Shri Vaishnav Vidyapeeth Vishwavidyalaya

B. Tech., B. Tech. + M. Tech. and B. Tech. + MBA (Information Technology)

Choice Based Credit System (CBCS) 2018-19

SEMESTER IV

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
ML301		Environment and Energy Studies	3	-	-	3	60	20	20	-	-

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
*__Teacher Assessment__ shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The students will be able to:

1. To understand sources of information required for addressing environmental challenges.
2. To identify a suite of contemporary tools and techniques in environmental informatics.
3. To apply literacy, numeracy and critical thinking skills to environmental problem-solving.

Course Outcomes:

The students should be able to:

1. Apply the principles of ecology and environmental issues that apply to air, land and water issues on a global scale.
2. Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment.
3. Demonstrate ecology knowledge of a complex relationship between predators, prey, and the plant community.

Syllabus:

UNIT I

Environmental Pollution and Control Technologies: Environmental Pollution & Control: Classification of pollution, Air Pollution: Primary and secondary pollutants, Automobile and industrial pollution, Ambient air quality standards. Water pollution: Sources and types, Impacts of modern agriculture, degradation of soil. Noise Pollution: Sources and Health hazards, standards, Solid Waste management composition and characteristics of e - Waste and its management. Pollution control technologies: Wastewater Treatment methods: Primary, Secondary and Tertiary.

UNIT II

Natural Resources: Classification of Resources: Living and Non - Living resources, water resources: use and over utilization of surface and ground water, floods and droughts, Dams: benefits and problem, Mineral resources: use and exploitation, environmental effects of extracting and using mineral resouces, Land resources: Forest resources, Energy resources: growing energy needs, renewable energy source, case studies.

UNIT III

Ecosystems: Definition, Scope and Importance ecosystem. Classification, Structure and function of an ecosystem, Food chains, food webs and ecological pyramids. Energy flow in the ecosystem, Biogeochemical cycles, Bioaccumulation, ecosystem value, devices and carrying capacity, Field visits.

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UNIT IV

Biodiversity and its Conservation: Introduction - Definition: genetic, species and ecosystem diversity. Bio-geographical classification of India - Value of biodiversity: consumptive use, productive use, social, ethical, aesthetic and option values - . Biodiversity at global, National and local levels. - . India as a megadiversity nation - Hot-sports of biodiversity - Threats to biodiversity: habitat loss, poaching of wildlife, manwildlife conflicts; Conservation of biodiversity: In-situ and Exsitu conservation. National biodiversity act.

UNIT V

Environmental Policy, Legislation & EIA: Environmental Protection act, Legal aspects Air Act- 1981, Water Act, Forest Act, Municipal solid waste management and handling rules, biomedical waste management and handling rules, hazardous waste management and handling rules. EIA: EIA structure, methods of baseline data acquisition. Overview on Impacts of air, water, biological and Socio- economical aspects. Strategies for risk assessment, Concepts of Environmental Management Plan(EMP).

Text Books and Reference Books:

1. Agarwal, K.C.,(latest edition).Environmental Biology, Bikaner :Nidi Pub. Ltd.,
2. Brunner R.C.(latest edition) Hazardous Waste Incineration, McGraw Hill Inc.
3. Clank R.S. .,(latest edition. Marine Pollution, Clanderson Press Oxford (TB).
4. Environmental Encyclopedia, Jaico Pub. Mumbai,
5. De A.K(latest edition) Environmental Chemistry, Wiley Wastern Ltd.
6. ErachBharucha(2005).Environmental Studies for Undergraduate Courses by for University Grants Commission.
7. R. Rajagopalan(2006).Environmental Studies. Oxford University Press.
8. M. AnjiReddy(2006).Textbook of Environmental Sciences and Technology. BS Publication.
9. Richard T. Wright(2008).Enviromental Science: towards a sustainable future PHL Learning Private Ltd. New Delhi.
10. Gilbert M. Masters and Wendell P. Ela.(2008).Environmental Engineering and science. PHI Learning Pvt Ltd.
11. Daniel B. Botkin& Edwards A. Keller(2008).Environmental Science Wiley INDIA edition.
12. AnubhaKaushik(2009).EnviromentalStudies. New age international publishers.

