Jai Hind College Autonomous

T.Y.BVOC- SEM V

Draft Syllabus of

Dept of

Software Development 2019-20

T.Y.B.Voc Software Development Syllabus

Academic year 2019-2020

Semester <V>			
Course Code	**Course Title**	**Credits**	**Lectures /Week**
General Component			
SBSD501	Strategic Management	3	3
SBSD502	Entrepreneurship & Business Planning-I	3	3
SBSD503	Multimedia-I	3	3
SBSD504	Managerial Economics (Macro Economics)	3	3
Skill Component			
SBSD505	Project Management	3	3
SBSD506	Python Programming and Data Structures	3	3
SBSD507	Big Data Analysis	3	3
SBSD508	Project Viva & Voce	3	3
SBSD505PR	Project Management Practical	1.5	3
SBSD506PR	Python Programming and Data Structures Practical	1.5	3
SBSD507PR	Big Data Analysis Practical	1.5	3
SBSD508PR	Project Viva & Voce Practical	1.5	3

Semester V – Theory

Course Code: SBSD501	**Course Title: Strategic Management (Credits :03 Lectures/Week:03)**	
Learning Objectives	➢ **To introduce students to the subjects of Strategic Management** ➢ **To give them fair understanding of strategy formulation, implementation, monitoring and evaluation** ➢ **To familiarize students to corporate strategies, functional strategies and global strategies** ➢ **To develop capabilities of the students to analyze cases and develop strategic solutions**	
Course Description	**This course aims to build the understanding of students into how managers employ the formal and informal relationships that exist between firms in an industry, devise solutions to the externally focused questions facing a company, and effectively formulate and implement an organization's key strategies, the results of which shapes the structure and functioning of an organization.**	
	THEORY	**(45 lectures)**
	Unit – I: Introduction to business policy& Environmental Scanning	**10 lectures**
1.	a) Strategic management i. Definitions & nature ii. Scope & significance iii. Elements and processes	
2.	a) Ben and Jerry's Ice Cream: Case Study i. Mission & Goals ii. Objectives iii. Company report analysis	
	Unit – II: Evaluation and Control	**15 lectures**
1.	a) i. Analyzing the External & Internal Environment of the Firm ii. Michael Porter's Five Forces Model b) Kirin Beer: Case Study, SWOT Analysis	
2.	a) i. SWOT Analysis ii. Recognizing a Firm's Intellectual Assets b) Ali-baba: Case Study (not assessed) Group	
3.	a) i. Project: Preparation and Guidance	
	Unit – III: Strategic Formulation and Implementation	**15 lectures**

1.	a) i. Corporate, Business levels functional stages ii. Strategic implementation	
2.	a) i. Cultural aspect of strategic choice ii. Functional strategies b) Strategic Implementation	
	Unit – IV: Theory of Constraints &Corporate Level Strategies	**10 lectures**
1.	**a)** **i.** Corporate level strategy- Samsung: Case Study **ii.** Business level strategy- Foxconn: Case Study **b)** International strategy: Zara case study	
2.	**a)** Strategy implementation **i.** Issues in implementation **ii.** Project implementation and control procedures **iii.** Resource allocation	
3.	**a)** **i.** Corporate ethos **ii.** Culture and ethics **iii.** Management of change	
References:	1. Fred R. David, (13th Ed). *Strategic Management: Concepts & Cases*, New Jersey: Prentice Hall International. 2. Dr. Kazmi, Azhar.(2008) *Business Policy & Strategic Management*, Mumbai : Tata McGraw Hill. 3. Pearce II, John A & Robinson Jr, Richard B. (2015).*Strategic Management*, Delhi: A.I.T.B.S. Publishers.	

