

**RAJIV GANDHI PROUDYOGIKI VISHWAVIDYALAYA, BHOPAL**

**New Scheme Based On AICTE Flexible Curricula**

**Artificial Intelligence and Data Science, V-Semester**

**AD 504 (B) Game Theory with Engineering Applications**

**COURSE OUTCOMES: After Completing the course student should be able to:**

- CO1. Relate the basic concepts and fundamentals of Game.
- CO2. Understand and comprehend the design process for any game.
- CO3. Develop a level of interactivity and choice for Game approach.
- CO4. Understand the conceptual framework for digital games.
- CO5. Apply the strategy for different games.

**COURSE CONTENTS:**

**UNIT-I**

Overview: What is a Game, Game Design Schema, Game Design fundamentals, Engineering application of game theory, Design Process: Iterative design, Commissions, Design & Testing of the Board Game, Introduction to meaningful play, two kinds of meaningful play- discernable & integrated.

**UNIT-II**

Introducing design, design & meaning, Semiotics: A brief overview, four semiotic Concepts, Context Shapes interpretations.

**UNIT-III**

Introduction to Systems, elements of a System, Framing Systems, open & closed systems, Introduction to Interactivity, a multivalent model of interactivity, interaction & choice, choice molecules, anatomy of choice, space of possibility.

**UNIT-IV**

Defining games: overview of digital games, magic circle. Primary Schemas: conceptual framework, rule, play, culture.

**UNIT-V**

Rules: defining rules, a deck of cards, quality of rules, rules in context, Rules on three levels: Operational, Constitutive, Implicit, Identity of a Game, Specificity of Rules, Rules of Digital games. Case Studies: Tic Tac Toe, Deck of Cards.

### **TEXT BOOKS RECOMMENDED:-**

1. Brathwaite, Brenda, and Ian Schreiber. Challenges for Game Designers: Non-digital Exercises for Video Game Designers. Boston, MA: Charles River Media/Course Technology, 2009. ISBN: 97815845058081
2. Game Design Workshop: A Playcentric Approach to Creating Innovative Games by Tracy Fullerton. ISBN-10: 1482217163.
3. Challenges for Game Designers by Brenda Brathwaite (now: Romero) and Ian Schreiber. ISBN-10: 158450580X

### **REFERENCE BOOKS:-**

1. Rules of Play - Game Design Fundamentals, Katie Salen and Eric Zimmerman, The MIT Press Cambridge, Massachusetts London, England, book design and photography.