

Certificate Courses

Semester	Course Code	Course Name	Credit	Hrs/wk	
				L	T
Semester I	SJBCA1CC01	Operating System	0	3	3
Semester II	SJBCA2CC01	Computer Networks	0	4	4
Semester III	SJBCA3CC01	Introduction to Digital technology	0	3	3
Semester IV	SJBCA4CC01	Virtualization and Cloud	0	4	4
Semester V	SJBCA5CC01	Process Management	0	3	3
Semester V	SJBCA5CC02	Infrastructure Management	0	3	3
Semester VI	SJBCA6CC01	Client relationship Management and ITIL	0	3	3
Semester VI	SJBCA6CC02	Introduction to Worksheet	0	2	2
Total				25	25

SJBCA1CC01 – OPERATING SYSTEMS

Contact Hours per Week: 4

Number of Credits: 0

Number of Contact Hours: 48 Hrs.

Objectives

- To learn operating systems

Prerequisites

- Basic Computer fundamentals

Course Outline

Unit I

Windows-Hardware Basics, Operating System overview and Windows, Windows 7 Essential, Client OS-Windows 7-Users and Groups-IP Configuration, Client OS-Windows 7 Tools and Utilities-Client OS Windows 7- Installation-Features-Disk Management-File Systems.

Unit II

Server OS-Windows Server 2012 Overview-Server DNS-Zone Creation - DHCP LAB-Advanced server storage Management-server ADS concepts and FSMO-Server OS Windows Server 2012 Roles and features- Server OS Windows Server 2012 File and Print Services.

Unit III

Server OS monitoring and managing Windows Server 2012-Server OS Windows Server 2012 DNS and DHCP- Server OS Windows server 2012 Administrative Tools and ADS

Unit IV

Server OS-Windows Server 2012-Storage and Backup Management-Client OS Windows 7 Devices and Printers-Server OS Windows Server 2012 Installation.

Unit V

Group Policy Management-Server Windows Server 2012- File and print services-Group Policy-Server Storage Management –Server Scenario- Server OS Windows Server 2012-DNS and DHCP - Server- ADS scenario.

Reference Books

1. Mitch Tulloch, “Windows 7 Essential Guidance”, 2009.
2. William PanekTylor Wentworth, “Microsoft Windows 7 Administration”, Wiley Publishing, 2010
3. Charles Edge, Chris Barker EhrenSchwiebert, “Beginning MacOSX Snow Leopard Server”, 2010
4. Greg Tomsho, “Guide to Operating System”, 5th Edition, 2017.

OPERATING SYSTEM LAB

Exercises

- Installation of client and server OS
- Create server and play roles
- Zone creation and DHCP
- File and print services
- Devices and printers
- Group policy
- Server storage management
- Server scenario
- ADS Scenario based
- DNS and DHCP

SJBCA2CC01- Computer Networks

Contact Hours per Week: 4

Number of Credits: 0

Number of Contact Hours: 64Hrs.

Objective

- To learn about transmissions in Computer Networks.
- To learn various Protocols used in Communication.
- To have a general idea on Network Administration.

Prerequisites

- Basic Computer fundamentals

Course Outline

Unit I

Introduction - Applications – LAN – WAN – MAN - Network Hardware - Network Software: Protocol Hierarchies – Connection-oriented and connectionless services. Reference Models: OSI Reference Model – TCP/IP Reference Model – Comparison of OSI and TCP/IP.

Unit II

Basics - Protocols, Topology - Guided Transmission Media: Magnetic Media – Twisted Pair – Coaxial Cable – Fiber Optics. Wireless Transmission: Electromagnetic Spectrum – Radio Transmission – Microwave Transmission – Communication Satellites: Geostationary, Medium-Earth Orbit, Low Earth-orbit Satellites.

Network

Unit III

IP Addressing Version 4 – IP Addressing Version 6 – Subnetting Advanced VLSM - Switch Basic - VLAN - VTP / CDP - Subnetting Basic Version 4 - Network Quiz - Routing Static

Unit IV

Routing algorithms – Congestion Control Algorithms - CISCO IOS / Managing / Password recovery - Routing Dynamic Routing protocols OSPF RIP EIGRP - Network Advanced Routing Dynamic Routing protocols - OSPF RIP EIGRP

Unit V

Monitoring Network Devices - Overview of ACL\NAT\WAN\Wireless

Reference Books

1. David J.Wetherall, Andrew S.Tanenbaum, "Computer Networks", 5th Edition, Pearson Education, 2012.
2. Behrouz A. Forouzan, "Data Communication and Networking", 4th Edition, Tata McGraw Hill, 2007.
3. SilviuAngelescu, "CCNA Certification All-In-One for Dummies", Wiley Publishing. Inc.

