माधव प्रौद्योगिकी एवं विज्ञान संस्थान, ग्वालियर (म.प्र.), भारत
MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE, GWALIOR (M.P.), INDIA
Deemed University
(Declared under Distinct Category by Ministry of Education, Government of India)
NAAC ACCREDITED WITH A++ GRADE

Department of Information Technology

Semester Proficiency (16241209)

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TABLE OF CONTENT

Transforms and vector Calculas (16242101)

Objectives:

1. Enhance mathematical modeling skills.
2. Develop proficiency in transforms.
3. Strengthen vector calculus understanding.
4. Prepare students for advanced engineering applications.

Real-World Application:

1. Analyzing physical systems and engineering problems.
2. For signal processing and system analysis.
3. To solve field-related problems in electromagnetics and fluid dynamics.
4. Used in control systems, robotics, and computational simulation.

Design and Analysis of Algorithms(16242102)

Objectives:

1. Equip students to design efficient algorithms.
2. Enable complexity analysis.
3. Introduce algorithmic paradigms.
4. Prepare for advanced topics.

Real-World Application:

1. Used in software development, data processing, and system optimization.
2. To evaluate performance and scalability if IT solutions in real-world scenarios.
3. Use of greedy, divide-and-conquer, and dynamic programming for solving IT-centric problems.
4. Used to enhance machine learning, cyber security etc.

Database Management System(16242103)

Objectives:

1. Enable efficient data organization and retrieval.
2. Develop practical skills in SQL.
3. Introduce data integrity, security, and concurrency control.
4. Prepare students for backend development, data analytics, and enterprise-level applications.

Real-World Application:

1. Used in relational models and query optimization.
2. Used for designing, querying, and managing real-world databases.
3. Used for robust and reliable IT system.
4. Used in banking systems, E-commerce platforms, Hospital management systems, university portals etc.

Operating System(16242104)

Objectives:

1. To understand core OS concepts.
2. Develop skills to manage resources efficiently.
3. Learn security to manage resources efficiently.

Real-World Application:

1. To understand process management, memory allocation, and file system for system-level thinking.
2. Providing a multi-user environment to users.
3. To maintain security and integrity of data in IT infrastructure.
4. Prepare for careers in system programming, cloud computing, and cyber security.

Computer Networks(16242105)

Objectives:

1. Understand network architectures and protocols.
2. Develop skills in configuring and troubleshooting networks.
3. Learn security principles and access control mechanisms.
4. Prepare for careers in network administration, cybersecurity, and cloud computing.

Real-World Applications:

1. To enable reliable data communication across distributed systems.
2. It also include the usage of IP addressing , routing, and switching.
3. Used to protect data during transmission.
4. Gives Knowledge about OSI and TCP/IP models.

Cyber Security(16242112)

Objectives:

1. Understand core security principles.
2. Learn to identify and mitigate cyber threats.
3. Develops skills in cryptography, authentication, and access control.

Real-World Applications:

1. Used in maintaining confidentiality, integrity, and availability of data assets.
2. Protecting systems form malware, phishing, and network attacks.
3. Building a secure system design.
4. Prepares for roles in ethical hacking, security auditing, and secure software development.

THANK YOU !!