

Master of Computer Application Department
Syllabus for First Year MCA programme wef academic year 2023-2024

MCPCC1010: Object Oriented Programming with Java		
Teaching Scheme	Examination Scheme	
Lectures : 03 Hrs/Week	ISE I*	20 Marks
Tutorial :	ISE II*	20 Marks
Credits : 03	End Semester Examination	60 Marks

Course Outcome - After studying this course, students will be able to

- CO1:** Understand OOP concepts and Java programming environment.
- CO2:** Demonstrate the various programming constructs in Java programming language.
- CO3:** Create Java application programs using sound OOP practices.
- CO4:** Apply testing and debugging to discover errors.
- CO5:** Develop stand alone applications with GUI and database connectivity.

Course Contents

Unit No	Detailed Contents
1	Fundamentals of Object Oriented Programming: OOP concepts: Class, object, message passing, Abstraction, Inheritance, Encapsulation, Polymorphism, OOP Vs conventional programming, Access Modifiers.
2	Java Fundamentals: Introduction to Java: History and evolution, Types of Java applications, Java features, Java programming environment, JVM, JRE and JDK, Byte code, The Java Class Libraries, Basics of Java Programming, Type Casting, Wrapper Classes, Single Dimension and Multi-Dimensional Arrays.
3	Java Memory Model: Objects and classes, Method Overloading, String Class, Constructors in Java, Static Members in Java, Inheritance and its types, Method Overriding, Inner classes in java, Interfaces, Abstract Class and Abstract Methods, This Keyword, Packages in Java, Garbage Collection and finalize method.
4	Multithreading and Exception Handling: Multithreading and Multitasking, Thread Programming- the start and run methods, Extending the Thread Class, Implementing the Runnable Interface, Thread States, Lifecycle of a Thread, Thread Priority, Thread Synchronization, Daemon Thread. Exception and its types, Checked and Unchecked exceptions, throws keyword.
5	GUI Programming: Introduction to GUI, Introduction to AWT packages and its Classes, AWT Events, Applets in Java, Life Cycle of an Applet, AWT Component Classes, Event Handling in an Applet, Introduction to Swing, Swing Component Classes, Event Handling in Swing, AWT vs Swing, Mouse Events, Keyboard Events, Introduction to Graphics Class and its Methods.

Text Books

1. Programming with JAVA, 2nd Ed, E. Balgurusamy, TMH
2. Thinking in Java, 3rd Edition, Bruce Eckel, Prentice-Hall

Reference Books

1. Java 2 Complete Reference, Herbert Schildt and Patrick Naughton, McGraw Hill
2. Java Swing, 2nd Edition, Dave Wood, Marc Loy, James Elliott, Brian Cole.
3. Core Java-Part 1, Sun Microsystems Press
4. A Programmer's Guide to Java Certification, Khalid Mughal, Rolf Rasmussen

E Books/ Online learning material

1. <https://nptel.ac.in/courses/106/105/106105191/>
2. https://swayam.gov.in/nd1_noc19_cs84/preview
3. <https://www.coursera.org/courses?query=core%20java>

Mapping of COs and POs

PO → CO ↓	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	1	2											1	2	
CO 2	1	2											1	2	
CO 3	1	2	3		2								1	2	
CO 4	1	2	1										1	1	
CO 5	1	2	3		2									2	

Assessment Table

Assessment Tool	Course Outcomes					
	CO1	CO2	CO3	CO4	CO5	
ISE I* (Class Test) 20 Marks	10	10	-	-	-	
ISE II* 20 Marks	5	5	-	5	5	
ESE Assessment 60 Marks	6	12	18	12	12	

Assessment Pattern

Level No.	Knowledge Level	ISE I*	ISE II*	End Semester Examination
K1	Remember	-	-	-
K2	Understand	-	-	-
K3	Apply	-	-	-
K4	Analyze	-	-	-
K5	Evaluate	-	-	-
K6	Create	-	-	-
Total		0	0	0

Approved in BoS meeting held on 24/08/2023 and Approved by Chairman, Academic Council