Course Code: SBSD502	**Course Title: Entrepreneurship (Credits :03 Lectures/Week:03)**	
Learning Objectives	➢ **Teaches students to think outside the box and nurtures unconventional talents and skills** ➢ **It creates opportunity, ensures social justice, in stills confidence and stimulates the economy** ➢ **To understand the steps and processes in the process of becoming and entrepreneur**	
Course description	**This course aims to promote and develop entrepreneurship. It teaches how to conduct research and provide consultancy for entrepreneurship development, analyses the entrepreneurial growth in India and various success stories and how to develop an idea.**	
	THEORY	**(45 lectures)**
Sub Unit	**Unit – I: Introduction: The Entrepreneur**	**10 lectures**
1.	a) i. Definition & Characteristics of a successful entrepreneur ii. Entrepreneurial scene in India b) Analysis of entrepreneurial growth in different communities	
2.	a) i. Case histories of successful entrepreneurs ii. Concept & development of Social Entrepreneurship in India.	
3.	a) i. Role of Entrepreneurship in economic development ii. Start ups	
	Unit – II: Role of Innovation in Business and Idea Generation	**10 lectures**
1.	a) i. Types of Innovation ii. Creating and Identifying	

	iii. Opportunities for Innovation	
2.	a) i. The Technological Innovation Process & Creating New ii. Technological Innovation and Entrepreneurship iii. Licensing & Patent, Innovation in Indian Firms.	
3.	a) i. Idea Generation and Opportunity Assessment, ii. Sources of New Ideas & Techniques for generating ideas iii. Opportunity Recognition	
Sub Unit	**Unit – III: Business Plan Preparation**	**15 lectures**
1.	a) i. Elements of the Business Plan ii. Developing a Business Plan iii. Guidelines for preparing a Business Plan	
2.	a) i. Financial Market Analysis & Technical Feasibility ii. Feasibility Analysis: Technical Feasibility of Products and Services iii. Marketing Feasibility: Marketing Methods, Pricing Policy and Distribution Channels	
3.	a) i. Estimating project cost ii. Incorporation of Business iii. Forms of Business organizations	
	Unit – IV: Entrepreneurial Venture and Marketing (Project Based)	**10 lectures**
1.	a) i. Methods& Channel of Marketing	

	ii. Marketing Institutions & Assistance iii. Business Model Canvas	
2.	a) i. New trends in entrepreneurship & E-entrepreneurship ii. Role of e- commerce and M commerce iii. Ethical considerations	
3.	a) i. Life cycle of an entrepreneurial venture ii. Role of entrepreneur during various transition stages iii. Dynamics of small business environment b) Causes for failure & success factors for smallbusiness	
References:	1. Kumar, Arya. (2012). *Entrepreneurship*, Delhi: Pearson. 2. Poornima M.CH. (2009). *Entrepreneurship Development – Small Business Enterprises*, Delhi: Pearson. 3. Michael H. Morris, ET. al. (2011). *Entrepreneurship and Innovation*, New Delhi: Cen gage Learning. 4. Anil Kumar, S., ET.al. (2011). *Entrepreneurship Development*, New Delhi: New Age International Publishers. 5. Bedi, Kanishka. (2009). *Management and Entrepreneurship*, Delhi: Oxford University Press.	

Course: SBSD503	**Course Title: Multimedia-I (Credits :03 Lectures/Week:03)**	
Learning Objectives	**To understand and create and design for print and digital media.**	
Course Description	**layout designs, digital illustration, color theory, typography, image manipulation, branding, packaging and advertising, pre-press, the design of symbols and logos & corporate stationery and multimedia project management with sound and video editing techniques.**	
	THEORY	**(60 Lectures)**
Unit I	**Photoshop Topics** • Navigating the Workspace • Working with Documents • Image Modes &Color Selection • Selections techniques • Layers and Mask • Adding and Working with Type • Painting Tools • Saving & exporting **Coreldraw Topics** • IMPORTANCE & USAGE VARIOUS DRAWING TOOLS • UNDERSTANDING OF DIFFERENT TEXT AND ALIGNMENT OPTION • IMPORTANCE & USAGE VARIOUS INTERACTIVE TOOL • How to select color from one object & fill in other object • To create new Shapes with Different Shaping Options • Difference between Duplicate & Clone • Use of Transformation tool	**15 L**
Unit II	**Adobe Flash** • Drawing Toolbar introduction • Timeline Introduction • Introduction to Different Symbols, Library etc. • Use of Layers • Introduction to Classic Animation • Introduction to Shape Animation • Introduction to Frame by Frame Animation • Introduction to Masking Techniques in Flash etc. • Creating Gif Animation and export options. **Sony Sound Forge** • Technical concepts and theory of sound	**15 L**

