PURE MATHEMATICS 423
"DIFFERENTIAL GEOMETRY"

Calendar Description: H(3-0)

Fundamentals of the Gaussian theory of surfaces. Introduction to Riemannian geometry. Some topological aspects of surfaces.

Prerequisite: Mathematics 353 or consent of the Division.

Suggested Text: ∧Elements of Differential Geometry≅, 1977 edition, Millman & Parker, Prentice Hall.

Syllabus

Topics

Ch. 1   Review of vector algebra and elementary vector analysis

Ch. 2   Local curve theory, Frenet-Serret formulas and applications

Ch. 4   Local surface theory, Geodesics, Gaussian curvature

Ch. 6   Global theory of surfaces, Gauss-Bonnet Theorem

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