GANPAT UNIVERSITY

FACULTY OF COMPUTER APPLICATION

TEACHING AND EXAMINATION SCHEME

Programme	M.Sc.(IT)	Branch/Spec.	Department of Computer Science
Semester	I		
Effective from Academic Year	2020-21	Effective for the batch Admitted in	JUNE-2020

Subject Code	Subject Name	Teaching scheme												Examination scheme (Marks)					
		Credit						Hours (per week)						Theory			Practical		
		Lecture(DT)			Practical(Lab.)			Lecture(DT)			Practical(Lab.)			CE	SEE	Total	CE	SEE	Total
		L	TU	Total	P	TW	Total	L	TU	Total	P	TW	Total						
P41A1AI	Artificial Intelligence	3	-	3	-	-	-	3	-	3	-	-	-	40	60	100	-	-	-
P41A2WD1	Web Designing - I	3	-	3	2	-	2	3	-	3	4	-	4	40	60	100	20	30	50
P41A3AWP1	Advance Web Programming - I	3	-	3	2	-	2	3	-	3	4	-	4	40	60	100	20	30	50
	Elective – I	3	-	3	2	-	2	3	-	3	4	-	4	40	60	100	20	30	50
	Total	12	-	12	6	-	6	12	-	12	12	-	12	160	240	400	60	90	150

List of Electives						
	Course Code	Course Name	Th.	Tu.	P	C
	P41A4JP1	Java Programming Techniques-I	3	-	2	5
	P41A4AT1	Advance Technology – I (.Net)	3	-	2	5

Elective-I	P41A4IDA	Introduction to Data Analytics	3	-	2	5
	P41A4DWM	Data Warehouse and Mining	3	-	2	5

GANPAT UNIVERSITY

FACULTY OF COMPUTER APPLICATION

TEACHING AND EXAMINATION SCHEME

Programme	M.Sc.(IT)	Branch/Spec.	Department of Computer Science
Semester	II		
Effective from Academic Year	2020-21	Effective for the batch Admitted in	JUNE-2020

Subject Code	Subject Name	Teaching scheme											Examination scheme (Marks)						
		Credit						Hours (per week)					Theory			Practical			
		Lecture(DT)			Practical(Lab.)			Lecture(DT)			Practical(Lab.)		CE	SEE	Total	CE		SEE	Total
		L	TU	Total	P	TW	Total	L	TU	Total	P	TW	Total						
P42A1UML	Unified Modelling Language	3	-	3	-	-	-	3	-	3	-	-	-	40	60	100	-	-	-
P42A2WD2	Web Designing - II	3	-	3	2	-	2	3	-	3	4	-	4	40	60	100	20	30	50
	Elective-II	3	-	3	2	-	2	3	-	3	4	-	4	40	60	100	20	30	50

GANPAT UNIVERSITY

FACULTY OF COMPUTER APPLICATON

Programme	Master of Computer Science (Information Technology)	**Branch/Spec.**	---
Semester	I	**Version**	1.0.0.0
Effective from Academic Year	2020-21	**Effective for the batch Admitted in**	JUN-2020
Subject code	P41A1AI	**Subject Name**	Artificial Intelligence

Teaching scheme						**Examination scheme (Marks)**			
(Per week)	**Lecture(DT)**		**Practical(Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	3	-	-	-	03	Theory	40	60	100
Hours	3	-	-	-	03	Practical	-	-	-

Objective:

To Compare AI with human intelligence and traditional information processing and discuss its strengths and limitations as well as its application to complex and human-centred problems.
To Identify problems that have solution by AI methods, and which AI methods may be suited to solving a given problem.
To Design and implement appropriate solutions for search problems and for planning problems.

Pre-requisites:

Strong hold on Mathematics, Strong experience of programming languages, Writing algorithm for finding patterns and learning, Strong data analytics skills, Good knowledge of Discrete mathematics.

Learning Outcome:

After completing this course, students should be able to:

- Compare AI with human intelligence and traditional information processing and discuss its strengths and limitations as well as its application to complex and human-centred problems.
- Identify problems that have solution by AI methods, and which AI methods may be suited to solving a given problem.
- Design and implement appropriate solutions for search problems and for planning problems.

