

**Sacred Heart College (Autonomous)**

**Department of Computer Science**

**BCA**

**(Mobile Applications and Cloud Technology)**

**Course Plan**

**Academic Year: 2018-19**

**Semester V**

<b>COURSE CODE</b>	<b>TITLE OF THE COURSE</b>	<b>NO. OF HRS./WEEK</b>	<b>CREDITS</b>	<b>TOTAL HRS./SEM</b>
U5VCBCA3	PRINCIPLES OF VIRTUALIZATION	4	4	72
U5VCBCA4	SERVER OPERATING SYSTEM	4	4	72
U5VCBCA5	FUNDAMENTALS OF STORAGE	4	4	72
U5CRBCA15	ADVANCED ANDROID	5	4	90
U5PVBCA2	SERVER OPERATING SYSTEM – LAB	2	1	36
U5PRBCA8	ADVANCED ANDROID - LAB	2	1	36

**COURSE PLAN: 16U5VCBCA3- PRINCIPLES OF VIRTUALIZATION**

<b>PROGRAMME</b>	<b>BACHELOR OF COMPUTER APPLICATIONS</b>	<b>SEMESTER</b>	<b>5</b>
<b>COURSE CODE AND TITLE</b>	<b>U5VCBCA3: PRINCIPLES OF VIRTUALIZATION</b>	<b>CREDIT</b>	<b>4</b>
<b>HOURS/WEEK</b>	<b>4</b>	<b>HOURS/SEM</b>	<b>72</b>
<b>FACULTY NAME</b>	<b>CHRISTY JACQUELINE</b>		

<b>COURSE OBJECTIVES</b>
To understand the basic of virtualization and its types
To deploy and manage an Enterprise Desktop Virtualization environment
To deploy and manage the presentation virtualization environment
To understand the virtualization software
To understand Citrix and VMWare environment

<b>SESSION</b>	<b>TOPIC</b>	<b>LEARNING RESOURCES</b>	<b>VALUE ADDITIONS</b>	<b>REMARKS</b>
<b>MODULE I</b>				
1	Understanding Virtualization	PPT		
2	Need of Virtualization	PPT/Lecture		
3	Virtualization Technologies	PPT/Lecture	Video	
4	Advantages and Disadvantages	PPT/Lecture		
5	Server Virtualization	PPT/Lecture		
6	Storage Virtualization	PPT/Lecture		
7	I/O Virtualization	Lecture		
8	Network Virtualization	Lecture		
9	Client Virtualization	Lecture		
10	Application Virtualization	Lecture	E-resource	

11	Understanding Virtualization uses	PPT/Lecture		
12	Sever consolidation,	PPT/Lecture		
13	Development and testing,	PPT/Lecture	E-resource	
14	Disaster recovery	PPT/Lecture		
<b>MODULE II</b>				
15	Configure the BIOS to support hardware Virtualization	PPT/Lecture	Video	
16	Install and configure Windows Virtual PC	Lecture		
17	Installing Windows virtual PC on various platforms	Lecture		
18	Creating and Managing virtual hard disks	Lecture		
19	Configuring virtual machine resources including network resources	Lecture		
20	Discussing the requirements of installation	PPT/Lecture		
21	More on VHD	PPT/Lecture		
22	Prepare host machines- create	PPT/Lecture		
23	Prepare host machines- Deploy	PPT/Lecture		
24	Prepare host machines- maintain images	Lecture		
25	Illustration and explain	Lecture		
26	CIA-1			
27	More on VHD	Lecture	Video	
28	Prepare host machines- create	Lecture		
29	Prepare host machines- Deploy	PPT/Lecture		
30	Prepare host machines- maintain images	PPT/Lecture		
31	Illustration and explain	PPT/Lecture		
<b>MODULE III</b>				
33	Prepare and manage remote applications	PPT/Lecture		
34	Package application for deployment by using RemoteApp	PPT/Lecture		
35	Installing and configuring the RD session Host Role service on the server	PPT/Lecture		
36	Access published applications	Lecture	Quiz	