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COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTIT502		Computer Networks	3	1	2	5	60	20	20	30	20

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
*__Teacher Assessment__ shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The student should be made to:

1. Build an understanding of the fundamental concepts of computer networking.
2. Familiarize the student with the basic taxonomy and terminology of the computer networking area.
3. Introduce the student to advanced networking concepts, preparing the student for entry Advanced courses in computer networking.

Course Outcomes:

Upon completion of the subject, students will be able to:

1. Independently understand basic computer network technology.
2. Understand and explain Data Communications System and its components.
3. Identify the different types of network topologies and protocols.
4. Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer.
5. Identify the different types of network devices and their functions within a network
6. Understand and building the skills of sub netting and routing mechanisms.

Syllabus:

UNIT I

Computer Network: Definitions, goals, components, Architecture, Classifications & Types. Layered Architecture: Protocol hierarchy, Design Issues, Interfaces and Services, Connection Oriented & Connectionless Services, Service primitives, Design issues & its functionality. ISO-OSI Reference Model: Principle, Model, Descriptions of various layers and its comparison with TCP/IP. Network standardization.

UNIT II

Data Link Layer: Need, Services Provided, Framing, Flow Control, Error control. Data Link Layer Protocol: Elementary & Sliding Window protocol: 1-bit, Go-Back-N, Selective Repeat, Hybrid ARQ. Bit oriented protocols: SDLC, HDLC, BISYNC, LAP and LAPB.

UNIT III

MAC Sublayer: MAC Addressing, Binary Exponential Back-off (BEB) Algorithm, Distributed Random Access Schemes/Contention Schemes: for Data Services (ALOHA and Slotted-ALOHA), CSMA/CA, CSMA/CD Ethernet, token bus, token ring, (IEEE 802.3, IEEE 802.4, IEEE 802.5)

UNIT IV

Network Layer: Need, Services Provided , Design issues, Routing and congestion in network layer, Routing algorithms: Least Cost Routing algorithm, Dijkstra's algorithm, Bellman-ford algorithm, Hierarchical Routing, Broadcast Routing, Multi cast Routing. IP protocol, IP Addresses, Subneeting, Comparative study of IPv4 & IPv6, Mobile IP.

UNIT V

Transport Layer: Design Issues, UDP: Header Format, Per-Segment Checksum, Carrying Unicast/Multicast Real-Time Traffic, TCP: Connection Management, Reliability of Data Transfers, TCP Flow Control, TCP Congestion Control, TCP Header Format, TCP Timer Management.**Session layer:** Authentication, Authorisation, Session layer protocol. **Presentation layer:** Data conversion, Encryption and Decryption, Presentation layer protocol (LPP, Telnet, X.25 packet Assembler/Disassembler).**Application Layer:** WWW and HTTP, FTP, SSH, Email (SMTP, MIME, IMAP), DNS, Network Management (SNMP).

Text Books:

1. Computer Networks - Andrew S Tanenbaum, 4th Edition, Pearson Education.

Reference Books:

1. Data Communications and Networking - Behrouz A. Forouzan, Fifth Edition TMH, 2013.
2. “Networking Fundamentals”, KavehPahlavan, PrashantKrishnamurthy,Wiley Publication.
3. “Computer Communications & Networking Technologies” Michael A. Gallo & William M. Hancock Cengagepearsen publications.

List of Practical’s:

1. Study of Different Types of Network Equipment’s.
2. Color coding standard of CAT 5, 6, 7 and crimping of cable in RJ-45.
3. LAN installations and Configurations.
4. Study of basic network command and Network configuration commands.
5. Study of network IP.
6. Write a program to implement various types of error correcting techniques.
7. Write a program to implement various types of farming methods.
8. Study of Tool Command Language (TCL).
9. Study and Installation of Standard Network Simulator: N.S-2.
10. Implement & simulate various types of routing algorithm.
11. Study & Installation of ONE (Opportunistic Network Environment) Simulator for High MobilityNetworks.
12. Simulate STOP AND WAIT Protocols on NS-2.
13. Simulate various Routing Protocol on NS-2.
14. Simulate various Network Topologies on NS-2.
15. Configuring routers, bridges and switches and gateway on NS-2.