Master of Computer Application Department
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MCPCC1011 Python Programming		
Teaching Scheme	Examination Scheme	
Lectures : 03 Hrs/Week	ISE I*	20 Marks
Tutorial :	ISE II*	20 Marks
Credits : 03	End Semester Examination	60 Marks

Course Outcome - After studying this course, students will be able to

- CO1:** Understand the basic structure of python application development.
- CO2:** Understand different data constructs in python like lists, tuples, sets & dictionaries.
- CO3:** Analyse various control structures, methods and exception handling concepts in python.
- CO4:** Design and development of applications using python classes.
- CO5:** Develop a python application using database connectivity.

Course Contents

Unit No	Detailed Contents
1	<p>Introduction: Introduction to python, identifiers, variables, indentation in python, input and output functions, operators, data types – numbers, strings, list, tuple, set, dictionary, data type conversion.</p>
2	<p>Conditional and control statements: Decision making, loops, nested loops, control statements – break, continue, pass, operations on data types.</p>
3	<p>Functions: Function definition, function calling, function arguments – required, keyword, default, variable length, Anonymous functions, recursive functions.</p>
4	<p>Functions: Built in modules, creating modules, import statement, packages in python, importing modules from package. Object oriented programming – class definition, creating objects, built in attribute methods and class methods, inheritance, operator overloading.</p>
5	<p>Exception handling: Built in exceptions, handling exceptions, raising an exception, user defined exceptions, assertions in python. File Handling – opening a file, closing a file, writing to a file, reading from a file, file methods. Data base programming – connecting to data base, creating tables, operations on tables, exception handling in data base.</p>

Text Books

1. Taming python by programming, Dr. Jeeva Jose, Khanna Publishing, 2018

Reference Books

1. Python Crash Course, Eric Matthes, No Starch Press, 2016
2. Learn Python-3 The Hard Way, Zed A. Shaw, Addison-Wesley, 2016
3. Think Python First Edition, by Allen B. Downey, Green Tea Press
4. Python - The Complete Reference by Martin C. Brown, McGraw Hill Education; Forth edition

E Books/ Online learning material

1. <https://nptel.ac.in/courses/106/106/106106182/>
2. https://swayam.gov.in/nd1_noc19_cs41/preview
3. <https://docs.python.org/3/tutorial/>
4. <http://www.codecademy.com/tracks/python>
5. <http://corepython.com/>

Mapping of COs and POs

PO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	1	2											1	1	
CO 2	1	2											1	1	
CO 3	1	2	3		2								1	2	
CO 4	1	2	3		2								1	2	
CO 5	1	2	3		2								1	2	

Assessment Table

Assessment Tool	Course Outcomes					
	CO1	CO2	CO3	CO4	CO5	
ISE I* (Class Test) 20 Marks	5	10	5	-	-	
ISE II* 20 Marks	-	5	5	5	5	
ESE Assessment 60 Marks	12	12	18	12	6	

Assessment Pattern

Level No.	Knowledge Level	ISE I*	ISE II*	End Semester Examination
K1	Remember	5	5	12
K2	Understand	5	5	24
K3	Apply	10	-	24
K4	Analyze	-	5	-
K5	Evaluate	-	5	-
K6	Create	-	-	-
Total		20	20	60

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Master of Computer Application Department
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MCPCC1012 Information Security		
Teaching Scheme	Examination Scheme	
Lectures : 03 Hrs/Week	ISE I*	20 Marks
Tutorial :	ISE II*	20 Marks
Credits : 03	End Semester Examination	60 Marks

Course Outcome - After studying this course, students will be able to

- CO1:** Identify and solve different information security issues.
- CO2:** Development of secure cryptosystem.
- CO3:** Design of basic biometric system application.
- CO4:** Development of biometric security algorithm.
- CO5:** Identify and investigate network security threats.

