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| |  |  |  |  |  | | --- | --- | --- | --- | --- | |  |  |  |  |  | |  |  | |  | | --- | | **List of Courses** | |  |  | |  | |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | Ser | Course Code | Course Name | Lec. | Lab. | Online/Self study | Total | Credit Hours | |  | **General Courses** | | | | | | | | | 1 | ESS/AGL/200 | Agile Software Development Methodologies | 12 | 12 | 6 | 30 | 2 | | 2 | ESS/CST/100 | Client-Side Technologies | 30 | 30 | 15 | 75 | 5 | | 3 | ESS/CNF/100 | Introduction to Computer Networks & Cyber Security | 21 | 6 | 3 | 30 | 2 | | 4 | ESS/DSA/100 | Data Structures and Algorithms | 12 | 12 | 6 | 30 | 2 | | 5 | ESS/DB/100 | Database Fundamentals | 18 | 12 | 0 | 30 | 2 | | 6 | ESS/HTML5/100 | HTML5 & CSS3 | 9 | 9 | 12 | 30 | 2 | | 7 | ESS/IP/100 | Introduction to Programming | 21 | 21 | 3 | 45 | 3 | | 8 | ESS/SWE/100 | Introduction to Software Engineering | 18 | 0 | 12 | 30 | 2 | | 9 | ESS/OOPC/100 | Object-Oriented Programming Concepts | 24 | 24 | 12 | 60 | 4 | | 10 | ESS/OSF/100 | Operating Systems Fundamentals | 18 | 0 | 12 | 30 | 2 | | 11 | ESS/XMLF/100 | XML Fundamentals | 9 | 9 | 12 | 30 | 2 | |  | **Core Courses** | | | | | | | | | 12 | OST/AJS/400 | Angular | 15 | 15 | 15 | 45 | 3 | | 13 | OST/APTWS/200 | Apache Web Server | 6 | 6 | 3 | 15 | 1 | | 14 | OST/ASB/200 | Application Security Basics | 6 | 6 | 18 | 30 | 2 | | 15 | OST/BSS/100 | Bash Shell Script | 9 | 9 | 27 | 45 | 3 | | 16 | OST/BCF/100 | Block Chain Fundamentals | 0 | 0 | 0 | 0 | 0 | | 17 | OST/CCDF/100 | Cloud Computing and Dockers Fundamentals | 18 | 6 | 6 | 30 | 2 | | 18 | OST/CPMD/400 | Cross Platform Mobile Development | 9 | 9 | 12 | 30 | 2 | | 19 | OST/CSSFWS/100 | CSS Frameworks | 6 | 6 | 18 | 30 | 2 | | 20 | OST/DPS/100 | Design Patterns | 12 | 0 | 3 | 15 | 1 | | 21 | JD/CJP/100 | Core Java programming | 21 | 21 | 18 | 60 | 4 | | 22 | JD/GUIIP/200 | GUI using Java programming | 9 | 9 | 12 | 30 | 2 | | 23 | JD/DBPJ/200 | Database programming using Java programming | 9 | 9 | 12 | 30 | 2 | | 24 | OST/JSLibs/200 | JavaScript Libraries | 6 | 6 | 18 | 30 | 2 | | 25 | OST/Mongo/200 | MongoDB | 9 | 9 | 12 | 30 | 2 | | 26 | OST/MYSQL/200 | MySQL Database | 9 | 9 | 12 | 30 | 2 | | 27 | OST/NJS/400 | Node.js | 15 | 15 | 15 | 45 | 3 | | 28 | OST/OSERPs/500 | Open-Source ERP Systems | 12 | 12 | 6 | 30 | 2 | | 29 | OST/PHPCMSs/400 | PHP CMSs | 6 | 6 | 18 | 30 | 2 | | 30 | OST/PHP/300 | PHP Programming | 15 | 15 | 15 | 45 | 3 | | 31 | OST/PHPWFs/300 | PHP Web Frameworks | 15 | 15 | 30 | 60 | 4 | | 32 | OST/PPT/500 | Push and Pull Technologies | 6 | 6 | 18 | 30 | 2 | | 33 | OST/PTHN/300 | Python Programming | 18 | 18 | 9 | 45 | 3 | | 34 | OST/RCT/400 | ReactJS | 9 | 9 | 12 | 30 | 2 | | 35 | OST/RHSAI/200 | Red Hat System Administration I | 15 | 15 | 15 | 45 | 3 | | 36 | OST/RHSAII/300 | Red Hat System Administration II | 15 | 15 | 15 | 45 | 3 | | 37 | OST/RUBY/300 | Ruby Programming | 12 | 12 | 21 | 45 | 3 | | 38 |  | Introduction to unit testing | 6 | 6 | 3 | 15 | 1 | | 39 | OST/VCS/100 | Version Control Systems | 6 | 6 | 3 | 15 | 1 | | 40 | OST/VJS/200 | VueJS | 9 | 9 | 12 | 30 | 2 | | 41 | OST/WS/400 | Web Services | 6 | 6 | 3 | 15 | 1 | |  | **Soft Skills** | | | | | | | | | 41 | BUS/BPRW/100 | Best Practices for Remote Working (Workshop) | 0 | 3 | 0 | 0 | 0 | | 42 | BUS/CEP/100 | Communication Essentials for Professionals | 9 | 9 | 18 | 12 | 2 | | 43 | BUS/HIP/100 | High Impact Presentations | 12 | 0 | 3 | 15 | 1 | | 44 | BUS/JSS/100 | Job Seeking Skills | 3 | 15 | 12 | 30 | 2 | | 45 | BUS/PD/100 | Professional Demeanor (Workshop) | 3 | 0 | 0 | 0 | 0 | | 46 | BUS/PTW/100 | Progressive Teamwork (Workshop) | 3 | 0 | 0 | 0 | 0 | |  |  | Total Conducting Hours | | | |  |  | 100 | | | |  | |  |  |  |  |  | |

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|  | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  | |  |  |  |  | |  | | --- | | **Course Description** | |  |  | |  |  |  |  |  |  |  | |  |  | |  | | --- | | ***General Courses*** | |  |  |  |  | |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  | |  | | --- | | ***ESS/AGL/200 - Agile Software Development Methodologies*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | This course emphasizes the rapid realization of system value through disciplined, iterative and incremental software development techniques, and elimination of wasteful practices. Students will study the full spectrum of Agile Methods, including Scrum, Extreme Programming, Lean, Crystal Methods, Dynamic Systems Development Method, and Feature-driven Development. These methods promote teamwork, rich and concise communication, and the frequent delivery of running tested systems containing the highest priority customer features. Agile methods are contrasted with common workplace practices and traditional methods such as CMMI, PMI/PMBOK and RUP. Examples of agile adoption in industry are discussed. Additional topics in the course include team dynamics, collaboration, software quality and metrics for reporting progress | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | • To learn the fundamental principles and practices associated with each of the agile development methods: Lean, Scrum, eXtreme Programming (XP), Crystal, Feature-driven Development (FDD), Kanban, and Dynamic Systems Development Method (DSDM) • To apply the principles and practices of agile software development on a project of interest and relevance to the student • To perform in-depth explorations into aspects of agile development that are particularly relevant to each student through independent research and discussion | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Introduction to Programming & OOP | | * Introduction to Software Engineering | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | • Agile Development Methods Overview. • Lean. • Scrum. • eXtreme Programming (XP). • Crystal Methodologies. • Feature-Driven Development (FDD). • Test-Driven Development (TDD). • Teamwork and Collaboration. • Dynamic Systems Development Method. • Agile Infrastructure and Tools. | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | |  |  | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  |  | | | | | | |  | |  |

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| |  | | --- | | ***ESS/CST/100 - Client-Side Technologies*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | This course will start with basic HTML tags. Students will learn how to create HTML websites and use CSS in building web applications, before diving into client-side script capabilities and how to use JavaScript in creating dynamic applications that take full advantage of the browser objects and responds to users’ inputs and events, moving to discussing the available object-oriented programming with JavaScript syntax. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Knowledge  o You will have more control over the functionality of your Web page  o You will learn the skills to make your Web content more interactive  o You will have scope to create interesting and exciting Web pages  o Learn object-oriented programming using Javascript  • Skills o You will apply to do more control over the functionality of your Web page  o You will apply to make your Web content more interactive  o You will apply to create interesting and exciting Web pages  o creating, compiling and running object-oriented JavaScript  • Experience  o Will gain experience on how to design interactive web pages  o Creating JSON Files and making AJAX requests using JavaScript  o building your own library  o Applying Object Oriented programming concept over client-side scripting language using JavaScript | |  | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | * Introduction to web Technology * HTML Basics * Creating HTML Webpage * HTML Table and Lists * HTML Forms & Input * Introduction CSS * CSS2 Selectors and Properties * Getting Started with JavaScript * Values, Variables and Literals * Control Statements * Expressions and Operators * Predefined Functions * User defined function * Error Handling & Debugging * Events and Event Handling * JavaScript Objects * Built-in Object   o Browser Object Model  o Document Object Model  o Custom Object  • Cookies  • DHTML  • Object Oriented JavaScript concepts and techniques  • JSON  • Introduction to JavaScript Libraries (Prototype, Scriptaculous …)  • AJAX  • JSON | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 30 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 30 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 5 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 30% | | ∙ ***Project:*** | 70% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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***ESS/CNF/100 – Introduction to Computer Networks & Cyber Security*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | The goal of this course is to introduce the students to fundamentals of networking concepts, distributed systems and cyber security concepts and trends. This course provides a hands-on experience on networking and the Internet using tools and hardware commonly found in the home and small business environment and help students how to deal with the computer networks and protect their devices from threats | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | On successful completion of the course the student will be able to:   * Know about computer networks and network protocols * Know about cyber security and security goals * Know about methods of attacks and risks * Know about attacks mitigation and encryption * Know about Distributed System * Know about Types of Distributed System and examples * Know about Cloud computing service models and deployment models * Enhance students’ skills by doing some practices on some topics | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | * **Part 1 (Network Essentials)** * Computer Networks Definition and Basic Terminologies * Networks Classifications   + Covered Area /Topology /Network Model * Networks Elements (Hardware/Software) * Network Hardware * Devices * Repeater /Hub * Switch * Router * Transmission Media * Wired * Wireless * **Network Software (Protocols)**   + OSI Reference Model   + TCP/IP Protocol Suite * TCP/IP Definition * TCP/IP Advantages and Disadvantages * TCP/IP VS. OSI Model * Data Encapsulation * **TCP/IP Protocol Architecture** * Network Access Layer (Physical Layer /Datalink Layer) * Internet Layer (IP Layer) * Public IP vs Private IP * How to assign IP address to device? * Reserved Address * Network Address Translation (NAT) * Internet Protocol (IP V6) * Internet of Things (IOT) * Transport layer protocol   + TCP   + UDP   + TCP VS UDP   + Port Numbers * Application Layer   + The World Wide Web: HTTP   + Naming Service: DNS   + File Transfer: FTP   + Telnet Service/RDP   + Electronic Mail service: IMAP4, POP 3, SMTP * **Part 2 (Security Essentials)** * **Security Goals**   + Confidentiality   + Integrity   + Availability * **Risks**   + Threats & Vulnerabilities   + Attackers’ types   + Attackers’ methodology   + Attack Methods   + Malware Types * **Firewalls Types**   + Static firewalls   + Dynamic firewalls   + IDS /IPS   + VPN   + Proxy   + Next generation Firewalls * **Encryption**   + Symmetric Key Cryptography   + Asymmetric Key Cryptography   + Digital Signatures   + Digital Certificates   + IP Security      * **Part 3 (Distributed System)** * **Distributed System**   + Definition   + Why build a distributed system (Advantages and disadvantages)?   + Distributed system Examples * **Cloud computing**   + Virtualization   + Cloud computing service models     - IaaS     - PaaS     - SaaS   + Cloud computing deployment models     - Public     - Private     - Hybrid Cloud   + Cloud Service Providers      * **Network Fundamentals Labs** * **Lab 1 (Covering Network Essentials Part 1)** * Configuring your IP address * ICMP “Ping Command” * ARP Command Definition * Ports and sessions * Domain name System * Dealing with FTP protocol * Using Remote Administration      * **Lab 2 (Covering Security Essentials &Distributed System Part 2&3)** * Port Scanning * Advanced Firewall options * virtual Machines VMs | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 21 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 3 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 30% | | ∙ ***Exam:*** | 70% | | | | | | | | | |  |  |  |  |  |  |   **Course Materials** |   **Required Materials**   * Course PTT   + Network tools   + VMware® Workstation 15 Pro   + ISO image of any OS   **Optional Materials**  **Required Text**  [Programming paradigms: Essential Computer Science- A Programmer’s Guide to Foundational Concepts](https://link.springer.com/book/10.1007/978-1-4842-7107-0) **Additional Information and Resources**  * Cisco Student Guide ICND1 * TCP/IP Protocol Suite “Behrouz A. Forouzan 4th Edition” * Distributed Systems ”van Steen, Maarten, Tanenbaum, Andrew S. * <https://maharatech.gov.eg/enrol/index.php?id=22> * <https://maharatech.gov.eg/enrol/index.php?id=37> |  | |  |

