



# VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(An Autonomous Institution)

[Sponsored by Lavu Educational Society, Affiliated to JNTUH & Approved by AICTE, New Delhi]

Kondapur (V), Ghatkesar (M), Medchal - Malkajgiri (D) - 501 301. Phone: 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 and construct precise mathematical proofs                  | 2        |
| CO2   | Apply logic and set theory to formulate precise statements            | 3        |
| CO3   | Analyze and solve counting problems on finite and discrete structures | 4        |
| CO4   | Describe and manipulate sequences                                     | 4        |
| CO5   | Apply graph theory in solving computing problems                      | 3        |

#### MAPPING

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



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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.                                                            | 5        |

## 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   | Control access to a computer and the files that may be shared                                                                         | 2        |
| CO3   | Demonstrate the knowledge of the components of computers and their respective roles in computing.                                     | 3        |
| CO4   | Recognize and resolve user problems with standard operating environments.                                                             | 4        |
| CO5   | Gain practical knowledge of how programming languages, operating systems, and architectures interact and how to use each effectively. | 5        |

## 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    |

[illegible]

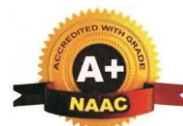


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## SUBJECT: Software Engineering (CS405PC)

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

| S.No. | COURSE OUTCOMES                                                                                                                                                       | BT Level |
|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CO1   | Translate end-user requirements into system and software requirements, using e.g. UML, and structure the requirements in a Software Requirements Document (SRD).      | 1        |
| CO2   | Identify and apply appropriate software architectures and patterns to carry out high level design of a system and be able to critically compare alternative choices.. | 2        |
| CO3   | Have experience and/or awareness of testing problems and will be able to develop a simple testing report                                                              | 3        |
| CO4   | Evaluate software testing strategies, quality assurance techniques, and maintenance practices.                                                                        | 5        |
| CO5   | Demonstrate teamwork, documentation, and ethical responsibility in software project development.                                                                      | 1        |

## MAPPING

| CO      | PO1  | PO2  | PO3  | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---------|------|------|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| CO1     | 3    | 2    | 2    | 2   | -   | -   | -   | -   | -   | -    | 2    | 2    | 3    | 2    | -    |
| CO2     | 3    | 3    | 3    | 3   | 2   | -   | -   | -   | -   | -    | 3    | 3    | 3    | 2    | -    |
| CO3     | 3    | 2    | 2    | 3   | 2   | -   | -   | -   | -   | -    | 2    | 2    | 3    | 3    | -    |
| CO4     | 2    | 2    | 2    | 3   | 2   | -   | -   | -   | -   | -    | 3    | 3    | 2    | 3    | -    |
| CO5     | -    | -    | -    | 2   | -   | -   | -   | -   | -   | -    | 2    | 2    | 2    | -    | -    |
| Average | 2.75 | 2.25 | 2.25 | 2.6 | 2   | -   | -   | -   | -   | -    | 2.4  | 2.4  | 2.6  | 2.5  | -    |



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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   | Simulate and implement operating system concepts such as scheduling, deadlock management, file management and memory management. | 1        |
| CO2   | Implement C programs using Unix system calls                                                                                     | 2        |
| CO3   | Apply memory management and file system operations using system calls                                                            | 3        |
| CO4   | Develop shell scripts for automation and system administration tasks                                                             | 6        |
| CO5   | Demonstrate teamwork, debugging, and documentation skills in lab assignments                                                     | 1        |

## 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                            | 6        |
| CO2   | Apply normalization techniques to optimize database design                     | 3        |
| CO3   | Develop queries using relational algebra and SQL for data retrieval            | 6        |
| CO4   | Implement transaction management and concurrency control mechanisms            | 4        |
| CO5   | Demonstrate teamwork, documentation, and debugging skills in database projects | 1        |