	• Introduction to Audio formats • Digitization and Resampling of Sound, • Editing, Mixing, Recording of WAV audio • Converting sound into different formats for presentation	
Unit III	**Adobe Photoshop Advance** • Bitmap vs vector, RGB/CMYK theory • Clip mask techniques, creating artwork with Pen tool, • Different text and image effect using Filters, • Creating GIF animations using layers • Use of Actions, batch, liquify etc. • Different techniques of image color corrections, smart filters • Creating different Layouts as per the industry requirements **Adobe Illustrator** • Raster and Vector theory • Creating Vector using Pen tool, • Creating & Manipulating Paths • Specifications RGB v CMYK, • Duplicating shapes & transformations • Organizing Artwork With Layers • Working With Type And Creating Corporate Stationery • Saving for various software and export options	**15 L**
Unit IV	**Adobe Premier** • Introduction to Interface and workflow • Working with Video and Audio timeline • Cutting & Editing Video, Applying Effects etc. • Inserting different transitions in-between videos • Exporting Video in different formats for presentation **Flash Action Script** • Basic syntax of Action Script 3.0 • Movieclip and Button Properties syntax • Different Data type used in script • Interactive multimedia presentation commands	**15 L**
Textbook: 1. CORELDRAW X4 FOR SIMPLE STEPS		

2. CORELDRAW X4 THE OFFICIAL GUIDE BY GARY DAVID BOUTON PRAKHAR COMPLETE COURSE FOR DTP

Course Code: SBSD504	**Course Title: Managerial Economics (Credits :03 Lectures/Week:03)**	
Learning Objectives	➢ **To familiarize the students with macro concepts and macro policies.** ➢ **To help them to understand how these policies affect business decisions.** ➢ **To effectively use economic analysis while framing business policies**.	
Course description	**This course aims to introduce students to basics of economic terms which is an essential part to understanding the economy of our country which will help them maneuver in the real world. It teaches them management of economy, concepts of demand, supply, revenue, cost, inflation, deflation etc.**	
	THEORY	**(45 lectures)**
Sub Unit	**Unit – I: Introduction**	**10 lectures**
1.	a) i. Managerial Economics: Definition ii. Relevance iii. National Income	
2.	a) i. Fundamental Concepts of Revenue & Cost & Profit ii. Production & Consumption & Distribution iii. Money demand & Supply	
3.	a) i. Concepts of inflation deflation ii. recession & depression iii. HDI, Monetary policy & taxes	
Sub Unit	**Unit – II: Market system and Equilibrium**	**10 lectures**

1.	a)Economic System	
2.	a) Market Structure	
Sub Unit	**Unit – III: Markets and Pricing**	**15 lectures**
1.	a)Demand and Supply Curves	
2.	a) Pricing Strategies	
Sub Unit	**Unit – IV: Demand and Price elasticity's**	**10 lectures**
1.	a) Consumer Demand and Consumer Behaviour	
2.	a)Price Elasticity of Supply	
References:	1. Gupta, G.S. (2017). *Managerial Economics*, New York: McGraw Hill Education. 2. Dwivedi, D.N. (2010). *Managerial Economics*, New Delhi:S.Chand (G/L) & Company Ltd.	

