

Kannada Sangha Pune's  
**Kaveri College of Arts, Science and Commerce, Pune**

F.Y. B.Sc.(Computer Science)

CBCS Pattern (2019-20)

Subject:-Database Management System (SEM I)

### **Course Outcomes**

CO1: Students will understand how to describe the fundamental elements of relational database management systems

CO2: Students are able to explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.

CO3: Students can design ER-models to represent simple database application scenarios

CO4: Students will understand how to convert the ER-model to relational tables, populate relational database and formulate SQL queries on data.

CO5: Students can write and read (understand) simple and Nested SQL queries.

CO6: Students will understand how to perform normalization based on functional dependency.

Kannada Sangha Pune's  
**Kaveri College of Arts, Science and Commerce, Pune**

F.Y. B.Sc.(Computer Science)

CBCS Pattern (2019-20)

Subject: Matrix Algebra (M-I, SEM I)

### **Course Outcomes**

CO1: Students should be able to learn to solve systems of linear equations and application problems requiring them.

CO2: Students should be able to learn to compute determinants and know their properties.

CO3: Students should be able to solve the matrix equation  $AX = B$  using row operations and matrix operations.

CO4: Students should be able to characterize a set of vectors and linear systems using the concept of linear independence.

CO5: Students should be able to write cohesive and comprehensive solutions to exercises and be able to defend their arguments.

CO6: Enhancing students' overall development and to equip them with mathematical modelling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.

Kannada Sangha Pune's  
**Kaveri College of Arts, Science and Commerce, Pune**

F.Y. B.Sc.(Computer Science)

CBCS Pattern (2019-20)

Subject: Linear Algebra (M-I, SEM II)

### **Course Outcomes**

CO1: Students should be able to learn basics of Linear Algebra through Matrices Theory and use them for evaluation of system of linear equations.

CO2: Students should be able to learn about vector spaces and subspaces.

CO3: Students should be able to find the characteristic equation, eigen values and corresponding eigenvectors of a given matrix.

CO4: Students should be able to determine if a given matrix is diagonalizable.

CO5: Students should be able to identify and construct linear transformations of a matrix.

CO6: Students should get adequate exposure to global and local concerns that explore them many aspects of Mathematical Sciences.

CO7: Students should be able to apply their skills and knowledge.

CO8: Enhancing students' overall development and to equip them with mathematical modelling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.

Kannada Sangha Pune's  
**Kaveri College of Arts, Science and Commerce, Pune**

F.Y. B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Descriptive Statistics (SEM I)

### **Course Outcomes**

CO1: Students will understand how to compute various measures of central tendency, dispersion, skewness and kurtosis.

CO2: Students are able to analyze data pertaining to attributes and to interpret the results.

Kannada Sangha Pune's  
**Kaveri College of Arts, Science and Commerce, Pune**

F.Y.B.Sc. (Computer Science)

(CBCS 2019-20)

Subject: Methods of Applied Statistics (SEM II)

### **Course Outcomes**

CO1: Students will understand the relationship between two variables using scatter plot.

CO2: Students will understand how to compute the correlation coefficient for bivariate data and interpret it.

CO3: Students are able to explain how to fit linear, quadratic and exponential curves to the bivariate data to investigate relation between two variables.

CO4: Students will understand the trend in time series and how to remove it.

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**Kaveri College of Arts, Science and Commerce, Pune**

F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject:-CSST 112: Mathematical Statistics (SEM I)

### **Course Outcomes**

CO1: Students will understand how to distinguish between random and non-random experiments.

CO2: Students can find the probabilities of events.

CO3: Students will understand how to obtain a probability distribution of random variable in the given situation.

CO4: Students can fit the discrete probability distribution.

Kannada Sangha Pune's  
**Kaveri College of Arts, Science and Commerce, Pune**

F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Problem Solving Using Computers and 'C' Programming SEM I

### **Course Outcomes**

CO 1: Prepare for current and continued learning in a rapidly changing discipline of computer science and technology.

CO 2: Build the necessary skill set and analytical abilities for developing computer-based solutions for real life problems.

CO 3: Develop their programming skills.

CO 4: Explore algorithmic approaches to problem solving.

CO 5: Be familiar with programming environment with C Program structure.

CO 6: Declaration of variables and constants, understand operators, expressions.

CO 7: Understand arrays, declaration and uses.

