School of Mathematics

Course 425 — Differential Geometry  
(Optional JS & SS Mathematics, SS Two-subject Moderatorship )

Lecturer: Dr. Dmitri Zaitsev

Requirements/prerequisites: Basic point set topology (covered in Course 212, see e.g. the lecture notes by David Wilkins http://www.maths.tcd.ie/~dwilkins/Courses/212/) and analysis in several real variables (covered in Course 221, see e.g. the lecture notes by David Simms http://www.maths.tcd.ie/pub/coursework/211/ and the references below). Quick introduction to the necessary concepts will be given.

Duration: 21 weeks.

Number of lectures per week: 3

Assessment: Regular assignments

End-of-year Examination: One 3-hour examination

Description: (To be extended)
The course is thought as a "classical" course in Differential Geometry covering most of basic material traditionally associated with Differential and Riemannian Geometry. Geometrical structures on differentiable manifolds, going back to the mathematical formulation of classical mechanics, play a central role in modern mathematics and physics, in particular, in Riemannian geometry, Morse theory, Hodge theory, and the theory of partial differential operators.

Topics:


Additional information and feedback form can (or will) be found at http://www.maths.tcd.ie/~zaitsev/425.html

Textbooks:

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