37	Configuring Remote Desktop Web Access and client connections	Lecture		
38	Configuring role based application provisioning	PPT/Lecture		
39	Components of Role based provisioning	PPT/Lecture		
40	Provisioning, Role Management, Access and web portal	PPT/Lecture		
41	Configuring Remote Desktop	PPT/Lecture		
42	Configuring Remote Desktop Web Access client connections	Lecture		
43	Configure client settings to access virtualized desktops	PPT/Lecture		
44	Configuring client settings	PPT/Lecture		
45	Making Local devices and resources available in a remote session.	PPT/Lecture		
46	Configuring Remote session	PPT/Lecture	E-resource	
47	Configuring monitor settings for a remote session	PPT/Lecture		
48	Redirection concept	PPT/Lecture		
<b>MODULE IV</b>				
49	List of Virtualization Software available	PPT/Lecture		
50	VmWare- Introduction to Vsphere	Lecture		
51	Components of VMware Vsphere	PPT/Lecture		
52	ESXi	PPT/Lecture	Video	
53	Installing ESXi	PPT/Lecture		
54	System Requirements for ESXi	PPT/Lecture		
55	Configuring ESXi using DCUI	Lecture		
56	Vsphere client	Lecture	Quiz	
57	Installing vSphere Client	PPT/Lecture		
58	Managing ESXi using vsphere client	PPT/Lecture		
59	VMware vcenter	PPT/Lecture		
60	Vcenter server virtual appliance features	PPT/Lecture		

61	components of vCenter server	PPT/Lecture		
62	vCenter deployment process	PPT/Lecture		
<b>CIA – II</b>				
63	Introduction to Hyper-V	Lecture	Demo video	
64	Introduction to Citrix XENDesktop fundamentals	Lecture		
65	List of Virtualisation Software available	Lecture	Quiz	
66	VmWare- Introduction to Vsphere	Lecture		
67	Introduction to Hyper-V	PPT/Lecture		
68	Introduction to Citrix XENDesktop fundamentals	PPT/Lecture		
69	List of Virtualisation Software available	PPT/Lecture		
70	VmWare- Introduction to Vsphere	Lecture		
71	Revision			
72	Revision			

**INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines**

Sl.No	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	10/08/2018	VMWare and Citrix

**GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines**

Sl.No	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	20/08/2018	Hyper-V

### References

- Virtualization the complete cornerstone to virtualization best practices, Ivnka Menken and Gerard Blokdijk
- Virtualization: From the desktop to the Enterprise , Ebook, Chris Wolf, Erick M

### Web resource references:

- VMware vCenter Guide
- A brief introduction of virtualization and VMware ESXi

### COURSE PLAN: U5VCBCA4 -SERVER OPERATING SYSTEM

<b>PROGRAMME</b>	<b>BACHELOR OF COMPUTER APPLICATIONS</b>	<b>SEMESTER</b>	<b>5</b>
<b>COURSE CODE AND TITLE</b>	<b>U5VCBCA4:SERVER OPERATING SYSTEM</b>	<b>CREDIT</b>	<b>4</b>
<b>HOURS/WEEK</b>	<b>4</b>	<b>HOURS/SEM</b>	<b>72</b>
<b>FACULTY NAME</b>	<b>SANTHOSH KUMAR K P</b>		

### COURSE OBJECTIVES

To demonstrate the Installing and Configuring Windows Server 2008
To differentiate between the IPv4 and IPv6 addressing
To configure DHCP, DNS and firewall for implementing network services
To describe the Configuration of Active Directory Domain Services in windows server 2008
To describe the Group Policy in Active Directory Domain Services
To demonstrate Server services DNS, DHCP, TELNET, Web service, NIS, NFS

SESSION	TOPIC	LEARNING RESOURCES	VALUE ADDITIONS	REMARKS
<b>MODULE I</b>				
1	History of Server OS, Introduction to windows server 2003 & 2008	PPT	video	
2	History of Server OS, Introduction to windows server 2003 & 2008	PPT/Lecture		
3	Overview of Windows Server 2008	PPT/Lecture		
4	Overview of Windows Server 2008	PPT/Lecture	e-resource	
5	Installing Windows Server 2008	PPT/Lecture		
6	Managing Server Roles and Features	PPT/Lecture		
7	Managing Server Roles and Features	Lecture		
8	Configuring and Managing Windows Server 2008 Server Core	Lecture		
9	Configuring and Managing Windows Server 2008 Server Core	Lecture		
10	Configuring and Managing Windows Server 2008 Server Core	Lecture		
11	Deploying Windows Server 2008	PPT/Lecture		
12	Deploying Windows Server 2008	PPT/Lecture		
13	Introduction and Creation of Users accounts	PPT/Lecture		
14	Revision			
<b>MODULE II</b>				
15	Configuring IPv6 Addressing	PPT/Lecture	video	
16	Configuring IPv6 Addressing	Lecture		
17	Migrating from IPv4 to IPv6	Lecture		
18	Migrating from IPv4 to IPv6	Lecture	e-resource	
19	DHCP	Lecture		
20	DHCP	PPT/Lecture		
21	DNS	PPT/Lecture		
22	DNS	PPT/Lecture		
23	Configuring zones	PPT/Lecture		
24	Configuring zones	Lecture		
25	Configuring DNS server settings	Lecture		
26	CIA-1			
27	Configuring zone transfer and Replication	Lecture	video	
28	Configuring zone transfer and Replication	Lecture		
29	Configuring and Managing Windows Firewall with Advanced Security	PPT/Lecture		
30	Configuring and Managing Windows Firewall with Advanced Security	PPT/Lecture	e-resource	
31	Configuring and Managing Windows Firewall with Advanced Security	PPT/Lecture		
32	revision			
<b>MODULE III</b>				