Course Contents

Unit No	Detailed Contents
1	<p>Information Security: Introduction to IS, CIA model, computer security concepts, security attacks, security services, security mechanisms, a model for network security.</p>
2	<p>Message Authentication codes: Message Authentication requirements, Message Authentication functions, Digital Signature, Elgamal digital signature scheme, Hash Function, Cryptographic Hash Function, Secure Hash Algorithm (SHA) and Application of Cryptographic hash Functions.</p>
3	<p>Cryptography: Basics of Cryptography, Elementary Ciphers (Substitution, Transposition and Ceaser cipher), Random and Pseudorandom Numbers , Stream Ciphers and RC4 ,Cipher Block Modes of Operation, Block Cipher. Data Encryption Standard (DES), Introduction to Public Key, Advanced Encryption Standard (AES), Cryptosystem, Diffie-Hellman Key Exchange, RSA Cryptosystem.</p>
4	<p>Network access control: Transport layer security, secure shell (SSH)- transport layer protocol, user authentication protocol, connection protocol Electronic mail security – PGP, S/MIME.</p>
5	<p>Biometrics security: Biometric identification, verification, authentication, different biometric techniques, biometric design steps, face recognition system, fingerprint recognition system, biometric template security, fuzzy vault algorithm.</p>

Text Books

1. Cryptography and Network Security, 5th Edition, William Stallings,Pearson.
2. Network Security and Cryptography, Bernard Menezes, Cengage, 2010.

Reference Books

1. Information Security and cyber laws, Saurabh Sharma, Student series, Vikas publication
2. Network Security: The Complete Reference, Keith Strassberg, Mark Rhodes-Ousley, and Roberta Bragg.

E Books/ Online learning material

1. <https://nptel.ac.in/courses/106/106/106106129/>
2. <https://bit.ly/3jAmS7k>

Mapping of COs and POs

PO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	1	2											1	1	
CO 2	1	2		2		1							1	1	1
CO 3	1	2	2										1	1	
CO 4	1	2	2										1	1	
CO 5	1	2		2	1			1					1	2	

Assessment Table

Assessment Tool	Course Outcomes					
	CO1	CO2	CO3	CO4	CO5	
ISE I* (Class Test) 20 Marks	10	10	-	-	-	
ISE II* 20 Marks	5	-	5	5	5	
ESE Assessment 60 Marks	15	15	10	10	10	

Assessment Pattern

Level No.	Knowledge Level	ISE I*	ISE II*	End Semester Examination
K1	Remember	10	5	20
K2	Understand	5	5	20
K3	Apply	5	-	10
K4	Analyze	-	5	5
K5	Evaluate	-	5	5
K6	Create	-	-	-
Total		20	20	60

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Master of Computer Application Department
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MCPEC1013 : Data Science		
Teaching Scheme	Examination Scheme	
Lectures : 04 Hrs/Week	ISE I*	20 Marks
Tutorial :	ISE II*	20 Marks
Credits : 04	End Semester Examination	60 Marks

Course Outcome - After studying this course, students will be able to

- CO1:** To get an understanding of machine learning techniques for text classification and clustering.
- CO2:** To study the various probability-based learning techniques.
- CO3:** To apply the core skills in visualization for time series, data analysis..
- CO4:** Apply statistical and other research tools to analyze and interpret data.
- CO5:** To understand the role and stages of data science projects.

Course Contents

Unit No	Detailed Contents
1	<p>Introduction: What Is Data Science? Where Do We See Data Science? How Does Data Science Relate to Other Fields? The Relationship between Data Science and Information Science, Computational Thinking, Skills for Data Science, Tools for Data Science, Issues of [Ethics, Bias, and Privacy in Data Science]</p>
2	<p>Data: Introduction, Types of Data, Structured Data, Unstructured Data, Challenges with Unstructured Data, Data Collection, Data Pre-processing, Data Cleaning, Data Integration, Data Transformation, Data Reduction, Data Discretization.</p>
3	<p>Techniques: Data Analysis and Data Analytics, Descriptive Analysis, Diagnostic Analytics, Predictive Analytics, Prescriptive Analytics, Exploratory Analysis, Mechanistic Analysis.</p>
4	<p>Tools for Data Science: Introduction to R, Getting Access to R, Getting Started with R, R Basics, Control Structures, Functions, Importing Data, Graphics and Data Visualization, Installing ggplot, Loading the Data, Plotting the Data, Statistics and Machine Learning, Basic Statistics, Regression, Classification, Clustering.</p>
5	<p>Applications, Evaluations, and Methods: Data Collection Methods: Introduction to Quantitative and Qualitative Methods Evaluation: Comparing Models, Training–Testing and A/B Testing, Cross-Validation Hands-On with Solving Data Problems: Collecting and Analyzing Twitter / YouTube Data</p>

