M.L. Dahanukar College of Commerce

Teaching Plan: 2022 - 2023

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

Subject: Core Java

Name of the Faculty: Snehal S. Borlikar

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	Unit 1: Introduction ,Data types		15
December	Unit 2:Control Flow Statements, Iterations, Classes		10
January	Unit 3: Inheritance, Packages Unit 4: Enumerations, Arrays, Exceptions		20
February	Unit 4: Multithreading, Byte streams Unit 5: Event Handling ,Abstract Window Toolkit ,layout		15

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M.L. Dahanukar College of Commerce

Teaching Plan: 2022 – 2023

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

Subject: Introduction Embedded System

Name of the Faculty: Amit Bane

Month	Topics to be Covered	Internal Assessment	Number of Lectures
November	**Introduction:** Embedded Systems and general purpose computer systems, history, classifications, applications and purpose of embedded systems **Core of embedded systems:** microprocessors and microcontrollers, RISC and CISC controllers, Big endian and Little endian processors, Application specific ICs, Programmable logic devices, COTS, sensors and actuators, communication interface, embedded firmware, other system components.		15
December	**Characteristics and quality attributes of embedded systems:** Characteristics, operational and non-operational quality attributes. **Embedded Systems – Application and Domain Specific:** Application specific – washing machine, domain specific - automotive. **Embedded Hardware:** Memory map, i/o map, interrupt map, processor family, external peripherals, memory – RAM , ROM, types of RAM and ROM, memory testing, CRC ,Flash memory. **Peripherals:** Control and Status Registers, Device Driver, Timer Driver - Watchdog Timers. **The 8051 Microcontrollers:** Microcontrollers and Embedded processors, Overview of 8051 family. 8051 Microcontroller hardware, Input/output pins, Ports, and Circuits, External Memory.		15
January	**8051 Programming in C:** Data Types and time delay in 8051 C, I/O Programming, Logic operations, Data conversion Programs. **Designing Embedded System with 8051 Microcontroller:** Factors to be considered in selecting a controller, why 8051 Microcontroller, Designing with 8051. **Programming embedded systems:** structure of embedded program, infinite loop, compiling, linking and debugging.		20
February	**Real Time Operating System (RTOS):** Operating system basics, types of operating systems, Real-Time Characteristics, Selection Process of an RTOS. **Design and Development:** Embedded system development Environment – IDE, types of file generated on cross compilation, disassembler/ de-compiler, simulator, emulator and debugging, embedded product development life-cycle, trends in embedded industry.		10

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M.L. Dahanukar College of Commerce

Teaching Plan: 2022 – 2023
Department: Information Technology

Class: S.Y.B.Sc.(I.T.) – Semester IV
Subject: Computer Oriented Statistical Techniques
Name of the Faculty: Mohammad Tahir Ansari

Month	Topics to be covered	Internal Assessment	Number of Lectures
November	**UNIT I** Averages, or Measures of Central Tendency, The Arithmetic Mean, The Weighted Arithmetic Mean, Properties of the Arithmetic Mean, The Arithmetic Mean Computed from Grouped Data, The Median, The Mode, The Empirical Relation Between the Mean, Median, and Mode, The Geometric Mean G, The Harmonic Mean H, The Relation Between the Arithmetic, Geometric, and Harmonic Means, The Root Mean Square, Quartiles, Deciles, and Percentiles, Software and Measures of Central Tendency.		**10**
December	**UNIT I** The Range, The Mean Deviation, The Semi Interquartile Range, The 10–90 Percentile Range, The Standard Deviation, The Variance, Short Methods for Computing the Standard Deviation, Properties of the Standard Deviation, Charlie's Check, Sheppard's Correction for Variance, Empirical Relations Between Measures of Dispersion, Absolute and Relative Dispersion; Coefficient of Variation, Standardized Variable; Standard Scores, Software and Measures of Dispersion. **Introduction to R:** Basic syntax, data types, variables, operators, control statements, R-functions, R –Vectors, R – lists, R Arrays. **UNIT II** Moments, Moments for Grouped Data, Relations Between Moments, Computation of Moments for Grouped Data, Charlie's Check and Sheppard's Corrections, Moments in Dimensionless Form, Skewness, Kurtosis, Population Moments, Skewness, and Kurtosis, Software Computation of Skewness and Kurtosis.		**16**
January	**UNIT II** Sampling Theory, Random Samples and Random Numbers, Sampling With and Without Replacement, Sampling Distributions, Sampling Distribution of Means, Sampling Distribution of Proportions, Sampling Distributions of Differences and Sums,		**16**