Course: SBSD505	**Course Title: Project Management (Credits :03 Lectures/Week:03)**	
Learning Objectives	**This course provides a *basic foundation of knowledge* from which *processes* and *procedures* can be learned and developed for management of projects. It also describes Project Management *tools* that can used to effectively create and manage various types of planning and scheduling activities that are required for completion of a project.**	
Course Description	**Participants will develop skills in effective time management and planning while determining how deliverables and milestones can have a major impact upon the success of a project. Quality management, effective resource allocation and risk analysis are also determining factors that will be discussed.**	
	THEORY	**(60 Lectures)**
Unit I	**Introduction to Software Project Management**: Introduction, Why is Software Project Management Important? What is a Project? Software Projects versus Other Types of Project, Contract Management and Technical Project Management, Activities Covered by Software Project Management, Plans, Methods and Methodologies, Some Ways of Categorizing Software Projects, Project Charter, Stakeholders, Setting Objectives, The Business Case, Project Success and Failure, What is Management? Management Control, Project Management Life Cycle, Traditional versus Modern Project Management Practices. **Project Evaluation and Programme Management**: Introduction, Business Case, Project Portfolio Management, Evaluation of Individual Projects, Cost–benefit Evaluation Techniques, Risk Evaluation, Programme Management, Managing the Allocation of Resources within Programmes, Strategic Programme Management, Creating a Programme, Aids to Programme Management, Some Reservations about Programme Management, Benefits Management.	**15 L**
Unit II	**Selection of an Appropriate Project Approach:** Introduction, Build or Buy? Choosing Methodologies and Technologies, Software Processes and Process Models, Choice of Process Models, Structure versus Speed of Delivery, The Waterfall Model, The Spiral Model, Software Prototyping, Other Ways of Categorizing Prototypes, Incremental Delivery, Atern/Dynamic Systems Development Method, Rapid Application Development, Agile Methods, Extreme Programming (XP), Scrum, Lean Software Development, Managing Iterative Processes, Selecting the Most Appropriate Process Model. **Software Effort Estimation:** Introduction, Where are the Estimates Done? Problems with Over- and Under-Estimates, The Basis for Software Estimating, Software Effort Estimation Techniques, Bottomup Estimating, The Top-down Approach and Parametric Models, Expert Judgement, Estimating by Analogy, Albrecht Function Point 12 6 Analysis, Function Points Mark II, COSMIC Full Function Points, COCOMO II: A Parametric Productivity Model, Cost Estimation, Staffing Pattern, Effect of Schedule Compression, Capers Jones Estimating Rules of Thumb.	**15 L**

Unit III	**Activity Planning: Introduction,** Objectives of Activity Planning, When to Plan, Project Schedules, Projects and Activities, Sequencing and Scheduling Activities, Network Planning Models, Formulating a Network Model, Adding the Time Dimension, The Forward Pass, Backward Pass, Identifying the Critical Path, Activity Float, Shortening the Project Duration, Identifying Critical Activities, Activity-on-Arrow Networks. **Risk Management**: Introduction, Risk, Categories of Risk, Risk Management Approaches, A Framework for Dealing with Risk, Risk Identification, Risk Assessment, Risk Planning, Risk Management, Evaluating Risks to the Schedule, Boehm's Top 10 Risks and Counter Measures, Applying the PERT Technique, Monte Carlo Simulation, Critical Chain Concepts. **Resource Allocation**: Introduction, Nature of Resources, Identifying Resource Requirements, Scheduling Resources, Creating Critical Paths, Counting the Cost, Being Specific, Publishing the Resource Schedule, Cost Schedules, Scheduling Sequence	**15 L**
Unit IV	**Monitoring and Control:** Introduction, Creating the Framework, Collecting the Data, Review, Visualizing Progress, Cost Monitoring, Earned Value Analysis, Prioritizing Monitoring, Getting the Project Back to Target, Change Control, Software Configuration Management (SCM). **Managing Contracts:** Introduction, Types of Contract, Stages in Contract Placement, Typical Terms of a Contract, Contract Management, Acceptance. **Managing People in Software Environments:** Introduction, Understanding Behaviour, Organizational Behaviour: A Background, Selecting the Right Person for the Job, Instruction in the Best Methods, Motivation, The Oldham–Hackman Job Characteristics Model, Stress, Stress Management, Health and Safety, Some Ethical and Professional Concerns	**15 L**

Textbook:

1. Software Project Management Bob Hughes, Mike Cotterell, Rajib Mall TMH 6 th 2018
2. Project Management and Tools & Technologies – An overview Shailesh Mehta SPD 1st 2017
3. Software Project Management Walker Royce Pearson 2005

