



भारतीय तकनीकी अनुसंधान एवं विकास परिषद
Indian Council for Technical Research & Development



Punyashlok Ahilyadevi
Holkar Solapur
University, Solapur.

Online Programs Under Academic Cooperation between ICTRD & PAHSU

Program Structure

Diploma in Cyber Security

Highlights of the Program-

- Excellent Opportunity to judge inclination towards Cyber Security Domain.
- Offered through distance learning
- Additional qualification acquired without disturbing daily schedule
- Reading material prepared by Domain experts
- Question-Bank provided at the end of every chapter to aid revision
- Contact Classes scheduled to facilitate solving of difficulties
- Provides inputs and procedures for getting admission to BMS/BMM
- All lectures will be conducted online.
- On-line examination.

Examination Pattern-

A) **Theory Paper** Title & Total Marks & Minimum Passing Marks

Paper No	Paper Title	Total Marks	Minimum Passing Marks
DCS11	Fundamentals of Cyber Security & Cryptography	100	40
DCS12	Web Application Security, Malware Analysis & Networks.	100	40

B) **Practical Paper** Title & Total Marks & Minimum Passing Marks

Paper No	Paper Title	Total Marks	Minimum Passing Marks
DCS13	Internal/Practical Live Interaction and Assessments– Cyber & Web Security	100	40
DCS14	Internal/Practical Live Interaction and Assessments– Mobile Security	100	40

Diploma in Cyber Security

Paper Title	Paper 1- Fundamentals of Cyber Security & Cryptography			
Paper Number	DCS11			
Paper Type	Theory			
Objectives of Paper	<ol style="list-style-type: none"> 1. An understanding of the inter-disciplinary nature of cyber-security domain. 2. Introductory skills and knowledge of impact of security on economics, legal, business, warfare and social domains. 			
Expected Outcome	<ol style="list-style-type: none"> 1. Understand the broad set of technical, social & political aspects of cyber-security 2. Describe the operational and organizational aspects security 			
Content	Unit 1	Introduction Cyber Security Threats	Hours	10
	Unit 2	Security Threat Management and Its Elements	Hours	10
	Unit 3	Banking Security, Cyber Forensics Cyber warfare , Surveillance and privacy Stream Cipher	Hours	10
	Unit 4	Cryptography: Block cipher, Symmetric and Asymmetric Encryption Techniques	Hours	10
	Unit 5	Message Authentication Code and Digital Signatures	Hours	5
Reference Books	<ol style="list-style-type: none"> 1. W.A.Coklin, G.White, Principles of Computer Security: Fourth Edition, McGrawHill, 2016 2. William Stallings, Cryptography and Network Security Principles and Practices, Seventh Edition,Pearson 3. Swiderski, Frank and Syndex, "Threat Modeling", Microsoft Press, 2004. 4. Cryptography and Network Security, Behrouz A. Forouzan and Debdeep Mukhopadhyay. 			

Diploma in Cyber Security

Paper Title	Paper 2- Web Application Security, Malware Analysis & Networks			
Paper Number	DCS12			
Paper Type	Theory			
Objectives of Paper	<ol style="list-style-type: none">1. To understand Web application security controls2. To understand the Malware functionality and implications.			
Expected Outcome	<ol style="list-style-type: none">1. Understand the core concepts related to malware, hardware and software vulnerabilities and their causes2. Exploit the vulnerabilities related to computer system and networks using state of the art tools and technologies			
Content	Unit 1	Web Application Technologies and Architecture	Hours	10
	Unit 2	Web Application Security	Hours	10
	Unit 3	Application Flaws and Defense Mechanisms	Hours	10
	Unit 4	Malware Functionality	Hours	10
	Unit 5	Malware Detection Techniques	Hours	5
Reference Books	<ol style="list-style-type: none">1. Web Application Architecture: Principles, Protocols and Practices, 2nd Edition, ISBN: 978-0-470-51860-1 by Leon Shklar, Rich Rosen2. Practical malware analysis The Hands-On Guide to Dissecting Malicious Software by Michael Sikorski and Andrew Honig ISBN-10: 159327-290-1, ISBN-13: 978-1-59327-290-6, 2012 2			

Diploma in Cyber Security

Paper Title	Paper 3- Cyber & Web Security			
Paper Number	DCS13			
Paper Type	Internal/Practical Live Interaction and Assessments			
Objectives of Paper	<ol style="list-style-type: none"> 1. Learn various security issues related to web security 2. Understand key terms and concepts in Cryptography, Steganography and Ethical Hacking 			
Expected Outcome	<ol style="list-style-type: none"> 1. Have a broad knowledge of the state-of-the-art and open problems on network security 2. Develop cyber and web security strategies and policies 			
Content	Unit 1	Web browser Security: Cryptography, Steganography	Hours	10
	Unit 2	Basics of Ethical Hacking	Hours	10
	Unit 3	Study of different types of vulnerabilities for hacking	Hours	10
	Unit 4	Study of the features of firewall in providing network security	Hours	10
	Unit 5	Security Vulnerabilities of E-commerce services and E-Mail Application	Hours	5
Reference Books	<ol style="list-style-type: none"> 1. Security for Web Services and Service-Oriented Architectures by Elisa Bertino ISBN : 3642426034 2. Web Security for Developers: Real Threats, Practical Defense by Malcolm McDonald ISBN: 1593279949 3. Cyber Security by Nina Godbole and SunitBelapure ISBN: 9788126521791 			

Diploma in Cyber Security

Paper Title	Paper 4- Mobile Security			
Paper Number	DCS14			
Paper Type	Internal/Practical Live Interaction and Assessments			
Objectives of Paper	<ol style="list-style-type: none"> 1. Learn the fundamentals of mobile security 2. Hands-on experience in mobile security with labs and simulations 			
Expected Outcome	<ol style="list-style-type: none"> 1. Understand common mobile application security vulnerabilities 2. Recognize various security issues involved in Mobile Security 			
Content	Unit 1	Mobile Security Apps: Smart phoneencryption.	Hours	10
	Unit 2	Mobile Security: Android , iOS, APP Store Issues.	Hours	10
	Unit 3	Tracking tools, SMS Phishing,	Hours	10
	Unit 4	Mobile security MDM Solutions	Hours	10
	Unit 5	Protection tools and Pen testing.	Hours	5
Reference Books	<ol style="list-style-type: none"> 1. The Mobile Application Hacker's Handbook (MISL-WILEY) by Dominic Chell ISBN: 78-8126554911 2. Mobile Security and Privacyby Man Ho Au, Raymond Choo 3. ISBN: 9780128047460 			