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Structures and Algorithms*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | Students learn, in a comprehensive approach, the concepts of design and implementation of data types and how to create new data structures. Students acquire a good knowledge about the simple and famous algorithms used in computerized systems, like Sorting and Searching. In addition, they will learn how to work with Linked List, Binary Trees. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | • The course gives basic information and Implementation strategies of and uses for stack, queue, single and Double linked list, and Binary Trees. | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Introduction to Programming | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | • Basic SQL Statements and Functions. • Sorting Algorithms o Selection sort. o Merge sort. o Quick sort. • Linked Lists o What is linked contiguous structure? o Advantages and disadvantages. o Basic operations. o Doubly linked list.  • Stacks: o Definition and Examples. o Representing Stacks. o Array representation. o Linked list representation. • Queues:  o Definition and Examples. o Representing Queues. o Array representation. o Linked list representation. | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Exam:*** | 60% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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We consider this course basic introduction for different terminologies related to database engineering. Students will learn the main features of different DBMSs in the market. It focuses on building ERD using practical case studies. It explores how to build a relational database from the logical database design. This course covers how to design, build and query a relational database. They will apply normalization to data for effective, stable database design. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | The course gives basic information about SQL statements, functions, queries and data manipulation, in addition to PL/SQL statements, composite data types and exceptions | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Database Management Systems Introduction  • Introduction • Objectives • Database Definition Database System Definition Database Properties • DBMS Definition DBMS Functions • Advantages & Disadvantages of Database The Three Levels of Architecture • External Level • Conceptual Level • Internal Level • Mapping • Advantages of the Architecture • How Does the Application Program Access the Database • Distributed Processing & Architectural Design • Data Independence Data Models • Data Models Definition • Categories of Data Models Who Deals with Database • Database Administrator • System Analyst • Database Designer • Application Programmer • End User Entity-Relationship Model  • Basic Concepts  • Entities  • Keys  • Design Issues  • Entity-Relationship Diagram  • Weak Entity Sets  • Design of an E-R Database Schema  • Reduction of an E-R Schema to Tables  • Relational Database Design Using ER-to-Relational Mapping Security  • Introduction • DCL  • Grant / Revoke  SQL- The Relational Database Standard Language • Data Definition, Constraints • Basic Queries in SQL • More Complex SQL Queries • Insert, Delete and Update Statements in SQL • Views (Virtual Tables) in SQL • Indexes • System Catalog • Embedded SQL Normalization  • Functional Dependencies  • First Normal Form • General Definitions of Second and Third Normal Forms | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 0 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Exam:*** | 60% | |  |  | |  |  | |  |  | |  |  | |  |  | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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| | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | This course provides an accelerated introduction to HTML5 new tags, form elements, attributes, input types, CSS3, moving into the web application scripting APIs and how to incorporate HTML5 features in web pages and applications. Besides adding interactivity with JavaScript and enhancing the styling of web application design | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | • Knowledge o How to use HTML5 Markup to create your UI o Learn to use HTML5 JavaScript API's o Understanding of how HTML5 differs from previous specifications.  • Skills o Create your beautiful UI o Design more flexible and dynamic stylesheets o Ability to provide JavaScript alternatives for unsupported features o Practical knowledge to implement new HTML5 elements and attributes. o Practical knowledge of how to use the audio, video and canvas elements. o Practical knowledge of how to implement new CSS3 features • Experience o Experience in developing awsome web and mobile applications UI using HTML5. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | • HTML5 History/Timeline • HTML5 Design Principles • What is (and isn’t) HTML5 • Doctype & Root Element • Syntax & New Element and Attributes • HTML5 Sections, Containers, Boxes, Shapes, and Text • Fallback and Polyfills • Using Script Loader • Semantic Web & Microdata • New Form input type attributes • Embedded content & Multi-Media (Audio-Video) • Geolocation • Canvas & SVG • MathML • Web Storage • Drag & Drop API • Web Structure & CSS3 • modern CSS styling techniques • CSS3 new Selectors and Properties • transforms, transitions, and animations • Fonts & Interactions | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Exam:*** | 100% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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***ESS/IP/100 - Introduction to Programming*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | Learning main concepts and fundamentals of computer programming. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | A trainee who successfully completes the course will have the ability to: • understand the basic terminology used in computer programming • write, compile and debug programs. • use different data types in a computer program. • design programs involving decision structures, loops and functions. • explain the difference between call by value and call by reference • understand the dynamics of memory. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | • Introduction to Core Programming Concepts o Computer Data Storage and Processing o Application Types o Application Life-Cycle o Compilers and Interpreters o Code Compilation o Lab : Thinking Like a Computer • Core Programming Language Concepts o Syntax o Data Types o Variables and Constants o Lab : Working with Data Types • Core I/O Programming o Using Console I/O o Lab : Core I/O Programming • Program Flow o Introduction to Structured Programming Concepts o Introduction to Branching o Using Functions o Recursive Functions o Using Decision Structures o Introducing Repetition o Lab : Creating Functions, Decisions, and Looping • Arrays o Declaration and initialization of arrays. Passing arrays to functions o Lab: Creating Arrays • Structures o Declaration and initialization of Struct o Lab: Creating Struct, and Array of Struct • Error Handling and Debugging o Introduction to Program Errors o Lab: Implementing Debugging and Error Handling • Application Performance and Memory Management o Value Types vs Reference Types o Converting Types o Pointers o Lab: Using Value Types and Reference Types | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 21 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 21 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 3 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 3 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Exam:*** | 60% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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Software Engineering*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | This course is designed for students who have no previous SWE experience with enough materials to allow students get started on projects also there is a part for intermediate topic | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | • Understand SWE and why it is important  • Understand the concept of software process and process models • Understand the difference between agile development and software development methods that rely on documentation and design • Understand the distinguish between software verifications and software validation  • Introducing program inspection as a method of discovering defects in programs  • Understand process models and software life cycle | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | • Introduction and definitions • Professional and ethical responsibility • Software process models • Process iteration • Process activities  • The Rational unified process • Agile methods • Extreme programming • Rapid application development • Software prototyping • Planning verification and validation • Software inspection | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 0 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Presentation:*** | 100% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Object-Oriented Programming Concepts*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | Students learn the concepts and the meaning of Object-Orientation. They will be able to differentiate between Structured Abstract Data Type and Classes data type. They acquire the knowledge of the Encapsulation, Properties, Methods, and Polymorphism and how to implement these concepts in the most common Object-Oriented programming languages. Furthermore, they acquire the concept of Embedded objects and the different between it and the concept of Inheritance. The types of inheritance will be discussed in details. Students will understand the need of Virtual functions in case of inheritance, and so the overriding concept. Abstract classes and Interfaces will be covered in this course. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | • The course gives the main concepts of Object-Oriented Programing • Explain the need for Data Encapsulation  • Describe and make use of polymorphism • Describe when to use classes and when to use structures • Create and use new classes through inheritance and virtual functions | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Introduction to Programming | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | • History of programming: Linear, Structured, and Object-Oriented  • Object-Oriented Terminologies and Concepts  • Starting in Object-Oriented  • Encapsulations and Members’ Modifiers • Polymorphism (function overloading)  • Objects Creation & Deletion • Static and Instance Members  • Operator overloading  • Embedded objects  • Inheritance  • Overriding | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 24 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 24 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 4 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Exam:*** | 60% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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Fundamentals*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | Gives basic information about the important concepts of operating systems, process management, memory management, file systems, input/output management and CPU Scheduling. Gives basic information about Cloud Computing, concept of cloud, cloud computing types deployment models, type of services, and concept of Virtualization. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | This course deals with computer organization and operating systems, it aims for a balance between theory and practice. The students will become familiar with the important concepts of operating systems, process management, memory management, file systems, input/output management and distributed systems. The subject introduces the key mechanisms of all operating systems - processes, memory management, file systems, protection and security. The evolution of these mechanisms is presented through a historical tour of operating system development, leading to a study of current hardware and operating system speeds, capacities, and physical limitations. The role of processes, their creation, scheduling, synchronization, and communication are covered. This is followed by the study of storage management - static and dynamic allocation, paging & segmentation, virtual memory, demand paging, page replacement algorithms and memory caches showing their effect on performance. File system concepts are addressed - input/output hardware and software, files, directories, access mechanisms and file allocation. Finally, an introduction to Cloud Computing as a concept with different models of implementation and services delivery. The way of delivery of this course dependent on interactivity methodology by face-to-face discussion technique, to improve the learn ability skills and knowledge acquiring skills. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | • Introduction (Lect 1) o What is an Operating System? o Simple Batch Systems. o Multi programmed Batched Systems. o Time-Sharing Systems. o Personal-Computer Systems. o Parallel Systems. o Distributed Systems. o Real-Time Systems. o Handheld Systems. o Computing Environments • Computer-System Structures (Lect 2) o Computer-System Operation. o I/O Structure. o Storage Structure. o Storage Hierarchy. o Hardware Protection. • Operating System structures (Lect 2) o System Components. o Operating-System Services. o System Calls. o System Programs. o System Structure. o Virtual Machines. • Processes (Lect 3) o Process Concept. o Process Scheduling. o Operation on Processes.  o Threads  • Multithreading Models  • Threading Issues o Cooperating Processes. o Inter-process Communication. • CPU Scheduling (Lect 4) o Basic Concepts. o Scheduling Criteria. o Scheduling Algorithms. • Deadlocks (Lect 5) o System Model. o Deadlock Characterization. o Methods for Handling Deadlocks. o Deadlock Prevention. o Recovery from Deadlock. • Memory Management (Lect 5) o Logical versus Physical Address Space. o Swapping. o Contiguous Allocation. o Paging. o Segmentation. • Virtual Memory (Self Study) o Background. o Demand Paging. o Performance of Demand Paging. o Page Replacement. o Page-Replacement Algorithms. o Allocation of frames. o Thrashing. o Demand Segmentation. • File-System Interface (Self Study) o File Concept. o Access Methods. o Directory Structure. o Protection. • File-System Implementation (Self Study) o File System Structure. o Allocation Methods. o Free-Space Management. o Directory Implementation. o Recovery. • Introduction to Cloud Computing (Lect 6) o What is Cloud? o What is Cloud Computing? o Cloud Computing Architecture o Deployment Models o Service Models o Virtualization o Cloud Computing Features and Challenges | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 0 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Exam:*** | 100% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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Fundamentals*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | Extensible Markup Language (XML) is a markup language that defines a set of rules for encoding documents in a format, which is both human-readable and machine-readable. It is defined by the W3C's XML 1.0 Specification and by several other related specifications, all of which are free open standards. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | • To fully understand the purpose, structure, and application of XML . • To get substantial hands-on experience in creating XML documents.  • To understand how XML and its related technologies enable the web programmer to accomplish what has been very hard or even impossible to do with previous languages such as HTML.  • To validate a content model of XML by schema or DTD.  • To become proficient in using related languages like XSL, XLink, XPath and XPointer and how they add more power to XML.  • To become familiar with the relationship between the various XML applications.  • To understand how XML is revolutionizing the web and what it will do for complex, real world applications. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | • Evolution of markup languages and why XML. o Ancestors of XML: SGML and HTML.  o Differences between XML and HTML.  o Do we still need HTML? • Main features of the language. o XML Design Principles.  o Structure of a Basic XML Document.  o XML Declarations.  o Tags & Elements.  o Attributes.  o Syntax and the use of Parser.  o Different XML grammars.  o Editors and tools.  o CSS as a preliminary style sheet language. o Examples and Exercises. • Creating and documenting your own markup languages to unleash the full power of XML. o Document Type Definitions (DTD).  o External and Internal Subsets.  o Well-Formed vs. Valid XML Documents. o XML schemas. o Examples and Exercises. • Linking to parts of a document without the overhead. o Linking in HTML.  o XLink: "Multi-Directional" linking.  o Examples and Exercises. • Cascading Style Sheets (CSS).  • Extensible Style Sheets (XSL).  • XPATH. • XML DOM. • XML SAX. • XHTML. • SVG. | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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|  | |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | | |  | | --- | | ***Core Courses*** | | |  |  | |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  | |  | | --- | | ***OST/AJS/400 - Angular*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | AngularJS is a structural framework for dynamic web applications. It lets you use HTML as your template language and lets you extend HTML's syntax to express your application components clearly and succinctly. Its data binding and dependency injection eliminate much of the code you currently have to write. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | AngularJS is a system that is open-source like the greater part of its Java partners. The objective of this course is to empower members to create web applications that depend on the Model-View-Controller Architecture, and decline the reliance on JavaScript required to functionalize web applications | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Client-Side Technologies | | * Introduction to Programming using C | | * Node.js | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | - AngularJS Expressions - AngularJS Modules -Directives -Model -Data Binding -controllers -Scopes -Filters -Services -Http -Tables -Select -DOM -Events -Forms -Validation -API -Animation  -Routing -Includes | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 3 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Project:*** | 60% | | | | | | | | | |  |  |  |  |  |  |  | | | |  | |  |

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 |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | This course provides details of the httpd.conf configuration file, using .htaccess files, virtual hosts, MIME and file types, URL mapping, directory indexing, performance tuning, handlers, filters, server-side includes, managing scripts, security and Apache modules. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Compile and install Apache on both Windows and LINUX-type environments Explain the difference between Apache httpd/web server and Apache Software Foundation  Deploy, support, and troubleshoot applications on Apache Navigate Apache's directory structure Understand Apache configuration files: httpd.conf  Secure Apache and applications running on it Set up Apache for SSL Tune Apache's performance | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Red Hat System Administration I | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | HTTP overview Overview about web server Apache Web page life cycle Apache structure Basic configuration Important modules Aliases and redirectors Delegation control with HTTP access HTTP secure sites Apache security Monitoring & Logs Performance tunning | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 3 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 1 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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| | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | This course presents the foundational principles of information and web security in the context of the systems development and security life cycle process. This course covers security principles; security needs, threats, and attacks; legal, ethical and professional issues; security technology including firewalls, access control; cryptography; physical security; security implementation; security maintenance and change management. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Understand security concepts, security professional roles, and security resources in the context of systems and security development life cycle Understand the business need for security, threats, attacks, top ten security vulnerabilities, and secure software development Understand risk management concepts, risk identification and assessment, risk control strategies, quantitative and qualitative risk control practices, risk management and risk control practices Understand information security policies, standards and practices, the information security blueprint Understand the use of intrusion detection, access control and other security tools in physical design Understand cryptography concepts, algorithms, and digital signatures used to protect information Understand how to implement and execute the information security blueprint | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * MySQL Database | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Security and its history Information system components Balancing security with access Security implementation System and Security Development Life Cycles Threats Attacks Top ten security vulnerabilities Secure software development Risk identification Risk assessment | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Project:*** | 100% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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--- | --- | --- | --- | |  |  |  | |  | | --- | | ***OST/BSS/200 - Bash Shell Script*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | This course surveys the Bash shell. It is designed for users who have mastered basic Linux commands for manipulating files and navigating directories and are ready to begin exploring the power and support available in the shell environment. This course combines coverage of the shell language and working environment with advanced utilities such as Sed, and Awk, and provides an overview of the similarities and differences among the Bash. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Create simple and complex scripts using Bash shell scripting | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Red Hat System Administration I | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Introduction to UNIX Essential Concepts Streamlined Editor (SED) The AWK Utilities When do we use Shell Script? When do we avoid Shell Script? Bash shell | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 27 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 3 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 30% | | ∙ ***Project:*** | 70% | | ∙ ***Lab Assignment:*** | 30% | | ∙ ***Project:*** | 70% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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Fundamentals*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | This first course of the Blockchain specialization provides a broad overview of the essential concepts of blockchain technology – by initially exploring the Bitcoin protocol followed by the Ethereum protocol – to lay the foundation necessary for developing applications and programming. You will be equipped with the knowledge needed to create nodes on your personal Ethereum blockchain, create accounts, unlock accounts, mine, transact, transfer Ethers, and check balances. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | You will learn about the decentralized peer-to-peer network, an immutable distributed ledger and the trust model that defines a blockchain. This course enables you to explain basic components of a blockchain (transaction, block, block header, and the chain) its operations (verification, validation, and consensus model) underlying algorithms, and essentials of trust (hard fork and soft fork). Content includes the hashing and cryptography foundations indispensable to blockchain programming, which is the focus of two subsequent specialization co | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Ethereum Cryptography Blockchains Bitcoin | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 1 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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and Docker Fundamentals*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | This course will begin by first establishing the definition of cloud computing, then describing the various service delivery models of a cloud computing architecture, and the ways in which clouds can be deployed as public, private, hybrid, and community clouds, followed by a much deeper review of the security and privacy issues related to cloud computing environments. We will examine cloud computing models, look into the threat model and security issues related to data and computation outsourcing, and explore practical applications of secure cloud computing. Using the confidentiality, integrity, and availability of data (CIA) model we will examine the threats and security implications to befall poorly established and maintained cloud computing environment. Audit approaches and methodologies for assessing internal control exposures within cloud computing environments will also be fully discussed and examined. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | After completing this seminar, participants will be able to: 1. Discuss, with confidence, what is cloud computing and what are key security and control considerations within cloud computing environments. 2. Identify various cloud services. 3. Assess cloud characteristics and service attributes, for compliance with enterprise objectives. 4. Explain the four primary cloud category “types”. 5. Evaluate various cloud delivery models. 6. Contrast the risks and benefits of implementing cloud computing. 7. Specify security threat exposure within a cloud computing infrastructure. 8. Recognize steps and processes used to perform an audit assessment of a cloud computing environment. 9. Summarize specific environments that would benefit from implementing cloud computing, contrasted against those environments that might not benefit. 10. Weight the impact of improperly controlled cloud computing environments on organizational sustainability. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Cloud Computing Definition What are Cloud Services Cloud Service Attributes Access to the Cloud Cloud Hosting Information Technology Support Provisioning Pricing Underestimated costs User Interface System Interface Shared Resources/Common Versions Characteristics of Cloud Computing Rapid elasticity Pay per use Independent resource pooling Network access On-demand self-service The Five Levels of Redundancy Physical Virtual resource Availability zone Region Cloud Cloud Categories Public Cloud Private Cloud Hybrid Cloud Community Cloud Delivery Models SaaS PaaS Iaas Cloud Architectural Models Design for Failure (DFF) Traditional Cloud Architecture Summary Customization Service Reliability and Disruptions Integration Challenges Loss of Control Emerging Technology Vendor Choices Infrastructure Limitations Negligence Cloud Scenarios and Considerations Would you want the computer that controls safety local or in the cloud Someone you know is in a hospital. Do you want there respirator and medical dosage managed in the cloud or locally Weapons control system Corporate web server Satellite navigation system DNS, Firewall rules, Active Directory | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Exam/Presentation:*** | 100% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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Cross Platform Mobile Development*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | Cross-platform mobile development can either involve a company developing the original app on a native platform (which could be iOS, Android, Windows Mobile, BlackBerry/RIM, etc.) or developing the original app in a singular environment for development that will then allow the app to be sent to many different native platforms. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Create rich native iOS, Android, hybrid, and mobile web apps from a single JavaScript-based SDK. | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Client-Side Technologies | | * ReactJS | | * Web Services | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | What is Cross platform Appcelerator Alloy MVC framework Integrated mobile backend as a service (MBaaS) Integrated with Appcelerator’s open Marketplace | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Frameworks*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | This course learns students how to use CSS frameworks that meant to allow for easier, more standards-compliant web design using the Cascading Style Sheets (CSS) language. Using CSS frameworks student will be able to speed up the front-end development process and normalize common cross-browser compatibility issues. CSS Frameworks encourage a more structured design the same way a newspaper grid system does. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Understand the common CSS frameworks and the difference between.  Use CSS frameworks to divide and style websites. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | CSS Frameworks overview. Bootstrap framework overview. Bootstrap with CSS. Bootstrap components. Bootstrap plugins. | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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| | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | Identifying the idea of Design Patterns and providing a full description for several well known design patterns | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Describe the important design patterns. Explain why Design Patterns are needed and use the following Design Patterns in the process of Software Development: Abstract Design Pattern Singleton Design Pattern Composite Design Pattern Decorator Design Pattern Factory Design Pattern Façade Design Pattern Identify the optimum pattern to use in various situations Use the following patterns to complete a web-tier application design: Intercepting Filter Design Pattern Front Controller Design Pattern Use the following patterns to complete a business-tier application design: Data Transfer Object Design Pattern Business Delegate Design Pattern Service Locator Design Pattern Configure a pattern to specific application needs. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Introduction to Design Patterns  The Observer Pattern The Decorator Pattern Factory Patterns The Singleton Pattern The Command Pattern The Adapter Pattern Template Method Pattern Case Study: Patterns Application Intercepting Filter Front Controller Model View Controller Business Delegate Service Locator Transfer Object Data Access Object | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 0 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 3 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 1 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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Programming*** | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | This course serves as an introduction to java Programming. The course focuses on giving the attendees highlights on the java history and evolution of java from a newly introduced language to becoming a standard in the area of application development.  The course covers the basic building blocks of Java programming language, and these includes Data types (either primitive or Reference). Also the course covers the building blocks of any programming languages such as Looping and Iteration Statements, string Handling Classes, handling encapsulation using packages and also describes the effect of introducing Modules on encapsulation.  The course Also introduces the Lambda expression ad how Lambda expression affected our code writing methodology.  The course also provides information on storing data in Collections and getting Streams form this Collections and uses the Stream API to perform operations on Collection. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | * Understand the basic Java Language Blocks. * Manipulate Strings using different String Handling Classes. * Understand Lambda expressions and how to use them with Interfaces and Stream API. * Understand Generics and how it could be used to write better code. * Store data in different Collection classes. * Create Applications and modularize it. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | * The History and Evolution of Java * An Overview of Java * Data Types, Variables and Arrays * Operators and Control Statements * String Handling * Enumeration, Autoboxing, and Annotations * Packages and Interfaces * Generics * Exception Handling * Lambda Expressions * Method References * Introduction to Collection Framework * Stream API * Java Platform Module System | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 21 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 21 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 4 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Exam:*** | 30% | | ∙ ***Project:*** | 30% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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|  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  | ***Jd/GUIIP/200 GUI Using Java Programming*** | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | This course will talk about GUI components in Java programming language, an introduction to JavaFX and event handling model. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | * To get familiar with GUI components in JavaFX and event handling model. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | * Lesson 1: Nested and Inner classes * Lesson 2: Event Handling in Java * Lesson 3: Introduction to GUI Programming * Lesson 4: Building UI Using JavaFX: Basic Controls, Event Handling, and Layout * Introducing to JavaFX Event Handling, and Layout Managers | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | % | | ∙ ***Exam:*** | % | | ∙ ***Project:*** | % | | | | | | | | | |  |  |  |  |  |  | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  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|  |  |  |  |  | | | | | | | | |  | | |  |  | |  | | --- | | This course will talk about the different way to connect to Data Base using Java API's. | |  | | | | | | | | | | | | |  | | |  |  |  |  |  |  |  |  |  |  |  |  | | | | |  | | |  |  | |  | | --- | | **Course Objectives:** | |  |  |  |  | | | | | | | | | |  | | |  |  |  |  |  |  |  |  |  |  |  |  | | | | |  | | |  |  | |  | | --- | | * To know the different ways to connect to Data Base using Java API's. | | | | | | | | | | | | | | |  | | |  |  |  |  |  |  |  |  |  |  |  |  | | | | |  | | |  | |  | | --- | | **Course Contents:** | |  |  |  |  |  |  |  |  | | | | | | |  | | |  |  |  |  |  |  |  |  |  |  |  |  | | | | |  |  | • Lecture 1:  1. Lesson 1: Introduction to JDBC:  1. What is the JDBC?  2. Why Should We Use JDBC?  3. JDBC Product Component:  1. The JDBC API  2. JDBC Driver Manager  3. JDBC Test Suite  4. JDBC-ODBC Bridge  4. JDBC Architecture  1. Two-tier processing models for database access  2. Three-tier processing models for database access  5. JDBC Driver  1. What is JDBC Driver?  