Text Books

1. A Hands-On Introduction to Data Science, Second Edition, Chirag Shah, Cambridge Press.
2. Introduction to Data Science, Rafael A. Irizarry, Hardward CRC Press

Reference Books

1. The Data Science Handbook: Advice and Insights from 25 Amazing Data Scientists, Carl Shan, William Chen, Data Science Bookshelf.
2. Data Science (The MIT Press Essential Knowledge series), John D. Kelleher and Brendan Tierney, Part of: The MIT Press Essential Knowledge series.
3. Foundations of Data Science 1st Edition, Avrim Blum , John Hopcroft, Ravindran Kannan Cambridge University Press.

E Books/ Online learning material

1. https://swayam.gov.in/nd1_noc19_cs60/preview

Mapping of COs and POs

PO → CO ↓	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	1	2											1	1	
CO 2	1	2	3		2								1	1	
CO 3	1	2	1										1	1	
CO 4	1	2	1										1	1	
CO 5	1	2	1										1	1	

Assessment Table

Assessment Tool	Course Outcomes					
	CO1	CO2	CO3	CO4	CO5	
ISE I* (Class Test) 20 Marks	5	10	-	5	-	
ISE II* 20 Marks	-	-	5	10	5	
ESE Assessment 60 Marks	18	18	12	12	-	

Assessment Pattern

Level No.	Knowledge Level	ISE I*	ISE II*	End Semester Examination
K1	Remember	5	-	18
K2	Understand	10	5	24
K3	Apply	5	10	18
K4	Analyze	-	5	-
K5	Evaluate	-	-	-
K6	Create	-	-	-
Total		20	20	60

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MCPEC1014 : Soft Computing		
Teaching Scheme	Examination Scheme	
Lectures : 04 Hrs/Week	ISE I*	20 Marks
Tutorial :	ISE II*	20 Marks
Credits : 04	End Semester Examination	60 Marks

Course Outcome - After studying this course, students will be able to

- CO1:** Understand the basic concepts of ANN
- CO2:** Understand different ANN training algorithms
- CO3:** Understand Fuzzy logic concepts and apply it for simple applications
- CO4:** Design ANN using supervised and unsupervised learning algorithms
- CO5:** Apply ANN and fuzzy logic for application development

Course Contents

Unit No	Detailed Contents
1	<p>Introduction to ANN: Basic terminology, Biological neurons and its working, Simulation of biological neurons to problem solving, Different ANNs architectures, Training techniques for ANNs, Applications of ANNs to solve some real life problems.</p>
2	<p>Pattern recognition and data classification: Pattern recognition and data classification, neuron signal functions, Non-linearly separable problems, XOR problem, perceptron learning algorithm</p>
3	<p>Multilayer network Multilayer network, Back propagation algorithm, function approximation and NN, applications of FFNN, learning from examples and generalization, radial basis function network</p>
4	<p>Self organization: Self organization, competitive learning, vector quantization, Mexican hat networks, self organizing feature map, applications of self organizing feature map</p>
5	<p>Fuzzy sets and fuzzy systems: Fuzzy sets and fuzzy systems, need for numeric and linguistic processing, fuzzy uncertainty and the linguistic variable, fuzzy sets, membership functions, simple operations on fuzzy sets, fuzzy rules, applications</p>

Text Books

1. Neural Network – A classroom approach, Satish Kumar, Tata McGraw hill
2. Fuzzy logic, F. Martin McMeill, Academic Press Inc