Theory syllabus

Unit	Content	Hrs
1	**Introduction to AI:** What is AI?, The History, The Foundation, Intelligent Agents: Agents and Environment, Concept of Rationality, Nature of Environments, Structure of Agents- Agent Programs, Simple reflex, Model based reflex, Goal and utility based, learning Agents.	10
2	**Problem Solving:** **Solving problem by searching-** Formulating Problem, Real World Problem, Toy Problem, Searching for Solution. **Uninformed search strategies:** Breadth-first, Depth-first, Depth-limited, Iterative deepening depth-first and Bidirectional search. **Informed Search strategies:** Greedy best-first, A*, Heuristic Functions, Local Search Algorithm and	14

	Optimization Problems- Hill Climbing, Simulated annealing, Local beam and Genetic algorithms. **Constraint Satisfaction Problems:** CSP, Backtracking Search for CSPs. **Adversarial Search:** Games	
3	**First Order Predicate Logic**: Representation of Simple facts, Syntax and Semantics of FOPL, Models for First-order Logic **Knowledge Representation:** Introduction, Representation and mappings, Approaches of knowledge representation **Weak Slot-and filler structure**: Semantics Nets, Frames **Strong Slot-and-Filler Structure**: Conceptual Dependency, Scripts	14
4	**Natural Language Processing:** Introduction, Steps in Natural Language Processing, Syntactic Processing, Semantic Analysis **Planning**: Introduction, Planning system components, **Expert Systems**: Introduction, MYCIN.**Fuzzy Logic System:** Introduction, Fuzzy Sets, Fuzzy Set Operations.	07
Practical content		
List of programs on the above mentioned topics as per decided by subject faculty		
Text Books		
1	**Artificial Intelligence-A Modern Approach** by Stuart Russell and Peter Norvig, Second Edition Pearson Education.	
2	**Artificial Intelligence** by Elaine Rich, Kevin Knight, Shivashankar B. Nair, Third Edition, McGraw Hill.	
Reference Books		
1	**Principles of Artificial Intelligence and Expert System Development** by David W. Rolston, McGraw Hill.	
MOOC/Certification Courses		
1	https://www.javatpoint.com/artificial-intelligence-tutorial	
2	http://www-g.eng.cam.ac.uk/mmg/teaching/artificialintelligence/nonflash/resolutionframenf.htm	
3	https://www.tutorialspoint.com/artificial_intelligence/index.htm	
Question Paper Scheme:		
	Note for Examiner Q-1 must be common from any topics from syllabus. Q-2 and onwards must be from specific topics and internal choice or option can be given **Paper Structure** Q-1 (Attempt any Six Out of Eight: each question must be 5 marks) --- 30 Questions must be covered all possible section. Q-2 (Must be from topics: UNIT-1 (08 marks)) Q-3 (Must be from topics: UNIT-2 (08 marks)) Q-4 (Must be from topics: UNIT-3 (08 marks)) Q-5 (Must be From topics: UNIT-4 (06 marks))	

Note:

Version 1.0.0.0 (First Digit= New syllabus/Revision in Full Syllabus, Second Digit=Revision in Teaching Scheme,Third Digit=Revision in Exam Scheme, Forth Digit= Content Revision)

L=Lecture, TU=Tutorial, P= Practical/Lab., TW= Term work, DT= Direct Teaching, Lab.= Laboratory work

CE= Continuous Evaluation, SEE= Semester End Examination

GANPAT UNIVERSITY

FACULTY OF COMPUTER APPLICATION

Programme	Master of Computer Science (Information Technology)	**Branch/Spec.**	-----
Semester	I	**Version**	1.0.0.0
Effective from Academic Year	2020-21	**Effective for the batch Admitted in**	JUN-2020
Subject code	P41A2WD1	**Subject Name**	Web Designing - I

Teaching scheme						**Examination scheme (Marks)**			
(Per week)	**Lecture(DT)**		**Practical(Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	3	-	2	-	5	Theory	40	60	100
Hours	3	-	4	-	7	Practical	20	30	50

Objective

The core objective of this subject is the practice of building a website suitable to work on every device and every screen size, no matter how large or small, mobile or desktop. The ultimate goal of responsive design is to avoid the unnecessary resizing, scrolling, zooming, or panning that occurs with sites that have not been optimized for different devices

Pre-requisites:

Basic knowledge of HTML and JAVASCRIPT

Learning Outcome:

Will be able to develop a responsive, faster, mobile first web pages by using HTML, CSS templates and optimal JavaScript Plug-ins.