2. JDBC Drivers Types  1. Type 1: JDBC-ODBC Bridge Driver  2. Type 2: JDBC-Native-API driver (partially java driver)  3. Type 3: JDBC-Network Protocol driver (fully java driver)  4. Type 4: JDBC-Pure Java – Native Protocol Driver (fully java driver)  3. Which Driver should be Used?  6. 1.6 JDBC Versions History  1. JDBC Versions Released  2. Features of JDBC 1.0 API  3. Features of JDBC 1.2 API  4. Features of The JDBC 2.0 Optional Package API  5. Features of the JDBC 2.1 core API  6. Features of JDBC 3.0 API  7. Features of JDBC 4.0  8. Features of JDBC 4.1  9. Features of JDBC 4.2  • Lesson 2: Processing SQL Statements with JDBC:  1. Register the driver class (Loading the Driver)  1. Class.forName()  2. DriverManager.registerDriver()    2. Create the Connection  1. Import JDBC Packages  2. Register JDBC Driver  3. Database URL Formulation  4. Create Connection Object  1. Using a URL with a username and password  2. Using Only a Database URL  3. Using a Database URL and a Properties Object  3. Create a Statement  1. Statement  2. CallableStatement  3. PreparedStatement  4. Recommended using of statement types  4. Deal with ResultSet  1. ResultSet Types  2. Concurrency of ResultSet  3. Holdability of ResultSet  4. ResultSet Methods  1. Navigation Methods  2. Get Methods  3. Update Methods  5. Execute Queries  6. Close Connection  7. Working with Statement example  Lecture 2:  • Lesson 3: Connecting With DataSource Objects:  1. Overview about DataSource  2. Using DataSource Objects to Get a Connection  3. Deploying Basic DataSource Objects  1. Creating an instance of the DataSource class  2. Setting its properties  3. Registering DataSource Object with Naming Service That Uses JNDI API  4. Using Deployed DataSource Object  5. Deploying Other DataSource Implementations  1. Deploying ConnectionPoolDataSource  2. Deploying Distributed Transactions  6. Advantages of DataSource Objects  7. DataSource Example  1. Example 1:Using properties file  2. Example 2:Using Web server (Tomcat 9)  8.  • Lesson 4: Prepared Statement, Transaction, and Batch Update:  1. Using Prepared Statement  1. Overview of Prepared Statements  2. Creating a PreparedStatement Object  3. Supplying Values for PreparedStatement Parameters  4. Execute PreparedStatement object  2. Using Transactions:  1. What is the Transaction  2. Disabling Auto-Commit Mode  3. Committing Transactions  4. Setting and Rolling Back to Savepoints  3. Batch Update:  1. Overview of Batch  2. How can make a Batch?  3. Batching with Statement Object  4. Batching with PreparedStatement Object  Lecture 3:  • Lesson 5: Dealing with RowSet Objects  1. What is RowSet?  1. Introduction to RowSet  2. What can RowSet object do?  1. Function as JavaBeans Component  1. Properties  2. JavaBeans Notification Mechanism    2. Add Scrollability or Updatability  3. Kinds of RowSet Objects  1. Connected RowSet Objects  2. Disconnected RowSet Objects  4. How to Create any type of RowSet?  2. Using JdbcRowSet Objects  1. Why We Are Using JDBCRowSet Objects?  2. Creating JdbcRowSet Objects  1. Passing ResultSet Objects  2. Passing Connection Objects  3. Using the Default Constructor  4. Using the RowSetFactory Interface  3. How to use JdbcRowSet Objects  1. Navigating JdbcRowSet Objects  2. Updating Column Values  3. Inserting Rows  4. Deleting Rows  3. Using CachedRowSet Objects  1. When we use CashedRowSet?  2. Setting Up CachedRowSet Objects  1. Creating CachedRowSet Objects  1. Using the Default Constructor  2. Using an instance of RowSetFactory    2. Setting CachedRowSet Properties  3. Setting Key Columns  3. Populating CachedRowSet Objects  4. What Reader Does?  5. Updating CachedRowSet Object  1. Updating Column Values  2. Inserting and Deleting Rows    6. Updating Data Sources  7. What Writer Does?  8. Notifying Listeners  1. Setting Up Listeners  4. Using JoinRowSet Objects  1. Why we are using JoinRowSet objects?  2. Creating JoinRowSet Objects  3. Adding RowSet Objects    5. Using FilteredRowSet Objects  1. Why we are using FilteredRowSet objects?  2. Defining Filtering Criteria in Predicate Objects  3. Creating FilteredRowSet Objects  4. Creating and Setting Predicate Objects  5. Removing All Filters so All Rows Are Visible  6. Using WebRowSet Objects  1. Why we are using WebRowSet objects?  2. Creating and Populating WebRowSet Objects  3. Writing and Reading WebRowSet Object to XML  1. Using the write Xml Method. | | | | | | | | | | | | |  |  | • Lecture 1:  1. 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Using the writeXml Method | |  | | |  |  |  |  |  |  |  |  |  |  |  |  | | | | |  | | |  | |  | | --- | | **Course Hours:** | |  |  |  |  |  |  |  |  |  | | | | | |  | | |  |  |  |  |  |  |  |  |  |  |  |  | | | | |  | | | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  | | | | | | | | |  | | |  |  |  |  |  |  |  |  |  |  |  |  | | | | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | % | | ∙ ***Exam:*** | % | | ∙ ***Project:*** | % | | | | | |  |  |  |  |  |  | | | | | | | | | | | |  |  | | --- | | ***OST/JSLibs/200 - JavaScript Libraries*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | Advanced JavaScript programming (especially the complex handling of browser differences), can often be very difficult and time-consuming to work with. To deal with these difficulties, a lot of JavaScript (helper) libraries have been developed. These JavaScript libraries are often called JavaScript frameworks. It could be divided into: DOM manipulation as jQuery Server-Side as NodeJs Web-application as AngularJs Graphical/Visualization as Raphaël | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Understand what's so good about jQuery - Google, IBM, Netflix, and even Microsoft are all using it! Be able to add support for jQuery into your own UIs - and let Google host it for you Get how jQuery works: DOM selection, decoration, enhancing Be able to use jQuery's effects, animation, scrolling, and resizing capabilities Build lightboxes, slideshows, and manipulate images - all in JavaScript! Be able to render pro-looking panels, menus (including drop-down), accordions, tabs, tooltips UI widgets in your apps Learn about jQuery's AJAX facilities and create amazing interactive applications Be able to enhance your forms with hints, autosuggestions, client-side validation, star ratings, and more! Learn about jQuery's controls, including date pickers, sliders, progress bar, sorting, and drag'n'drop Be able to create/manage lists, trees, and tables - again all in JavaScript Understand jQuery's plugins, themes, and other advanced concepts, including best-practices | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Client-Side Technologies | | * HTML5 | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | What's jQuery and what's so good about it? Who is using it? Cross-browser compatibility jQuery UI and Plugins Handling Events. Handling Form inputs and Form validation Downloading and including jQuery Google and Microsoft CDN Developer vs. Production versions (compressed vs uncompressed) jQuery namespace and jQuery '$' alias Revisiting HTML DOM Debugging jQuery problems Accessibility concerns Making sure that the page is ready Selections using CSS3 Decorating with CSS Effects with jQuery (e.g. hiding, revealing, and toggling elements) Event handlers Adding and removing HTML elements Modifying content Simple form validation The submit event Validation plugin Form hints Checkbox checker Inline editing Autocomplete Star rating input Overview of Angular in Action: a Simple App | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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|  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | MongoDB is an open-source database system which is distributed as a free, document-oriented and cross-platform software. It is a fast and scalable NoSQL database, which moves away from the traditional relational database structure to embrace a dynamic schema design and JSON-type documents (known as BSON in MongoDB). Therefore, it becomes really easy and fast to integrate data from different applications. This MongoDB training program will cover fundamentals of installation, schema design, JSON, inserting data, querying, indexing and using language drivers. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | understand how to install and configure MongoDB and know the concepts of NoSQL | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Database Fundamentals | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Installation and configuration of the main components of MongoDB Working with documents and different data types available Exploring Data Models and schema design are implemented in the NoSQL and MongoDB world Using different methods such as insert(),update(), find(),and delete() for performing CRUD operations Performing aggregation operations in MongoDB General Administration of the database system along with maintaining security Using indexes to increase the speed of retrieving data from search queries Applying the concepts of replication and replica sets to configure high availability environment using replicated servers in same host. Setting up a sharing environment using two MongoDB servers | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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MySQL Database*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | This course provides students with a comprehensive overview of MySQL. Students will be able to install, run, tune, create and use databases. Basics of database applications will also be covered so that the student will have the tools to create database backed websites. MySQL is an open-source relational database that is free for most uses. It has wide platform support and can be quickly deployed. MySQL has become a standard for small and medium sized organizations, as it is affordable, reliable, and fast. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Understand how to install and configure and develop MYSQL database | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Database Fundamentals | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Introduction DDL  Create database, Indexes, creating tables Data-types  Primary key & foreign key DML [Insert, Delete, Update] SELECT statement & Sub-queries  Joins Group by & Having  Retrieving data from multiple tables  Unions Special functions  Views, Stored procedures, Triggers | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 50% | | ∙ ***Exam:*** | 50% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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--- | |  |  |  | |  | | --- | | ***OST/NJS/400 - Node.js*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | Node.js is a platform built on Chrome's JavaScript runtime for easily building fast and scalable network applications. Node.js uses an event-driven, non-blocking I/O model that makes it lightweight and efficient, perfect for data-intensive real-time applications that run across distributed devices. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | The main idea of Node.js: use non-blocking, event-driven I/O to remain lightweight and efficient in the face of data-intensive real-time applications that run across distributed devices. | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Client-Side Technologies | | * Geo-Apps Development | | * Introduction to Programming | | * MongoDB | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | -Node.js Introduction  -Node.js setup -Node.js First Application -Node.js REPL Terminal -Node.js Package Manager (NPM) -Node.js Callbacks Concept -Node.js Event Loop -Node.js Event Emitter -Node.js Buffers -Node.js Streams -Node.js File System -Node.js Global Objects -Node.js Utility Modules -Node.js web Module -Node.js Express Framework -Node.js RESTFul API -Node.js Scaling Application -Node.js Packaging | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 3 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Project:*** | 60% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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***OST/OSERPs/500 - Open-Source ERP Systems*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | Open ERP System is a suite of open-source business apps written in Python and released under the AGPL license. It is used by 2 million users worldwide[1][third-party source needed] to manage companies of all different sizes | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Integrate open ERP Modules Create new module Customize Open ERP modules | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Database Fundamentals | | * Python Programming | | * Web Services | | * XML Fundamentals | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | What is ERP systems Open ERP installation and structure  Open ERP Modules Open ERP Views Create new modules | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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PHP CMSs*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | This course learns students the concepts behind web frameworks techniques and how to use MVC concept to build their project structure. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Provide practical training of the most common features of a CMS checking and changing content before publishing on the internet without having the knowledge of HTML | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Apache Web Server | | * MySQL Database | | * PHP Programming | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | What a Content Management System (CMS) How to log on to the CMS How to define 'Content Types' and how to add content Using Templates to add content to the web site Preparing Content for the web site Adding attachments to content Adding links within the content Understanding Workflow Editing content on the system | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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***OST/PHP/300 - PHP Programming*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | PHP is a server-side scripting language which has gained wide-spread popularity and acceptance in the web-developing community because of its powerful functionality and ease of use. Because of its simplicity, even non-programmers or starters can create their own web sites easily by using PHP. This probably explains the existence of over five million PHP-based web sites on the Internet. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Incorporate PHP into HTML files  Process form input  Write and use functions Connect PHP with MySQL DBMS | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Apache Web Server | | * MySQL Database | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | PHP Overview Installing and Configuring PHP Introduction to PHP Programming Form Parsing in PHP Using Session Variables in PHP  Working with Files and Directories in PHP PHP Arrays PHP functions MySQL connection | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 3 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Exam:*** | 60% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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***OST/PHPWFs/300 - PHP Web Frameworks*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | This course learns students the concepts behind web frameworks techniques and how to use MVC concept to build their project structure. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Model-View-Component design pattern Create a simple web application using PHP. | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * MySQL Database | | * PHP Programming | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Introduction to Zend\_Tool and Zend\_Application Authentication and Authorization (Zend\_Acl, Zend\_Auth, …) Core Infrastructure (Zend\_Config,Zend\_Log, …) Databases (Zend\_Db,Zend\_Db\_Table, …) Model-View-Controller (Zend\_Controller,Zend\_Controller\_Action, …) Web Form (Zend\_Form, …) View and Layout (Zend\_View,Zend\_Layout, …) | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 30 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 4 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Project:*** | 60% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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***OST/PPT/500 - Push and Pull Technologies*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | Pull or client pull is a style of network communication where the initial request for data originates from the client, and then is responded to by the server. The reverse is known as push technology, where the server pushes data to clients. Usually, customers will look for a site and visit only if it provides helpful and attractive content to display. The pull code is effective and economical when advertising to open, unidentified potential customers worldwide. It is more effective for the customer when he searches for a specific item. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Understand the relationship between the different protocols that comprise AJAX Use reverse AJAX to push the data from server side to client side Learn best practices in cross browser coding  Use AJAX to develop web applications for a dynamic user experience. | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * JavaScript | | * Node.js | | * ReactJS | | * Web Services | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | The key elements of AJAX Orchestrating the user experience with JavaScript Defining look and feel using CSS Organizing the view using the DOM Loading data asynchronously using XML technologies What sets AJAX apart | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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***OST/PTHN/300 - Python Programming*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | This course teaches students to write python programs with powerful user graphical interfaces and using the different features such as multithreading, networking and client/server programming | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Good understanding of Python programming language, and selected libraries used in web development. Students will be able to write good modular procedural code and use objects. An Overview of the other major topics, features and libraries in Python. Good understanding of Django Framework and MVT pattern. | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Client-Side Technologies | | * Introduction to Programming | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Introduction Identifiers, variables and data-types Expressions and Strings "Processing Strings and Regular Expressions" Object-Oriented Python Using Databases Networking and the Internet Handling Internet Data "Parsing XML" Django Framework | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 3 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Project:*** | 60% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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|  | | --- | | ***OST/RCT/400 - ReactJS*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | React is a library for building composable user interfaces. It encourages the creation of reusable UI components, which present data that changes over time. Lots of people use React as the V in MVC. React abstracts away the DOM from you, offering a simpler programming model and better performance. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | ReactJS is an open-source JavaScript library designed by Facebook for creating rich and engaging web apps fast and efficiently with minimal coding. The core objective of ReactJS is providing the best possible rendering performance. Its strength comes from the focus on individual components. | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Client-Side Technologies | | * MySQL Database | | * Node.js | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | -ReactJS Setup -ReactJS JSX -ReactJS Components -ReactJS State -ReactJS Props Overview -ReactJS Props Validation -ReactJS Component API -ReactJS Component Life Cycle -ReactJS Forms -ReactJS Events -ReactJS Refs -ReactJS Keys -ReactJS Router -ReactJS Flux concept -ReactJS Using Flux -ReactJS Animations -ReactJS Higher Order Components | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 30% | | ∙ ***Project:*** | 70% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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Red Hat System Administration I*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | The course is designed for IT professionals who are new to Linux®. This course focuses on enabling students rapidly become capable of performing core administration tasks. Students are also introduced to the graphical environment and tools. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Gain sufficient skills to perform core system administrator tasks on Red Hat Enterprise Linux. Start building the skills needed by an RHCSA-certified Red Hat Enterprise Linux system. | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Operating Systems Fundamentals | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Graphical installation of Linux Managing physical storage Introduction to the command line Learning how to install and configure local components and services Establishing network and securing network services Managing and securing files Administrating users and groups Deploying file-sharing services GUI-based tools and key command-line concepts Basic security skills | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 3 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Exam:*** | 60% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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***OST/RHSAII/300 - Red Hat System Administration II*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | A follow-up course for students that have completed Red Hat® System Administration I. The students will dive deeper into Red Hat Enterprise Linux to broaden their toolkits of administration skills. By the end of this course, students will be able to administer and troubleshoot file systems and partitioning, logical volume management, access control, and package management. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Provide students with solid skills in Red Hat Enterprise Linux. Prepare students to validate their skills in the RHCSA exam. | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Operating Systems Fundamentals | | * Red Hat System Administration I | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Network configuration and troubleshooting Managing file systems and logical volumes Controlling user and file access Installing and managing services and processes Essential command-line operations Troubleshooting file systems and partitioning LVM, access control, and package management | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 15 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 3 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Exam:*** | 60% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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***OST/RUBY/300 - Ruby Programming*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | This course teaches students to write Ruby programs with powerful user graphical interfaces and using the different features. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Setup Ruby development environment Learn the fundamentals of the Ruby language Learn about the built-in Ruby libraries and APIs Learn the principals of object-oriented programming (OOP) in Ruby Practice test-driven development in Ruby Learn how to use external libraries in Ruby | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Introduction to Programming | | * Red Hat System Administration I | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Introduction Learning ruby Getting started with rails Classes AND Objects Rails & MVC | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 21 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 3 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 40% | | ∙ ***Project:*** | 60% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