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SEMESTER IV

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							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTCS405		**Data Base Management System**	3	1	2	5	60	20	20	30	20

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
*__Teacher Assessment__ shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The student will have ability to:

1. To understand the dissimilar issues concerned in the intend and implementation of a database system.
2. To learn the physical and logical database design, database modeling, relational, hierarchical, and network models
3. To understand and develop data manipulation language to query, modernize, and manage a database
4. To expand an understanding of necessary DBMS concepts such as: database security, integrity, concurrency,
5. To intend and build a straightforward database system and show competence with the fundamental tasks involved with modeling, designing, and implementing a DBMS.

Course Outcomes:

Upon completion of the subject, students will be able to:

1. Evaluate business information problem and find the requirements of a problem in terms of data.
2. Understand the uses the database schema and need for normalization.
3. Design the database schema with the use of appropriate data types for storage of data in database.
4. Use different types of physical implementation of database
5. Use database for concurrent use.
6. Backup data from database.

Syllabus:

UNIT I

INTRODUCTION TO DATABASE CORE CONCEPTS AND APPLICATIONS:

What is database system, purpose of database system, view of data, relational databases, database architecture, transaction management, Introduction to File and Database systems- Database system structure , Data Models , Introduction to Network and Hierarchical Models , ER model , Relational Model , Relational Algebra and Calculus.

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SEMESTER IV

UNIT II
RELATIONAL DATA STRUCTURE: SQL

Relations, Domains, Attributes, Keys, Extensions and Intentions, Base Table, Indexes, System R, Data Manipulation, Retrieval, Operations, Built-in-Functions, Update Operations, Introduction of SQL, Multi table Queries, Nested Queries or Sub queries, Multiple Row Nested Queries, Data Manipulation Language, The Create Table Statement

UNIT III
DATA STORAGE AND QUERY PROCESSING:

Record storage and Primary file organization- Secondary storage Devices- Operations on Files- Heap File- Sorted Files- Hashing Techniques , Index Structure for files ,Different types of Indexes- B-Tree - B+Tree ,Query Processing.

UNIT IV
RELATIONAL DATABASE DESIGN AND TRANSACTION MANAGEMENT:

Relational algebra, Traditional Set operations, Attribute Name for Derived Relations, Special Relational Operations, Relational Calculus, Type Oriented Relational Calculus, Further Normalization, Functional Dependence, First, Second and Third Normal forms, Relations with more than one candidate key, Good and Bad Decompositions, Fourth Normal Form, Fifth Normal Form. Transaction Processing: Introduction- Need for Concurrency control- Desirable properties of Transaction- Schedule and Recoverability- Serializability and Schedules , Concurrency Control , Types of Locks- Two Phases locking- Deadlock- Time stamp based concurrency control , Recovery Techniques , Concepts- Immediate Update- Deferred Update - Shadow Paging.

UNIT V
THE NETWORK APPROACH AND SECURITY AND INTEGRITY:

The architecture of an IMS system, Background, Architecture, IMS Data Structure, Physical Database, The Database Description, Hierarchical Sequence, IMS data manipulation, Defining the Program Communication Block (PCB). The DL/I Examples, Constructing the Segment Search Argument, using more than one PCB. Object Oriented Databases , Need for Complex Data types- OO data Model- Nested relations- Complex Types- Inheritance Reference Types - Distributed databases- Homogenous and Heterogenous- Distributed data Storage , XML , Structure of XML- Data- XML Document- Schema- Querying and Transformation. , Data Mining and Data Warehousing.Introduction, Security and Integrity Violations, Authorization, Granting of Privileges, Security Specification in SQL

Text Books:

1. A Silberschatz, H Korth, S Sudarshan, “Database System and Concepts”, fifth Edition McGraw-Hill ,
2. Rob, Coronel, “Database Systems”, Seventh Edition, Cengage Learning.
3. Date C J, “An Introduction To Database System”, Pearson Educations
4. Elmasri, Navathe, “Fundamentals Of Database Systems”, Pearson Educations

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Reference Books:

1. Understanding SQL by Martin Gruber, BPB.
2. SQL- PL/SQL by Ivan bayross.
3. Oracle – The complete reference – TMH /oracle press.
4. AtulKahate , " Introduction to Database Management System", Pearson Educations.
5. Oracle 9i Database Administration Fundamental-I, Volume I, Oracle Press, TMH.
6. Paneerselvam,"DataBase Management System", PHI Learning.
7. Sanjeev Sharma, JitendraAgarwal, ShikhaAgarwal, "Advanced DBMS", Dreamtech Publication

List of Practical's:

1. Design a Database and create required tables. For e.g. Bank, College Database
2. Apply the constraints like Primary Key , Foreign key, NOT NULL to the tables.
3. Write a sql statement for implementing ALTER,UPDATE and DELETE
4. Write the queries to implement the joins
5. Write the query for implementing the following functions: MAX(),MIN(),AVG(),COUNT()
6. Write the query to implement the concept of Integrity constrains
7. Write the query to create the views 8) Perform the queries for triggers
8. Perform the following operation for demonstrating the insertion , Updation and deletion using the referential integrity constraints
9. Write the query for creating the users and their role.

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SEMESTER IV

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							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTCS504		**Software Engineering and Project Management**	2	1	2	4	60	20	20	30	20

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
*__Teacher Assessment__ shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The student will have ability to:

1. Knowledge of basic software engineering methods and practices.
2. Define software requirements and requirement engineering.
3. Apply approaches for various designs and their principle.
4. Explore testing in various domains.
5. Development of significant teamwork and project based experience.

Course Outcomes:

Upon completion of the subject, students will be able to:

1. Compare various software process models and identify where these models are applicable.
2. Define and analyze software project management, the framework and the dimensions of software project management.
3. Comprehend System modeling using UML.
4. Identify software testing strategies by using testing tools.
5. Analyze software risks and risk management strategies.

Syllabus:

UNIT I

Nature of software, software engineering, software process, A Generic process model, process assessment and improvement, prescriptive process models-waterfall model, incremental models, evolutionary models, concurrent models, Specialized Process Model, Unified Process, Personal and team process models, process technology, Agile development.

UNIT II

Functional and Non-functional requirements, Requirement Sources and Elicitation Techniques, Analysis Modeling for Function-oriented and Object-oriented software development, Use case Modeling, System and Software Requirement Specifications, Requirement Validation, Traceability.

UNIT III

The Software Design Process, Design Concepts and Principles, Software Modeling and UML, Architectural Design, Architectural Views and Styles, User Interface Design, Function-oriented Design, SA/SD Component Based Design, Design Metrics.

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UNIT IV

Software testing strategies-Approach, issues, validation testing and their criteria, system testing, alpha-beta testing, system testing, debugging, Testing conventional applications, Testing object oriented applications ,Testing web applications.

UNIT V

Need and Types of Maintenance, Software Configuration Management (SCM), Software Change Management, Version Control, Change control and Reporting, Program Comprehension Techniques, Re-engineering, Reverse Engineering, Tool Support. Project Management Concepts, Feasibility Analysis, Project and Process Planning, Resources Allocations, Software efforts, Schedule, and Cost estimations, Project Scheduling and Tracking, Risk Assessment and Mitigation, Software Quality Assurance(SQA). Project Metrics.

Text Books:

1. Roger S. Pressman, "Software Engineering – A Practitioner's Approach", Tata McGraw-Hill seventh edition, 2009.
2. Richard Fairley, "Software Engineering Concepts" –, Tata Mcgraw Hill, 2008.
3. PankajJalote ,"An Integrated Approach to Software Engineering", Narosa Pub, 2005.
4. Richard H.Thayer,"SoftwareEnginerring& Project Managements",Willey India

Reference Books:

1. Bernd Bruegge, Allen H. Dutoit," Object-Oriented Software Engineering" Using UML, Patterns, and Java, PEARSON Third Edition, 2017.
2. Waman S.Jawadekar,"Software Enginerring", TMH
3. Ian Sommerville, "Software Engineering", Seventh Edition, Pearson Education Asia, 2007.
4. Rajib Mall, "Fundamentals of Software Engineering" Second Edition, PHI Learning

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							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTCS409		Advance Java programming	3	1	2	5	60	20	20	30	20

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
*__Teacher Assessment__ shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The student will have ability to:

1. Understand Event Handling.
2. Understand structured and unstructured queries
3. Design and develop Web applications
4. Designing Enterprise based applications by encapsulating an application's business logic.
5. Designing applications using pre-built frameworks.