Theory syllabus

Unit	Content	Hrs
1	**Basic concepts of JQUERY and CSS(10)** **CSS(5)** Box Model, Float, Margin, Padding, List, Overflow, Z Index, Selectors, Media query, Border, Radius, Shadow, Animation, Tooltip **JQUERY(5)** Introduction, JQueryEffects (hide, show, toggle, fadeIn(), fadeout(),SlideUp, SlideDown,Animate,Delay) , JQUERY Events(click,bind,blur,select,change,focus,keypress ,keydown,mouseenter,mouseleave, hover, mousedown, mouseup, mouseover,mouseout,load)	10
2	**Introduction to Bootstrap and Bootstrap Grid(12)** **Bootstrap(3)** Bootsrap Framework, History of Bootstrap, Features of Bootstrap, Mobile first strategy **Bootstrap Grid(9)** Adnatages,Container, Offset Column, Class,Custmaization of bootstrap components, typography, table, layout, button, styling images in shapes, alert, Carets Class,Hide and show text	12

3	**Bootstrap Components(15)** Advantages , Types of Components(Glyphicons , Dropdown Menu, Button Groups and toolbar, navigation and tabs, navbar, Spinners, Toasts, Cards, breadcrumb, pagination, Labels/Badge, Jumbotron/Page Header, Thumbnail, Progress Bar, Media objects, List Group, Panel Component	15
4	**Bootstrap Plug ins(13)** Use of Bootstrap Plug ins, Modal Dialog Box, Types of Plug ins (ScrollSpy, Tab, Drop Down, Tooltip, Alert and Button, Popover, Collapse, Carousel, Affix	13

Practical content	
List of programs on the above mentioned topics as per decided by subject faculty	
Text Books	
1	Mastering Bootstrap 4 By Benjamin Jakobus, Jason Marah
2	Web Design with HTML, CSS, JavaScript and jQuery Set by Jon Duckett
Reference Books	
1	Bootstrap in 24 Hours, Sams Teach Yourself, by Jennifer Kyrnin
2	Bootstrap 4 Quick Start: A Beginner's Guide to Building Responsive Layouts with Bootstrap 4 by Jacob Latt
3	Beginning JavaScript and CSS Development with JQuery by Richard York
MOOC/Certification Courses	
1	Microsoft - HTML5 Application Development Fundamentals - Exam 98-375
2	Microsoft - Programming in HTML5 with JavaScript and CSS3 - Exam 70-480
3	Microsoft - Introduction to Programming Using JavaScript - Exam 98-382
4	The Bootstrap Developer Certificate – w3schools.com
5	The JavaScript Developer Certificate – w3schools.com
6	The jQuery Developer Certificate – w3schools.com
Question Paper Scheme:	
	Note for Examiner Q-1 must be common from any topics from syllabus. Q-2 and onwards must be from specific topics and internal choice or option can be given **Paper Structure** Q-1 (Attempt any Six Out of Eight : each question must be 5 marks) --- 30 Questions must be covered from all possible section. Q-2 (Must be from topics: UNIT-1(07marks)) Q-3 (Must be from topics: UNIT-2(07marks)) Q-4 (Must be from topics: UNIT-3(08marks)) Q-5 (Must be from topics: UNIT-4(08marks))

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FACULTY OF COMPUTER APPLICATION

Programme	Master of Computer Science (Information Technology)	**Branch/Spec.**	----
Semester	I	**Version**	1.0.0.0
Effective from Academic Year	2020-21	**Effective for the batch Admitted in**	JUN-2020
Subject code	P41A3AWP1	**Subject Name**	Advance Web Programming - I

Teaching scheme						**Examination scheme (Marks)**			
(Per week)	**Lecture(DT)**		**Practical(Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	3	-	2	-	5	Theory	40	60	100
Hours	3	-	4	-	7	Practical	20	30	50

Objective:

Understand how server-side programming works on the web.
PHP Basic syntax for variable types and calculations.
Creating conditional structures
Storing data in arrays
Using PHP built-in functions and creating custom functions
Understanding POST and GET in form submission.
How to receive and process form submission data.
Reading and writing cookies.
Create a database in phpMyAdmin.
Read and process data in a MySQL database.

Pre-requisites:

Basic knowledge of programming.

Learning Outcome:

All students will learn PHP programming skills to build interactive data driver web sites using PHP.

