

Selected courses in English in the academic year 2010/2011

KUL institute/department:	Institute of Mathematics and Computer Science/ Department of Functional Analysis
Course title:	Differential Geometry of Curves and Surfaces
Lecturer (name, surname):	Robert Stepnicki
Title/position:	PhD/assistant professor
ECTS credits:	4
Course duration (1 st , 2 nd or both semesters):	2 nd semester
Number of hours per week:	2
Course type:	lecture
Level:	4
Course description:	<p>This lecture is an introduction to the differential geometry of curves and surfaces, both its local and global aspects. The course includes the following material:</p> <ol style="list-style-type: none"> 1. Curves (Parametrized Curves; Regular Curves; Arc Length; the Local Theory of Curves Parametrized by Arc Length; Global Properties of Plane Curves). 2. Regular Surfaces (Regular Surfaces; Inverse Images of Regular Values; Change of Parameters; Differentiable Functions on Surfaces; the Tangent Plane; the Differential of a Map; the First Fundamental Form; Area). 3. The Geometry of the Gauss Map (the Definition of the Gauss Map and Its Fundamental Properties; the Gauss Map in Local Coordinates). 4. The Intrinsic Geometry of Surfaces (Isometries; the Gauss Theorem; Parallel Transport; the Gauss-Bonnet Theorem; Geodesics).
Required reading list:	It is not required.
Prerequisites:	linear algebra and calculus of several variables
Assessment method:	test
Contact person for further information (name, surname, e-mail, phone):	Robert Stepnicki; roberts@kul.lublin.pl ; +48 602401859