CO 8: Develop modular programs using control structures and arrays in 'C'.

CO 9: Design programs using Functions.

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F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: CS 103 Practical course on Problem Solving using Computer and 'C' programming and Database Management Systems. SEM I

### **Course Outcomes**

CO 1: Develop Pseudo code and flowchart for computational problems.

CO 2: Write, debug and execute programs using advanced features in 'C'( Simple C Programs, Control Structures, Loop Controls, Arrays, Functions.)

CO 2: Create database tables in PostgreSQL.

CO 3: Write and execute simple, nested queries and views.



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F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Advanced 'C' Programming. SEM II

### **Course Outcomes**

CO 1: Develop modular programs using control structures, pointers, arrays, strings and structures and Files.

CO 2: Design and develop solutions to real world problems using C.

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F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Practical Course on Advanced 'C' Programming and Relational  
Database Management Systems SEM II

### **Course Outcomes**

CO 1: Students can write, debug and execute programs using advanced features in 'C'(Pointers, Strings, Structures and Unions, File Handling)

CO 2: Students will understand how to use SQL & PL/SQL.

CO 3: Students will understand about advanced database operations.

Kannada Sangha Pune's  
**Kaveri College of Arts, Science and Commerce, Pune**

F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Discrete mathematics (SEM I)

### **Course Outcomes**

CO1: Students should be able to develop problem solving abilities using a Computer.

CO2: Students will be able to Write an argument using logical notation and determine if the argument is or is not valid.

CO3: Students are able to demonstrate the ability to write and evaluate a proof or outline the basic structure of and give examples of each proof technique described.

CO4: Apply counting principles to determine probabilities.

CO5: Use logical notation to define and reason mathematically about the fundamental data types and structures (such as numbers, sets) used in computer algorithms and systems.

CO6: Students Should able to Solve problems involving recurrence relations and generating functions.

CO7: Demonstrate an understanding of relations and functions and be able determine their properties.

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**Kaveri College of Arts, Science and Commerce, Pune**

F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Mathematics Practical (SEM I)

### **Course Outcomes**

CO1: Students are able to construct simple mathematical proofs and possess the ability to verify them.

CO2: Demonstrate an understanding of relations and functions and be able to determine their properties.

CO3: Students should be able to develop problem solving abilities using a computer

CO4: Students should be able to perform certain algorithms, justify why these algorithms work, and give some estimates of the running times of these algorithms.

CO5: Students should be able to solve basic exercises of the type: given a graph with properties X, prove that the graph also has property Y.

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**Kaveri College of Arts, Science and Commerce, Pune**

F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Graph Theory (SEM II)

### **Course Outcomes**

CO1: Student will be able to apply graph theoretic terminology and notation. Even though most students conceptually understand graph theory.

CO2: Students will be able to formally understand and prove theorems and relevant results in graph theory.

CO3: Student will be able to account for the theory of paths and the degree of connectedness of a graph.

CO4: Students will understand how to use graph and tree concepts are used to solve problems arising in the computer science.

CO5: Students should be able to work with graphs and identify certain parameters and properties of the given graphs.

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F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Mathematics Practical (SEM II)

### **Course Outcomes**

CO1: Students are able to construct simple mathematical proofs and possess the ability to verify them.

CO2: Students should be able to work with graphs and identify certain parameters and properties of the given graphs.

CO3: Students should be able to perform certain algorithms, justify why these algorithms work, and give some estimates of the running times of these algorithms.

CO4: Students should be able to solve basic exercises of the type: given a graph with properties X, prove that the graph also has property Y.

CO5: Students should develop an appreciation for the literature on the subject and be able to read and present results from the literature.

CO6: Students should be able to write cohesive and comprehensive solutions to exercises and be able to defend their arguments.

Kannada Sangha Pune's  
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F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: CSST 113: Statistical Practical (SEM I)

### **Course Outcomes**

CO1: Students will be able to understand frequency distribution of the given data.

CO2: Use various graphical and diagrammatic techniques and interpret.

CO3: Students will understand how to compute various measures of central tendency, dispersion, Skewness and kurtosis, to fit the Binomial and Poisson distributions.

CO4: Students will understand how to compute the measures of attributes.

CO5: Students will get all information about the process of collection of data, its condensation and representation for real life data.

CO6: Students will study free statistical softwares and use them for data analysis in project.

