



# VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

[Sponsored by Lavu Educational Society]

(Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad.)

Kondapur (V), Ghatkesar (M), Medchal - Malkajgiri (D) - 501 301 Phone: +91 96529 10002/3



## Department of Computer Science and Engineering

### II B. Tech II Semester

#### SUBJECT: Discrete Mathematics (CS401PC)

At the end of the course, the student will be able to

| S.No. | COURSE OUTCOMES                                                                 | BT Level |
|-------|---------------------------------------------------------------------------------|----------|
| CO1   | Understand the foundations of mathematical logic and set theory                 | 1        |
| CO2   | Apply relations and functions to model computational problems                   | 3        |
| CO3   | Use combinatorics and recurrence relations for algorithm analysis               | 3        |
| CO4   | Analyze graphs and trees for data organization and network modeling             | 4        |
| CO5   | Apply algebraic structures in designing and understanding computational systems | 5        |

#### MAPPING

| CO      | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| CO1     | 3   | 3   | 3   | 2   | -   | -   | -   | 2   | -   | -    | -    | 3    | 3    | -    | 3    |
| CO2     | 3   | 3   | 3   | 3   | -   | -   | -   | 2   | 3   | -    | -    | 2    | 3    | -    | 2    |
| CO3     | 3   | 3   | 3   | 3   | -   | -   | -   | 2   | 2   | -    | -    | 3    | 3    | -    | 2    |
| CO4     | 3   | 3   | 3   | 3   | -   | -   | -   | 2   | 2   | -    | -    | 2    | 3    | -    | 2    |
| CO5     | 3   | 3   | 2.8 | 2.6 | -   | -   | -   | 2   | 2.3 | -    | -    | 2.4  | 2.8  | -    | 2.4  |
| Average | 3   | 3   | 3   | 2   | -   | -   | -   | 2   | -   | -    | -    | 3    | 3    | -    | 3    |



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## SUBJECT: Business Economics and Financial Analysis (SM402MS)

At the end of the course, the student will be able to

| S.No. | COURSE OUTCOMES                                                                                                                                                             | BT Level |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CO1   | Understand the various Forms of Business and the impact of economic variables on the Business.                                                                              | 2        |
| CO2   | Understand the elasticity of the demand of the product, different types, and measurement of elasticity of demand and factors influencing on elasticity of demand and supply | 2        |
| CO3   | Recognize the Production function, features of Iso-Quants and Iso-Costs, Market Structure, Pricing aspects are learnt.                                                      | 3        |
| CO4   | Study the firm's financial position by analyzing the Financial Statements of a Company.                                                                                     | 4        |
| CO5   | Evaluate different types of financial ratios knowing liquidity, solvency and profitability position of business.                                                            | 6        |

## MAPPING

| CO      | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| CO1     | 1   | -   | -   | -   | -   | 2   | -   | 2   | 2   | -    | -    | 2    | -    | -    | 2    |
| CO2     | 1   | -   | -   | -   | -   | 2   | -   | 2   | 2   | -    | -    | 2    | -    | -    | 2    |
| CO3     | 2   | -   | -   | -   | -   | 1   | -   | 1   | 2   | -    | -    | 2    | -    | -    | 2    |
| CO4     | 2   | -   | -   | -   | -   | 1   | -   | 1   | 2   | -    | -    | 2    | -    | -    | 2    |
| CO5     | 2   | -   | -   | -   | -   | 1   | -   | 1   | 2   | -    | -    | 2    | -    | -    | 2    |
| Average | 1.5 | -   | -   | -   | -   | 1.5 | -   | 1.3 | 2   | -    | -    | 2    | -    | -    | 2    |



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## SUBJECT: Operating Systems (CS403PC)

At the end of the course, the student will be able to

| S.No. | COURSE OUTCOMES                                                   | BT Level |
|-------|-------------------------------------------------------------------|----------|
| CO1   | Understand the structure and functions of operating systems       | 2        |
| CO2   | Analyze process management and CPU scheduling algorithms          | 4        |
| CO3   | Apply synchronization techniques and deadlock handling methods    | 3        |
| CO4   | Evaluate memory management strategies and virtual memory concepts | 4        |
| CO5   | Understand file systems, I/O systems, and protection mechanisms   | 2        |

