SYLLABUS

Panjab University, Chandigarh

Advanced Calculus-I (Semester III)

Time : 3 hrs.   **Max. Marks : 30**

Note : 1. The syllabus has been split into two Units : Unit–I and Unit–II. Four questions will be set from each Unit.

2. A student will be asked to attempt five questions selecting at least two questions from each Unit. Each question will carry 6 marks.

3. The teaching time shall be five periods (45 minutes each) per paper per week including tutorial.

4. If internal assessment is to be conducted in the form of written examinations, then there will be only one written examination in a Semester.

UNIT-I

Limit and continuity of functions of two and three variables. Partial differentiation. Change of variables. Partial derivation and differentiability of real-valued functions of two and three variables. Schwarz and Young's theorem. Statements of Inverse and implicit function theorems and applications

Vector differentiation, Gradient, Divergence and Curl with their properties and application.

UNIT-II

Euler's theorem on homogeneous functions. Taylor's theorem for functions of two and three variables. Jacobians. Envelops. Evolutes. Maxima, Minima and saddle points of function of two and three variables. Lagrange's multiplier method.