COMPUTER NETWORKS LAB

Requirements:

Cisco packet tracer software (Freeware)

Exercises

- Switch basic VLAN
- Routing Static
- Switch basic commands
- Switch basic STP
- Dynamic Routing protocols OSPF RIP EIGRP

SJBCA3CC01 –Introduction to Digital Technology

Contact Hours per Week: 3

Number of Credits: 0

Number of Contact Hours: 48 Hrs.

Objective

- To get a general introduction to the digital technology

Prerequisites

- Basic knowledge in computer networks and operating systems

Course Outline

Unit I

Digital Primer - Why is Digital Different?- Digital Metaphors On Cloud 9-A Small Intro to Big Data-Social Media & Digital Marketing-Artificial Intelligence- Unchain the Block chain-Internet of Everything-Immersive Technology.

Unit II

Digital for Industries-Manufacturing and Hi-tech-Banking and Financial Services-Insurance and Healthcare-Retail-Travel & Hospitality-Communications, Media & Information Services-Government.

Unit III

Automatix – Art of RPA-Introduction - Setting the Context-RPA Prelude-RPA Demystified-RPA vs BPM RPA Implementations-RPA in Industries-RPA Tools-Automatix - Art of RPA

Unit IV

Automation Anywhere-Getting Started with AA Enterprise-Exploring AA Enterprise-AA Enterprise – Architecture.

Unit V

Knowing the Bots-More About TaskBots-AA Enterprise - All About Recorders-Designers-MetaBots-Cognitive RPA.

Reference Books

1. Richard Murdoch, “Robotic Process Automation: Guide To Building Software Robots, Automate Repetitive Tasks & Become an RPA Consultant”
2. Kelly Wibbenmeyer, “The Simple Implementation Guide to Robotic Process Automation (RPA): How to Best Implement RPA in an Organization”

DIGITAL TECHNOLOGYLAB

Exercises

- Creating bots for automatic software installation
- Creating bots for automatic software patch installation
- Creating bots for file transfer
- Creating bots for automatic file backup

SJBCA4CC01- VIRTUALIZATION AND CLOUD

Contact Hours per Week: 3

Number of Credits: 0

Number of Contact Hours: 80 Hrs.

Objective

- To learn the basics of virtualization and cloud

Prerequisites

- Basic knowledge in operating systems and networks

Course Outline

Unit I

Distributed Systems: Distribute a system - Distributed algorithm - Distributed Data Stores - Distributed Computing - File Systems - Distributed Messaging - Distributed Applications - Distributed Transaction - Parallel and distributed computing - Applications.

Unit II

Cloud Concepts: Introduction Cloud Computing - Advantages of Cloud - Public Cloud - five essential characteristics - three service models - Four deployment models - Benefits of Cloud Computing - Cloud Vendors - Traditional Infrastructure setup and Challenges – AWS.

Unit III

Virtualization : Introduction to vSphere and the Software - Defined Data Center Creating Virtual Machines - VCenter Server - Configuring and Managing - Virtual Networks Configuring and Managing Virtual Storage - Virtual Machine Management - Resource Management and Monitoring.

Unit IV

Virtual Machines: vSphere HA - vSphere Fault Tolerance - Protecting Data vSphere DRS - Network Scalability - vSphere Update Manager and Host Maintenance - Storage Scalability - Securing Virtual Machines.

Unit V

Datacenter: Data center overview -Components - Provisions - Need of Data Center - Data Center Architecture - Different Racks - Data center architecture for cloud computing - role of data center in cloud computing.

Reference Books

1. Jean Dollimore formerly of Queen Mary, Tim Kindberg, “Distributed Systems Concepts and Design”, 5th Edition Cambridge University, University of London
2. VenkataJosyula , Malcolm Orr , Greg Page, “Cloud Computing: Automating the Virtualized Data Center”, 1st Edition.
3. Brian J.S. Chee, Curtis Franklin Jr., “Cloud Computing: Technologies and Strategies of the Ubiquitous Data Center”, 1st Edition.

