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| --- | --- | --- | --- | --- | --- | --- |
| **Course Title:** | **Object Oriented Programming** | | | | **Course Code:** | **R204GA05302** |
| **Class & Sem:** | **II B. Tech I Sem** | | | | **Regulations:** | **SRIT-R20** |
| **Course Structure:** | **Theory** | **Tutorial** | **Lab** | **Credits** | **Core/Elective:** | **Core** |
| **3** | **0** | **0** | **3** |
| **Instructor 1:** | **Dr. G. Hemanth Kumar Yadav** | | | **Instructor 2:** |  | **AY: 2021-22** |

**1. Prerequisites:** Action Script, Procedural Languages, Object-Oriented Languages.

**2. Course Description:** This course deals with the concepts of Introduction, Data Types, Operators and Expressions, Classes and Methods, Inheritance, Exceptions, Packages, Interfaces, I/O, packages, collection Framework, AWT components, Event handling and swings.

**3. Detailed Syllabus:**

**UNIT – I: (20 Periods)**

**Introduction to Java:** Object Oriented Programming, History and Evolution of java, Java’s magic: The byte code, Java Buzzwords, Java Keywords, The Java class Libraries.

**Data Types, Operators and Control Statements:** Java Data Types, Variables and Constants, Naming Conventions, Type conversion and casting, Arrays, Operators & Expressions, Java Control Statements.

**Introducing Classes and Methods:** Classes and Objects, Introducing Methods, Constructors, this Keyword, Garbage Collection. Overloading Methods and Constructors, Argument passing, Recursion, Introducing Access Control, understanding static, Command Line Arguments, Exploring the String class.

**UNIT – II: (9 Periods)**

**Inheritance:** Basics, super keyword, method overriding, dynamic method dispatch, Abstract classes, using final with inheritance, Introducing Nested and Inner classes.

**Exception Handling:** Fundamentals, Exception Types, Using try and catch, Multiple catch clauses, Nested try statements, throw, throws, finally, Java Built-in Exceptions, Creating user-defined exceptions.

**UNIT – III: (11 Periods)**

**Packages and Interfaces:** Basics of Packages, Access protection, Importing Packages, Creating and Importing User-defined Packages.

**Interfaces:** Declaring, Implementing and Extending Interfaces, using static methods in an Interface, using final keyword in interfaces.

**Multithreaded Programming:** Multithreading in Java, The Java Thread Model, Life Cycle of a Thread, The main thread, Creating Thread, Creating Multiple Threads, Thread Priorities, Synchronization, Inter Thread Communication, Suspending, resuming and stopping threads, Obtaining a thread state, The finalize() method.

**UNIT – IV: (14 Periods)**

**Collections Framework:** Overview, Collection Interfaces, Collection Classes. Working with Maps, Comparators.

**Introduction to AWT: Windows, Graphics and Text**

AWT classes, window fundamentals, frame windows, creating and displaying information within a window, Graphics, Color, Fonts, Managing text output using Font Metrics.

**UNIT – V: (20 Periods)**

**Event Handling in Java:** The Delegation Event Model, Event Classes and Event Listener Interfaces.

**AWT Controls, Layout Managers, and Menus:** AWT Control Fundamentals, Labels, Buttons, Check Boxes, CheckboxGroup, Choice Controls, Lists, Scroll Bars, TextField and TextArea, Layout Managers, Menu Bars and Menus, Dialog Boxes, FileDialog.

**Swings:** Swing Features, MVC Connection, Components and Containers, JLabel, ImageIcon, JTextField, Swing Buttons, Check Boxes, Radio Buttons, JTabbedPane, JScrollPane, JList, JComboBox, JTree, and JTable.

**Total Periods: 74**

**4. Text Books:**

1. **“The Complete Reference -Java”,** Herbert Schildt, Mc GRAW HILL Edition, 11th Edition, 2018.
2. **“Java – How to Program”**, Paul Deitel, Harvey Deitel, PHI, 11th Edition, 2017.

