Mathematical Learning Support Centre

Flexible Tutorial Sessions

Each student can form a group of 5 members or above in one of the following topics. The Flexible Tutorial Session also allows students in select topic. The available time is determined by students with 30 minutes each session. Teacher will be assigned to your session.

Topics

1. **Basic Mathematics**
   a. Rational Functions and Partial Fractions
   b. Trigonometric Functions
   c. Real Number & Complex numbers
   d. Binomial Theorem & Mathematical Induction
   e. Partial Fractions

2. **Functions and Limit**
   a. Functions and Inverse Functions
   b. Limits
   c. Continuity and Differentiability

3. **Differentiation Technique**
   a. Product Rule, Quotient Rule & Chain Rule
   b. L'Hopital Rule & Leibniz's rule

4. **Application of Calculus**
   a. Absolute/ Relative Maximum & Minimum
   b. Rate of Change
   c. Curve Sketching and Concavity
   d. Taylor's Formula
   e. Area, Volume, Arc length, & Surface area Convergence
   f. Power Series

5. **Integration Technique**
   a. Integration by Substitution
   b. Integration by Parts
   c. Reduction Formulae

6. **Matrix**
   a. Matrices, & Inverse of Matrix
   b. Determinants & Singular Matrix
   c. System of Linear equations
   d. Rank

7. **Linear Algebra**
   a. Gaussian Elimination and Gauss-Jordan Method
   b. Vectors
   c. Dot product and Cross product
   d. Projection and Orthogonal vectors
   e. Eigenvalue Problem

8. **Probability**
   a. Probability
   b. Permutations and Combination
   c. Probability Rules
   d. Probability Distributions

9. **Statistics**
   a. Mean, Mode, and Median
   b. Variance & Standard Deviation
   c. Sampling Distributions
   d. Confidence Intervals
   e. Hypothesis Testing

10. **Regression**
    a. Linear Regression
    b. Covariance and Correlation
    c. Multiple Regression

For details, please visit our website
http://www.polyu.edu.hk/ama/math_learning_support_centre/