VIRTUALIZATION AND CLOUD LAB

Exercises

- Working with hypervisors
- Creating account in AWS
- Exploring AWS services like storage, machine image, pricing models, data bases

SJBCA5CC01- Process Management

Contact Hours per Week: 3

Number of Credits: 0

Number of Contact Hours: 80 Hrs.

Objective

- To learn the basics of Software and software process management

Prerequisites

- Basic knowledge in Computer Fundamentals

Course Outline

Unit I

Software and software Engineering: The Nature of Software –The Unique Nature of WebApps- Software Engineering- Software Process-Software Engineering Practice-Software Myths. Software Process Model: A Generic Process Model- Process Assessment and Improvement –Perspective Process Models-Specialized Process Model-The Unified Process.

Unit II

Agile: Agile Methodology-Manifesto-Principles of Agile-Agile Methodologies-Challenges with Agile. Scrum: Overview of Scrum-Scrum Roles-Scrum Ceremonies-Scrum Artifacts-Extreme programming vs Scrum.

Unit III

Devops: Introduction to Devops-Principles-Automation-Performance Measurement through KPIS and Metrics-Agile and Devops-Agile Infrastructure-Velocity-Lean Startup UPS.

Unit IV

Lean UX and Agile Anti-Patterns : Sprint -Staggered sprints -Sprint zero and design sprints- Dual-track Agile- Listening to Scrum’s rhythms- Listening to Scrum’s rhythms- Participation- Design is a team sport- Coordinating multiple Lean UX teams- Managing up and out – Agile anti-patterns.

Unit V

Design Thinking: Introduction to Design Thinking – Lean thinking - Actionable Strategy- The Problem with Complexity - Vision and Strategy - Defining Actionable Strategy Act to Learn - Leading Teams to Win.

Reference Books

1. Roger S Pressman, “Software Engineering A Practitioners Approach”, 7th Edition 2010
2. Kallori Vikraman, “Introduction to Devops”, 1st Edition, 2016.
3. Stephen Haunts, “Essential of Scrum” Addison-Wesley Professional; 1st Edition, 2012
4. Jeff Gothelf, Josh Seiden, “Lean UX”, 2nd Edition, 2016.
5. Jonny Schneider, “Understanding Design Thinking, Lean, and Agile” O’Reilly Media 2017.
6. Jeff Gothelf , "Lean vs. Agile vs. Design Thinking”Sense and Respond Press,2017.

SJBCA5CC02- INFRASTRUCTURE MANAGEMENT

Contact Hours per Week: 3

Number of Credits: 0

Number of Contact Hours: 80 Hrs.

Objective

- To learn the basics of infrastructure management in frames

Prerequisites

- Basic knowledge in operating systems

Course Outline

Unit I -Introducing Windows 10: Overview of Deploying Windows 10- Configure Devices and Drivers- Perform Post installation Configuration Task- Managing Apps in Window.

Unit II -MS SCCM Basics- Overview of System Center 2012 R2 Configuration Manager-Planning and Deploying a Stand-Alone Primary Site- Planning and Configuring Role-Based Administration- Planning and Deploying a Multiple-Site Hierarchy- Replicating Data and Managing Content in Configuration Manager 2012-Planning Resource Discovery and Client Deployment- Configuring Internet and Cloud-Based Client Management- Maintaining and Monitoring System Center 2012 Configuration Manager.

Unit III -Overview of System Center 2012 R2 Operations Manager: Operations Manager Introduction and Basic Concepts- Reason to use Operations Manager- What’s New in 2012 R2 Operations Manager- System Requirements- Operations Manager Components. Planning & Installation: Deployment Scenarios-Order of Installation- Installation Process- SQL Server Configuration- Operations Console- Web Console.

Unit IV -Administration : Agent Deployment- Security of manual agent- Agent and Agent less managed systems-Role Based Security- Reporting server- Object Discovery. Management Packs: Management Pack Overview- Pre-Installed Management Packs- Importing Management Packs- Overrides.

