

MAM 2401 DIFFERENTIAL GEOMETRY

- UNIT – I** Graphs and level sets, Vector fields, Tangent spaces, Surfaces, Vector Fields on Surfaces: Orientation, Gauss map.
- UNIT – II** Geodesics, Parallel Transport, Weingarten Map, Curvature of Plane Curves
- UNIT – III** Arc lengths, Line integrals, Curvature of surfaces
- UNIT – IV** Parametrized surfaces, Local equivalence of surfaces and parametrised surfaces
- UNIT – V** Rigid Motions and congruence, Isometries.

TEXT BOOK

T.A. Thorpe: Elementary Topics in Differential Geometry, Springer-Verlag
[Chapters 1 -12, 14, 15, 22, 23]

REFERENCES

- [1] Goursat, Mathematical Analysis (Vol.I) (last two chapters)
- [2] Struik, Differential Geometry
- [3] Kreyszig, Introduction to Differential Geometry and Riemannian Geometry.

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