Kannada Sangha Pune's  
**Kaveri College of Arts, Science and Commerce, Pune**

F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Continuous Probability Distribution and Testing of Hypothesis  
SEM II

### **Course Outcomes**

CO1: Students will understand standard continuous probability distribution to different situations.

CO2: Students will study properties of these distributions as well as interrelation between them.

CO3: Students will understand how to generate model sample from given distribution.



Kannada Sangha Pune's  
**Kaveri College of Arts, Science and Commerce, Pune**

F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: CSST 123: Statistical Practical SEM II

### **Course Outcomes**

CO1: Understanding of the relationship between two variables using scatter plot.

CO2: Compute coefficient of correlation, coefficient of regression.

CO3: Students will understand how to fit various regression models and to find best fit and to fit the Normal distribution.

CO4: Understanding of the trend in time series and how to remove it.

CO5: Students will able to to apply inferential methods for real data sets and to generate model sample from given distributions.

CO6: Students will understand the importance and functions of different statistical organizations in the development of nation.

Kannada Sangha Pune's  
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F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Principles of Digital Electronics (SEM I)

### **Course Outcomes**

CO1: Students will be familiar with concepts of digital electronics

CO2: Students will learn number systems and their representation

CO3: Students will understand basic logic gates, Boolean algebra and K-maps

CO4: Students will be able to explain arithmetic circuits, combinational circuits and sequential circuits

F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Basics of Computer Organization (SEM II)

### **Course Outcomes**

CO1: Students will get familiar digital sequential circuits

CO2: Students will study Basic computer Organization

CO3: Students will understand Memory architecture

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F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Electronics Practical (SEM I)

### **Course Outcomes**

CO1: Through preparatory experiments, students will learn how to identify various electronic components.

CO2: Students will get familiar with the electronic instruments such as multimeter, CRO, function generator.

CO3: Students will get knowledge of electronic circuits and their working through experiments.

CO4: Students can learn applications of theoretical circuits through various experiments.

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F.Y.B.Sc.(Computer Science)

(CBCS:2019-2020)

Subject: Basics of Computer Organization (SEM II)

### **Course Outcomes**

CO1: Students will learn different types of sensors and their applications through experiments.

CO2: Students will get knowledge of computer hardware and important electronic circuits.

CO3: Students are expected to construct a small electronic project through which they can learn how to design and construct the electronic circuits and their applications in real life.

Kannada Sangha Pune's  
**Kaveri College of Arts, Science and Commerce, Pune**

F.Y.B.Sc.(Computer Science)

CBCS Pattern (2019-20)

Subject:-Relational Database Management System (SEM II)

### **Course Outcomes**

CO1: Demonstrate an understanding of the elementary & advanced features of DBMS & RDBMS

CO2: Develop a clear understanding of the conceptual frameworks and definitions of specific terms that are integral to the Relational Database Management Systems

CO3: Attain a good practical understanding of the SQL

CO4: Develop clear concepts about Relational Model.

CO5: Examine techniques pertaining to Database design practices

CO6: Prepare various database tables and joins them using SQL commands

CO7: Understand the basic concepts of Concurrency Control & database security

CO8: Understand the basic concept how storage techniques are used to backup data and maintain data access performance in peak hours

CO9: Evaluate options to make informed decisions that meet data storage, processing, and retrieval needs.

CO10: Able to design and documents data structures incorporating integrity constraints to satisfy business rules by applying the relational model

CO11: Able to build, populate, and document a secure, normalized database that meets business requirements using industry standards and best practices

CO12: Able to develop structured query language (SQL) queries to create, read, update, and delete relational database data.

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F.Y.B.Sc.(Computer Science)

CBCS Pattern (2019-20)

Subject: Semiconductor Devices and Basic Electronic Systems (SEM I)

### **Course Outcomes**

CO1: Students will learn various types of semiconductor devices and their working principles.

CO2: Students will study elementary electronic circuits and systems.

CO3: Students will be able to explain the importance and applications of data converters.

Kannada Sangha Pune's  
**Kaveri College of Arts, Science and Commerce, Pune**

F.Y.B.Sc.(Computer Science)

CBCS Pattern (2019-20)

Subject: Instrumentation Systems (SEM II)

### **Course Outcomes**

CO1: Students will learn various types of instrumentation systems.

CO2: Students will able to explain blocks of any instrumentation system.

CO3: Students will learn smart instrumentation system, its block diagram and applications.