**5. Reference Books:**

1. **“A Programmers Guide to Java SCJP”**, Third Edition, Mughal, Rasmussen, Pearson, 2009.
2. **“Programming with Java”** T.V.Suresh Kumar, B.Eswara Reddy, P.Raghavan Pearson Edition, 2011.
3. **“Java Fundamentals - A Comprehensive Introduction”**, Herbert Schildt and Dale Skrien, Special Indian Edition, McGrawHill, 2013.

**6. Course Outcomes:**

On successful completion of this course the students will be able:

1. Describe elements of Java, arrays, Strings and Overloading and advanced overloading.
2. Develop programs using type casting, type promotion control statements, language constructs, Inheritance and Exceptional handling methods for efficient problem solving.
3. Implement packages to overcome the naming conflicts and Interfaces for dynamic method resolution at run time.
4. Implement inter thread communication to write very efficient programs that make maximum use of the CPU.
5. Develop programs on applets for web server communication and Collection Framework for managing groups of objects.
6. Develop programs using AWT frame work and layout manager, Swing frame work and layout manager to sketch a window, Event handling methods and AWT controls suitable for the given problem scenario.

**7. Lesson Plan**

**\*(*Mode of delivery:*** *Chalk & Talk, ICT, Group Discussion, Demonstration, Tutorial, Industrial Visit, Seminar)*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Sr. No.** | **Topics to be covered** | **Mode of Delivery** | **Periods Required** | **Books followed** | **Scheduled Date** |
| **Unit I -FOUNDATION TO MANAGERIAL ECONOMICS** | | | | | |
|  |  |  |  |  | DD-MM-YY |
| **1** | Unit – I- Introduction to Managerial Economics | Chalk & Talk | 1 | T1,T2,R1 | 27-08-22 |
| **2** | Managerial Economics | C&T | 1 | T1,T2,R1 | 27-08-22 |
| **3** | Definition, Nature and Scope of Managerial Economics | C&T | 1 | T1,T2,R1 | 28-08-22 |
| **4** | Contemporary importance of Managerial Economics | C&T | 1 | T1,T2,R1 | 28-08-22 |
| **5** | Relationship of Managerial Economics with Financial Accounting and Management | C&T | 1 | T1,T2,R1 | 03-09-22 |
| **6** | Demand Analysis | C&T | 1 | T1,T2,R1 | 03-09-22 |
| **7** | Concept of Demand | C&T | 1 | T1,T2,R1 | 04-09-22 |
| **8** | Demand function – Law of Demand | C&T | 1 | T1,T2,R1 | 04-09-22 |
| **9** | Elasticity of Demand - Significance | C&T | 1 | T1,T2,R1 | 10-09-22 |
| **10** | Types of Elasticity | C&T | 1 | T1,T2,R1 | 10-09-22 |
| **11** | Measurement of Elasticity of Demand | C&T | 1 | T1,T2,R1 | 11-09-22 |
| **12** | Demand Forecasting –Factors Governing Demand Forecasting. | C&T | 1 | T1,T2,R1 | 11-09-22 |
| **13** | Methods of Demand Forecasting | C&T | 1 | T1,T2,R1 | 17-09-22 |
| **14** | Tutorial class | *C&T* |  |  | 17-09-22 |
| **Unit II - THEORY OF PRODUCTION AND COST ANALYSIS** | | | | | |  | | | | | | | | |
| **15** | Production, Production Function | Chalk & Talk | 1 | T1,T2,R1 | 24-09-22 |
| **16** | Least cost combination | C&T | 1 | T1,T2,R1 | 24-09-22 |
| **17** | Short run and Long -run Production Function | C&T | 1 | T1,T2,R1 | 24-09-22 |
| **18** | Isoquants and Isocosts | C&T | 1 | T1,T2,R1 | 25-09-22 |
| **19** | MRTS- Cobb Douglas Production function | C&T | 1 | T1,T2,R1 | 25-09-22 |
| **20** | Law of Returns | C&T | 1 | T1,T2,R1 | 25-09-22 |
| **21** | Internal and external Economies of Scale | C&T | 1 | T1,T2,R1 | 01-10-22 |
| **22** | Cost Analysis | C&T | 1 | T1,T2,R1 | 01-10-22 |
| **23** | Cost Concept and Cost Behavior | C&T | 1 | T1,T2,R1 | 07-10-22 |
| **24** | Break-even analysis (BEA) | C&T | 1 | T1,T2,R1 | 07-10-22 |