Course: SBSD506	**Course Title: Python Programming and Data Structures (Credits :03 Lectures/Week:03)**	
Learning Objectives:	➢ **To be familiar about the basic constructs of programming such as data, operations, conditions, loops, functions etc.** ➢ **To understand how to read/write to files, handle exception using python.** ➢ **To build and package Python modules for reusability.** ➢ **To design and understand object-oriented concepts with Python classes.** ➢ **To understand the concept of pattern matching.** **To understand the concepts of GUI controls and designing GUI applications along with database connectivity to move the data to/from the application.**	
Course Description	**In addition to providing an overview of how Python is used in the business world today, this course is intended to teach basic to intermediate to advance level programs involving data using Python.** **This course focuses on both procedural programming and object oriented design. Thus this course can serve as a good foundation to learn other applications of Python (such as mobile development) as well as other programming languages.**	
	THEORY	**(60 Lectures)**
Unit I	a) Introduction: i. The Python Programming Language, History, features, Installing Python, Running Python program. ii. Interactive and script modes of IDLE b) Data Types : i. Values and Types ii. Type conversion c) expressions and operators i) Of types int, float, boolean. Built-in function type. Operator precedence. ii) Variables, Variable Names and Keywords. d) Statements: i. The conditional statements if, if-else, ii. if-elsif-else iii. The iterative statements while, while-else, for-else. iv. Nested compound statements. v. The continue statement to skip over one iteration of a loop, the break statement to exit the loop, pass statement. e) Functions: i) The import statement for already-defined functions and constants. ii) Modules. iii) The compound statement def to define functions; the role of indentation for delimiting the body of a	**15 L**

	compound statement; calling a previously defined function. iv) Advantages of functions, function parameters v) Built-in functions vi) Recursive functions	
Unit II	a) Strings : i. Strings and tuples are immutable, lists are mutable. ii. String Methods, operators and comparison b) Tuples: i) Built-in methods ii) Operations c) Lists: i) Accessing elements ii) Built-in List functions iii) List Operations d) Sets and Dictionaries i) Difference between sets and dictionaries ii) Sets and frozen sets. iii) Creating a Dictionary, Accessing Values in a Dictionary iv) Built-in methods v) Operations on dictionary. e) Gentle introduction to object-oriented programming f) Python File Input-Output: i) Opening and closing files ii) Various types of file modes iii) Reading and writing to files iv) Manipulating directories.	**15 L**
Unit III	a) Exception handling: i) What is an exception ii) Various keywords to handle exceptions such try, catch, except, else, finally, raise. a) GUI Programming in Python: i. What is GUI ii. Introduction to GUI library. iii. Layout management, events and bindings, fonts, colors, drawing on canvas (line, oval, rectangle, etc.) iv. Widgets b) Database connectivity in Python:: i. Mysql connector, accessing connector module. ii. Using connect, cursor, execute & close functions. iii. Reading single & multiple results of query execution iv. Executing different types of statements, executing	**15 L**

	transactions.	
Unit IV	a) Stacks: i. Operations push(), pop(), is_empty(); stacktop(), len() implementation using lists. ii. Applications a) Queues: i. Operations enqueue() and dequeue(), i.e., enter() and exit(),is_empty(), first(), last()); implementation using Python lists ii. Application a) Linked List: i. Singly, doubly and circularly linked lists, with head and optional tail. ii. Implementation of list nodes as Python objects. iii. Operations: insertion and deletion at the front and the rear of the list. iv. Search for a value in a list, Delete a value in a list. v) Applications a) Trees: i. Trees and binary trees, definitions and properties ii. Insertion and deletion of a tree node. iii. Binary tree traversal.	**15 L**

Textbook:

1. Allen Downey. (2012). Think Python. Needham, Massachusetts: O'Reilly.
2. Allen Downey. (2012). Think Python.Retrieved from http://www.greenteapress.com/thinkpython/thinkpython.pdf
3. Jason Montojo, Jennifer Campbell, Paul Gries. (2014). An Introduction to Computer Science using Python 3. North Carolina Dallas, Texas: SPD.
4. Goodrich, Tamassia, Goldwasser.(2016).Data Structures and Algorithms in Python: J. Wiley.
5. Rance D. Necaise, College of William and
6. Mary.(2016).Data Structures and Algorithms Using Python: J. Wiley.
7. Burkhard A. Meier. (2015). Python GUI Programming Cookbook. Birmingham, UK: Packt.
8. E. Balagurusamy. (2016). Introduction to Problem Solving with Python: TMH.
9. Joel Murach, Michael Urban. (2017).Murach's Python programming: SPD.
10. Michael H.Goldwasser, David Letscher. (2008). Object-oriented Programming in Python. Upper Saddle River, N.J: Pearson Prentice Hall.
11. Budd. (2016). Exploring Python: TMH.
12. https://docs.python.org/3/tutorial