Theory syllabus

Unit	Content	Hrs
1	**Introduction to PHP** Introduction to www, History Understanding client/server roles Apache, PHP, MySQL, XAMPP Installation (1), **PHP Fundamentals (Decisions and loop)** PHP Basic syntax, PHP data Types, PHP Variables, PHP Constants, PHP Expressions, PHP Operators, PHP Control Structures, PHP Loops (3) **PHP Arrays** PHP Enumerated Arrays, PHP Associative Arrays, Array Iteration, PHP Multi-Dimensional Arrays, Array Functions (2) **PHP Functions** PHP Functions – User Define (1), Syntax, Arguments, Variables, References, Pass by Value & Pass by references, Return Values, Variable Scope(3)	10
2	**PHP Forms and Advance PHP**	10

	PHP Form Handling(2), PHP Form Validation(1), PHP Form Required(1), PHP String, Date and Time, PHP Include(2), PHP File Handling (Read, Write and Append) (2), PHP Cookies, PHP Sessions(2)	
3	**PHP using Object-Oriented Programming** Introduction, Objects(1), Declaring A Class, The New Keyword and Constructor, Destructor(1), Access Method and Properties Using $This Variable, Public, Private, Protected Properties and Methods(3), Static Properties and Method, Class Constant(2), Inheritance & Code Reusability, Polymorphism(2), Instance of Operator, Abstract Method And Class, Interface, Final(2), Exception Handling (Try, Catch, Throw) (2)	13
4	**MySQL Database:** Connecting to MySQL (1), Making MySQL Queries (3), Fetching Data Sets (3), Building in Error Checking (1), Insert Multiple Records, ORDER BY Clause (2), MySQL Functions (2).	12

Practical content
List of programs specify by subject teacher based on above mention topics.

Text Books	
1	PHP 5 and MySQL Bible publication

Reference Books	
1	Beginning PHP, Apache, MySql web Development ,wrox publication
2	Web Reference : https://www.w3schools.com/php/
3	Web Reference : https://www.php.net/

MOOC/Certification Courses	
1	https://www.ncsacademy.com/certification/php.cfm
2	https://www.brainmeasures.com/courses/online/914/free-zend-php-test.aspx
3	https://ranksheet.com/online-exams/PHP 10
4	https://www.zend.com/training/php (Free Trial)
5	https://www.studysection.com/certification-exams
6	https://alison.com/courses?query=php

Note for Examiner

Q-1Must be common from any topics from syllabus.
Q-2 And onwards must be from specific topics and internal choice or option can be given

Paper Structure

Q-1 (Attempt any Six Out of Eight: each question must be 5 marks) --- 30
Questions must be covered all possible section.
Q-2 (Must be From topics: UNIT-1 (7 marks))
Q-3 (Must be From topics: UNIT-2 (7 marks))
Q-4 (Must be From topics: UNIT-3 (8 marks))
Q-5 (Must be From topics: UNIT-4 (8 marks))

Note:

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FACULTY OF COMPUTER APPLICATION

Programme	Master of Computer Science (Information Technology)	**Branch/Spec.**	----
Semester	I	**Version**	1.0.0.0
Effective from Academic Year	2020-21	**Effective for the batch Admitted in**	Jun-2020
Subject code	P41A4JP1	Subject Name	(Elective-1) Java Programming Techniques-I

Teaching scheme						**Examination scheme (Marks)**			
(Per week)	**Lecture(DT)**		**Practical(Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	3	-	2	-	5	Theory	40	60	100
Hours	3	-	4	-	7	Practical	20	30	50

Objective:

Interprete the basic principle of Object Oriented Programming .
Develop Computer Programs to solve real world problems using object oriented principles.
Also students will be able to build windows based applications.

Pre-requisites:

Basic knowledge of OOPs Concept.

Learning Outcome:

All students will learn Java programming skills to build desktop application using JAVA.

Theory syllabus

Unit	Content	Hrs
1	**Multithreaded Programming: (7)** Life Cycle of Thread (1), Main Thread; Implementing Runnable Interface; Extending Thread Class; Multiple Threads (2), Using isAlive() and join(); Thread Priorities; (2) Synchronization; Inter thread Communication and Deadlock;(1) Suspending, Resuming and Stopping Threads (1) **Java Collection Framework and Libraries: (5)** Collection Framework Introduction (1), Java ArrayList, Java LinkedList, Java List Interface (2), Java HashSet, Java LinkedHashSet (1), Java TreeSet, Java Map Interface (1).	12
2	**Input and Output : (8)** Files and Directories (1); Console Input/Output; Byte Streams (InputStream, OutputStream, FileInputStream, FileOutputStream, BufferedInputStream, BufferedOutputStream, DataInputStream, DataOutputStream)(4), Character Streams (Reader, Writer, FileReader, FileWriter, BufferedReader, BufferedWriter, PrintWriter) (3)	08