Course Outcomes:

Upon completion of the subject, students will be able to:

1. Design full set of UI widgets and other components, including windows, menus, buttons, checkboxes, text fields, scrollbars and scrolling lists, using Abstract Windowing Toolkit (AWT) & Swings and JavaFX
2. Learn to access database through Java programs, using SQL and No-SQL
3. Create dynamic web pages, using Servlets and JSP
4. Make a reusable software component, using advanced Frameworks
5. Invoke the remote methods in an application using Remote Method Invocation (RMI)

Syllabus:

UNIT I

Event handling, AWT: Windows, Graphics, Text, AWT Controls, Layout Managers, and Menus, Images, GUI Programming with Swing, Exploring Swing, Swing Menu.

UNIT II

GUI Programming with JavaFX, JavaFX Controls, JavaFX Menus

.

UNIT III

Introduction to databases (SQL ,No - SQL) Connecting to Databases – JDBC principles – Databases access – Interacting – Database search – Accessing Multimedia databases – Database support in Web applications. MySQl , MongoDB , Firebase , Merging Database to swing , Model View Controller, Servlet , JSP , HTML , CSS , Bootstrap/Sementic UI

UNIT IV

Introduction to Frameworks Struts, Hibernate, Spring basics , Spring AOP , Advanced Java Scripting Techniques.

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SEMESTER IV

UNIT V

Java Networking :Network Basics and Socket overview, TCP/IP client sockets, URL, TCP/IP server sockets, Datagrams, java.net package Socket, ServerSocket, InetAddress, URL, URLConnection. Remote Method Invocation, basic client server structure through RMI.

Text Books:

1. Black Book "Java server programming" J2EE, 1st ed., Dream Tech Publishers, 2008. 3. Kathy walrath."
2. Complete Reference J2EE by James Keogh mcgraw publication.
3. Professional Java Server Programming by SubrahmanyamAllamaraju, Cedric Buest Wiley Publication.
4. SCWCD, Matthew Scarpino, HanumantDeshmukh, JigneshMalavie, Manning publication 1. Core Java, Volume II: Advanced Features by Cay Horstmann and Gary Cornell Pearson Publication.
5. Core Java, Volume II: Advanced Features by Cay Horstmann and Gary Cornell Pearson Publication.

Reference Books:

1. Java Server Faces in Action, Kito D. Mann, Manning Publication.
2. JDBC™ API Tutorial and Reference, Third Edition, Maydene Fisher, Jon Ellis, Jonathan Bruce, Addison Wesley.
3. Beginning JSP, JSF andTomcat, GiulioZambon, Apress.
4. JSF2.0 CookBook, Anghel Leonard, PACKT publication.
5. Head First Servlets and JSP by Bryan Basham, Kathy Sierra & Bert Bates, Publisher: O'Reilly Media

List of Practical's:

1. How to set up multiple panels, compound borders, combo boxes, and how to load multiple images(Using Swing)
2. Write a Program to implement Swing Menu.
3. Write a Program to develop GUI using JavaFx
4. Write a Program to develop GUI using JavaFx Menus
5. Build Java web application using JDBC
6. Create servlet file which contains following function:
   1) Connect 2) Create Database 3) Create table 4) Insert records into respective table 5) Update records of particular table of database 6) Delete records from table 7) Delete table and also Database.
7. Write a program to demonstrate Struts
8. Write a program to demonstrate Hibernate
9. Write a program to demonstrate Spring
10. Write to program to communicate between two nodes.

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BTIT406		Unix and Shell Programming Lab	-	-	2	1	-	-	-	-	50

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
***Teacher Assessment** shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The course content should be taught and implemented with the aim to develop required skills so that students are able to acquire following competency:

1. Know the basics of UNIX operating system and shell programming.

Course Outcomes:

Upon completion of the subject, students will be able to:

1. Work on any Unix platform with confidence
2. Write the code in C language on UNIX platform.
3. Write effective scripts for their day to day jobs
4. Understand and use most of the Unix features and commands.