Course: SBSD507	**Course Title: Big Data Analysis(Credits :03 Lectures/Week:03)**	
Learning Objectives:	➢ **Ability to Analyze Big Data** ➢ **Learn to apply hypotheses and data into actionable predictions** ➢ **Understand the Big Data Platform and its Use cases** ➢ **Identify Big Data and its Business Implications.**	
Course Description	**Big Data analysis using R tools and Hadoop**	
	THEORY	**(60 Lectures)**
Unit I	a) Data Analytics with R Using R packages i. Data Structures in R ii. Data Manipulation in R iii. Desc Dataframe factor iv. Performing data operations v. Importing the data into R, vi. Analytics Tools and Exploring R vii. Exporting the data from R viii. Measuring the central tendency ix. Measuring spread - variance andstandard deviation x. Visualizing numeric variables –boxplots xi. Visualizing numeric variables –histogram xii. Read and Write Operations in R Analytics Tools Exploring R	**15 L**
Unit II	a) INTRODUCTION TO BIG DATA AND HADOOP i. Understanding different Hadoop modes ii. Understanding Hadoop features iii. Understanding Hadoop installation steps iv. Types of Digital Data, v. Introduction to Big Data, vi. Big Data Analytics b) History of Hadoop, i. Apache Hadoop, Analysing Data with Unix tools, ii. Analysing Data with Hadoop, iii. Hadoop Streaming, iv. Hadoop Echo System, v. IBM Big Data Strategy, vi. Introduction to InfosphereBigInsights and Big Sheets.	**15 L**
Unit III	a) HDFS(Hadoop Distributed File System) i. The Design of HDFS, ii. HDFS Concepts, iii. Command Line Interface, iv. Hadoop file system interfaces, v. Data flow, vi. Data Ingest with Flume and Scoop and Hadoop archives, vii. Hadoop I/O: Compression, Serialization,	**15 L**

	viii. Avro and File-Based Data structures. b) Anatomy of a Map Reduce Job Run, Failures, Job Scheduling, Shuffle and Sort, Task Execution, Map Reduce Types and Formats, Map Reduce Features.	
Unit IV	a) Hadoop Eco System i. Pig : Introduction to PIG, Execution Modes of Pig, Comparison of Pig with Databases, Grunt, Pig Latin, User Defined Functions, Data Processing operators. ii. Hive : Hive Shell, Hive Services, Hive Metastore, Comparison with Traditional Databases, HiveQL, Tables, Querying Data and User Defined Functions. iii. Hbase :HBasics, Concepts, Clients, Example, Hbase Versus RDBMS. iv. Big SQL : Introduction	**15 L**
Textbook: 1. "Hadoop: The Definitive Guide" ,Tom White Third Edit on, O'reily Media, 2012. 2. "Big Data Analytics", Seema Acharya, SubhasiniChellappan, Wiley 2015.		

Evaluation Scheme

[A] Evaluation scheme for Theory courses

I. Internal Test- 25 Marks

II. Semester End Examination (SEE)- 75 Marks

Course: SBSD508	Course Title: Project Viva & Voce (Credits :03 Lectures/Week:03)	
Learning Objectives:	➢ Learning through practice is a very good way of crystallizing in your mind what you may have learnt. ➢ A management level post graduate course is of no use if you are unable to apply theoretical knowledge in practical scenarios. ➢ Project work is one such tool- It enables you to apply your conceptual knowledge in a practical situation and to learn the art of conducting a study in a systematic way and presenting its findings in a coherent report. ➢ A proper application towards this exercise should help you in your professional life.	
Course Description	1. A project is a scientific and systematic study of real issue or a problem intended to resolve the problem with application of management concepts and skills. 2. The study can deal with a small or a big issue in an organization, the problem can be from any discipline of management. 3. The essential requirement of a project is that it should entail scientific collection, analysis and interpretation of data leading to valid conclusions.	
	THEORY	**(60 Lectures)**
Unit I	a) Investigation i. Project fixing ii. Synopsis a) Analysis i. Project history ii. Requirement Gathering iii. Objective And Scope of Project iv. Problems With Existing System v. Advantage Of Proposed System vi. Feasibility Study vii. Cost Benefit Analysis viii. Requirement Specification ix. Tools & Technology	**15 L**
Unit II	a) Design Phase i. Detailed Life Cycle Of Project(Logical Design) ii. Class Diagram iii. E-R Diagram iv. Event Table v. Use Case Diagram a) Coding Phase i. Data base Design (with proper records) ii. Forms iii. Modules Design iv. Validating Forms/ applications	**15 L**
Unit III	a) Testing Phase i. Module Testing/ unit testing ii. Integration Testing iii. System Testing	**15 L**

