



Pragnya education trust's
Pragnya college of management & computer studies,
Handewadi, Pune-411060

BBA (CA) -- Semester: V

Teaching Plan 2020-2021

Name of Faculty:
Subject: Cyber Security

Prof. Shilpa Thakur
(SUBJECT CODE-501)

Sr.No.	Month	Week	Topic	
1	JULY		Chapter 1: Introduction to Cyber Crime and Cyber Security	1.1
			Introduction	
			1.2 Cybercrime: Definition and Origin of the Word	
			1.3 Cybercrime and Information Security	
			1.4 Who are Cybercriminals?	1.5
			Classifications of Cybercrimes:	
			E-Mail Spoofing, Spamming, Cyber defamation, Internet Time Theft, Salami Attack/Salami Technique, Data Diddling, Forgery, Web Jacking, Newsgroup, Spam/Crimes Emanating from Usenet Newsgroup, Industrial Spying/Industrial Espionage	LAB
		2	WORK	
			Hacking, Online Frauds, Computer Sabotage, Email Bombing/Mail Bombs, Computer Network Intrusions, Password Sniffing, Credit Card Frauds, Identity Theft	1.6
		3	Definition of Cyber Security	
2	AUG		1.7 Vulnerability, Threats and Harmful acts	
			1.8 CIA Triad	
			1.9 Cyber Security Policy and Domains of Cyber Security Policy	
			Chapter 2: - Cyber offenses and Cyberstalking	2.1
			Criminals Plan: Categories of Cybercrime Cyber Attacks:	
			Reconnaissance, Passive Attack, Active Attacks, Scanning/Scrutinizing gathered Information, Attack (Gaining and Maintaining the System Access), Social Engineering, and Classification of Social Engineering.	
		4	2.2 Cyberstalking: Types of Stalkers, Cases Reported on Cyberstalking, Working of Stalking	
			2.3 Real-Life Incident of Cyber stalking	
			2.4 Cybercafe and Cybercrimes	LAB
			WORK	
		1	2.5 Botnets: The Fuel for Cybercrime, Botnet, Attack Vector	
			2.6 Cybercrime: Mobile and Wireless Devices – Proliferation - Trends in Mobility	
			2.7 Credit Card Frauds in Mobile and Wireless Computing Era	
		2	2.8 Security Challenges Posed by Mobile Devices	
			2.9 Authentication Service Security	
			2.10 Attacks on Mobile/Cell Phones	
			Chapter 3: Tools and Methods Used in Cybercrime	3.1
			Introduction 3.2 Proxy Servers and Anonymizers	
		3	3.3 Phishing 3.4 Password Cracking	
			3.5 Keyloggers and Spywares 3.6 Virus and Worms	
			3.7 Trojan Horses and Backdoors	
			3.8 Steganography 3.9 DoS and DDoS Attacks	
			3.10 SQL Injection	
			LAB WORK	
			Chapter 4: Cybercrimes and Cyber security: The Legal Perspectives	4.1
			Introduction	
		4	4.2 Cybercrime and the Legal Landscape around the World	
			4.3 Why Do We Need Cyberlaws: The Indian Context	
			4.4 The Indian IT Act	
			4.5 Challenges to Indian Law and Cybercrime Scenario in India	

			4.6 Consequences of not Addressing the Weakness in Information Technology Act	
		1	4.7 Digital Signatures and the Indian IT Act	
			4.8 Amendments to the Indian IT Act	
			4.9 Cybercrime and Punishment	
			4.10 Cyberlaw, Technology and Students: Indian Scenario	
			Chapter 5: Cyber Forensics	5.1
3	SEP		Introduction	
		2	5.2 Historical background of Cyber forensics	
			5.3 Digital Forensics Science	
			5.4 The Need for Computer Forensics	
			5.5 Cyber Forensics and Digital evidence	
			5.6 Forensics Analysis of Email	
		3	5.7 Digital Forensics Lifecycle	
			5.8 Challenges in Computer Forensics	LAB
			WORK	
			Chapter 6: Cybersecurity: Organizational Implications	6.1
			Organizational Implications: Cost of cybercrimes and IPR issues	
		1	6.2 Web threats for organizations	
			6.3 Security and Privacy Implications from Cloud Computing	
			6.4 Social media marketing	
			6.5 Social computing and the associated challenges for organizations, Protecting people's privacy in the organization	
			6.6 Organizational guidelines for Internet usage and safe computing guidelines and computer usage policy	
4	OCT		6.7 Incident handling	6.8
			Intellectual property in the cyberspace of cyber security.	LAB
		2	WORK	
			Chapter 7: Cybercrime: Illustrations, Examples and Mini-Cases	
			7.1 Real-Life Examples 7.2 Mini-Cases 7.3 Illustrations of Financial Frauds in Cyber Domain	
		3	7.4 Digital Signature-Related Crime Scenarios	
			7.5 Digital Forensics Case Illustrations 7.6 Online Scams	
			LAB WORK	
		4	Online Viva conducted	
5	NOV	2	DIWALI VACATION	
6	NOV-DEC		University Examination Started	