3	**Graphical User Interface using Swing : (15)** Inheritance hierarchy of Swing classes; Methods of Component class (2); Displaying Frames; Centering Frames with Toolkit class; Adding panel to a Frame (2); Buttons, Labels, Text fields and Text areas (2) ; Combo box; List box; Scroll panes; Borders (2); Radio buttons; Check boxes (2); Semantic Events; Low-level Events; Event Handling Procedure with Listeners, Adapter classes; (2); Layout Managers (1); Class hierarchy of Menus; Adding menus and menu items; Menu item events; Submenus (2).	15
4	**Using JDBC to Work With Database : (8)** JDBC Overview & Architecture, JDBC Driver Types (2), Configuring ODBC Data Source; Connecting to a Database (2); Returning a Result Set; Moving Cursor Through a Result Set; Returning Data From a Result Set; Modifying Data in a Result Set (3) Working with Prepared Statements (1). **JDBC with Swing: (2)** JDBC Examples using Simple Statements and Prepared Statements with Swing (2).	10
Practical content		
List of programs on the above mentioned topics as per decided by subject faculty		
Text Books		
1	The Complete Reference Java 2 By Herbert Schildt's, Tata McGraw-Hill Edition	
Reference Books		
1	Murach's Beginning Java 2 By Andrea Steelman, BPB Publications	
2	Teach Yourself JAVA By Joseph O'Neil & Herb Schildt, Tata McGraw-Hill	
3	The class of Java By Pravin Jain, Pearson Education	
MOOC/Certification Courses		
1	https://www.coursera.org/learn/java-programming-arrays-lists-data	
2	https://www.udemy.com/course/how-to-connect-java-jdbc-to-mysql/	
Note for Examiner		
	Q-1Must be common from any topics from syllabus. Q-2 And onwards must be from specific topics and internal choice or option can be given	
Paper Structure		
	Q-1 (Attempt any Six Out of Eight: each question must be 5 marks) --- 30 Questions must be covered all possible section. Q-2 (Must be From topics: UNIT-1 (7 marks)) Q-3 (Must be From topics: UNIT-2 (5 marks)) Q-4 (Must be From topics: UNIT-3 (10 marks)) Q-5 (Must be From topics: UNIT-4 (8 marks))	

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GANPAT UNIVERSITY

FACULTY OF COMPUTER APPLICATIONS

Programme	Master of Computer Science (Information Technology)	**Branch/Spec.**	--
Semester	I	**Version**	1.0.0.0
Effective from Academic Year	2020-21	**Effective for the batch Admitted in**	JUN-2020
Subject code	P41A4AT1	**Subject Name**	(Elective-1) Advance Technology – I (.Net)

Teaching scheme						**Examination scheme (Marks)**			
(Per week)	**Lecture(DT)**		**Practical(Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	3	-	2	-	5	Theory	20	30	50
Hours	3	-	4	-	7	Practical	40	60	100

Objective:

Students are able to develop an ASP.NET web application by using standard controls, master page, AJAX and LINQ,
Students are able to develop and deploy WCF services

Pre-requisites:

1. Basic fundamental of HTML, application development and OOPs.
2. Basic awareness of .net framework architecture.

Learning Outcome:

1. Able to develop web base dynamic applications and WCF services

Theory syllabus

Unit	Content	Hrs
1	**Standard Controls :-** Label, Textbox, Button, Checkbox and RadioButton , Link Button, Image Button, Panel and Hyperlink control ,Dropdown list, ListBox(4) **Validation Control** :- RequiredField Validator, Range Validator, Compare Validator, Regular Expression Validator, Custom Validator, Validation Summery(3)	14