| **25** | Determination of Break-Even point (BEP) –simple problems | C&T | 1 | T1,T2,R1 | 08-10-22 |
| **26** | Significance and Limitations of BEP | C&T | 1 | T1,T2,R1 | 08-10-22 |
| **27** | Tutorial class | C&T |  |  | 14-10-22 |
| **Unit III - INTRODUCTION TO MARKETS** | | | | | |  |  | |  | | T1,T2,R7 | -1-2018 | |
| **28** | Market Structure | Chalk & Talk | 1 | T1,T2,R1 | 14-10-22 |
| **29** | Types of Markets | C&T | 1 | T1,T2,R1 | 14-10-22 |
| **30** | Perfect and Imperfect Competition | C&T | 1 | T1,T2,R1 | 15-10-22 |
| **31** | Features of Perfect competition | C&T | 1 | T1,T2,R1 | 21-10-22 |
| **32** | Monopoly – Monopolistic Competition | C&T | 1 | T1,T2,R1 | 21-10-22 |
| **33** | Oligopoly – Price output determination | C&T | 1 | T1,T2,R1 | 22-10-22 |
| **34** | Pricing Methods and Strategies | C&T | 1 | T1,T2,R1 | 22-10-22 |
| **35** | Sole Proprietorship- its features, Advantages & Disadvantages | C&T | 1 | T1,T2,R1 | 28-10-22 |
| **36** | Partnership, its kinds, features, Advantages & Disadvantages | C&T | 1 | T1,T2,R1 | 28-10-22 |
| **37** | Joint stock company- its features | C&T | 1 | T1,T2,R1 | 29-10-22 |
| **38** | Public enterprises – its features, Advantages & Disadvantages | C&T | 1 | T1,T2,R1 | 29-10-22 |
| **39** | New economic environment (LPG System) | C&T | 1 | T1,T2,R1 | 06-10-22 |
| **40** | Tutorial class | C&T | 1 | T1,T2,R1 | 13-10-22 |
| **Unit IV - INTRODUCTION TO FINANCIAL ACCOUNTING AND ANALYSIS** | | | | | |  | |  | |  | | |  | -2-2018 | |
| **41** | Financial Accounting Concept | C&T | 1 | T1,T2,R1 | 26-10-22 |
| **42** | Emerging need and importance | C&T | 1 | T1,T2,R1 | 26-10-22 |
| **43** | Double Entry Book Keeping | C&T | 1 | T1,T2,R1 | 27-10-22 |
| **44** | Journal Entry - problems | C&T | 1 | T1,T2,R1 | 02-11-22 |
| **45** | Ledger Entry - problems | C&T | 1 | T1,T2,R1 | 02-11-22 |
| **46** | Trail Balance preparation | C&T | 1 | T1,T2,R1 | 03-11-22 |
| **47** | Final statements -Trading Account | C&T | 1 | T1,T2,R1 | 09-11-22 |
| **48** | Final statements - Profit and Loss Account | C&T | 1 | T1,T2,R1 | 09-11-22 |
| **49** | Final statements - Balance Sheet | C&T | 1 | T1,T2,R1 | 10-11-22 |
| **50** | Financial Analysis - Ratios Types, Advantages & Disadvantages | C&T | 1 | T1,T2,R1 | 09-11-22 |
| **51** | Liquidity Ratios – Problems | C&T | 1 | T1,T2,R1 | 10-11-22 |
| **52** | Capital structure ratios – Problems | C&T | 1 | T1,T2,R1 | 16-11-22 |
| **53** | Profitability ratios – Problems | C&T | 1 | T1,T2,R1 | 16-11-22 |
| **54** | Activity ratios – Problems | C&T | 1 | T1,T2,R1 | 17-11-22 |
| **55** | Tutorial class | C&T | 1 | T1,T2,R1 | 23-11-22 |
| **Unit V –CAPITAL AND CAPITAL BUDGETING** | | | | | |  | | | | | | | | |  | | 1 | T1,T2,R7 |
| **56** | Concept of Capital | C&T | 1 | T1,T2,R1 | 23-11-22 |
| **57** | Over and Under Capitalization | C&T | 1 | T1,T2,R1 | 30-11-22 |
| **58** | Sources of short term and Long-term capital | C&T | 1 | T1,T2,R1 | 01-12-22 |
| **59** | Estimating working capital requirement | C&T | 1 | T1,T2,R1 | 01-12-22 |
| **60** | Features of Capital Budgeting | C&T | 1 | T1,T2,R1 | 07-12-22 |
| **61** | Proposals and methods of Capital Budgeting Projects | C&T | 1 | T1,T2,R1 | 07-11-22 |
| **62** | Payback period – Theory & Problems | C&T | 1 | T1,T2,R1 | 07-12-22 |
| **63** | Accounting Rate of Return - Theory & Problems | C&T | 1 | T1,T2,R1 | 08-12-22 |
| **64** | Net present value - Theory & Problems | C&T | 1 | T1,T2,R1 | 08-12-22 |
| **65** | IRR- Theory & Problems | C&T | 1 | T1,T2,R1 | 08-12-22 |
| **66** | Tutorial class | C&T | 1 | T1,T2,R1 | 09-12-22 |

