SRI VENKATESWARA UNIVERSITY

B.Com. Computer Applications & B.Com Computer Applications with Business Analytics, BA Computer Applications &B.Sc. Computer Applications
III Year – V Semester (Under CBCS W.E.F. 2020-21)
Course-**6B: MOBILE APPLICATION DEVELOPMENT**
(Skill Enhancement Course (Elective), 5 credits)

Learning Outcomes:

Upon successful completion of the course, a student will be able to:

1. Identify basic terms ,tools and software related to android systems
2. Describe components of IDE, understand features of android development tools
3. Describe the layouts and controls
4. Explain the significance of displays using the given view
5. Explain the features of services and able to publish android Application
6. Developing interesting Android applications using MIT App Inventor

Unit-1:(Total hours: 75 including Theory, Practical, Training, Unit tests etc.)   **10 Hrs**

1.1 Introduction to Android ,open headset alliance, Android Ecosystem
1.2 Need of Android
1.3 Features of Android
1.4 Tools and software required for developing an Application

Unit-2:   **13Hrs**

2.1 operating system, java JDK, Android SDK
2.2 Android development tools
2.3 Android virtual devices
2.4 steps to install and configure Android studio and sdk

Unit-3:   **14Hrs**

3.1   control flow, directory structure
3.2   components of a screen
3.3   fundamental UI design
3.4   linear layout, absolute layout , table layout
3.5   text view
3.6 edit text
3.7 button, image button, radio button
3.8 radio group, check box, and progress bar
3.9 list view, grid view, image view, scroll view
3.10 time and date picker

Unit-4:   **10Hrs**

4.1 android platform services
4.2 Android system Architecture
4.3 Android Security model

Unit-5   **13Hrs.**

5.1 Introduction of MIT App Inventor

5.2 Application Coding

5.3 Programming Basics & Dialog

5.4 Audio & Video

5.5 File

Text Books:

1. Erik Hellman, ‒Android Programming – Pushing the Limits‖, 1st Edition, Wiley India Pvt Ltd, 2014.
2. App Inventor: create your own Android apps by Wolber, David (David Wayne)

Reference Books:

1. Dawn Griffiths and David Griffiths, ‒Head First Android Development‖, 1st Edition, O'Reilly SPD Publishers, 2015.
2. J F DiMarzio, ‒Beginning Android Programming with Android Studio‖, 4th Edition, Wiley India Pvt Ltd, 2016. ISBN-13: 978-8126565580
3. Anubhav Pradhan, Anil V Deshpande, ― Composing Mobile Apps‖ using Android, Wiley 2014, ISBN: 978-81-265-4660-2
4. Android Online Developers Guide
5. http://developer.android.com/reference/ Udacity: Developing Android
6. Apps- Fundamentals
7. https://www.udacity.com/course/developing-android-appsfundamentals--ud853-nd
8. http://www.appinventor.mit.edu/

RECOMMENDED CO-CURRICULAR ACTIVITIES:

(Co-curricular activities shall not promote copying from textbook or from others work and shall encourage self/independent and group learning)

A. Measurable

1. Assignments (in writing and doing forms on the aspects of syllabus content and outside the syllabus content. Shall be individual and challenging)
2. Student seminars (on topics of the syllabus and related aspects (individual activity))
3. Quiz (on topics where the content can be compiled by smaller aspects and data (Individuals or groups as teams))
4. Study projects (by very small groups of students on selected local real-time problems pertaining to syllabus or related areas. The individual participation and contribution of students shall be ensured (team activity

General

a. Group Discussion
b. Try to solve MCQ's available online.
c. Others

RECOMMENDED CONTINUOUS ASSESSMENT METHODS:

Some of the following suggested assessment methodologies could be adopted;

1. The oral and written examinations (Scheduled and surprise tests),
2. Closed-book and open-book tests,
3. Problem-solving exercises,
4. Practical assignments and laboratory reports.
5. Observation of practical skills,
6. Efficient delivery using seminar presentations,
7. Viva voce interviews.
8. Computerized adaptive testing, literature surveys and evaluations,
9. Peers and self-assessment, outputs form individual and collaborative work

Course-6B: Mobile Application Development: Lab (Practical) Syllabus (15 Hrs.)

(Since, the proposed SECs are connected to Computer Programming/Software Tools and Skill enhancement, the students need to get exposure on the syllabus content by practicing on the computer even though there is no formal assignment of credits and laboratory hours for practical sessions. So, as part of the Co-curricular activities and continuous assessment, students should be engaged in practicing on computer for at least 15 hours per semester.)