## MAPPING

| CO      | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| CO1     | 2   | 2   | 2   | 1   | 1   | -   | -   | 3   | 2   | 3    | -    | 1    | 2    | 2    | 1    |
| CO2     | 3   | 3   | 3   | 2   | 2   | -   | -   | 2   | 3   | 2    | -    | 2    | 3    | 3    | 2    |
| CO3     | 3   | 3   | 3   | 3   | 2   | -   | -   | 1   | 2   | 2    | -    | 2    | 3    | 2    | 2    |
| CO4     | 2   | 3   | 3   | 2   | 2   | -   | -   | 2   | 2   | 1    | -    | 2    | 3    | 3    | 2    |
| CO5     | 3   | 3   | 3   | 3   | 3   | -   | -   | 2   | 2   | 2    | -    | 3    | 3    | 3    | 3    |
| Average | 2.6 | 2.8 | 2.8 | 2.2 | 2   | -   | -   | 2   | 2.2 | 2.0  | -    | 2    | 2.8  | 2.6  | 2    |

**SUBJECT: Database Management Systems (CS404PC)**

**At the end of the course, the student will be able to**

| S.No. | COURSE OUTCOMES                                                                | BT Level |
|-------|--------------------------------------------------------------------------------|----------|
| CO1   | Understand database concepts, architecture, and data models                    | 2        |
| CO2   | Design ER models and convert them into relational schemas                      | 2        |
| CO3   | Apply relational algebra and SQL for data manipulation and retrieval           | 3        |
| CO4   | Understand normalization techniques and apply them to optimize database design | 2        |
| CO5   | Analyze transaction management, concurrency control, and recovery techniques   | 4        |

## MAPPING

[illegible]

**SUBJECT: Java Programming (CS405PC)**

**At the end of the course, the student will be able to**

| S.No. | COURSE OUTCOMES                                                                  | BT Level |
|-------|----------------------------------------------------------------------------------|----------|
| CO1   | Understand object-oriented principles and Java language fundamentals             | 2        |
| CO2   | Apply inheritance, polymorphism, and exception handling in Java programs         | 3        |
| CO3   | Develop GUI applications using AWT and Swing                                     | 4        |
| CO4   | Implement multithreading and file I/O operations                                 | 4        |
| CO5   | Demonstrate teamwork, debugging, and communication skills in Java-based projects | 5        |

## MAPPING

[illegible]



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## SUBJECT: Operating Systems Lab (CS406PC)

At the end of the course, the student will be able to

| S.No. | COURSE OUTCOMES                                                                | BT Level |
|-------|--------------------------------------------------------------------------------|----------|
| CO1   | Understand basic UNIX/Linux commands and shell scripting                       | 2        |
| CO2   | Implement process management techniques such as scheduling and synchronization | 1        |
| CO3   | Apply memory management and file system operations using system calls          | 3        |
| CO4   | Develop shell scripts for automation and system administration tasks           | 4        |
| CO5   | Demonstrate teamwork, debugging, and documentation skills in lab assignments   | 5        |

## MAPPING

| CO      | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| CO1     | 3   | 2   | 2   | -   | -   | -   | -   | -   | 2   | -    | -    | -    | 2    | 2    | 2    |
| CO2     | 3   | 3   | 3   | -   | -   | -   | -   | -   | 2   | -    | -    | -    | 3    | 3    | 2    |
| CO3     | 3   | 3   | 3   | -   | -   | -   | -   | -   | 2   | -    | -    | -    | 3    | 3    | 3    |
| CO4     | 3   | 3   | 3   | -   | -   | -   | -   | -   | 2   | -    | -    | -    | 3    | 3    | 2    |
| CO5     | 3   | 3   | 3   | -   | -   | -   | -   | -   | 2   | -    | -    | -    | 3    | 3    | 3    |
| Average | 3   | 2.8 | 2.8 | -   | -   | -   | -   | -   | 2   | -    | -    | -    | 2.8  | 2.8  | 2.4  |



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## SUBJECT: Database Management Systems Lab (CS407PC)

At the end of the course, the student will be able to

| S.No. | COURSE OUTCOMES                                                                | BT Level |
|-------|--------------------------------------------------------------------------------|----------|
| CO1   | Design and implement relational databases using SQL                            | 1        |
| CO2   | Apply normalization techniques to optimize database design                     | 3        |
| CO3   | Develop queries using relational algebra and SQL for data retrieval            | 2        |
| CO4   | Implement transaction management and concurrency control mechanisms            | 4        |
| CO5   | Demonstrate teamwork, documentation, and debugging skills in database projects | 5        |