	Rich Control :- File Upload Control, Calendar Control, Displaying Different Page Views(3) **Master Page Basics** :-A Simple Master Page and Content Page, How Master Pages and Content Pages Are Connected, A Master Page with Multiple Content Regions, Default Content, Master Pages and Relative Paths (4)	
2	**Data-Bound Controls, LINQ and Entity Framework:-** **Data-Bound Controls :-** Gridview, ListView (2) **Understanding LINQ** :-LINQ Basics, LINQ Expressions (2) **LINQ to Object, LINQ to SQL (3)** **LINQ to Entities** :-Creating an Entity framework Data Model, Accessing Data, Writing LINQ Queries(3)	10
3	**ASP.NET AJAX** Overview of Server side ASP.NET AJAX, Server Side AJAX versus Client Side Ajax (1), **ASP.NET AJAX Extensions Controls** – ScriptManager, UpdatePanel, Timer, UpdateProgress (3) **Using the UpdatePanel control** (Specifying UpdatePanel Triggers, Nesting UpdatePanel Controls, Updating UpdatePanels Programmatically)(2), UpdatePanel ServerSide Page Execution Life Cycle, UpdatePanel Client-Side Page Execution Life Cycle (2) Cancelling the Current Asynchronous Postback(1)	09
4	**WCF Services :-** Introduction to WCF **(**2**)**, Simple Object Access Protocol **(**SOAP**)**,Representational State Transfer **(**REST**)**, JavaScript Object Notation **(**JSON**) (**2**)**, Creating, Publishing and Consuming SOAP**-**Based WCF Web Services **(**Creating a WCF Web Service, Code for the WelcomeSOAPXMLService, Building a SOAP WCF Web Service, Deploying the WelcomeSOAPXMLService, Creating a Client to Consume the WelcomeSOAPXMLService, Consuming the WelcomeSOAPXMLService**) (**2**)**, Publishing and Consuming RESTBased XML Web Services **(** HTTP get and post Requests, Creating a REST**-**Based XML WCF Web Service, Consuming a REST**-**Based XML WCF Web Service**) (**2**)**, Publishing and Consuming RESTBased JSON Web Services **(**Creating a REST**-**Based JSON WCF Web Service, Consuming a REST**-**Based JSON WCF Web Service**) (**2**)**, Take Database for web service example**. (**2**)**	12
Practical content		
List of programs specify by subject teacher based on above mention topics.		
Text Books		
	PROFESSIONAL ASP.NET 4.5 in C# and VB, Jason N. Gaylord, Christian Wenz, Pranav Rastogi, Todd Miranda, Scott Hanselman, Wrox	
Reference Books		
1	Beginning ASP.NET 4 in C# 2010, Matthew MacDonald, Apress	
2	Beginning Visual C#® 2010, Karli Watson, Christian Nagel, Jacob Hammer Pedersen, Jon D. Reid, Morgan Skinner	
3	ASP.NET 4 Unleashed, Stephen Walther, Kevin Hoffman, Nate Dudek	
MOOC/Certification Courses		

1	Program a Server-Side Application using ASP.NET Core by Microsoft URL : http://www.edx.org/course/program-a-server-side-application-using-aspnet-cor
2	Introduction to C# by Microsoft (3 Weeks) URL : https://www.edx.org/course/introduction-to-c-2
3	Object Oriented Programming in C# (3 Weeks) URL : https://www.edx.org/course/object-oriented-programming-in-c
4	Algorithms and Data Structures in C# by Microsoft (3 Weeks) URL : https://www.edx.org/course/algorithms-and-data-structures-in-c
5	MCSA: Web Applications Microsoft Certified Solutions Associate Exam 70-480/Course 20480 Programming in HTML5 with JavaScript and CSS3 Exam 70-483 Programming in C# Credit toward certification: MCSA Exam 70-486/Course 20486 Developing ASP.NET MVC Web Applications

Note for Examiner

Q-1 must be common from any topics from syllabus.

Q-2 and onwards must be from specific topics and internal choice or option can be given

Paper Structure

Q-1 ((Attempt any Six Out of Eight: each question must be 5 marks) --- **(30 Marks)**
Questions must be covered from all possible sections.

Q-2 (Must be from topic: UNIT-1 (10 Marks))

Q-3 (Must be from topic: UNIT-2 (6 Marks))

Q-4 (Must be from topic: UNIT-3 (6 Marks))

Q-5 (Must be from topic: UNIT-4 (8 Marks))

Note:

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GANPAT UNIVERSITY

FACULTY OF COMPUTER APPLICATION

Programme	Master of Computer Science (Information Technology)				**Branch/Spec**	------		
Semester	I				**Version**	1.0.0.0		
Effective from Academic Year	2020-21				**Effective for the batch Admitted in**	JUN-2020		
Subject code	P41A4IDA	**Subject Name**			Introduction to Data Analytics			
Teaching scheme					**Examination scheme (Marks)**			
(Per week)	**Lecture(DT)**		**Practical(Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	3	-	2	-	5	Theory	40	60	100
Hours	3	-	4	-	7	Practical	20	30	50
Objective:									

At the end of this course, students should:

- Be able to calculate various moments of common random variables including at least means, variances and standard deviations.
- Understand correlation, covariance, correlation coefficient and how these quantities relate to the independence of random variables.
- To provide a foundation in probability theory and statistical inference in order to solve applied problems and to prepare for more advanced courses in probability and statistics.