**8. Additional Topics:**

|  |  |  |
| --- | --- | --- |
| **Sr. No.** | **Topic** | **Course Outcome** |
| **1** |  |  |
| **2** |  |  |

**9. Course Assessment & Evaluation:**

|  |  |  |
| --- | --- | --- |
| **Mode of assessment** | **Frequency** | **Marks** |
| Mid-Term Examinations  (Internal) | Two exams CIE-1 and CIE-2 will be conducted. The consolidated CIE marks will be arrived by considering the marks secured by the student in both the CIEs with 80% weightage given to the better CIE and 20% to the other.  For each theory course, during the semester, there shall be two CAAs. Each CAA will be evaluated for 10 marks. The consolidated CAA marks will be arrived by considering the average of marks secured by the student in both the CAAs.  The final marks for CIA (for 40 marks) = Consolidated CIE marks (for 30 marks) + Consolidated CAA marks (for 10 marks) | 40 |
| University Examinations  (External) | Once | 60 |
| **Total** | | **100** |

**10. Mapping(X) of Course Outcomes with Program Outcomes & Program Specific Outcomes:**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO/PO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **CO1** | x |  | x |  |  |  |  |  |  |  |  |  |  | x |  |
| **CO2** |  |  | x |  |  |  |  |  |  |  |  |  |  | x |  |
| **CO3** |  |  | x |  |  |  |  |  |  |  |  |  |  | x |  |
| **CO4** |  |  | x |  |  |  |  |  |  |  |  |  |  | x |  |
| **CO5** |  |  | x |  |  |  |  |  |  |  |  |  |  | x |  |
| **CO6** |  |  | x |  |  |  |  |  |  |  |  |  |  | x |  |

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **CO/PO** | **PO1** | **PO2** | **PO3** | **PO4** | **PO5** | **PO6** | **PO7** | **PO8** | **PO9** | **PO10** | **PO11** | **PO12** | **PSO1** | **PSO2** | **PSO3** |
| **CO1** | 1 |  | 3 |  |  |  |  |  |  |  |  |  |  | 3 |  |
| **CO2** |  |  | 3 |  |  |  |  |  |  |  |  |  |  | 3 |  |
| **CO3** |  |  | 3 |  |  |  |  |  |  |  |  |  |  | 3 |  |
| **CO4** |  |  | 3 |  |  |  |  |  |  |  |  |  |  | 3 |  |
| **CO5** |  |  | 3 |  |  |  |  |  |  |  |  |  |  | 3 |  |
| **CO6** |  |  | 3 |  |  |  |  |  |  |  |  |  |  | 3 |  |

Signature