	iv. Acceptance Testing a) Maintenace and Evaluation i. System MaintainaceAnd Future Enhancement ii. User Manual/ help report	
Unit IV	a) Review b) Project / Black book & Back up softcopy submission	**15 L**

Textbook:

1. Modern Systems Analysis and Design; Jeffrey A. Hoffer, Joey F. George, Joseph,S.Valacich.
2. Pearson Education; Third Edition; 2002.
3. ISO/IEC 12207: Software Life Cycle Process
4. (http://www.software.org/quagmire/descriptions/iso-iec12207.asp).
5. IEEE 1063: Software User Documentation (http://ieeexplore.ieee.org).
6. ISO/IEC: 18019: Guidelines for the Design and Preparation of User Documentation for
7. Application Software.
8. http://www.sce.carleton.ca/squall.
9. http://en.tldp.org/HOWTO/Software-Release-Practice-HOWTO/documentation.html.
10. http://www.sei.cmu.edu/cmm/

Evaluation Scheme

[A] Evaluation scheme for Theory courses

I. Semester End Examination (SEE)- 50 Marks

Semester V – Practical

Course: SBSD505PR)	Practical Title:Project Management Practical(Credits: 1.5 Practicals/Week:01)
	1. SYSTEM REQUIREMENT STUDY (SRS) FOR A PROJECT 2. Waterfall Model as the conventional process model to prepare the flow and Gantt Chart 3. Cost Estimation of the project Using Function Point Analysis (FPA) 4. Cost Estimation of the project Using COCOMO Model I 5. Class diagram using StarUML 6. Use Case diagram using StarUML 7. Activity description for the project 8. Activity description and diagram for the project

Course: SBSD506PR	Practical Title: Python Programming and Data Structures Practical (Credits : 1.5 Practicals/Week: 01)
	1. a. Programs based on lists, conditional constructs, the for statement and the range function; interactively using the built-in functions len, sum, max, min. b. Programs using break and continue statements. 2. a. Programs related to string manipulation. b. Programs using list comprehensions and anonymous functions. 3. a. Programs related to dictionaries. b. Programs using the built-in methods of the string, list and dictionary classes 4. a. Design a class that store the information of Employee and display the same. b. Implement the concept of inheritance using python. 5. a. Programs to read and write files. b. Program to demonstrate exception handling 6. Program to show draw shapes & GUI controls. 7. a. Design a simple database application that stores the records and retrieve the same. b. Design a database application to search the specified record from the database. c. Design a database application to that allows the user to add, delete and modify the records.

	8. a. Write a program to implement stack and its applications. b. Write a program to implement queue and its applications. 9. Write a program to implement linked list and its applications.(singly, doubly) 10. a. Write a program to perform insertion and deletion of a node from a tree. b. Write a program to print pre-order, post-order and in-order traversal of a tree