	Standard Errors, Software Demonstration of Elementary Sampling Theory. **UNIT III** Estimation of Parameters, Unbiased Estimates, Efficient Estimates, Point Estimates and Interval Estimates; Their Reliability, Confidence-Interval Estimates of Population Parameters, Probable Error. **Statistical Decision Theory:** Statistical Decisions, Statistical Hypotheses, Tests of Hypotheses and Significance, or Decision Rules, Type I and Type II Errors, Level of Significance, Tests Involving Normal Distributions, Two-Tailed and One-Tailed Tests, Special Tests, Operating-Characteristic Curves; the Power of a Test, p Values for Hypotheses Tests, Control Charts, Tests Involving Sample Differences, Tests Involving Binomial Distributions. **Statistics in R:** mean, median, mode, Normal Distribution, Binomial Distribution, Frequency Distribution in R.		
February	**UNIT IV** **Small Sampling Theory**: Small Samples, Student's t Distribution, Confidence Intervals, Tests of Hypotheses and Significance, The Chi Square Distribution, Confidence Intervals for Sigma, Degrees of Freedom, The F Distribution. **The Chi-Square Test**: Observed and Theoretical Frequencies, Definition of chi-square, Significance Tests, The Chi-Square Test for Goodness of Fit, Contingency Tables, Yates' Correction for Continuity, Simple Formulas for Computing chi-square, Coefficient of Contingency, Correlation of Attributes, Additive Property of chi square. **UNIT V** **Curve Fitting and the Method of Least Squares:** Relationship Between Variables, Curve Fitting, Equations of Approximating Curves, Freehand Method of Curve Fitting, The Straight Line, The Method of Least Squares, The Least-Squares Line, Nonlinear Relationships, The Least-Squares Parabola, Regression, Applications to Time Series, Problems Involving More Than Two Variables. **Correlation Theory:** Correlation and Regression, Linear Correlation, Measures of Correlation, The Least-Squares Regression Lines, Standard Error of Estimate, Explained and Unexplained Variation, Coefficient of Correlation, Remarks Concerning the Correlation Coefficient, Product-Moment Formula for the Linear Correlation Coefficient, Short Computational Formulas, Regression Lines and the Linear Correlation Coefficient, Correlation of Time Series, Correlation of Attributes, Sampling Theory of Correlation,		**18**

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M.L.Dahanukar College of Commerce

Teaching Plan: 2022 – 2023

Department: Information Technology

Class: S.Y.B.Sc.(I.T.) – Semester IV
Subject: Software Engineering
Name of the Faculty: Prof. Supritha Bhandary

Month	Topics to be Covered	Internal Assessment	Number of Lectures
Nov	Introduction, Difference between hardware and software, SDLC, software requirements, software processes, waterfall model, prototyping model, iterative model., RUP, RAD model, Agile software development.		12
Dec	Socio-Technical System: Characteristics, legacy systems, critical systems. security of software systems, Requirements engineering processes, feasibility study, systems models, context model, behavioural model, data model, object model Architectural design, modular decomposition styles, control styles, User Interface design.		24
Jan	Need of UI, Design issues, user analysis. Project Management Quality Management: quality planning, quality control, software measurement and metrics, Verification and validation software inspections, Software Testing		18
Feb	system testing, project duration and staffing, Process improvement, software reuse, distributed software engineering.		06

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M.L. Dahanukar College of Commerce

Teaching Plan: 2021 - 22

Department: I.T. Class: S.Y.B.Sc. (I.T.) Semester: IV

Subject: Computer Graphics and Animation

Name of the Faculty: Sweta Chheda

Month	**Topics to be Covered**	**Internal Assessment**	**Number of Lectures**
November	Unit 1 - Chap 1 - Introduction to Computer Graphics Unit 1 - Chap 2 - Scan Conversion Unit 2 - Chap 3 - Two-Dimensional Transformation (half) + Practical's		20
December	Unit 2 - Chap 3 – Two-Dimensional Transformation Unit 2 - Chap 4 - Three Dimensional Transformations. Unit 5 - Chap 10 - Computer Animation Unit 5 - Chap 11 - Image Manipulation and Storage Unit 3 - Chap 7 - Color + Practical's		20
January	Unit 3 - Chap 5 - Viewing in 3D Unit 4 - Chap 8 - Visible Surface Determination Unit 4 - Chap 9 - Plane Curves and Surfaces Unit 3 - Chap 6 - Light + Practical's		20
February	Tentative if required		

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