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BBA (CA)-- Semester: V

Teaching Plan 2020-2021

Name of Faculty:

Prof. Amina Qadri

Subject: Object Oriented Software Engineering

(SUBJECT CODE-502)

Sr.No.	Month	Week	Topic	
1	JULY		Chapter 1: Introduction and basics of Software Modelling	1.1
			Software Life Cycle Models (Revision of SE)	
			1.2 System Concepts	
		2	1.3 Project Organization	
		3	1.4 Communication in Project Management	
			1.5 Risk management in Project Management	LAB
			WORK	
			Chapter 2 : SRS Documentation	2.1 SRS
			Specification	
		4	2.2 Requirement Elicitation	
2	AUG		2.3 Business Engineering	
			LAB WORK	
			Chapter 3 : Introduction to UML	3.1
		1	Concept of UML	
			3.2 Advantages of UML	
			Chapter 4: Object Oriented Concepts and Principles	4.1 What
			is Object Orientation? - Introduction , Object ,	
		2	Classes and Instance , Polymorphism, Inheritance	
			4.2 Object Oriented System Development- Introduction,	
			Function/Data Methods (With Visibility), Object Oriented	
			Analysis, Object Oriented Construction	
			LAB WORK	
			4.3 Identifying the Elements of an Object Model	
			4.4 Identifying Classes and Objects	
		3	4.5 Specifying the Attributes (With Visibility)	4.6
			Defining Operations	
			4.7 Finalizing the Object Definition	LAB
			WORK	
			Chapter 5: Structural Modeling	5.1
			Classes	
		4	5.2 Relationship	
			5.3 Common Mechanism	
			5.4 Class Diagram (Minimum three examples	
			should be covered)	
			5.5 Advanced Classes	
			5.6 Advanced Relationship	
		1	5.7 Interface	
			5.8 Types and Roles	
			5.9 Packages	
			5.10 Object Diagram (Minimum three examples should be covered)	

3	SEP		Chapter 6: Basic Behavioural Modeling	6.1
			Interactions	
		2	6.2 Use Cases and Use Case Diagram with stereo types (Minimum three examples should be covered)	
			6.3 Interaction Diagram (Minimum two examples should be covered)	LAB
			6.4 Sequence Diagram (Minimum two examples should be covered)	
		3	6.5 Activity Diagram (Minimum two examples should be covered)	
			6.6 State Chart Diagram (Minimum two examples should be covered)	
			Chapter 7 : Architectural Modelling	7.1
		1	Component	
			7.2 Components Diagram (Minimum two examples should be covered)	
			7.3 Deployment Diagram (Minimum two examples should be covered)	
			Chapter 8: Object Oriented Analysis	8.1
			Iterative Development and the Rational Unified Process	
			8.2 Inception	
			8.3 Understanding Requirements	
			8.4 Use Case Model From Inception to Elaboration	
			8.5 Elaboration	LAB
4	OCT	2	WORK	
			Chapter 9: Object Oriented Design	9.1 The
			Booch Method, The Coad and Yourdon Method and Jacobson Method and Raumbaugh Method	
			9.2 The Generic Components of the OO Design Model	9.3
		3	The System Design Process - Partitioning the Analysis Model, Concurrency and Sub System Allocation, Task Management Component, The Data Management Component, The Resource Management Component, Inter Sub System Communication	LAB
			WORK	
		4	Online Viva conducted	
5	NOV	2	DIWALI VACATION	
6	NOV-DEC		University Examination Started	



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BBA(CA) -- Semester: V

Teaching Plan 2020-2021

Name of Faculty:
Subject: Core Java

Prof. Sunita kadnikar
(SUBJECT CODE-503)

Sr.No.	Month	Week	Topic
1	JULY		Chapter 1: Java Fundamentals 1.1
			Introduction to Java.
			1.1 Features of Java
			1.2 Basics of Java: - Data types, variable, expression, operators, constant.
		2	1.3 Structure of Java Program LAB WORK
			1.4 Execution Process of java Program.
			1.5 JDK Tools.
			1.6 Command Line Arguments.
		3	1.7 Array and String:
			1.7.1 Single Array & Multidimensional Array
			1.7.2 String, String Buffer
			1.8 Built In Packages and Classes :
			1.8.1 java.util:- Scanner, Date, Math etc.
			1.8.2 java.lang
			LAB WORK
			Chapter 2: Classes, Objects and Methods
		4	2.1 Class and Object
			2.2 Object reference
			2.3 Constructor: Constructor Overloading
			2.4 Method: Method Overloading, Recursion, Passing and Returning object form Method
		1	2.5 new operator, this and static keyword, finalize() method
			2.6 Nested class, Inner class, and Anonymous inner class LAB WORK
			Chapter 3 : Inheritance, Package and Collection 3.1
			Overview of Inheritance 3.2
			inheritance in constructor
		2	3.3 Inheriting Data members and Methods,
			3.4 Multilevel Inheritance – method overriding Handle multilevel constructors LAB WORK

