Approved by the Bos in Bachelor of Science (Information of Technology) on 13-11-2024 Item No.03

As Per NEP 2020

Tolani College of Commerce (Autonomous)

Knowledge is Supreme

Title of the Course: Software Project Management

Programme: B.Sc(Information Technology) Semester V

Syllabus for 4 credits

From the academic year- 2025-2026

Name of the Course: Software Project Management

Sr. No.	Heading	Particulars
1	**Description of the course :**	A software development project is a complex undertaking by two or more persons within the boundaries of time, budget, and staff resources that produces new or enhanced computer code that adds significant business value to a new or existing business process.
2	**Vertical:**	Major
3	**Type:**	Theory and Project
4	**Credit**:	4 credits
5	**Hours Allotted:**	60 Hours
6	**Marks Allotted**:	100 Marks Practical Evaluation: 40 Marks Semester-End: 60 Marks
7	**Course Objectives**:	1. To describe the differences between project management and software project management. 2. To use multiple techniques to estimate software tasks, projects and products. 3. To define, implement, analyze and use the metrics required to manage a software project. 4. To define historical data to be captured at project closure.
8	**Course Outcomes**:	1. Learners will be able to Identify the different project contexts and suggest an appropriate management strategy. 2. Learners will practice the role of professional ethics in successful software development 3. Learners will be able to Identify and describe the key phases of project management. 4. Learners will determine an appropriate project management approach through an evaluation of the business context and scope of the project.

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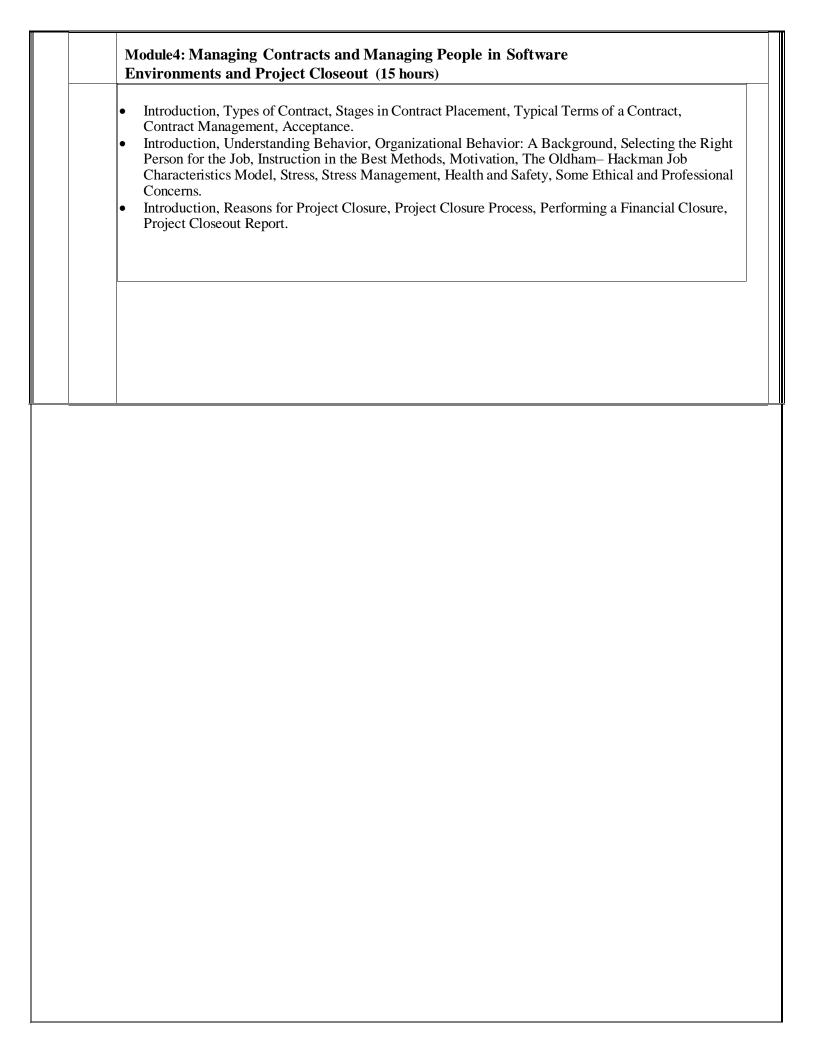| 9	**Module1: Introduction to Software Project Management and An Overview of Project Planning(15 hours)**
	• Introduction, Why is Software Project Management Important? What is a Project? Software Projects versus Other Types of Project, Contract Management and Technical Project Management, Activities Covered by Software Project Management, Plans, Methods and Methodologies, Some Ways of Categorizing Software Projects, Project Charter, Stakeholders, Setting Objectives, The Business Case, Project Success and Failure, What is Management? Management Control, Project Management LifeCycle, Traditional versus Modern Project Management Practices. • Introduction to Step Wise Project Planning, Step 0: Select Project, Step 1: Identify Project Scope and Objectives, Step 2: Identify Project Infrastructure, Step 3: Analyses Project Characteristics, Step 4: Identify Project Products and Activities, Step 5: Estimate Effort for Each Activity, Step 6: Identify Activity Risks, Step 7: Allocate Resources, Step 8: Review/Publicize Plan, Steps 9 and 10: Execute Plan/Lower Levels of Planning
	Module2: Selection of an Appropriate Project Approach and Software Effort Estimation(15 hours)
	• Introduction, Build or Buy? Choosing Methodologies and Technologies, Software Processes and Process Models, Choice of Process Models, Structure versus Speed of Delivery, The Waterfall Model, The Spiral Model, Software Prototyping, Other Ways of Categorizing Prototypes, Incremental Delivery, Atern/Dynamic Systems Development Method, Rapid Application Development, Agile Methods, Extreme Programming (XP), Scrum, Lean Software Development, Managing Iterative Processes, Selecting the Most Appropriate Process Model. • Introduction, Where are the Estimates Done? Problems with Over- and Under-Estimates, The Basis for Software Estimating, Software Effort Estimation Techniques, Bottom- up Estimating, The Top-down Approach and Parametric Models, Expert Judgement, Estimating by Analogy, Albrecht Function Point Analysis, Function Points Mark II, COSMIC Full Function Points, COCOMO II: A Parametric Productivity Model, Cost Estimation, Staffing Pattern, Effect of Schedule Compression, Capers Jones Estimating Rules of Thumb.
	Module3: Risk Management, Resource Allocation and Working in Teams (15 hours)
	. • Introduction, Risk, Categories of Risk, Risk Management Approaches, A Framework for Dealing with Risk, Risk Identification, Risk Assessment, Risk Planning, Risk Management, Evaluating Risks to the Schedule, Boehm's Top 10 Risks and Counter Measures, Applying the PERT Technique, Monte Carlo Simulation, Critical Chain Concepts. • Introduction, Nature of Resources, Identifying Resource Requirements, Scheduling Resources, Creating Critical Paths, Counting the Cost, Being Specific, Publishing the Resource Schedule, Cost Schedules, Scheduling Sequence. • Introduction, becoming a Team, Decision Making, Organization and Team Structures, Coordination Dependencies, Dispersed and Virtual Teams, Communication Genres, Communication Plans, Leadership