Reference Books

1. Artificial Neural Network, Yagnanarayana
2. Soft Computing techniques, N.P. Padhy , S.P. Simon, Oxford University Press
3. Soft Computing: Neural Networks, Fuzzy Logic and Genetic Algorithms, Sushil Kumar Singh, Galgotia Publications (P) Ltd

E Books/ Online learning material

1. https://swayam.gov.in/nd1_noc20_cs17/preview
2. www.mathworks.com

Mapping of COs and POs

PO → CO ↓	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	1	2											1	1	
CO 2	1	2	3		2								1	1	
CO 3	1	2	1										1	1	
CO 4	1	2	1										1	1	
CO 5	1	2	1										1	1	

Assessment Table

Assessment Tool	Course Outcomes				
	CO1	CO2	CO3	CO4	CO5
ISE I* (Class Test) 20 Marks	5	10	5	-	-
ISE II* 20 Marks	-	5	5	5	5
ESE Assessment 60 Marks	12	18	12	18	-

Assessment Pattern

Level No.	Knowledge Level	ISE I*	ISE II*	End Semester Examination
K1	Remember	5	-	12
K2	Understand	10	5	24
K3	Apply	5	5	24
K4	Analyze	-	5	-
K5	Evaluate	-	5	-
K6	Create	-	-	-
Total		20	25	60

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Master of Computer Application Department
Syllabus for First Year MCA programme wef academic year 2023-2024

MCPEC1015 : Data Mining		
Teaching Scheme	Examination Scheme	
Lectures : 04 Hrs/Week	ISE I*	20 Marks
Tutorial :	ISE II*	20 Marks
Credits : 04	End Semester Examination	60 Marks

Course Outcome - After studying this course, students will be able to

- CO1:** To understand the data extraction, transmission and loading with the various tools.
- CO2:** Ability to solve real world problems in scientific information using data mining techniques.
- CO3:** To Understand and apply the most current data mining techniques and applications, such as text mining, mining genomics data, and other current issues.
- CO4:** To design and analyse the data with the OPAL tools.
- CO5:** Ability to apply an association-rules on large data sets.

Course Contents

Unit No	Detailed Contents
1	<p>Introduction to Data Mining: What is data mining? Related technologies - Machine Learning, DBMS, OLAP, Statistics, Data Mining Goals, Stages of the Data Mining Process, Data Mining Techniques, Knowledge Representation Methods, Applications, Example: weather data.</p>
2	<p>Data mining algorithms: Association rules, Motivation and terminology, Example: mining weather data, Basic idea: item sets, Generating item sets and rules efficiently, Correlation analysis, Classification, Basic learning/mining tasks, Inferring rudimentary rules: 1R algorithm, Decision trees, Covering rules.</p>
3	<p>Data mining algorithms: Prediction, The prediction task, Statistical (Bayesian) classification, Bayesian networks, Instance-based methods (nearest neighbour), Linear models.</p>
4	<p>Clustering: Basic issues in clustering, First conceptual clustering system: Cluster/2, Partitioning methods: k-means, expectation maximization (EM), Hierarchical methods: distance-based agglomerative and divisive clustering, Conceptual clustering: Cobweb.</p>
5	<p>Advanced techniques: Data Mining software and applications, Text mining: extracting attributes (keywords), structural approaches (parsing, soft parsing). Bayesian approach to classifying text, Web mining: classifying web pages, extracting knowledge from the web, Data Mining software and applications.</p>

Text Books

1. Data Mining: Practical Machine Learning Tools and Techniques, (Second Edition), Ian H. Witten and Eibe Frank, Morgan Kaufmann, 2005
2. Data Mining: Concepts and Techniques, second edition., Jiawei Han, Micheline Kamber, Morgan Kauffman

Reference Books

1. Data Mining -Introductory and advanced topics, Margaret Dunham, Pearson education
2. Data Mining for Business Intelligence, Galit Shmueli, Nitin R. Patel, Peter C. Bruce, Wiley India Edition
3. Mastering Data Mining, Michael J.A. Berry, Gordon S. Linoff, Wiley Student Edition
4. Handbook of Statistical Analysis and Data Mining Applications, Robert Nisbet, John Elder, Gary Miner, Elsevier
5. Mining the Web: Discovering Knowledge from Hypertext Data, Soumen Chakrabarti