## 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: Real-time Research Project/ Societal Related Project (CS408PC)

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

| S.No. | COURSE OUTCOMES                                                                                                                                                                                               | BT Level |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|
| CO1   | Analyze real-world problems and societal challenges to identify appropriate computing solutions through systematic research and requirement analysis aligned with software development life cycle principles. | 4        |
| CO2   | Design and develop innovative software systems or research solutions that address contemporary societal issues by applying appropriate algorithms, technologies, and methodologies.                           | 6        |
| CO3   | Implement and validate real-time project solutions using current software development tools, platforms, and industry-standard practices while ensuring system functionality and reliability.                  | 3        |
| CO4   | Evaluate the social, ethical, environmental, and economic impact of proposed computing solutions on society and demonstrate professional responsibility in project execution.                                 | 4        |
| CO5   | Document, present, and defend project outcomes through comprehensive technical reports, presentations, and demonstrations while exhibiting effective communication and teamwork skills.                       | 5        |

## MAPPING

| CO      | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| CO1     | 3   | 3   | 2   | 3   | 2   | -   | -   | 2   | -   | 2    | 2    | 3    | 3    | 2    | -    |
| CO2     | 3   | 3   | 3   | 3   | 2   | -   | -   | 2   | -   | 2    | 3    | 2    | 3    | 3    | -    |
| CO3     | 3   | 3   | 3   | 2   | 3   | -   | -   | 2   | -   | 2    | 3    | 2    | -    | 3    | -    |
| CO4     | 3   | 3   | 3   | 2   | 3   | -   | -   | 2   | -   | -    | 3    | 2    | 3    | -    | -    |
| CO5     | 2   | 2   | 2   | 2   | 2   | -   | -   | 2   | 3   | 3    | 3    | 2    | 3    | 2    | -    |
| Average | 2.8 | 2.8 | 2.6 | 2.4 | 2.4 | -   | -   | 2   | 3   | 2.25 | 2.8  | 2.2  | 3    | 2.5  | -    |



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## SUBJECT: Node JS/ React JS/ DJANGO (CS409PC)

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

| S.No. | COURSE OUTCOMES                                                             | BT Level |
|-------|-----------------------------------------------------------------------------|----------|
| CO1   | Build a custom website with HTML, CSS, and Bootstrap and little JavaScript. | 3        |
| CO2   | Demonstrate Advanced features of JavaScript and learn about JDBC            | 2        |
| CO3   | Develop Server – side implementation using Java technologies like           | 6        |
| CO4   | Develop the server – side implementation using Node JS.                     | 6        |
| CO5   | Design a Single Page Application using React.                               | 6        |

## MAPPING

| CO      | PO1 | PO2 | PO3 | PO4 | PO5 | PO6 | PO7 | PO8 | PO9 | PO10 | PO11 | PO12 | PSO1 | PSO2 | PSO3 |
|---------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| CO1     | 3   | 3   | 2   | 2   | 2   | 2   | -   | -   | 3   | -    | 2    | 2    | 3    | 3    | 2    |
| CO2     | 3   | 3   | 3   | 3   | 2   | 2   | -   | -   | 2   | -    | 3    | 2    | 3    | 3    | 2    |
| CO3     | 3   | 3   | 3   | 3   | 2   | 2   | -   | -   | 2   | -    | 3    | 3    | 3    | 3    | 2    |
| CO4     | 3   | 3   | 3   | 3   | 3   | 2   | -   | -   | 2   | -    | 2    | 3    | 3    | 3    | 2    |
| CO5     | 3   | 3   | 3   | 3   | 3   | 3   | -   | -   | 3   | -    | 2    | 3    | 3    | 3    | 3    |
| Average | 3   | 3   | 2.8 | 2.8 | 2.4 | 2.2 | -   | -   | 2.4 | -    | 2.4  | 2.6  | 3    | 3    | 2.2  |



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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                                                                                                                                                                     | 2        |
| CO2   | Discuss the growth of the demand for civil rights in India for the bulk of Indians before the arrival of Gandhi in Indian politics.                                                                                                                | 1        |
| CO3   | Discuss the intellectual origins of the framework of argument that informed the conceptualization of social reforms leading to revolution in India.                                                                                                | 3        |
| CO4   | Discuss the circumstances surrounding the foundation of the Congress Socialist Party [CSP] under the leadership of Jawaharlal Nehru and the eventual failure of the proposal of direct elections through adult suffrage in the Indian Constitution | 4        |
| CO5   | Discuss the passage of the Hindu Code Bill of 1956.                                                                                                                                                                                                | 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    |