Module4: Managing Contracts and Managing People in Software Environments and Project Closeout (15 hours)

- Introduction, Types of Contract, Stages in Contract Placement, Typical Terms of a Contract, Contract Management, Acceptance.
- Introduction, Understanding Behavior, Organizational Behavior: A Background, Selecting the Right Person for the Job, Instruction in the Best Methods, Motivation, The Oldham– Hackman Job Characteristics Model, Stress, Stress Management, Health and Safety, Some Ethical and Professional Concerns.
- Introduction, Reasons for Project Closure, Project Closure Process, Performing a Financial Closure, Project Closeout Report.

10	**Reference Books:**

1) **Author/s**Bob Hughes, Mike Cotterell, Rajib Mall, **Title** : Software Project Management, **Publisher** : TMH , **Edition** : ₆th, **Year** :2018.
2) **Author/s**Shailesh Mehta, **Title** : Project Management and Tools & Technologies – An overview, **Publisher** : SPD , **Edition** :1st, **Year** :2017.

11	**Project Assessment: 40%**	**Semester End Examination: 60%**

12	**Format of Question Paper:**

Scheme of Evaluation Pattern
Table 1A: Scheme of Continuous Evaluation (CE)
Scheme of Evaluation Patter

Sub-components	Maximum Marks	Conditions for passing
Project Documentation and Viva Voce	40	A learner must be presentfor each of the sub- components
Total	40	

Table 1B: Scheme of Semester End Examination (SEE) Evaluation
Question Paper Pattern for Semester End Examination (SEE)
Maximum Marks: 60   **Duration: 2 Hrs.**

Note: All questions are compulsory. Each question has an internal choice.

Question Number		Nature of Questions	Maximum Marks
1)		**Attempt any three**	15
	a)		
	b)		
	c)		
	d)		
	e)		
2)		**Attempt any three**	15
	a)		
	b)		
	c)		
	d)		
	e)		
3)		**Attempt any three**	15
	a)		
	b)		
	c)		
	d)		
	e)		

		4)		**Attempt any three**	15	
			a)			
			b)			
			c)			
			d)			
			e)			