Syllabus:

UNIT I

Introduction to UNIX

The UNIX Operating System, The UNIX Architecture, Features of UNIX, Internal And External Commands, Command Structure.

GENERAL-PURPOSE UTILITIES: cal, date, echo, printf, bc, script, passwd, PATH, who, uname, tty, stty, pwd, cd, mkdir, rmdir, od.

UNIT II

Handling Files and C Environment

The File System, cat, cp, rm, mv, more, file, ls, wc, pg, cmp, comm, diff, gzip, tar, zip, df, du, mount, umount, chmod, The vi editor ,security by file Permissions. NETWORKING COMMANDS: ping, telnet, ftp, finger, arp, rlogin.

The C compiler, vi editor, compiler options, and run the programs.

.

UNIT III

Shell Basics

Types of shells , Shell functionality, Work Environment, Writing script & executing basic script, Debugging script, Making interactive scripts, Variables (default variables), Mathematical expressions. Conditional statements: If-else-elif, Test command, Logical operators-AND, OR, NOT, Case –esac. Loops: While, For, Until, Break & continue.

UNIT IV

Command Line Arguments and Regular Expression

Command line arguments: Positional parameters, Set & shift, IFS. Functions & file manipulations: Processing file line by line, Functions. Regular Expression & Filters: What is regular expression, Grep, cut, sort commands, Grep patterns.

UNIT V

SED and AWK

SED: Scripts, Operation, Addresses, commands, Applications, grep and sed.
AWK: Execution, Fields and Records, Scripts, Operations, Patterns, Actions, Associative Arrays, String Functions, String Functions, Mathematical Functions, User – Defined Functions, Using System commands in awk, Applications, awk and grep, sed and awk.

Reference Books:

1. Graham Glass, King Ables, "Unix for programmers and users", 3rd Edition, Pearson Education, 2009.
2. N.B Venkateswarlu, "Advanced Unix programming", 2ndEdition, BS Publications, 2010.
3. YashwanthKanitkar,"Unix Shell programming", 1stEdition, BPB Publisher, 2010.
4. Sumitabha Das, "Unix Concepts and Applications", 4thEdition. TMH, 2006.
5. Behrouz A. Forouzan, Richard F. Gilbery, "Unix and shell Programming", 1stEdition, Cengage Learning India, 2003.

List of Practical's:

1. Installation of Unix/Linux operating system.
2. Study of Unix general purpose utility command list obtained from (man, who, cat, cd, cp, ps, ls, mv, rm, mkdir, rmdir, echo, more, date, time, kill, history, chmod, chown, finger, pwd, cal, logout, shutdown) commands.
3. Study of vi editor.
4. Study of Bash shell, Bourne shell and C shell in Unix/Linux operating system.
5. Write a C program to check whether the given string is palindrome or not using Command line substitution.
6. Write a C program to check the given integer is prime or not.
7. Write a C program to check whether the given number is Avogadro number or not.
8. Write a C program that accept two integers as its arguments and computes the value of first number raised to the power of second number.
9. Write a shell script program to display list of user currently logged in.
10. Write a shell script program to display "HELLO WORLD".
11. Write a shell script program to develop a scientific calculator.
12. Write a shell Script program to check whether the given number is even or odd.
13. Shell script Program to search whether element is present is in the list or not.
14. Shell script program to check whether given file is a directory or not.
15. Shell script program to count number of files in a Directory.
16. Shell script program to copy contents of one file to another.

17. Create directory, write contents on that and Copy to a suitable location in your home directory.
18. Use a pipeline and command substitution to set the length of a line in file to a variable.
19. Write a program using sed command to print duplicated lines of Input.
20. Write a grep/egrep script to find the number of words character, words and lines in a file.
21. Write an awk script to develop a Fibonacci series.
22. Write an awk script to display the pattern of given string or number.
23. Write an egrep script to displaylist of files in the directory