Course: SBSD507PR	**Practical Title: Big Data Analysis Practical (Credits : 1.5 Practicals/Week: 01)**
	1. a. Perform setting up and Installing Hadoop in its two operating modes: Pseudo distributed, Fully distributed. b. Use web based tools to monitor your Hadoop setup 2. a. Implement the following file management tasks in Hadoop: Adding files and directories , Retrieving files , Deleting files b. Benchmark and stress test an Apache Hadoop cluster 3. Run a basic Word Count Map Reduce program to understand Map Reduce Paradigm. Find the number of occurrence of each word appearing in the input file(s) 4. Stop word elimination problem: a. Input: i. A large textual file containing one sentence per line ii. A small file containing a set of stop words (One stop word per line) b. Output: i. A textual file containing the same sentences of the large input file without the words appearing in the small file. 5. Write a Map Reduce program that mines weather data. Weather sensors collecting data every hour at many locations across the globe gather large volume of log data, which is a good candidate for analysis with MapReduce, since it is semi structured and record-oriented. Data available at: https://github.com/tomwhite/hadoopbook/tree/master/input/ncdc/all. a. Find average, max and min temperature for each year in NCDC data set? b. Filter the readings of a set based on value of the measurement, Output the line of input files associated with a temperature value greater than 30.0 and store it in a separate file. 6. a. Purchases.txt Dataset Instead of breaking the sales down by store, give us a sales breakdown by product category across all of our stores b. What is the value of total sales for the following categories? i. Toys

	ii. Consumer Electronic c. Find the monetary value for the highest individual sale for each separate store d. What are the values for the following stores? Reno, Toledo, Chandler, e. Find the total sales value across all the stores, and the total number of sales 7. Install and Run Pig then write Pig Latin scripts to sort, group, join, project, and filter your data. 8. Write a Pig Latin scripts for finding TF-IDF value for book dataset (A corpus of eBooks available at: Project Gutenberg) 9. Install and Run Hive then use Hive to create, alter, and drop databases, tables, views, functions, and indexes. 10. Data analytics using Apache Spark on Amazon food dataset, find all the pairs of items frequently reviewed together. a. Write a single Spark application that: b. Transposes the original Amazon food dataset, obtaining a PairRDD of the type: → o Counts the frequencies of all the pairs of products reviewed together; c. Writes on the output folder all the pairs of products that appear more than once and their frequencies. d. The pairs of products must be sorted by frequency.

[B] Evaluation scheme for Practical courses

I. Practical Exam (50 Marks)

Course: SBSD508PR	**Practical Title: Project Viva & voce Practical (Credits : 1.5 Practicals/Week: 01)**
	Implementation of Project in Android App Development

[B] Evaluation scheme for Project

I. Project Implementation (100 Marks)

JAI HIND COLLEGE

BASANTSING INSTITUTE OF SCIENCE & J. T. LALVANI COLLEGE OF COMMERCE. MUMBAI-400020.

Class: **Paper-**

Subject: **Time**:

Day & Date: **Total Marks :75**

PLEASE READ CAREFULLY THE WARNING PRINTED ON THE ANSWER BOOK IN CONNECTION WITH THE USE TO UNFAIR MEANS.

General Instructions:- 1. All questions are Compulsory

2. Numbers to the right indicate maximum marks

3. Answers to the sub-questions of the same question must be written together.

4. Each question carries 5 marks.

Q1)	**Answer three of the following questions (Based on Unit 1)**	**(15 marks)**
1)		(5)
2)		(5)
3)		(5)
4)		(5)
5)		(5)
6)		(5)
Q2)	**Answer three of the following questions (Based on Unit 2)**	**(15 marks)**
1)		(5)
2)		(5)
3)		(5)
4)		(5)
5)		(5)
6)		(5)
Q3)	**Answer three of the following questions (Based on Unit 3)**	**(15 marks)**
1)		(5)
2)		(5)
3)		(5)
4)		(5)
5)		(5)
6)		(5)
Q4)	**Answer three of the following questions (Based on Unit 4)**	**(15 marks)**
1)		(5)
2)		(5)
3)		(5)
4)		(5)

5)		(5)
6)		(5)
Q5)	**Answer <u>three</u> of the following questions (Based on Unit 1,2,3,4)**	**(15 marks)**
1)		(5)
2)		(5)
3)		(5)
4)		(5)
5)		(5)
6)		(5)

JAI HIND COLLEGE

BASANTSING INSTITUTE OF SCIENCE & J. T. LALVANI COLLEGE OF COMMERCE.

MUMBAI 400020.

CLASS: **TIME:**

SUBJECT: **DATE:**

SEMESTER V PRACTICAL EXAMINATION

1) Practical Examination – 50 Marks

1)	a) Questions on Practical programs	(20 marks)
	b) Questions on Practical programs	(20 marks)
	c) Journal	(5 marks)
	d) Viva	(5 marks)