E Books/ Online learning material

1. https://swayam.gov.in/nd1_noc20_cs92/preview
2. <http://planetbigdata.com/>

Mapping of COs and POs

PO → CO ↓	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	1	2											1	1	
CO 2	1	2	3		2								1	1	
CO 3	1	2	1										1	1	
CO 4	1	2	1										1	1	
CO 5	1	2	1										1	1	

Assessment Table

Assessment Tool	Course Outcomes					
	CO1	CO2	CO3	CO4	CO5	
ISE I* (Class Test) 20 Marks	-	-	-	-	-	
ISE II* 20 Marks	-	-	-			
ESE Assessment 60 Marks	-				-	

Assessment Pattern

Level No.	Knowledge Level	ISE I*	ISE II*	End Semester Examination
K1	Remember			
K2	Understand			
K3	Apply			
K4	Analyze	-	-	-
K5	Evaluate	-	-	-
K6	Create	-	-	-
Total		20	20	60

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Master of Computer Application Department
Syllabus for First Year MCA programme wef academic year 2023-2024

MCPCC1016 : Lab. Object Oriented Programming with Java		
Teaching Scheme	Examination Scheme	
Practicals : 04 Hrs/Week	ISE I*	50 Marks
Credits : 02	End Semester Examination	25 Marks

Course Outcome - After studying this course, students will be able to

- CO1:** Understand object oriented concepts like classes, objects, inheritance, polymorphism resembling real time situation.
- CO2:** Understanding Java development Environment such as Eclipse, NetBeans etc.
- CO3:** Create JAVA programs based on simple constructs like arrays, loops , decision statements, functions etc

Course Contents (Indicative List of Experiments not restricted to)

1. Write a Java program:
 - o For creating Fibonacci series up to 'n' terms
 - o To check for Prime number
 - o To check for Armstrong number
 - o To generate Reverse number
 - o To check for Palindrome number
2. Write a java program for accepting 10 integer numbers and sort them in ascending order using bubble sort.
3. Write a java program to demonstrate 2D array by finding
 - o Addition of Two 3*3 Matrices
 - o Multiplication of Two 3*3 Matrices).
4. Write a program in java to demonstrate the various methods of string class and their use with example.
5. Write a java program to demonstrate various Java constructors in a single program (Default, Parameterized, Copy).
6. Write a program in java to demonstrate:
 - o Single inheritance
 - o Multilevel inheritance.
7. Write a java program to demonstrate Multiple Inheritance achieved using Interface.
8. Write a Java Program for creating user defined packages (at least 2 packages)and access the classes of these packages in another program.
9. Multithreading in Java:
 - o Write a Simple Java program to demonstrate use of Threads by implementing Runnable Interface & by extending Thread class
 - o Write a Simple Java program to demonstrate suspend(), resume() and stop() methods of a thread.
 - o Write a java program to demonstrate sleep(), wait(), notify(), notifyall(), yield() methods of a thread.
10. Write a Java Program to demonstrate exception handling mechanism.
11. Applet Programming: Write a java program for accepting user input through applet using AWT Components..
12. AWT:
 - o Create a java applet to demonstrate the various mouse event handlers
 - o Create a java applet to demonstrate the various keyboard event handlers using interface.
13. SWING: Write a java program to create a GUI using various swing components and

implement event handling in it the various keyboard event handlers.

Mapping of COs and POs

PO → CO ↓	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	1	2											1	2	
CO 2	1	2											1	2	
CO 3	1	3	3						2				1	3	

Assessment Table

Assessment Pattern Level No.	Knowledge Level	ISE I	End Semester Examination
S1	Imitation	15	08
S2	Manipulation	15	07
S3	Precision	10	05
S4	Articulation	10	05
S5	Naturalization	-	-
Total		50	25

Assessment

Practical Examination will consist of Performance and Viva-voice Examination. The assessment will be based on

1. Performance in the practical examination.
2. Record of programs submitted by the candidate.

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MCPCC1017 Lab. Python Programming		
Teaching Scheme		Examination Scheme
Practicals : 04 Hrs/Week	ISE I*	50 Marks
Credits : 02	End Semester Examination	25 Marks

Course Outcome - After studying this course, students will be able to

CO1: Understand the basic concepts of scripting.