Pre-requisites:

Recursion, Principal of Mathematical induction

Learning Outcome:

Upon completion of this course, students will be able to:

- Understand all basic fundamentals of Statistics and its application on collected information.
- Prepare him/her self for making a proper interpretation of system based on parameters of distribution.
- Apply knowledge of statistics and Probability to form a mathematical model.

Theory syllabus

Unit	Content	Hrs
1	Basic Statistics Frequency table, histogram, measures of location (1), measures of spread, skewness, Kurtosis, percentiles (2), Sampling Techniques - Data classification, Tabulation, Frequency and Graphic representation(2). Measures of Central Tendency- Introduction, Arithmetic Mean(1), Simple and weighted for raw data, Discrete frequency distribution, Continuous frequency distribution(3), Properties of A.M., Merits & De merits of A.M.(1), Median for raw data, Discrete frequency distribution, Continuous frequency distribution(1), Merits and demerits of Median, Mode for raw data, Merits & demerits of mode(2).	(13)
2	**Measures of Dispersion** Introduction, Range, coefficient of range(2), Quartiles, Quartiles deviations, coefficient of quartile deviations(2), Mean deviation and coefficient of mean deviation(2), S.D and variance for all types of frequency distribution(2), Coefficient of Dispersion, Coefficient of variation(2).	(10)
3	**Correlation** Definition of Correlation, Types of Correlation(1), Scatter Diagram Method, Karl Person's Correlation Coefficients(2), Correlation Coefficients for bivariate frequency distribution(2), Probable error for Correlation Coefficients, Rank Correlation Co-efficient(3), Definition of Regression, Regression lines, Regression Coefficients(2)	(10)

4	**Probability** Introduction, Random Experiment, Sample Space, Events, Complementary Events(2), Union and Intersection of Two Events, Difference Events(2), Exhaustive Events, Mutually Exclusive Events, Equally Likely Events, Independent Events(3), Mathematical & Statistical definition of Probability ,Axiomatic definition of probability(2), Addition Theorem, Multiplication Theorem, Theorems of Probability, Conditional Probability, Inverse Probability(3).	(12)

Practical content
List of programs specify by subject teacher based on above mention topics.

Text Books	
1	Probability, Statistics and Random Process, 3rd Edition by T Veerarajan, TMH
	Probability, random variables and stochastic processes by A. Papoulis and S.U. Pillai, TMH

2	Probability, random variables and stochastic processes by A. Papoulis and S.U. Pillai, TMH
Reference Books	
1	Fundamental of Applied Statistic by S.C. Gupta & V.K. Kapoor , Sultan Chand Publication.
2	Statistical Methods by S. P. Gupta, Sultan Chand Publication
3	Business Statistics by Prof.

	H.R. Vyas & Others, B.S. Shah Prakashan
MOOC/Certification Courses	
1	https://www.my-mooc.com/en/mooc/statistics-unlocking-world-data-edinburghx-statsx/
2	https://www.coursera.org/learn/basic-statistics#about
Note for Examiner	
	Q-1 must be common from any topics from syllabus. Q-2 and onwards must be from specific topics and internal choice or option can be given.
Paper Structure	
Q - 1	

(Attempt any Six Out of Eight: each question must be 5 mar

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c t i o n . Q-2 (Must be from topics: UNIT-1 (08 marks))
Q - 3 (M u s t b e f r o m t o p i c s : U N I T - 2 (0 8 m a r k s))

Q-4 (Must be from topics: UNIT-3 (06 marks))

Q-5 (Must b

e f r o m t o p i c s : U N I T - 4 (0 8 m a r k s))

Note:

Version 1.0.0.0 (First Digit= New syllabus/Revision in Full Syllabus, Second Digit=Revision in Teaching Scheme, Third Digit=Revision in Exam Scheme, Forth Digit= Content Revision)

L=Lecture, TU=Tutorial, P= Practical/Lab., TW= Term work, DT= Direct Teaching, Lab.= Laboratory work

CE= Continuous Evaluation, SEE= Semester End Examination

GANPAT UNIVERSITY

FACULTY OF COMPUTER APPLICATION

Programme	Master of Computer Science (Information Technology)	**Branch/Spec.**	--
Semester	II	**Version**	1.0.0.0
Effective from Academic Year	2020-21	**Effective for the batch Admitted in**	JUN-2020
Subject code	P41A4DWM	**Subject Name**	Data Warehouse and Mining