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| |  |  |  |  |  |  | |  |  |  | |  | | --- | | Introduction to Software Testing Fundamentals and unit testing | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Upon completing this course, the students should be able to   * Know about Why we need testing as developer * Know about Testing types * Know about Testing levels * Know about Testing techniques * Learn Unit testing and code quality * Implement Unit testing using frameworks (Track Specific) * Implement TTD * Participate in Code reviews & testing workshop | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  | | --- | --- | |  |  | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | * Introduction to software testing   + Why we need testing as developer * Testing types   + Static & Dynamic Testing   + Functional & No-Functional * Testing levels   + Unit/Integration/System/Acceptance * Testing techniques   + Black box   + White box   + Experience based technique * Unit testing and code quality * Unit testing frameworks (Track Specific) * TTD * Code reviews & testing workshop | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 3 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 1 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  |  | | |  |  **Course Materials****Required Materials** Course PTT   * Junit installed on platform IDE * Student’s Sample code to test  **Optional Materials****Required Text** [Programming paradigms: Essential Computer Science- A Programmer’s Guide to Foundational Concepts](https://link.springer.com/book/10.1007/978-1-4842-7107-0) Appendix A&B **Assessment and examination**  * Code review & Unit testing for it (using their specific platform) from their assignments  **Additional Information and Resources** [www.softwaretestinhelp.com](http://www.softwaretestinhelp.com/)  [www.testbytes.com](http://www.testbytes.com/)  [www.ministryoftesting.com](http://www.ministryoftesting.com/) |  |

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| --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  | |  | | --- | | ***OST/VCS/100 - Version Control Systems*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | This course is a gateway to learning software version control (SVC), process management, and collaboration techniques. It reviews the history of version control and demonstrates the fundamental concepts: check-in/checkout, forking, merging, commits, and distribution. The choice of an SVC system is critical to effectively managing and versioning the assets in a software development project (from source code, images, and compiled binaries to installation packages), so the course also surveys the solutions available. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | understand the major difference between CVCS and DVCS and how to deal with git or SVN | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Comparing centralized vs. distributed systems Saving changes and tracking history Using revert or rollback Working with the GUI tools Using IDE and shell integration Installing different systems Creating a repository Tagging code Branching and merging code Selecting a software version control system that's right for you | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | |  |  | |  |  | |  |  | |  |  | |  |  | |  |  | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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 |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | a progressive framework for building user interfaces. Unlike other monolithic frameworks, Vue is designed from the ground up to be incrementally adoptable | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | powering sophisticated Single-Page Applications when used in combination with modern tooling and supporting libraries. | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * Client-Side Technologies | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | -components  -props | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 9 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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Services*** | | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  |  | |  |  |  | |  | | --- | | This course learns students the concepts behind web services techniques and what exactly web services are and why and how to use them. and how to create a production-strength RESTful and SOAP web service. | | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | Create RESTful web services. Create SOAP web services. Connect to remotely web services. | | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  |  |  | | --- | --- | --- | | |  | | --- | | **Prerequisite(s):** | |  | |  |  | | |  | | --- | | * JavaScript Libraries | | * Node.js | | * XML Fundamentals | | | | | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | What is web services. RESTful web services. SOAP web services. Consume web service. | | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 6 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 1 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 100% | | | | | | | | | |  |  |  |  |  |  |  | | |  | |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  |  |  |  |  | | --- | --- | --- | --- | --- | |  | |  | | --- | | ***Soft Skills Courses*** | |  |  | |  |  |  |  | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | |  |  |  |  |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  | |  | | --- | | ***BUS/BPRW/100 - Best Practices For Remote Working (Workshop)*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Workshop Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | Moving to remote working and shifting to virtual organizations are increasing, therefore all individuals should get ready for such global change. The course helps learners to grasp the key practices of remote working, pros and cons of it, the main challenges they might encounter, the best practices for time management, deep work, and self-motivation. The Workshop also capitalizes on the importance of video conferencing and team collaboration tools. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | By the end of this course, the learner will be able to:  • Prepare successfully for working remotely, in terms of desk setup, internet connection, time zone difference, work environment. • Recognize the advantages and disadvantages of remote working. • Identify personal factors that might affect the decision of working remotely, including family, health and commuting. • Recognize and weight the difficulties of remote working. • Evaluate remote work challenges based on individual’s personal capabilities to decide about the suitable work style. • Capitalize the importance of flexibility and self-motivation in remote working. • Follow the professional communication channels and flows while communicating remotely. • Prioritize and schedule tasks while maintaining successful work- life integration. • Conquer procrastination and follow the time plan. • Identify individual’s personal factors that affect productivity.  • Capitalize the conditions and tools that increase productivity and foster deep work. • Increase the level of concentration at work to achieve the best outcomes. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | • Getting Ready to Work Remotely • Pros and Cons of Remote Working • Challenges of Working Remotely • Effective Remote Working • Effective Time Management • Deep Work and Productivity • Meetings Via Video Calls | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 3 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 0 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 1 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Attendance:*** | 100% | | | | | | | | | |  |  |  |  |  |  | | | | |  | |  |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
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***BUS/CEP/100 - Communication Essentials for Professionals*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | Communication skills are skills that facilitate employees to communicate effectively with one another Effective communication skills are essential for success in most jobs, as a freelancer, an entrepreneur or a remote worker Effective communication engages the choice of the best communication channel, the building of a comprehensible message, the presentation of information to target audience, the skill to reply and give feedback professionally, and the skill to understand responses received from others Good communicators know how to analyze audience, assess situations, choose the appreciate channel, distinguish between formal and informal communication, mix between oral and written verbal communication, and master how to overcome communication barriers Also, the course focuses on aspects and factors that affect the quality of communication, virtual communication barriers, storytelling and communication freezers Good communicators know how to study different culture and know how to respect cultural values The course helps learners to understand the difference between high and low context cultures, and to communication effectively within different global cultures The course highlights the dimensions of national culture according to Hofstede s model, and differentiates the various meanings of body language and hand gestures across cultures Finally, the course focuses on the etiquette and social manners differences between cultures Effective communication engages the skills of professional writing this includes writing formal reports and e-mails, build comprehensive documents, develop meeting agenda and minutes of meetings effectively In addition to using data visualization techniques to ensure that readers grasp the information easily and quickly Also, the course discusses the important aspects of organizing information in a document, eliminating redundancy and proofreading. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | By the end of this course, the learner will be able to: • Understand the basic concept of human communication as it occurs across various contexts. • Identify the different contributors to effective communication and the successful communication process. • Gain the ability to formulate clear, concise, and coherent messages that leave no room for misunderstanding. • Choose the correct channel to use, without committing mistakes or receiving negative comments • Use voice or video communication periodically when possible. • Analyze the process of stereotype formation and the manifestations of prejudice, discrimination, and other communication freezers such as sexism and racism. • Understand e-mail writing etiquette following the professional rules according to business protocols • Use e-mails in an effective manner, to make no mistakes, and create no conflicts with managers, colleagues, and clients. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Module 1: Communication Essentials for Professionals ( 6 H/C) • Concept of Communication • Basic Communication Process • 7 Cs of Communications • Communication Channels • Types of Communication • Barriers to Communication • Communication Freezers • Storytelling Effective Word Module 2: Cross-cultural Communication ( 3 H/O) • Understanding Culture and Cultural Values • Communication between Cultures • High and Low Context Cultures • Dimensions of National Cultures • Cultures and Body Language • Intercultural Business Etiquette Module 3: Professional Writing Skills ( 3 H/O) • Organizing Information in a Document • Eliminating Redundancy and Verbosity • Proofreading • E-mail Writing • Meeting Agenda • Minutes of Meeting • Writing Reports • Data Visualization | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 0 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 3 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 1 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 90% | | ∙ ***Attendance:*** | 10% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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***BUS/HIP/100 - High Impact Presentations*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | Effective presentation skills are important to develop a successful career The course provides systematic and proven strategies for organizing ideas and information for greatest impact while presenting and for building strong audience rapport The course emphasizes on planning, preparing, designing and building a presentation in a way that ensures influencing audience The course focuses on how to deliver high impact presentations and the different styles and characteristics of presenters, besides highlighting the tips and tricks of professional body language and voice while presenting face to face or online. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | By the end of this course, the learner will be able to: • Identify the reasons that cause unbearable presentations and poor audience engagement in both in-person and virtual • Prepare and plan for a professional presentation with high impact. • Identify differences between face to face and online presentations • Identify the presentation audience and their interests and level of understanding. • Improve the presentation content and duration by adopting an audience centered approach. • Modify delivery according to the audience culture and age group. • Understand how to leverage virtual tools to create interaction • Recognize and understand different presentation structures and styles, and when and how to use each. • Build logical and impressive presentation and logically organize the body of the presentation using clear and meaningful slides. • Deliver a presentation with confidence and use nonverbal communication aids. • Use clear and attractive visual aids, meaningful supporting material, demonstrations, and charts. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Course Outline: • Preparing and Planning a Presentation • Analyzing Audience • Objective and Content of Presentation • Building a Presentation • Presentation Delivery and Visuals • Presenter’s Characteristics and Body Language • Stress Management for Presentations • Online Presentations | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 0 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 3 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 1 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Presentation:*** | 90% | | ∙ ***Attendance:*** | 10% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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***BUS/JSS/100 - Job Seeking Skills*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | This course exposes students to effective interview techniques with composition of resumes and reference sheets, focuses on the pre interview preparations and post interview follow up The course is designed to enhance learners’ understanding of the recruitment process and types of interview, and to examine techniques to ensure proper interview preparations and increased personal effectiveness By discussing different types of interview questions, examples for typical interview questions, different possible elements of interviews and examining what interviewers are looking for, students can identify how their strengths and experience can meet the interview criteria Also the course highlights the important steps in the selection process for remote working jobs, including recruitment tasks, phone interviews and online video interviews The workshop helps learners to prepare themselves to apply for job including remote working jobs, be aware of what they need to hunt a good job opportunity and know how to handle the remote working challenges The content gives the learners useful tips and tricks to conduct a successful recruitment online interview and to submit a professional recruitment prerecorded short video, cover letter and job application An important step to find a good job online is to create a complete and attractive LinkedIn profile, the workshop answers many questions regarding LinkedIn, and gives useful recommendations to create All Star profile, and how to tailor the CV to match the job requirements and pass ATS screening. Finally, important personal branding recommendations will be discussed to help learners to enhance their online presence | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | By the end of this course, the learner will be able to: • Understand the Human Resources Management activities and the HR selection process. • Understand the meaning of recruitment, labor market components, and placement • Hunt an employment opportunity and apply for a job vacancy • Deliver convincing answers to different types of interview questions. • Understand the reason behind using Recruitment Video. • Prepare for Live online video interview. • Submit professional and interesting pre-recorded recruitment video • Create and complete LinkedIn profile. • Customize your LinkedIn public profile link. • Create an appropriate plan of action to develop and promote your personal brand and enhance your career | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | Module 1: Interviewing Skills • Recruitment Process and Selection Techniques • Types of Interviews • Types of Interviews Questions and Frequently asked Questions • Preparing for an Interview • Personal Appearance and First Impression • Managing Body Language • Recruitment Video • Online Interviews Module 2: CV Writing And Personal Branding • Types of CVs • CV Versus Resume • CV/Resume Design • Main CV/Resume Sections • LinkedIn Profile Sections • All-Star LinkedIn Profile • Online Profiles and Portfolio • Personal Branding • Brand Identity • Developing Online Presence Module 3: Job Candidacy Enhancement  • Matching CV/Resume with Job Profile • Passing ATS Scan • Writing a Personal Profile/ Summary • Cover Letter • Job Application E-mail • Writing Proposals for Freelancers | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 18 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 0 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 2 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Lab Assignment:*** | 90% | | ∙ ***Attendance:*** | 10% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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(Workshop)*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | Understanding the workplace is crucial for all individuals who are seeking to build a career in the ICT field. Professional workplace behavior is necessary for the long-term success of a business, whether it's a big corporation or small business. A professional workplace attitude and appearance allow employees to take pride in their work and improve worker performance. Professional manners at the workplace enhance relationships, maintain respect for others, cultivate collaborative corporate culture, and promote business growth. The course covers the workplace expectations and acceptable behaviors, major work attitudes, results of job satisfaction, business code of conduct, respecting privacy and intellectual properties, appropriating business appearance, and office etiquette. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | • Identify the main components of a business code of conduct. • Acknowledge the necessity to follow the company’s code of conduct, and discern the ramifications of misconduct. • Apprehend the linkage between the employee’s behaviors and the company’ image even after official working hours. • Concede how unprofessional off-duty conduct can negatively impact the company’s reputation. • Capitalize the benefits of going the extra mile at work, in terms of over-performing, culture add and going beyond expectations, on a team level, and on the organization level. • Respect and maintain the privacy and personal space of other colleagues at work. Besides maintaining suitable physical personal space, this also includes conserving the privacy of personal properties, laptop, PC, mobile, personal or work documents and any other personal belongings. • Don’t copy or use the Company’s software licenses. • Source code and work you do and get paid for it; is an intellectual property of the company; don’t keep it and don’t reuse it with other clients. • Don’t be afraid of singing NDA. • Follow professional manners at the workplace and apply office, greeting, business card, phone calls, elevator and door, and meeting etiquette. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | • Business Code of Conduct • Off-duty Conduct and Corporate Image • Work Attitudes • Going the Extra Mile • Professional Appearance and Dress Code • Personal Distance and Privacy • Business Etiquette | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 3 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 0 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 1 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Attendance:*** | 100% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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(Workshop)*** | | | | | | | |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Description:** | | | | | |  |  |  |  |  | |  |  |  | |  | | --- | | Successful teams usually produce first-rate results, and great products and services are made and delivered by effective teams. To achieve that, team members must develop their interaction, communication, reducing conflict, sharing, and interpersonal skills. This workshop intends to increase the students’ knowledge and skill levels in team building and team working skills. Gain skills using methods, techniques, and tools which will improve the team effectiveness and the organization's performance. Also, build awareness of the importance of team diversification, organizational citizenship, and work engagement. The workshop helps students to appreciate the role of effective leadership and motivation skills in enhancing the organization’s performance. In addition to exploring conflict management techniques, situational leadership, and digital tools for team communication and collaboration. | | | | | | | | | |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | **Course Objectives:** | | | | | | |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  |  | |  | | --- | | By the end of this course, the learner will be able to: • Discover and understand team principles • Effectively use The CORNERSTONES to improve team behavior • Determine clear roles and responsibilities within the team • Identify the stages of team development, and analyze the characteristics of each stage. • Promote and practice effective teamwork to improve results. • Identify ways to participate and lead in a team setting. • Understand individual impact on team goals and results • Implement Virtual Team Building  • Successful Virtual Teams Collaboration • Develop and practice techniques for handling counterproductive team behavior and team conflicts. • Understand theories and concepts of leadership in organizations. • Recognize the importance of work engagement and organizational citizenship. • Develop team strengths , improve weaknesses and evaluate team progress • Understand what are the different types and styles of leadership and motivation. | | | | | | | | | | | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Contents:** | | | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | • Cornerstones of Teamwork • Stages of Team Development • Team Diversity and Interdependence • Conflict Management • Organizational Citizenship Behavior • Roles of Team Leader • Situational Leadership • Team collaboration tools (Slack/ Agile/ MS Teams) • Tasking and project management tools (Trello, Monday, Jira) | | | | | | | | | |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  |  | |  | | --- | | **Course Hours:** | | |  |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | |  | |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | |  | |  | | --- | | ∙ ***Lectures:*** | | | |  |  | |  | | --- | | 3 Hours | |  | |  | |  | | --- | | ∙ ***Lab.:*** | |  |  |  |  |  |  | |  |  |  |  |  | |  | | --- | | 0 Hours | |  | |  | |  | | --- | | ∙ ***Self-Study:*** | | | | |  |  | |  |  | |  | | --- | | 12 Hours | |  | |  | |  | | --- | | ∙ ***Credits*:** | | |  |  |  |  | |  |  |  |  | |  | | --- | | 1 Hours | |  | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  | | | | | |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |  |  |  |  |  | | |  |  |  | | --- | --- | --- | |  | |  | | --- | | **Evaluation Criteria** | | | |  |  | | --- | --- | | ∙ ***Attendance:*** | 100% | | | | | | | | | |  |  |  |  |  |  | | |  | |  |

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