

Web Technology and Cyber Security

Course Introduction



Course Content

Module No.	Subtitle of the Module	Topics in the Module	No. of Lectures for the module
1.	Review of Essential topics in Web Development	HTML, CSS, JavaScript Basics, Primitives , Functions, Objects , Event - Driven Programming ,Callbacks	4
2.	Programming in React JS	Understanding SPA, React Overview, React vsAngular,React Deep-Dive, Composition over Inheritance, Declarative code with JSX, Unidirectional Data Flow, Components, Life Cycle, React Router	8
3.	Programming in Node JS	Introduction to Node JS, Event Loop, REPL, Modules , REST, Scaling	4
4.	Web Development Frameworks	Developing web applications using Django, Bootstrap, JQuery	5

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Mod ule No.	Subtitle of the Module	Topics in the Module	No. of Lectures for the module
1.	Securing Web Applications	Principles of Cyber Security and Secure Application Architecture	2
2.	Hacking Web Applications and Countermeasures	Cross Site Scripting, Cross Site Request Forgery, XML External Entity (XXE) attacks and their countermeasures	5
3.	Injection Attacks and Their Defenses	SQL injection, code injection and Command injection Attacks and their Defenses	4
4.	Denial of Service Attacks	Denial of Service and Distributed Denial of Service Attacks on Web Applications and Defenses	2
5.	Secure Network Protocols	DNS Attacks and DNSSec , SSL/TLS. VPNs , HTTPs and IPSec	8

Reference Books/Resources

	Text Books
1.	Security in Computing (5th edition), Pfleeger, Pfleeger and Margulies, Pearson.
2.	Computer Security: Art and Science by Matt Bishop, Addison-Wesley Educational Publishers Inc
3.	Node.js, MongoDB and Angular Web Development: The definitive guide to using the MEAN stack to build web applications (Developer's Library) by Brad Dayley , Brendan Dayley, et al.,sec edition,2 February 2018, Addison-Wesley Educational Publishers Inc
4	Chris Northwood,The Full Stack Developer: Your Essential Guide to the Everyday Skills Expected of a Modern Full Stack Web Developer,Apress, 2018
	Reference Books
1	Vasan Subramanian, Pro MERN Stack: Full Stack Web App Development with Mongo, Express, React, and Node , sec edition,Apress.
2.	Computer Security, Principles And Practice by William Stallings Lawrie Brown, Pearson Education
3	Applied Information Security, Dr. David Basin, Springer, 2011
4	Cryptography Theory and Practice (3rd edition), Stinson, Chapman & Hall/CRC

Web Technology with NodeJS

Course Introduction



Cyber Security Basics

Course Introduction