33	Active Directory Enhancements in Windows Server 2008 and 2008 R2	PPT/Lecture		
34	Active Directory Enhancements in Windows Server 2008 and 2008 R2	PPT/Lecture		
35	Installing and Configuring Domain Controllers	PPT/Lecture		
36	Installing and Configuring Domain Controllers	Lecture	Quiz	
37	Configuring Read-Only Domain Controllers	Lecture	Q & Ans Session	
38	Configuring Read-Only Domain Controllers	PPT/Lecture		
39	Configuring Fine-Grained Password Policies, Sites	PPT/Lecture		
40	Configuring Fine-Grained Password Policies, Sites	PPT/Lecture		
41	Global Catalog	PPT/Lecture		
42	Global Catalog	Lecture		
43	Thrashing	PPT/Lecture		
44	Managing Active Directory Objects with Windows PowerShell	PPT/Lecture		
45	Managing Active Directory Objects with Windows PowerShell	PPT/Lecture		
46	Managing Active Directory Objects with Windows PowerShell	PPT/Lecture		
47	Active Directory Database Management	PPT/Lecture		
48	Active Directory Database Management	PPT/Lecture		
49	Replication between the Domain Controllers	PPT/Lecture		
50	Replication between the Domain Controllers	PPT/Lecture		
51	Replication between the Domain Controllers	PPT/Lecture		
52	Revision	PPT/Lecture		
53	Revision	PPT/Lecture		
54	Revision	PPT/Lecture		
55	Revision			
	<b>MODULE IV</b>			
56	Group Policy Enhancements in Windows Server 2008	Lecture	Debate	
57	Group Policy Enhancements in Windows Server 2008	PPT/Lecture		
58	Managing Security with Group Policy	PPT/Lecture		
59	Managing Security with Group Policy	PPT/Lecture		
60	Managing Clients with Group Policy Preferences	PPT/Lecture		
61	Managing Clients with Group Policy Preferences	PPT/Lecture		
62	Server Management in Windows Server 2008	PPT/Lecture		
CIA - II				

63	Server Management in Windows Server 2008	Lecture	Demo video	
64	Managing Windows Server with Server Manager	Lecture		
65	Managing Windows Server with Server Manager	Lecture	Group discussion	
66	Managing Server Updates by Using WSUS	Lecture		
67	Managing Backup and Restore by Using Windows Server Backup	PPT/Lecture		
68	Managing Event Logs and Auditing, Performance and Resource Management	PPT/Lecture		
69	Managing Event Logs and Auditing, Performance and Resource Management	PPT/Lecture		
70	Managing Event Logs and Auditing, Performance and Resource Management			
71	Revision			
72	Revision			

#### INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	20/6/2018	Installation of windows server and VMs
2	16/7/2018	Server service Modelling

#### GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	14/8/2018	Security issues in windows firewall (Group Discussion)

#### References

- mcgraw.hill.microsoft.windows.server.2008.administration.feb.2008
- Red hat Linux Administration By Michael Turner and Steve Shah-McGraw-Hill Companies, Inc Publisher, 2010
- RHCSA/RHCE Red Hat Linux Certification Study Guide (Exams EX200 & EX300), 6<sup>th</sup> Edition (Certification Press) [Paperback], Michael Jang, McGraw-Hill Osborne Media; 6 edition (June 17, 2011)