Outcomes:

1. Understand the android platform
2. Design and implementation of various mobile applications

Experiments:

1. Demonstrate mobile technologies and devices
2. Demonstrate Android platform and applications overview
3. Working with texts , shapes, buttons and lists
4. Develop a calculator application
5. Implement an application that creates a alarm clock

Note: The list of experiments need not be restricted to the above list. *Detailed list of Programming/software tool based exercises can be prepared by the concerned faculty members.*

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III Year – V Semester (Under CBCS W.E.F. 2020-21)
Course-**6B: MOBILE APPLICATION DEVELOPMENT**
MODEL QUESTION PAPER

SECTION - A (Total 15 marks)
Answer any FIVE Questions   **5×3 = 15 Marks**

1.
2.
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9.
10.

SECTION - B (Total 60 marks)
Answer any FIVE Questions   **5×12 = 60 Marks**

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15.
16.
17.
18.
19.
20.

Note: Must Give Two 3 Marks Questions and Two 12 Marks Questions from each Unit.

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**B.Com. Computer Applications & B.Com Computer Applications with Business Analytics,
BA Computer Applications & B.Sc. Computer Applications**
III Year – V Semester (Under CBCS W.E.F. 2020-21)
Course-**7B**: **CYBER SECURITY AND MALWARE ANALYSIS**
(Skill Enhancement Course (Elective), 5 credits)
COURSE OUTCOMES:
Upon successful completion of this course, students should have the knowledge and skills to

1. Understand the computer networks, networking tools and cyber security
2. Learn about NIST Cyber Security Framework
3. Understand the OWASP Vulnerabilities
4. Implement various Malware analysis tools
5. Understand about Information Technology act 2000

Syllabus: (Total hours: 75 including Theory, Practical, Training, Unit tests etc.)

UNIT 1: Introduction to Networks & cyber security   **14hrs**

- Computer Network Basics
- Computer network types
- OSI Reference model
- TCP/IP Protocol suite
- Difference between OSI and TCP/IP
- What is cyber, cyber-crime and cyber-security
- All Layer wise attacks
- Networking devices: router, bridge, switch, server, firewall
- How to configure: router
- How to create LAN

UNIT 2: NIST Cyber security framework   **12hrs**

- Introduction to the components of the framework
- Cyber security Framework Tiers
- What is NIST Cyber security framework
- Features of NIST Cyber security framework
- Functions of NIST Cyber security framework
- Turn the NIST Cyber security Framework into Reality/ implementing the framework

UNIT 3: OWASP   12hrs

- What is OWASP?
- OWASP Top 10 Vulnerabilities
    - Injection
    - Broken Authentication
    - Sensitive Data Exposure
    - XML External Entities (XXE)
    - Broken Access Control
    - Security Misconfiguration
    - Cross-Site Scripting (XSS)
    - Insecure Deserialization
    - Using Components with Known Vulnerabilities
    - Insufficient Logging and Monitoring
- Web application firewall

UNIT 4: MALWARE ANALYSIS   12hrs

- What is malware
- Types of malware
    - Key loggers
    - Trojans
    - Ran some ware
    - Rootkits
- Antivirus
- Firewalls
- Malware analysis
    - VM ware
    - How to use sandbox
    - Process explorer
    - Process monitor

UNIT 5: CYBER SECURITY: Legal Perspectives   10hrs

- Cybercrime and the legal landscape around the world
- Indian IT ACT 2000 --Cybercrime and Punishments
- Challenges to Indian law and cybercrime scenario in India

Textbooks:

1. Computer Networks | Fifth Edition | By Pearson (6th Edition)|Tanenbaum, Feamster & Wetherill
2. Computer Networking | A Top-Down Approach | Sixth Edition | By Pearson | Kurose James F. Ross Keith W.
3. Cyber Security by Sunit Belapure, Nina Godbole|Wiley Publications
4. TCP/IP Protocol Suite |Mcgraw-hill| Forouzan|Fourth Edition

Website References:

- https://csrc.nist.gov/Projects/cybersecurity-framework/nist-cybersecurity-framework-a-quick-start-guide
- https://owasp.org/www-project-top-ten/
- https://owasp.org/www-project-juice-shop/

Co-Curricular Activities:

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6. Efficient delivery using seminar presentations,
7. Viva-Voce interviews.
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9. Peers and self-assessment, outputs form individual and collaborative work

Course-7B: Cyber Security and Malware Analysis; Lab (Practical) Syllabus (15 Hrs.)
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Experiments:

1. Configure a LAN by using a switch
2. Configure a LAN by using Router
3. Perform the packet sniffing mechanism by download the ‒wire shark‖ tool and extract the packets
4. Perform an SQL Injection attack and its preventive measure to avoid Injection attack

Note: The list of experiments need not be restricted to the above list. *Detailed list of Programming/software tool based exercises can be prepared by the concerned faculty members.*

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