CO2: Explore the object oriented concepts of Python programming language.

CO3: Create python programs using files and databases.

Course Contents (Indicative List of Experiments not restricted to)

1. Write a program to find largest and smallest of three integer numbers without using decision making statements
2. Write a program to swap values of two variables using bitwise operator
3. Write a program to print non prime numbers from the given range using for loop
4. Write a program to add digits of a number using while loop
5. Write a program to Search whether all characters in one string are available into another string
6. Write a program for Result Processing using nested list
7. Write a program for Result Processing using dictionary
8. Write a program to convert words into numbers using dictionary and list.
9. Write a program to count digits of number using function
10. Write a program to check whether the given number is palindrome by passing function name as an argument to another function
11. Write a program to demonstrate use of lambda function with map and reduce functions.
12. Write a program to demonstrate calling function from another file
13. Write a program to demonstrate creating and importing a package
14. Write a program to demonstrate hierarchical inheritance
15. Write a program to demonstrate binary operator overloading
16. Write a program to demonstrate exception handling using raise, try, except and finally statements.
17. Create a list of 10 elements. Write a program to write this list in binary file and then read it back to find out the smallest and largest value.
18. Write a function in Python to count and display the total number of words in a text file.
19. Write a program to create a table and insert some records in that table. Then selects all rows from the table and display the records.

Mapping of COs and POs

PO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	1	2											1	1	
CO 2	1	2	2										1	3	
CO 3	1	3	3						2				1	3	

Assessment Table

Assessment Pattern Level No.	Knowledge Level	ISE I	End Semester Examination
S1	Imitation	15	08
S2	Manipulation	15	07
S3	Precision	10	05
S4	Articulation	10	05
S5	Naturalization	-	-
Total		50	25

Assessment

Practical Examination will consist of Performance and Viva-voice Examination. The assessment will be based on

1. Performance in the practical examination.
2. Record of programs submitted by the candidate.

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MCPCC1018 Lab. Information Security		
Teaching Scheme		Examination Scheme
Practicals : 02 Hrs/Week	ISE I*	25 Marks
Credits : 01	End Semester Examination	25 Marks

Course Outcome - After studying this course, students will be able to

- CO1:** Implement security algorithm for authentication.
- CO2:** Implement basic biometric system application.
- CO3:** Implement Cryptosystems and analyze it.

Course Contents (Indicative List of Experiments not restricted to)

1. Write a program that contains a string with a value “Hello world”. The program should XOR each character in this string with 0 and displays the result.
2. Write a Java program to perform encryption and decryption using the Ceaser cipher algorithm.
3. Write a Java program to perform encryption and decryption using the substitution cipher algorithm.
4. Implement DES Encryption and Decryption
5. Implement the Play fair Cipher
6. In a RSA System, the public key of a given user is e=31, n=3599. Write a program to find private key of the User.
7. Write a program for random number generation.
8. Calculate the message digest of a text using the SHA-1 algorithm
9. Develop a biometric system application.
10. Write a program for fuzzy vault algorithm.

Mapping of COs and POs

PO CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO 1	1	2											1	1	
CO 2	1	2	2										1	3	
CO 3	1	3	3						2				1	3	

Assessment Table

Assessment Pattern Level No.	Knowledge Level	ISE I	End Semester Examination
S1	Imitation		08
S2	Manipulation		07
S3	Precision		05
S4	Articulation		05
S5	Naturalization	-	-
Total		25	25

Assessment

Practical Examination will consist of Performance and Viva-voice Examination. The assessment will be based on

1. Performance in the practical examination.
2. Record of programs submitted by the candidate.

Approved in BoS meeting held on 24/08/2023 and Approved by Chairman, Academic Council