Budha dal public school,Patiala
Academic Plan class 11(Applied Mathematics)(241)

Topic	Learning outcomes	Innovative/Art Integration/Experiential Learning/Inter Disciplinary
Numbers, Quantificati on and Numerical Applications	Students would be able to: 1) Understand about prime numbers 2) Learn how to encrypt data using prime numbers 3) Understand the concept of binary numbers a) How it is different from Decimal Number System b) Conversion of decimal number to binary number and vice – versa c) Conversion of fractional numbers from decimal number to binary and vice – versa d) Binary addition e) Binary subtraction 4) Understand about Indices, Logarithms and Anti – logarithms a) Laws and properties of logarithms b) Simple applications of logarithm and antilogarithm 5) Solve numerical problems on: a) Averages b) Calendar c) Clock d) Work, Time and Distance e) Mensuration	**Art Integration**:Figures and computer **Experiential learning:** A project on Prime numbers and divisibility rules.
Algebra	Students will be able to: 1.Extends the ideas related to Arithmetic progressions learnt earlier to new types of sequences and their series. 2.Use stigma notation and expand corresponding series. 3. Distinguish between sequence and series. 4. Calculate the nth partial sum of sequence. 5. Students are able to solve the problems by using Fundamental principle of counting 6.Students understand Permutation as an arrangement and apply their knowledge in solving problems 7. Students can differentiate permutation and combination and can apply in solving problems.	**Innovative methods:** An activity to find the number of subsets in a given set will be done. **Experiential learning** : Use of Venn diagrams in solving Practical Problems. Fibonacci sequence-its history and presence in nature. To find the number of subsets of a given set and verify that if a set has n number of elements, then the total number of subsets is 2^n **Art Integration**:Figures and computer.
Coordinate Geometry	Students would be able to use 1. Concept of Straight Line 2. Graphical representation in two-dimensional Plane 3. Concept of Circles 4. Graphical representation of Circles in two-dimensional Plane 5. Concept of Parabola 6. Graphical representation of Parabola in two-	**Innovative methods:** Students will be asked to derive equation of circle by coordinate of a fixed point and a general point. **Art Integration**: Figures and computer.

	dimensional plane 7. develop Imagination skill & Creativity 8. Appreciate different approach for plane geometry.	**Experiential learning** : To construct an ellipse using a rectangle.
Logical Reasoning	Students would be able to understand concept of: 1) Logical reasoning a) Coding – Decoding b) Odd man out c) Blood relation d) Syllogism 2)Form „New statements from old statements" 3)Form „Compound statements" 4)Use words like "AND" and "OR" in appropriate place/statements 5)Prove things by using contradiction approach 6)Code and Decode messages/puzzles 1 7)Relate themselves with their own family members	**Innovative methods:** **Art Integration**: Relation diagrams and computer. **Experiential learning** : Visit the census site of India and depict the information given there in pictorial form.
Calculus	Students would be able to 1. Identify the function and find out Domain and Range of a function, 2.Explain the concept of limit and continuity. 3. Corelate Instantaneous rates of change with differentiation 4. Find out Derivatives of algebraic functions using Chain rule 5..Tangent line and equations of tangents 6. Approach for solving daily life problems	**Innovative methods:** Differentiation concept will be explained graphically. **Art Integration**:Figures and computer. **Experiential learning** : Analysis of Population migration data.
Probability	Students will be able to Builds up the axiomatic approach to Probability through the terms Random experiment, Sample space, Events etc. Apply Baye's theorem In practical solutions	**Innovative methods:** :To write the sample space, when a coin is tossed once, two times, three times, four times. **Art Integration**:Figures and computer. **Experiential learning** :Prediction of monsoon from past data. Predicting the outcome of an election-exit polls.
Descriptive Statistics	Students will be able to 1. develop an understanding of everyday data. 2.Understand the organization,visualisation and analysis of data. 3. darw meaningful conclusion from the data 4.make comparisons among two distributions. 5. translate real world problems and make meaningful inferences out of it.	**Innovative methods:** Prepare a questionnaire to collect information regarding expenditure of your friends in a month and draw interedting conclusions from it. **Art Integration**:Figures and computer. **Experiential learning:** Analysis of

		a career graph of asports person. Conclude tghe best year of his/her career.
Basics of Financial Mathematics	Students will be able to 1. Explain the origin and history of interest rate 2. Have an outlook of various economic theory associated with interest rate 3. explain the steps involved in computation of tax and GST 4. develop understanding on the concepts associated with the financial mathematics.	**Innovative methods:** Stock price movement **Art Integration**:Figures and computer. **Experiential learning:** Risk assessments of insurance firms from the data