Unit V -Monitoring Overview- Overriding of MPs- Creating Rules and Monitors- Agentless Monitoring- Demo on Role Based Security- Creating Groups- Configuring Notifications. Operations Manager Reporting: Installing SQL Reporting Services- Installing Operations Manager Reporting- Creating, Viewing and Customizing Reports- Dashboard- Considerations for High Availability and Disaster Recovery.

Reference Books

1. Kerrie Meyler, Gerry Hampson, “System Center Configuration Manager Current Branch Unleashed System” 1st Edition, 2018.
2. SlawekLigus, “Effective Monitoring and Alerting: For Web Operations” 1st Edition, 2012.

INFRASTRUCTURE MANAGEMENT LAB

Exercises

- Working with SCCM
- Working with SCOM

SJBCA6CC01- CLIENT RELATIONSHIP MANAGEMENT

Contact Hours per Week: 4

Number of Credits: 0

Number of Contact Hours: 64Hrs.

Objective

- To learn the basics of manage client relationship

Prerequisites

- Basic knowledge in company infrastructure

Course Outline

Unit I

Service Now Intermediate level / Administrator-ServiceNow Introduction-ServiceNow Platform UI ServiceNow ITSM overview-Managing Users, Groups and Roles, departments, companies and Assignment Rules-Tables, Columns,Attributes,Dictionary Entries ,Schema Map-Managing Forms , Layouts and Lists-Dictionary Overrides and Simple Reference Qualifiers.

Unit II

System Properties - Incident management - - Problem management- - Change management- Overview of other ITSM Modules - Overview of other ITSM Modules- SLA Basics-Introduction to Client and Server Side Scripting-server-side scripting - Server Side Glide API -server-side scripting - Server Side Glide API -Server Side script Debugging-Server Side Scripting Best Practices-Business Rules-Client Side APIs-UI Policies and Data Policies-Client Scripts -Client Side script Debugging.

Unit III

Client Scripts & Client Glide APIs-Best Practices - client-side scripting & policies (UI and Data)- Modularize programming using UI Actions (both Server and Client Side)-Script Include-Glide AJAX-UI Pages and UI Macros-Managing Update Sets-Custom Applications Automated Test Framework –Events-Inbound/Out Bound notifications-Mail Templates and Scripts.

Unit IV

Manage Workflows-Managing Stage Sets -Manage Workflows -Manage Workflows -Flow Designer (Over view)-Service Catalogs, Categories, Items and variables-Manage Execution Plans and workflows-Card Layouts-Client scripts and UI policies-Record Producers-Order Guides & Scriptable Order Guides-Scheduled Jobs. VTB Agent Intelligence (Over View)-Restrict access to applications and application modules-Automatically create application Access Controls -Manually create, test, and debug Access Controls-Managing ServiceNow imports and exports-Managing Import Sets and Transform Map-Configure and run Reports and Dashboards Security Controls-Database Views.

Unit V

ServiceNow Service portals overview -ServiceNow Service portals core components -Scripting in Service Portal-ITSM Virtual Agent – Overview-Performance Analytics Overview-ServiceNow on Mobile-ServiceNow Integration Overview.

Reference Books

1. Tim Woodruff, “Learning ServiceNow: Administration and development on the Now platform, for powerful IT automation”, 2nd Edition, Packt Publishing Ltd., 2018.
2. Ashish Rudra Srivastava “ServiceNow Cook Book” Packt Publishing Ltd, 2017.
3. Andrew Kindred , “Mastering ServiceNow Scripting” Packt Publishing2018.

CLIENT RELATIONSHIP MANAGEMENT LAB

Exercises

- Creating tickets for servicing requests from clients
- Creating reports of status of client services

SJBCA6CC02- PROBLEM SOLVING USING WORKSHEETS LAB

Contact Hours per Week: 4

Number of Credits: 0

Number of Contact Hours: 64Hrs.

Objective

- Develop intra-personal, inter-personal, critical thinking, decision making and communication skills.
- Establish self-management and help to maintain work life balance.
- Get an insight to career planning and development

Prerequisites

- Basic knowledge in excel

Course Outline

Exercises:

- Create sales dashboard (such as Market wise, Product wise, quarter wise sales) in Excel using VBA code
- Create randomized quiz question paper in Excel using VBA code.
- Design an attendance tracker using login time of the employee in Excel using VBA code to perform the operation like if employee is late, and then lock the system.