M.L. Dahanukar College of Commerce

Teaching Plan: 2022- 23

Department: I.T. **Class: T.Y.B.Sc.(I.T.)** **Semester: V**

Subject: Software Project Management

Name of the Faculty: Navneet Kaur Nagpal

Month	Topics to be Covered	Internal Assessment	Number of Lectures
June	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, Business Case, Project Success and Failure, What is Management? Management Control, Project Management Life Cycle, Traditional versus Modern Project Management Practices, Project Portfolio Management, Evaluation of Individual Projects, Cost benefit Evaluation Techniques, Risk Evaluation, Programme Management, Managing the Allocation of Resources within Programmes, Strategic Programme Management, Creating a Programme, Aids to Programme Management		16
July	Introduction to Step Wise Project Planning, Step 0: Select Project, Step 1: Identify Project Scope and Objectives, Step 2: Identify Project Infrastructure, Step 3: Analyse 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, 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		20
August	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 Judgment, Estimating by Analogy, Albrecht Function Point Analysis, Function Points Mark II, COSMIC Full Function Points, COCOMO II, Cost Estimation, Staffing Pattern,		20

	Effect of Schedule Compression, Capers Jones Estimating Rules of Thumb, Objectives of Activity Planning, Project Schedules, Projects and Activities, Sequencing and Scheduling Activities, Network Planning Models, Formulating a Network Model, Adding the Time Dimension, Forward Pass, Backward Pass, Identifying the Critical Path, Activity Float, Shortening the Project Duration, Identifying Critical Activities, Activity on Arrow Network, 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, Nature of Resources, Identifying Resource Requirements, Scheduling Resources, Creating Critical Paths, Counting the Cost, Being Specific, Publishing the Resource Schedule, Cost Schedules, Scheduling Sequence		
September	Creating the Framework, Collecting the Data, Review, Visualizing Progress, Cost Monitoring, Earned Value Analysis, Prioritizing Monitoring, Getting the Project Back to Target, Change Control, Software Configuration Management , types of Contract, Stages in Contract Placement, Typical Terms of a Contract, Contract Management, Acceptance 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 Management, Health and Safety, Some Ethical and Professional Concerns, Decision Making, Organization and Team Structures, Coordination Dependencies, Dispersed and Virtual Teams, Communication Genres, Communication Plans, Leadership, The Place of Software Quality in Project Planning, Importance of Software Quality, Defining Software Quality, Software Quality Models, ISO 9126, Product and Process Metrics, Product versus Process Quality Management, Quality Management Systems, Process Capability Models, Techniques to Help Enhance Software Quality, Testing, Software Reliability, Quality Plans, Reasons for Project Closure, Project Closure Process, Performing a Financial Closure, Project Closeout Report		20

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M.L. Dahanukar College of Commerce
Teaching Plan: 2022 - 23

Department: I.T. **Class: T.Y.B.Sc.(I.T.)** **Semester:V**

Subject: Internet of Things

Name of the Faculty: Ms. Shruti Save

Month	Topics to be Covered	Internal Assessment	Number of Lectures
June	**Unit I** **The Internet of Things**: An Overview: The Flavour of the Internet of Things, The "Internet" of "Things", The Technology of the Internet of Things, Enchanted Objects, Who is Making the Internet of Things? **Design Principles for Connected Devices**: Calm and Ambient Technology, Magic as Metaphor, Privacy, Keeping Secrets, Whose Data Is It Anyway? Web Thinking for Connected Devices, Small Pieces, Loosely Joined, First-Class Citizens on The Internet, Graceful Degradation, Affordances **Internet Principles**: Internet Communications: An Overview, IP, TCP, The IP Protocol Suite (TCP/IP), UDP		14
July	**UNIT I** **Internet Principles**: IP Addresses, DNS, Static IP Address Assignment, Dynamic IP Address Assignment, IPv6, MAC Addresses TCP and UDP Ports, An Example: HTTP Ports, Other Common Ports, Application Layer Protocols, HTTP, HTTPS: Encrypted HTTP, Other Application Layer Protocols. **Unit II** **Thinking About Prototyping**: Sketching, Familiarity, Costs versus Ease of Prototyping, Prototypes and Production, Changing Embedded Platform, Physical Prototypes and Mass Personalisation, climbing into the Cloud, Open Source versus Closed Source, Why Closed? Why Open? Mixing Open and Closed Source, Closed Source for Mass Market Projects, Tapping into the Community. **Prototyping Embedded Devices**: Electronics, Sensors, Actuators, Scaling Up the Electronics, Embedded Computing Basics, Microcontrollers, System-on-Chips, Choosing Your Platform, Arduino, developing on the Arduino, Some Notes on the Hardware, Openness, Raspberry Pi, Cases and Extension Boards, Developing on the Raspberry Pi, Some Notes on the Hardware, Openness.		24

