6	50	*	50
*	-	Total for Semester I	18	15	9	300	300	600

IE- Internal Examination

UE - University Examination

### Semester II

No	C.Code	Course Title	Credits	Lect	Lab	IE	UE	Tot
1	ISMS2201	Cryptography	3	3	0	40	60	100
2	ISMS2202	Operating Systems	3	3	0	40	60	100
3	ISMS2203	Data Structures and Algorithms	3	3	0	40	60	100
4	ISMS2EL2	Elective 2	3	3	0	40	60	100
5	ISMS2EL3	Elective 3	3	3	0	40	60	100
6	ISMS2206	Mini Project 1	2	0	0	50	*	50
7	ISMS2207	Cryptology Lab	1	0	3	50	*	50
*	-	Total for Semester II	18	15	3	300	300	600

IE - Internal Examination

UE - University Examination

Semester III

No	C.Code	Course Title	Credits	Lect	Lab	IE	UE	Tot
1	ISMS2301	<b>Database Management Systems and Security</b>	3	3	0	40	60	100
2	ISMS2302	Information Systems Control and Audit	3	3	0	40	60	100
3	ISMS2EL4	Elective 4	3	3	0	40	60	100
4	ISMS2EL5	Elective 5	3	3	0	40	60	100
5	ISMS2EL6	Elective 6	3	3	0	40	60	100
6	ISMS2306	Mini Project 2	2	0	0	50	*	50
7	ISMS2307	Cyber Forensics Lab	1	0	3	50	*	50
*	-	Total for Semester III	18	15	3	300	300	600

Semester IV

No	C.Code	Course Title	Marks		
			IE	UE	Total
1	ISMS2401	Project/Internship	250	250	500