#### Web resource references:

- [https://en.wikipedia.org/wiki/Active\\_Directory](https://en.wikipedia.org/wiki/Active_Directory)

**COURSE PLAN: U5VCBCA5 - FUNDAMENTALS OF STORAGE**

<b>PROGRAMME</b>	<b>BACHELOR OF COMPUTER APPLICATIONS</b>	<b>SEMESTER</b>	<b>5</b>
<b>COURSE CODE AND TITLE</b>	<b>U5VCBCA5 - FUNDAMENTALS OF STORAGE</b>	<b>CREDIT</b>	<b>4</b>
<b>HOURS/WEEK</b>	<b>4</b>	<b>HOURS/SEM</b>	<b>72</b>
<b>FACULTY NAME</b>	<b>FR. NIJO ANTONY</b>		

<b>COURSE OBJECTIVES</b>
To identify mechanism deployed in information storage and its management.
To know the process involved in the storage system environment
To discourse different backup technologies, recovery mechanism and its usage.
To have a deep understanding of different storage mechanisms, operations and how to optimize the storage space and its accessibility.
To experimental knowledge about hardware associated with storage.

<b>SESSION</b>	<b>TOPIC</b>	<b>LEARNING RESOURCES</b>	<b>VALUE ADDITIONS</b>	<b>REMARKS</b>
<b>MODULE I</b>				
1	Information Storage: Data – Types of Data	PPT/Lecture		
2	Information - Storage	PPT/Lecture		
3	Evolution of Storage Technology and Architecture	PPT/Lecture		
4	Data Center Infrastructure	PPT/Lecture	Quiz	
5	Core elements- Key Requirements for Data Center Elements	PPT/Lecture		
6	Managing Storage Infrastructure	PPT/Lecture	video	
7	Key Challenges in Managing Information,	PPT/Lecture		
8	Information Lifecycle	PPT/Lecture		
9	Information Lifecycle Management ILM Implementation -ILM Benefits	PPT/Lecture	e-resource	
10	Components of a Storage System Environment	PPT/Lecture		
12	Host –Connectivity	PPT/Lecture		
13	Storage, Disk Drive Components	PPT/Lecture		

14	Platter – Spindle - Read/Write Head	PPT/Lecture		
15	Actuator Arm Assembly			
<b>MODULE II</b>				
16	Controller - Physical Disk Structure	PPT/Lecture		
17	Zoned Bit Recording	Lecture	Quiz	
18	Logical Block Addressing	Lecture		
19	Disk Drive Performance -1 Disk Service Time	Lecture		
20	Fundamental Laws Governing Disk Performance	Lecture	video	
21	Logical Components of the Host	PPT/Lecture		
22	Backup Purpose -Disaster Recovery	PPT/Lecture		
23	Operational Backup –Archival, Backup Considerations	PPT/Lecture	e-resource	
24	Backup Granularity	PPT/Lecture		
25	Recovery Considerations, Backup Methods	Lecture		
26	Backup Process	Lecture		
CIA-1				
27	Backup and Restore Operations	Lecture		
28	Backup Topologies	Lecture		
29	Serverless Backup , Backup Technologies	PPT/Lecture		
30	Backup to Tape - Physical Tape Library	PPT/Lecture		
31	Backup to Disk - Virtual Tape Library	PPT/Lecture		
32	Backup to Disk - Virtual Tape Library	Lecture	video	
<b>MODULE III</b>				
33	Backup Topologies	PPT/Lecture		
34	Serverless Backup ,	PPT/Lecture		
35	Backup to Tape - Physical Tape Library	PPT/Lecture		
36	Backup to Disk - Virtual Tape Library	Lecture		
37	Backup Methods	Lecture	Quiz	
38	Backup Methods	PPT/Lecture		
39	Backup Methods	PPT/Lecture		
40	Backup Technologies	PPT/Lecture		
41	Source and Target	PPT/Lecture	video	
42	Uses of Local Replicas	Lecture		
43	Data Consistency - Consistency of a Replicated File System			
44	Consistency of a Replicated Database	PPT/Lecture	e-resource	
45	Local Replication Technologies	PPT/Lecture		