	UNIT III **Prototyping the Physical Design**: Preparation, Sketch, Iterate, and Explore, Nondigital Methods, Laser Cutting, Choosing a Laser, 3D Printing, Types of 3D Printing, Software, CNC Milling, Repurposing/Recycling.		
August	**UNIT III** **Prototyping Online Components**: Getting Started with an API, Mashing Up APIs, Scraping, Legalities, writing a New API, Clockodillo, Security, implementing the API, Using Curl to Test, Going Further, Real-Time Reactions, Polling, Comet, Other Protocols. **UNIT IV** **Techniques for Writing Embedded Code**: Memory Management, Types of Memory, Making the Most of Your RAM, Performance and Battery Life, Libraries, Debugging Business Models: A Short History of Business Models, Space and Time, From Craft to Mass Production, The Long Tail of the Internet, Learning from History, The Business Model Canvas, Who Is the Business Model For? Models, Make Thing, Sell Thing, Subscriptions, Customisation, be a Key Resource, Provide Infrastructure: Sensor Networks, take a Percentage, Funding an Internet of Things Startup, Hobby Projects and Open Source, Venture Capital, Government Funding, Crowdfunding. **UNIT V** Moving to Manufacture: What Are You Producing? Designing Kits, Designing Printed, Software Choices, The Design Process, Manufacturing Printed Circuit Boards, Etching Boards, Milling Boards. Assembly, Testing, Mass-Producing the Case and Other Fixtures, Certification, Costs, Scaling Up Software, Correctness and Maintainability, Performance, User Community.		20
September	**Ethics:** Characterizing the Internet of Things, Privacy, Control, Disrupting Control, Crowdsourcing, Environment, Physical Thing, Electronics, Internet Service, Solutions, The Internet of Things as Part of the Solution, Cautious Optimism, The Open Internet of Things Definition.		02

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M.L. Dahanukar College of Commerce

Teaching Plan: 2022 - 23

Department: I.T. **Class: T.Y.B.Sc.(I.T.)** **Semester: V**

Subject: Advance Web Programming

Name of the Faculty: Snehal S. Borlikar

Month	Topics to be Covered	Internal Assessment	Number of Lectures
June	Unit 1: Introduction to .net C# language, Type objects and Namespace Unit 2: Web Form Fundamentals		15
July	Unit 2: Form Controls Unit 3: Error handling, logging, State management		20
August	Unit 3: Style, Themes, Master pages Unit 4: ADO.net Fundamentals, Data Binding		15
September	Unit 4: Data Controls Unit 5:xml, security fundamentals, Ajax		10

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M.L. Dahanukar College of Commerce

Teaching Plan: 2022 - 23

Department: I.T. **Class: T.Y.B.Sc.(I.T.)** **Semester:V**

Subject: Artificial Intelligence

Name of the Faculty: Ms.Shweta Shirsat

Month	Topics to be Covered	Internal Assessment	Number of Lectures
June	**Introduction**: What is Artificial Intelligence? Foundations of AI, history, the state of art AI today. **Intelligent Agents**: agents and environment, good behavior, nature of environment, the structure of agents.		15
July	**Solving Problems by Searching**: Problem solving agents, examples problems, searching for solutions, uninformed search, informed search strategies, heuristic functions **Beyond Classical Search**: local search algorithms, searching with non-deterministic action, searching with partial observations, online search agents and unknown environments.		13
August	**Adversarial Search**: Games, optimal decisions in games, alpha-beta pruning, stochastic games, partially observable games, state-of-the-are game programs. **Logical Agents**: Knowledge base agents, The Wumpus world, logic, propositional logic, propositional theorem proving, effective propositional model checking, agents based on propositional logic		12
September	**First Order Logic**: Syntax and semantics, using First Order Logic, Knowledge engineering in First Order Logic. **Inference in First Order Logic**: propositional vs. First Order, unification and lifting, forward and backward chaining, resolution. **Knowledge Representation**: Categories and Objects, events, mental		10

	events and objects, reasoning systems for categories, reasoning with default information, Internet shopping world		
October	**Planning**: Definition of Classical Planning, Algorithms for planning as state space search, planning graphs, other classical planning approaches, analysis of planning approaches, Time, Schedules and resources, hierarchical planning, Planning and Acting in Nondeterministic Domains, multiagent planning,		10

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M.L. Dahanukar College of Commerce

Teaching Plan: 2022 - 23

Department: I.T. **Class: T.Y.B.Sc.(I.T.)** **Semester:V**

Subject: Next Generation Technologies

Name of the Faculty: Supritha Bhandary

Month	Topics to be Covered	Internal Assessment	Number of Lectures
June	Big Data: Introduction to Big Data, Three Vs of Big data, usage of Big data, Big data Challenges NoSQL: Definition, ACID Vs BASE, CAP Theorem, Advantages and Disadvantages, MongoDB data Model: JSON and BSON, Capped collection, Schema Evolution Introducing MongoDB: Non-Relational approach, SQL comparision		14
July	Using MongoDB shell, creating collection, MapReduce, aggregate(), Conditional operators, MongoDB document Data Model Approach. MongoDB Architecture, Standalone Deployment, Cluster Architecture, MongoDB Storage engine: Data storage Engine, data file, GridFS, Indexing, types of indexes.		18
August	sharding, managing the data, MongoDB Limitations, MongoDB Best Practices The End of Disk? SSD AND In-Memory Databases: Solid State Disk, the Economics of Disk, SAP HANA,		16
September	JQuery: Introduction, Ajax with JQuery, Image Slider JSON: Introduction, JSON Grammar, JSON vs XML, Data Interchanging, JSON HTML, JSNOP		12

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