B.A. / B.Sc. 3rd Semester

Lesson plan (Mathematics)

Paper -Statics

Session 2022-23

**August 2022, September 2022**

**SECTION-I**

Composition and resolution of forces. Parallel forces.

Moments and Couples.

**October 2022**

**SECTION-II**

Analytical conditions of equilibrium of coplanar forces. Friction.

Centre of Gravity.

**November 2022**

**SECTION-III**

Forces in three dimensions. Poinsots central axis. Virtual work.

**SECTION-IV**

**December 2022**

Null lines and planes. Wrenches. Stable and unstable equilibrium.

Dr. Kavita Rani

(Assistant Prof. Maths)

B.A. / B.Sc. 5th Semester

Lesson plan (Mathematics)

Numerical Analysis

Session 2022-23

**August, September 2022**

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**October 2022 **

**November 2022**

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**December 2022**

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**Practical: Practical of Numerical methods will be conducted simultaneously.**

Dr. Kavita Rani

(Assistant Prof. Maths)

B.A. / B.Sc. 1st Semester

Lesson plan (Mathematics)

Paper - Calculus

Session 2022-23

**August 2022**

**Section I**

Limit, continuity, Differentiability, Taylor series expansion, Mean value theorem

**September 2022**

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**October 2022**

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**November 2022**

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**December 2022**

Revision and class test

Dr. Kavita Rani

(Assistant Prof. Maths)

B.A. / B.Sc. 5th Semester

Lesson plan (Mathematics)

Paper- Groups and Rings

Session 2022-23

**August 2022, September 2022**

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**October 2022**

** November 2022**

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**December 2022**

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Dr. Kavita Rani

(Assistant Prof. Maths)

B.A. / B.Sc. 3rd Semester

Lesson plan (Mathematics)

Paper - Advanced Calculus

Session 2022-23

**August 2022, September 2022**

**SECTION-I**

Continuity, Sequential Continuity, properties of continuous functions, Uniform continuity, chain rule of differentiability. Mean value theorems; Rolle’s Theorem and Lagrange’s mean value theorem and their geometrical interpretations. Taylor’s Theorem with various forms of remainders, Darboux intermediate value theorem for derivatives, Indeterminate forms.

**October 2022**

**SECTION-II**

Limit and continuity of real valued functions of two variables. Partial differentiation. Total Differentials; Composite functions & implicit functions. Change of variables. Homogenous functions & Euler’s theorem on homogeneous functions. Taylor’s theorem for functions of two variables.

**November 2022**

**SECTION-III**

Differentiability of real valued functions of two variables. Schwarz and Young’s theorem. Implicit function theorem. Maxima, Minima and saddle points of two variables. Lagrange’s method of multipliers.

**December 2022**

**SECTION-IV**

Curves: Tangents, Principal normals, Binormals, Serret-Frenet formulae. Locus of the centre of curvature, Spherical curvature, Locus of centre of Spherical curvature, Involutes, evolutes, Bertrand Curves. Surfaces: Tangent planes, one parameter family of surfaces, Envelopes.

Dr. Kavita Rani

(Assistant Prof. Maths)