46	Host-Based Local Replication	PPT/Lecture		
47	Restore and Restart Considerations	PPT/Lecture		
48	Tracking Changes to Source and Target	PPT/Lecture		
49	Creating Multiple Replicas, Management Interface	PPT/Lecture		
50	Monitoring <i>the</i> Storage Infrastructure - Parameters Monitored	PPT/Lecture		
51	Components Monitored - Monitoring Examples	PPT/Lecture		
52	Alerts, Storage Management Activities	PPT/Lecture		
53	Availability management - Capacity management	PPT/Lecture		
54	Performance management	PPT/Lecture		
55	Security Management - Reporting-Storage Management Examples	PPT/Lecture		
56	What Is a WAN?, WAN Switching, WAN Switching techniques Circuit Switching,	PPT/Lecture		
57	Connecting to the Internet : PSTN, ISDN, DSL, CATV, Satellite-Based Services, Last Mile Fiber	PPT/Lecture		
58	Cellular Technologies, Connecting LANs : Leased Lines	PPT/Lecture		
59	Remote Access: Dial-up Remote Access, Virtual Private Networking	PPT/Lecture		
60	SSL VPN, Remote Terminal Emulation	PPT/Lecture		
61	Tunneling and Encryption Protocols,	PPT/Lecture		
62	IPSec, SSL and TLS, Firewall, Other Security Appliances,	PPT/Lecture		
CIA - II				
63	Network Operating Systems: Microsoft Operating Systems	PPT/Lecture		
64	Novell NetWare, UNIX and Linux Operating Systems, Macintosh Networking	PPT/Lecture		
65	Trouble Shooting Networks: Command-Line interface Tools,	PPT/Lecture		
66	Network and Internet Troubleshooting, Basic Network Troubleshooting	PPT/Lecture		
67	Troubleshooting Model, implement a solution, test the result,	PPT/Lecture		
68	recognize the potential effects of the solution, document the solution	PPT/Lecture		
69 - 72	Revision	Discussion		

### **INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines**

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	20/09/2018	Different storage mechanisms

### **GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines**

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	15/06/2018	Mobile security and performance

### **References**

- EMC Education Services (2009) Information Storage and Management: Storing, Managing, and Protecting Digital Information, 1st edition, Wiley Publishing.
- Robert Spalding (2003) Storage Networks: The Complete Reference, Tata McGraw Hill Publication.

**COURSEPLAN: U5CRBCA15- ADVANCED ANDROID**

<b>PROGRAMME</b>	<b>BACHELOR OF COMPUTER APPLICATIONS</b>	<b>SEMESTER</b>	<b>5</b>
<b>COURSE CODE AND TITLE</b>	<b>U5CRBCA15 ADVANCED ANDROID</b>	<b>CREDIT</b>	<b>5</b>
<b>HOURS/WEEK</b>	<b>5</b>	<b>HOURS/SEM</b>	<b>90</b>
<b>FACULTY NAME</b>	<b>NEETHU A S</b>		

<b>COURSE OBJECTIVES</b>
To define the callback methods to start the service and bind the service, implement IBinder object and Remote Bound Service.
To describe IPC using Messenger, Handler and AIDL.
To explain the various ways to create and manage different types of notifications and role of Notification Manager, use Embedded application
To describe the features of Canvas and OpenGL in rendering Graphics, define the fields and elements of different animation, define and instantiate a Drawable
To define the methods used at each stage of process life cycle, tasks, describe the worker thread and UI thread, lifecycle of a thread.
To describe the steps to add web view, demonstrate XML and JSON parsing, purpose of using SOAP web services and security aspects
To describe the user level and kernel level security aspects

<b>SESSION</b>	<b>TOPIC</b>	<b>LEARNING RESOURCES</b>	<b>VALUE ADDITIONS</b>	<b>REMARKS</b>
<b>MODULE I</b>				
1.	Android services Introduction	PPT	video	
2.	Services lifecycle and creation	PPT/Lecture		
3.	Types of services	PPT/Lecture		
4.	Bounded and Started Services	PPT/Lecture	e-resource	
5.	Scheduling of Services	PPT/Lecture		
6.	Messengers	PPT/Lecture		
7.	Handlers	Lecture		
8.	AIDL	Lecture		
9.	Remote Service Communication	Lecture		
10.	Notifications	Lecture		
11.	Android Networking	PPT/Lecture		
12.	Android Networking	PPT/Lecture		
13.	SOAP	PPT/Lecture		
14.	Integrating Embedded Applications	PPT/Lecture		
15.	Revision			
<b>MODULE II</b>				

