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| Lesson plan of mathematics,session 2020-21  **B.Sc-3rd sem (Advanced Calculus)** |  |
| **WEEKS** |  **Chapter**  |  |
| 1 | *Section – I*Continuity, Sequential Continuity, properties of continuous function,chain rule of differentiability. Mean value theorems; Rolle’theorems |  |
| 2 | Theorem and Lagrange’s mean value theorem and their geometrical interpretations |  |
| 3 |  Taylor’s Theorem with various forms of remainders, Darboux intermediate value theorem for derivatives, Indeterminate forms |  |
| 4 | Limit and continuity of real valued functions of two variables. Partial differentiation |  |
| 5 | . Total Differentials; Composite functions & implicit functions. Change of variables |  |
| 6 | Differentiability of real valued functions of two variables. Schwarz and Young’s theorem. |  |
| 7 | . Homogenous functions & Euler’s theorem on homogeneous functions. Taylor’s theorem for functions of two variables. |  |
| 8 | Differentiability of real valued functions of two variables. Schwarz and Young’s theorem. Implicit function theorem |  |
| 9 |  Maxima, Minima and saddle points of two variables. Lagrange’s method of multipliers. |  |
| 10 | Cĺĺlurves: Tangents, Principal normals, Binormals, Serret-Frenet formulae |  |
| 11 | Locus of the centre of curvature, Spherical curvature, Locus of centre of Spherical curvature, Involutes, evolutes, Bertrand Curves.  |  |
| 12 | . Surfaces: Tangent planes, one parameter family of surfaces, Envelopes. |  |