Academic Council Meeting No. and Date: 11 / June 27, 2025

Agenda Number: 3 **Resolution Number: 52/ 3.7**

Vidya Prasarak Mandal's
B. N. Bandodkar College of
Science (Autonomous), Thane

Certificate Course In
Digital Transformation

With effect from Academic Year
2025-2026

PREAMBLE

Digital transformation (course) is introduced as a certificate course conducted by Department of Statistics VPM's B.N. Bandodkar College of Science, Thane. In choice based credit system the course would be of 30 hrs. duration. There would be single paper based on syllabus consisting of 2 units. This course will offer credit of 2 on successful completion of the course.

In today's rapidly evolving technological landscape, understanding how software companies operate, how technology has progressed, and how it applies across various industries is essential for aspiring professionals. This course provides students with a comprehensive overview of contemporary software development practices, organizational structures, and the technological foundations that drive modern businesses.

Through real-world case studies and hands-on activities, students will explore topics such as enterprise applications, cloud infrastructure, business intelligence, AI/ML, and project management methodologies. By bridging theoretical concepts with practical applications, the course aims to equip learners with the knowledge and skills needed to thrive in today's tech-driven workplace.

This curriculum is designed not only to build technical awareness but also to enhance industry readiness, fostering an understanding of workflows, tools, and methodologies crucial for software delivery and digital transformation in enterprises. We have organized this Certificate Course.

COURSE COVERAGE:

1. Foundations of Technology in Industry
2. Enterprise Systems & Cloud Technologies
3. Data-Driven Decision Making & AI Applications
4. Project Methodologies & Industry Integration

OBJECTIVES OF THE COURSE:

1. To understand the organizational structure, workflows, and delivery pipelines of modern software companies.
2. To explore the evolution of technology and its application in transforming traditional and modern industries.
3. To gain knowledge of enterprise systems such as ERP, CRM, and cloud infrastructure, and their role in business operations.
4. To develop practical skills in business intelligence, data visualization, and introductory machine learning.
5. To apply project management methodologies like Agile, Scrum, and Waterfall in real-world project scenarios.

LEARNING OUTCOMES: After completion of this course participant would be able to

1. Describe the structure, workflows, and operational practices of software companies in the current industry landscape.
2. Analyze the evolution of technology and evaluate its impact on digital transformation across various industries.
3. Demonstrate understanding of enterprise systems like ERP, CRM, and cloud services, and explain their application through case studies.
4. Apply business intelligence tools to create dashboards and interpret data for decision-making.
5. Build a simple machine learning model and explain its relevance in real-world scenarios.
6. Implement project management methodologies such as Agile, Scrum, and Waterfall through collaborative project activities.
7. Present project outcomes effectively and reflect on career pathways and industry expectations.

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ELIGIBILITY:

The certificate course offers comprehensive content designed for students, educators, and aspiring professionals from diverse academic backgrounds who have limited exposure to enterprise technologies and software industry practices but are eager to develop a foundational understanding of modern IT operations. It is suitable for undergraduates, recent graduates, and early-career professionals from any field who seek to gain practical insights into software workflows, cloud infrastructure, business intelligence, and project methodologies.

Some other Important Points

To enroll in the "Insights into Modern IT Practices" course conducted by Drishti, students must meet the following criteria:

1. **Academic Background:**

- Currently pursuing a BSc in related fields (e.g., Computer Science, Data Science).
- Must be enrolled in at least the second year of their undergraduate program.

2. **Technical Skills:**

- Basic knowledge of programming languages (e.g., Python, Java, or C++) is preferred but not mandatory.

- Familiarity with IT concepts like databases, networks, or software development is a plus.

3. **Interest in Technology** :

- Demonstrated interest in emerging technologies such as AI, cloud computing, and data analytics.
- Willingness to participate in hands-on activities and group projects.

4. **Commitment:**

- Ability to dedicate 3-4 hours on weekends for the course duration (3 months).
- Consistent attendance and active participation are mandatory.

5. **Other Criteria**:

- Students must have access to a laptop or desktop with internet connectivity for practical sessions.
- A strong desire to learn about real-world applications of IT in business scenarios.

Note: Final year students will receive priority for enrolment due to their proximity to entering the workforce.

Certificate Course

BCCDT044	Certificate course in Digital Transformation	**45 Hrs**	**3 Credits**

CO1	Explain the operational models of modern software companies, including organizational structures, workflows, and technology delivery processes.	L3
CO2	Analyze the evolution of technology and its applicability in driving digital transformation across various industries.	L3
CO3	Apply the principles of Enterprise Applications and Cloud Infrastructure to support scalable business solutions.	L3
CO4	Develop skills in Business Intelligence, Dashboarding, and Platform Services to enable data-driven decision-making and efficient service delivery.	L6
CO5	Demonstrate foundational knowledge of Artificial Intelligence (AI) and Machine Learning (ML) concepts and their practical applications.	L2
CO6	Apply project management methodologies such as Agile, Scrum, and Waterfall to effectively plan, execute, and present technology projects.	L3

Syllabus of Basics

Theory

UNIT	SUB-TOPICS	No. of lectures
I	**How Software Companies Operate Today**: Organizational structure, workflows, and delivery pipelines. Case study: SaaS workflow. **Evolution of Technology Over the Years:** Tech milestones, disruptive technologies. Case study: Legacy systems vs. modern systems. **Applicability of Technology to Industry** Role of technology in industries, digital transformation. Case study: ERP in manufacturing.	**15**
II	**Enterprise Applications & Cloud Infrastructure:** ERP, CRM, SaaS, and cloud computing. Case study: Migrating to cloud. **Business Intelligence and Dash boarding**: Data analytics and visualization using BI tools. Case study: Retail dashboard creation. **Platform Services**: API integrations, middleware, DevOps tools. Case study: Payment gateway integration.	**15**
III	**AI and ML**: AI/ML concepts, industry use cases. Hands-on: Build a simple ML model. **Project Methodologies**: Agile, Scrum, Waterfall methodologies. Activity: Sprint planning for a project. **Summary and Final Presentation:** Recap, career tips, and student project presentations with feedback.	
	Total Theory Periods	**30**

Suggested Readings (References): Articles and online resources will be provided throughout the course.

Software/Tools:

- Access to a cloud computing platform (AWS, Azure, or GCP)
- A BI tool (Tableau, Power BI, or similar)
- Project management software (Jira, Trello, or similar

Evaluation Scheme

Assignments and Practical Examination

Total number of assignments:

(04 each carrying) 05 marks *4 assignments

Total marks: 20 marks

Practical Examination: Project based evaluation. Total Marks: 80

Total of Internal Assignments	20 Marks
Total of Practical Examination	80 Marks
Grand Total	100 Mark

Note:

1. Internal Assignments have to be submitted in the softcopy format in the department.
2. A minimum of 75% attendance is compulsory to be eligible for the examination.