2	AUG		3.5 Use of super and final keyword	
			3.6 Interface:	
			3.7 Creation and Implementation of an interface, Interface reference	
		3	3.8 Interface inheritance	
			3.9 Dynamic method dispatch	
			3.10 Abstract class	
			3.11 Comparison between Abstract Class and interface	
			3.12 Access control	LAB
			WORK	
			3.13 Packages	
		4	3.13.1 Packages Concept	
			3.13.2 Creating user defined packages	
			3.13.3 Java Built inpackages	
			3.13.4 Import statement, Static import	
			3.14 Collection	
			3.14.1 CollectionFramework.	
		1	3.14.2 Interfaces: Collection, List, Set	
			3.14.3 Navigation: Enumeration, Iterator, ListIterator	
			3.14.4 Classes: LinkedList, ArrayList, Vector, HashSet	
			LAB WORK	
			Chapter 4: File and Exception Handling	Exception
			4.1 Exception and Error	
3	SEP	2	4.2 Use of try, catch, throw, throws and finally	
			4.3 Built in Exception	
			4.4 Custom exception	
			4.5 Throwable Class	
			File Handling	
			4.6 Overview of Different Stream (Byte Stream, Character stream)	
		3	4.7 Readers and Writers class	
			4.8 File Class	LAB
			WORK	
			4.9 File Input Stream , File Output Stream	
			4.10 Input Stream Reader and Output Stream Writer class	
		1	4.11 FileReader and FileWriter class	
			4.12 Buffered Reader class.	
			LAB WORK	
			Chapter 5: Applet, AWT, Event and Swing Programming	
			Applet	
			5.1 Introduction 5.2 Typesapplet	
			5.3 Applet Lifecycle	
			5.3.1 Creatingapplet 5.3.2 Applet tag 5.4 AppletClasses	
			5.4.1 Color 5.4.2 Graphics 5.4.3 Font	
4	OCT	2		

			AWT
			5.5 Components and container used inAWT
			5.6 Layoutmanagers
			5.7 Listeners and Adapterclasses
			5.8 Event Delegationmodel
			Swing
		3	5.9 Introduction to Swing Componentand Container Classes
			5.10Exploring Swing Controls- JLabel and Image Icon, JText Field, The Swing Buttons JButton, JToggle Button, JCheck Box, JRadio Button, JTabbed Pane, JScroll Pane, JList, JTable, JComboBox, Swing Menus, Dialogs, JFileOpen, JColorChooser.
			LAB WORK
		4	Online Viva conducted
5	NOV	2	DIWALI VACATION
6	NOV-DEC		University Examination Started



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BBA (CA)-- Semester: V

Teaching Plan 2020-2021

Name of Faculty:
Subject: Mongo DB

Prof. Sunita kadnikar

(SUBJECT CODE-504)

Sr.No.	Month	Week	Topic	
1	JULY		Chapter 1: Introduction to NoSQL Databases	1.1
			Introduction to NoSQL Databases	
		2	1.2 Difference between NoSQL and RDBMS	
			1.3 Need of NoSQL Databases	
			1.4 Application of NoSQL Databases	
			1.5 Types of NoSQL Databases	
		3	1.6 What is MongoDB?	
			1.7 Features of MongoDB	
			LAB WORK	
			Chapter 2 : MongoDB Basics	
2	AUG	4	2.1 Installing MongoDB	
			2.2 MongoDB Server and Database, MongoDB tools	
			2.3 Collection, Documents and Key-Values	
		1	2.4 Data Modeling Concepts	
			2.4.1 Why Data Modeling? Data Modeling Approach	
			2.5 Mongo shell Commands to create, delete database, collection & documents	
		2	2.6 MongoDB Datatypes	
			2.7 Inserting and saving documents	
			2.7.1 Batch Insert	
			2.7.2 Insert Validation	
3	SEP		2.8 MongoDB GUI like compass	LAB
			Chapter 3: MongoDB CRUD Operations	3.1
		3	MongoDB Development Architecture	
			3.2 MongoDB Production Architecture	
			3.3 MongoDB CRUD Introduction, MongoDB CRUD Concepts	
			3.4 MongoDB CRUD Concerns (Read & Write Operations)	
		4	3.5 Concern Levels, Journaling	
			3.6 Cursor Query Optimizations, Query behaviour in MongoDB	
			3.7 Distributed Read & Write Queries	
			3.8 MongoDB CRUD Syntax & Queries	LAB
3	SEP		WORK	
			Chapter 4 :MongoDB Index and Aggregation	4.1 Index
		1	Introduction, Index Concepts, Index Types, Index Properties	
			4.2 Index Creation and Indexing Reference	
			4.3 Introduction to Aggregation	
		2	4.4 Approach to Aggregation	
			4.5 Types of Aggregation (Pipeline, MapReduce & Single Purpose)	
			4.6 Performance Tuning	
		3	LAB WORK	
			Chapter 5: MongoDB Administration	5.1
1		1	Administration concepts in MongoDB	
			5.2 Monitoring issues related to Database	
			5.3 Monitoring at Server, Database, Collection level, and various Monitoring tools related to MongoDB	