Teaching scheme						**Examination scheme (Marks)**			
(Per week)	**Lecture(DT)**		**Practical(Lab.)**		**Total**		**CE**	**SEE**	**Total**
	L	TU	P	TW					
Credit	3	-	2	-	5	Theory	40	60	100
Hours	3	-	4	-	7	Practical	20	30	50

Objective:

Students will develop an understanding of the data mining process and issues, learn various techniques for data mining, and apply the techniques in solving data mining problems using data mining tools and systems. Students will also be exposed to a sample of data mining applications.

Pre-requisites:

The basic knowledge requirement of OLTP, OLAP and DBMS.

Learning Outcome:

Getting the knowledge of data management and aware with data analytical and learning techniques to find unknown patterns.

Theory syllabus

Unit	Content	Hrs
1	**Introduction to Data Warehouse (11)** Introduction, A Multidimensional Data Model (4), Data Warehouse Architecture, Data Warehouse Implementation (4), OLAP (2), Web Search Engines (2), From Data Warehousing to Data Mining (1)	13
2	**Data Preprocessing (06)** Introduction to Data Preprocessing, :(1), Descriptive Data Summarization, Data Cleaning, DataIntegration and Transformation, Data Reduction, Data Discretization and Concept Hierarchy Generation :(6)	07
3.	**Introduction to Data Mining (08)** Introduction to Data Mining, Importance of Data Mining : (1) Types of Data for Data Mining, Integration of Data Mining System : (3) • Basic Data Mining Tasks :(4) o Classification, Regression, Time Series Analysis, Prediction, Clustering, Summarization, Association Rules, Sequence Discovery • Data Mining Issues : (2)	10
4.	**Mining Frequent patterns, Associations and Correlations (06)** 1) Basic concepts and a road map :(3) 2) Efficient and scalable frequent itemset Mining methods: (2) Apriori Algorithm, Association Rule 3) Pattern Evaluation Method: (3) From association Mining to Correlation Analysis	08
5.	**Classification and Prediction (05)** Introduction to Classification and Prediction, Issues regarding Classification and Prediction : (1)Classification by : (6) Decision Tree Induction, Rule Based Classification, Bayes' Prediction, Evaluating Classifier performance	07
6.	**PRACTICLE BASED ON: Applications and Trends in Data Mining (24)** 1) Case Study on : Data Mining Applications, Data Mining System Products and Research Prototypes, Social Impacts of Data Mining. 2) Practical Implication of data used in Data Mining using Association Rule &Classification, 3) Practical related to Data Mining by using various tools	24

Practical content

List of programmes specified by the subject teacher based on mentioned above topics.

Text Books

1	Data Mining: Concepts & Techniques by Jiawei Han & Micheline Kamber, Morgan Kaufmann Publishers
Reference Books	
1	Building the Data Warehouse by W. H. Inmon, Wiley Dreamtech India Pvt Ltd.
2	Data Warehousing: Design, Development and Best Practices by Mohanty, Soumendra, TataMcGraw Hill
3	Data Warehousing, Data Mining & OLAP by Alex Berson & Stephen J. Smith, Tata McGraw-Hill
4	Introduction to Data Mining with Case Studies by G. K. Gupta, EEE, PHI
MOOC/Certification Courses	
	https://www.classcentral.com/course/independent-data-mining-with-weka-1152
	https://www.mooc-list.com/course/data-mining-weka-waikato
	https://www.mooc-list.com/tags/data-mining
	https://www.coursera.org/specializations/data-mining
	https://www.nobleprog.in/data-mining/training/gujarat
	https://www.kdnuggets.com/education/analytics-data-mining-certificates.html
	https://www.edx.org/learn/data-mining
	Note For Examiner: Q-1 must be common from any topics from syllabus. Q-2 and onwards must be from specific topics and internal choice or option can be given. Paper Structure Q-1 (Attempt any Six Out of Eight: each question must be 5 marks) --- 30 Questions must be covered all possible Topics. Q-2 (Must be from topic: UNIT-1 (7 Marks)) Q-3 (Must be from topic: UNIT-2 & 3 (10 Marks)) Q-4 (Must be from topic: UNIT- 4 (6Marks)) Q-5 (Must be from topic: UNIT- 5 (7 Marks)) Practical Based on Topic :6

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