COURSE TITLE	**INFORMATION SECURITY**
COURSE CODE	**05MD0305**
COURSE CREDITS	**5**

Course Outcomes: After completion of this course, student will be able to:

1. Identify various security threats, vulnerabilities and understand authentication and access control.
2. Differentiate malicious and non malicious code and understand web attacks on user side.
3. Understand the security concerns related to OS and threats to network.
4. Understand various security concerns related to database, data mining and Big Data.
5. Understand importance of Cloud Computing and its security concerns and tools and techniques to secure Cloud.

Pre-requisite of course: Operating Systems, Databases, Networks and Cloud Computing

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
4	1	0	50	30	20	0	0

Contents : Unit	Topics	Contact Hours
1	**Introduction and Tool Box** Computer Security, Threats, Harm, Vulnerabilities, Controls, Authentication, Access Control, Cryptography	10
2	**Programs, Programming and Client-Side Attacks** Non malicious programming oversights, Malicious Code, Counter measures, Browser Attacks, Web attacks targeting users, Obtaining user and website data, Email attacks	12
3	**Operating Systems and Network Security** Security in Operating Systems, Security in Design of Operating Systems, Rootkit, Threats to Network Communications, Wireless Network Security, Denial of Service, Distributed Denial-of-Service	8
4	**Database Security** Introduction to Databases, Security requirements of Databases, Reliability and Integrity, Database Disclosure, Data Mining and Big Data	12
5	**Cloud Security** Cloud Computing Concepts, Moving to Cloud, Cloud Security Tools and Techniques, Cloud Identity Management	8
Total Hours		**50**

Textbook :

1 Security in Computing, Charles P. Pfleeger, Shari Lawrence Plfeeger, Jonathan Margulies, Prentice Hall, 5thE

References:

1 Information Security Fundamentals, Information Security Fundamentals, Thomas R Peltier, Justine Peltier, John Blacley, Auerbach, Special Indian Edition, .

2 Fundamentals of Information Security, Fundamentals of Information Security, Sanil Nadkarni, BPB, .

3 Information Security, Information Security, Mark S. Merkow, James Breithaupt, Pearson Education India, .

Suggested Theory Distribution:

The suggested theory distribution as per Bloom's taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery and evaluation					
Remember / Knowledge	**Understand**	**Apply**	**Analyze**	**Evaluate**	**Higher order Thinking**
10.00	10.00	30.00	20.00	20.00	10.00

Instructional Method:

1 Board-Work

2 PPT

3 Video

Supplementary Resources:

1 https://intellipaat.com/blog/what-is-information-security/

2 https://www.exabeam.com/explainers/information-security/information-security-goals-types-and-applications/

3 https://www.csoonline.com/article/3513899/what-is-information-security-definition-principles-and-jobs.html

4 https://uit.stanford.edu/security

5 https://www.eccu.edu/blog/cybersecurity/fundamentals-of-information-security/