4	OCT	2	5.4 Database Profiling, Locks, Memory Usage, No of connections, page fault 5.5 Backup and Recovery Methods for MongoDB 5.6 Export and Import of Data to and from MongoDB	
		3	5.7 Run time configuration of MongoDB 5.8 Production notes/ best practices 5.9 Data Managements in MongoDB (Capped Collections/ Expired data from TTL), Hands on Administrative Tasks.	LAB
		4		Online Viva conducted
5	NOV	2		DIWALI VACATION
6	NOV-DEC			University Examination Started



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BBA (CA) -- Semester: V

Teaching Plan 2020-2021

Name of Faculty:
Subject: Python

SUNITA KADNIKAR

(SUBJECT CODE-504)

Sr.No.	Month	Week	Topic
1	JULY		Chapter 1: Introduction to Python 1.1 History, feature of Python, setting up path, working with python Interpreter, basic syntax, variable and data types, operators
		2	1.2 Conditional statements-If, If-Else, nested if-else, Examples. 1.3 Looping-For,While,Nested loops, Examples
			1.4 Control Statements-Break, Continue, Pass. 1.5 String Manipulation-Accessing String, Basic Operations, String Slices,
		3	Function and Methods, Examples. 1.6 Lists-Introduction, accessing list, operations, working with lists, function & methods. LAB WORK
			1.7 Tuple-Introduction, Accessing tuples, operations working, function & methods, Examples.
			1.8 Dictionaries-Introduction, Accessing values in dictionaries, working with dictionaries, properties, function, Examples.
		4	1.9 Functions-Defining a function, calling a function, types of function, function arguments, anonymous function, global & local variable, Examples. LAB WORK
			Chapter 2 : Modules and Packages 2.1Built in Modules
		1	2.1.1 Importing modules in python program 2.1.2 Working with Random Modules. 2.1.3 E.g. - built-ins, time, date time, calendar, sys, etc
			2.2 User Defined functions
2	AUG		2.2.1Structure of Python Modules
		2	2.3 Packages 2.3.1 Predefined Packages 2.3.2User defined Packages
		3	LAB WORK
			Chapter 3 : Classes ,Objects and Inheritance 3.1 Classes and Objects
			3.1.1 Classes as User Defined Data Type
		4	3.1.2 Objects as Instances of Classes 3.1.3 Creating Class and Objects 3.1.4 Creating Objects By Passing Values 3.1.5 Variables & Methods in a Class

			3.2 Inheritance	
			3.2.1 Single Inheritance	
			3.2.2 Multilevel Inheritance	3.2.3
		1	Multiple Inheritance	
			3.2.4 Hybrid Inheritance	
			3.2.5 Hierarchical Inheritance	
			3.2.6 IS-A Relationship and HAS-A Relationship	LAB
			WORK	
3	SEP		Chapter 4: Exception Handling	4.1
		2	Python Exception	
			4.2 Common Exception	
			4.3 Exception handling in Python (try-except-else)	
			4.4 The except statement with no exception	
			4.5 Multiple Exception	
		3	4.6 The try-finally clause	
			4.7 Custom Exception and assert statement	LAB
			WORK	
			Chapter 5: GUI Programming	5.1
		1	Introduction 5.2 Tkinter programming	
			5.4 Tkinter widgets 5.5 Frame 5.6 Button	
			5.7 Label 5.8 Entry	LAB
			WORK	
			Chapter 6: Python Libraries	6.1
4	OCT		Statistical Analysis- NumPy, SciPy, Pandas, StatsModels	
			6.2 Data Visualization- Matplotlib, Seaborn, Plotly	
		2	6.3 Data Modelling and Machine Learning- Scikit-learn, XGBoost, Eli5	
			6.4 Deep Learning- TensorFlow, Pytorch, Keras	
		3	6.5 Natural Language Processing (NLP)- NLTK, SpaCy, Gensim	LAB
			WORK	
		4		Online Viva conducted
5	NOV	2		DIWALI VACATION
6	NOV-DEC			University Examination Started