Shri Vaishnav Vidyapeeth Vishwavidyalaya

B. Tech., B. Tech. + M. Tech. and B. Tech. + MBA (Information Technology)

Choice Based Credit System (CBCS) 2018-19

SEMESTER IV

COURSE CODE	CATEGORY	COURSE NAME	L	T	P	CREDITS	TEACHING & EVALUATION SCHEME				
							THEORY		PRACTICAL		
							END SEM University Exam	Two Term Exam	Teachers Assessment*	END SEM University Exam	Teachers Assessment*
BTIT306	UG	**Mobile Application Development Lab**	-	-	2	1	-	-	-	-	50

Legends: **L** - Lecture; **T** - Tutorial/Teacher Guided Student Activity; **P** – Practical; **C** - Credit;
*__Teacher Assessment__ shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Course Objectives:

The student will have ability to:

1. Describe those aspects of mobile programming that make it unique from programming for other platforms,
2. Critique mobile applications on their design pros and cons,
3. Utilize rapid prototyping techniques to design and develop sophisticated mobile interfaces.
4. Program mobile applications for the Android operating system that use basic and advanced phone features, and
5. Deploy applications to the Android marketplace for distribution.

Course Outcomes:

Upon completion of the subject, students will be able to:

1. Students will understand aspects of mobile.
2. Students will be able to develop rapid prototyping techniques to design and develop sophisticated mobile interfaces.
3. Students will be able to create Program mobile applications for the Android operating system that use basic and advanced phone features.
4. Students will be able to build applications to the Android marketplace for distribution.

Syllabus:

UNIT I

Introduction to mobile devices and Administrative,Mobile devices vs. desktop devices - ARM and intel architectures - Power Management - Screen resolution - Touch interfaces - Application development - App Store, Google Play, Windows Store - Development environments introduction: XCode , Eclipse , PhoneGAP, etc - Native vs. web applications.

UNIT II

Mobile OS Architectures: Comparing and Contrasting architectures of all three – Android, iOS and Windows - Underlying OS (Darwin vs. Linux vs. Win 8) - Kernel structure and native level programming - Runtime (Objective-C vs. Dalvik vs. WinRT) - Approaches to power management – Security.

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Chairperson
Board of Studies
Shri Vaishnav Vidyapeeth Vishwavidyalaya
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Shri Vaishnav Vidyapeeth Vishwavidyalaya
Indore

UNIT III

Introduction to Android Development Environment, Android/iOS/Win 8 Survival and basic apps, Mobile frameworks,Tools,Native level programming on Android o Low-level programming on (jailbroken) iOS o Windows low level APIs.

UNIT IV

Study different open source frameworks, tools and basic languages used for mobile development. Basic working knowledge on various editors, tools used in mobile development like android development environment.Mobile Software Engineering, Frameworks and Tools ,Generic UI Development.

UNIT V

Intents and Service: Android ,Intents and Services , Characteristics of Mobile Applications, Successful Mobile Development, Storing and Retrieving Data, Synchronization and Replication of Mobile Dat, Android Storing and Retrieving Data ,Working with a Content Provider, Communications Via Network and the Web, State Machine, Correct Communications Model, Android Networking and Web , Telephony, Wireless Connectivity and Mobile Apps, Notifications and Alarms, Memory Management, Graphics Performance and Multithreading, Graphics and UI Performance Android Graphics and MultimediaMobile Agents , LocationMobility and Location Based Packaging and DeployingPerformance Best Practices

Text Books:

1. Android Programming: The Big Nerd Ranch Guide (Big Nerd Ranch Guides)
2. Android User Interface Design: Turning Ideas and Sketches into Beautifully Designed Apps

References:

1. http://www.tutorialspoint.com/android/
2. http://rypress.com/tutorials/objective-c/index
3. http://www.programiz.com/python-programming

List of Practical's:

1. Write a html program for Creation of web site with forms, frames, links, tables etc
2. Design a web site using HTML and DHTML. Use Basic text Formatting, Images,
3. Create a script that asks the user for a name, then greets the user with "Hello" and the user name on the page
4. Create a script that collects numbers from a page and then adds them up and prints them to a blank field on the page.
5. Using CSS for creating web sites
6. Creating simple application to access data base using JDBC Formatting HTML with CSS.
7. Program for manipulating Databases and SQL.
8. Basic android programs.
9. Basic programs in objective c.
10. Programs in eclipse tools.