16.	Graphics and Animation Introduction	PPT/Lecture		
17.	Graphics components in Android	Lecture		
18.	Displaying graphics with OpenGL ES	Lecture		
19.	Graphics components in Android	Lecture		
20.	Displaying graphics with OpenGL ES	Lecture		
21.	Draw on Canvas and Drawables	Lecture		
22.	Animation framework	Lecture		
23.	Create scene and apply transition	PPT/Lecture		
24.	Property, View Animation	PPT/Lecture		
25.	Tween Animation, Frame Animation, Interpolators	PPT/Lecture		
26.	Crossfading two views, ViewPager	PPT/Lecture		
27.	Card flip, zooming a view, animate layout changes	Lecture		
28.	Revision	Lecture		
29.	CIA-1			
<b>MODULE III</b>				
30.	Tasks	Lecture		
31.	Backstacking	Lecture		
32.	Switching between tasks	PPT/Lecture		
33.	Processes - lifecycle, types	PPT/Lecture		
34.	Thread - creation	PPT/Lecture		
35.	Thread - creation	PPT/Lecture		
36.	Thread lifecycle, types	PPT/Lecture		
37.	Thread loop	PPT/Lecture		
38.	Thread Handler	PPT/Lecture		
39.	Thread Handler	PPT/Lecture		
40.	How to post Message and Runnable from a thread	PPT/Lecture		
41.	Async Task class creation and use	Lecture		
42.	Revision	Lecture	Q & Ans Session	
<b>MODULE IV</b>				
43.	Web View and View Port	PPT/Lecture		
44.	Debugging web applications	PPT/Lecture		
45.	Debugging web applications	PPT/Lecture		
46.	Communication Protocols	PPT/Lecture		
47.	Interacting with web services	PPT/Lecture		
48.	Interacting with web services	PPT/Lecture		
49.	Interacting with web services	PPT/Lecture		
50.	Interacting with web services	PPT/Lecture		
51.	XML parsing theory	Lecture		
52.	XML parsing theory	Lecture		
53.	JSON parsing theory	PPT/Lecture		



54.	Exchanging data over server	PPT/Lecture		
55.	XML parsing with example	PPT/Lecture		
56.	XML parsing with example	PPT/Lecture		
57.	JSON parsing with example	PPT/Lecture		
58.	Web View and View Port	PPT/Lecture		
59.	Web View and View Port	PPT/Lecture		
60.	Debugging web applications	PPT/Lecture		
61.	Debugging web applications	PPT/Lecture		
62.	Debugging web applications	PPT/Lecture		
63.	Communication Protocols	PPT/Lecture		
64.	Revision	Lecture	Q & Ans Session	
<b>MODULE V</b>				
65.	Introduction to security features	PPT/Lecture		
66.	Introduction to security features	PPT/Lecture		
67.	Kernal level security	PPT/Lecture	Video	
68.	Application level security	PPT/Lecture		
69.	Using permissions	PPT/Lecture		
70.	Designing for performance	PPT/Lecture		
71.	Building apps for wearables	Lecture		
72.	Building apps for wearables	Lecture		
73.	Building apps for TV	PPT/Lecture		
74.	Building apps for TV	PPT/Lecture		
75.	Building apps for TV	PPT/Lecture		
76.	Monetization	PPT/Lecture		
77.	In App Billing	PPT/Lecture		
78.	Revision	Lecture	Q & Ans Session	
79.	Revision	Lecture	Q & Ans Session	
80.	Revision	PPT/Lecture		
<b>CIA – II</b>				
81.	Revision			
82.	Revision			
83.	Revision			
84.	Revision			
85.	Revision			
86.	Revision			
87.	Revision			
88.	Revision			
89.	Revision			
90.	Revision			

### INDIVIDUAL ASSIGNMENTS/SEMINAR – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	06/07/2018	Property and tween animation lab exercise
2	18/08/2018	JSON parsing lab exercise

### GROUP ASSIGNMENTS/ACTIVITES – Details & Guidelines

	Date of completion	Topic of Assignment & Nature of assignment (Individual/Group – Written/Presentation – Graded or Non-graded etc)
1	09/09/2018	Create an android application to parse and display the data from the server

### References

- Professional Android 4 Development by Reto Meier, John Wiley and Sons
- Android Application Development Cookbook, by Wei-Meng Lee, John Wiley and Sons
- Android in Action, Third Edition, by W. Frank Ableson, RobiSen, Chris King, C. Enrique Ortiz

### Web resource references:

- <https://developer.android.com/>