## MAPPING

| CO      | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| CO1     | 2   | 2   | 2   | -   | 1   | -   | -   | -   | 3   | -    | -    | -    | 2    | 2    | 2    |
| CO2     | 3   | 3   | 3   | -   | 2   | -   | -   | -   | 3   | -    | -    | -    | 2    | 2    | 2    |
| CO3     | 3   | 3   | 3   | -   | 2   | -   | -   | -   | 2   | -    | -    | -    | 3    | 3    | 2    |
| CO4     | 3   | 3   | 3   | -   | 3   | -   | -   | -   | 3   | -    | -    | -    | 3    | 3    | 2    |
| CO5     | 2   | 3   | 3   | -   | 3   | -   | -   | -   | 3   | -    | -    | -    | 3    | 3    | 2    |
| Average | 2.6 | 2.8 | 2.8 | -   | 2.2 | -   | -   | -   | 2.8 | -    | -    | -    | 2.6  | 2.6  | 2    |



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## SUBJECT: Java Programming Lab (CS408PC)

At the end of the course, the student will be able to

| S.No. | COURSE OUTCOMES                                                            | BT Level |
|-------|----------------------------------------------------------------------------|----------|
| CO1   | Apply object-oriented programming concepts using Java                      | 3        |
| CO2   | Implement inheritance, polymorphism, and exception handling                | 2        |
| CO3   | Develop GUI applications using AWT and Swing                               | 4        |
| CO4   | Use multithreading and file I/O for concurrent and persistent applications | 5        |
| CO5   | Demonstrate teamwork, debugging, and documentation skills in Java projects | 6        |

## MAPPING

| CO      | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| CO1     | 3   | 2   | 2   | 1   | 3   | -   | -   | -   | 2   | -    | -    | -    | -    | -    | -    |
| CO2     | 3   | 3   | 3   | 2   | 2   | -   | -   | -   | 2   | -    | -    | -    | 3    | -    | -    |
| CO3     | 3   | 3   | 3   | 3   | 2   | -   | -   | -   | 2   | -    | -    | -    | 3    | 3    | -    |
| CO4     | 3   | 3   | 3   | 3   | 3   | -   | -   | -   | 3   | -    | -    | -    | 3    | 3    | -    |
| CO5     | 3   | 3   | 3   | 3   | 3   | -   | -   | -   | 3   | -    | -    | -    | 3    | 3    | -    |
| Average | 3   | 2.8 | 2.8 | 2.4 | 2.6 | -   | -   | -   | 2.4 | -    | -    | -    | 3    | 3    | -    |



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## SUBJECT: Constitution Of India (MC409)

At the end of the course, the student will be able to

| S.No. | COURSE OUTCOMES                                                                              | BT Level |
|-------|----------------------------------------------------------------------------------------------|----------|
| CO1   | Understand the historical background and philosophy of the Indian Constitution               | 1        |
| CO2   | Comprehend the fundamental rights, duties, and directive principles                          | 2        |
| CO3   | Analyze the structure and functions of the legislature, executive, and judiciary             | 3        |
| CO4   | Appreciate the role of constitutional provisions in promoting social justice and equality    | 4        |
| CO5   | Demonstrate civic responsibility and ethical awareness in professional and personal contexts | 5        |

## MAPPING

| CO      | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| CO1     | -   | -   | -   | -   | -   | 1   | -   | 3   | 1   | 2    | -    | 2    | -    | -    | 3    |
| CO2     | -   | -   | -   | -   | -   | 2   | -   | 3   | 2   | 3    | -    | 3    | -    | -    | 3    |
| CO3     | -   | -   | -   | -   | -   | 2   | -   | 3   | 2   | 2    | -    | 3    | -    | -    | 3    |
| CO4     | -   | -   | -   | -   | -   | 2   | -   | 3   | 3   | 3    | -    | 3    | -    | -    | 3    |
| CO5     | -   | -   | -   | -   | -   | 3   | -   | 3   | 3   | 3    | -    | 3    | -    | -    | 3    |
| Average | -   | -   | -   | -   | -   | 2   | -   | 3   | 2.2 | 2.6  | -    | 2.8  | -    | -    | 3    |