



# INSTITUTE OF AERONAUTICAL ENGINEERING

(Autonomous)

Dundigal - 500 043, Hyderabad, Telangana

## COURSE CONTENT

CLOUD SECURITY								
<b>VII Semester: CSE(CS)</b>								
Course Code	Category	Hours / Week			Credits	Maximum Marks		
ACCC12	Core	L	T	P	C	CIA	SEE	Total
		3	0	0	3	30	70	100
<b>Contact Classes: 45</b>	<b>Tutorial Classes: 15</b>	<b>Practical Classes: Nil</b>			<b>Total Classes: 60</b>			
<b>Prerequisite: Computer Networks</b>								
<b>I. COURSE OVERVIEW:</b>								
<p>This course provides learners with a baseline understanding of common cyber security threats, Vulnerabilities and risks. An overview of how basic cyber attacks are constructed and applied to real systems is also included. Examples include simple Unix kernel hacks, Internet worms, and Trojan horses in software utilities. Network attacks such as distributed denial of service(DDOS) and botnet-attacks are also described and illustrated using real time examples from the past couple of decades.</p>								
<b>II. COURSE OBJECTIVES:</b>								
<b>The students will try to learn:</b>								
<ol style="list-style-type: none"> <li>1. The various types of cyber-attacks and cyber-crimes.</li> <li>2. The threats and risks within context of the cyber security.</li> <li>3. The overview of the cyber laws and concepts of cyber forensics.</li> <li>4. The defensive techniques against these attacks</li> </ol>								
<b>III. COURSE SYLLABUS</b>								
<b>MODULE-I INTRODUCTION TO CLOUD SECURITY</b>								
Characteristics of cloud Security, Types of Cloud Computing Services, Separation of Responsibilities in cloud, Cloud Deployment models.								
<b>MODULE-II CLOUD COMPUTING THREATS</b>								
Cloud Provider Acquisition, Management Interface Compromise, Network Management Failure, Authentication Attacks, Data breach/Loss, Insufficient Due Diligence, Malicious Insiders.								
<b>MODULE-III CLOUD COMPUTING ATTACKS</b>								
Container vulnerabilities, Kubernetes Vulnerabilities, Service Hijackng, Wrapping Attack, Man-in-the Cloud Attack, Cloud Hopper Attack, Cloud brone attack.								
<b>MODULE-IV CLOUD COMPUTING SECURITY</b>								
Cloud Security Control layers, Cloud Security Considerations, Kubernetes vulnerabilities and Security, Server less Security Risks and Solutions.								
<b>MODULE-V CLOUD SECURITY MANAGEMENT</b>								
Address various data, application, platform and infrastructure needs. Managing disparate cloud services can be challenging, Organizations need a sound strategy that protects corporate assets.								
<b>IV. TEXT BOOKS:</b>								
<ol style="list-style-type: none"> <li>1. Nina Godbole and Sunit Belpure, "Cyber Security Understanding Cyber Crimes, Computer Forensics and Legal Perspectives", Wiley Publications, 2014.</li> <li>2. B.B.Gupta, D.P. Agrawal, Haoxiang Wang, "Computer and Cyber Security:Principles, Algorithm, Applications, and Perspectives", CRC Press, ISBN 9780815371335,2018.</li> </ol>								

**V. REFERENCE BOOKS:**

1. James Graham, Richard Howard and Ryan Otson ,”Cyber Security Essentials”, CRC Press..  
Chwan-Hwa(john) Wu,J. David Irwin , “Introduction to Cyber Security”, CRC Press T&F Group.