Study programmes: Bachelor studies – Mathematics	
Course name: M3.08 – Differential geometry	
Lecturers: Vladica S. Andrejić, Miroslava Ž. Antić, Ivan Dimitrijević, Mirjana Đ. Đorić, Zoran P. Rakić, Tijana Šukilović, Srđan N. Vukmirović	
Status: Compulsory for M-module, optional for master studies	
ECTS: 8	
Attendance prerequisites: Non	
Course aims: Acquiring general and particular knowledge in foundations of differential geometry and global theory of curves and preparing students for the more advanced courses in this topic.	
Course outcome: At the end of the course students will understand the basic notions of the differential geometry, by studying them in numerous examples. Motivated by the approach in the 3-dimensional Euclidean space, students will be able to understand the basic notions in the abstract theory of manifolds and will be ready for more thorough studying of this and related topics. Also, beside studying the numerous important examples, students will be able for independent studies and for applicating the acquired knowledge in other topics.	
Course content: Global theory of curves. Rotation index of planar curves. Total curvature. Fary-Milnor theorem. Notion and examples of smooth manifolds. Affine connection and covariant derivatives. Geodesic lines. Curvature. Gauss-Bonnet theorem.	

Literature:

M. Antić, *Diferencijalna geometrija mnogostrukosti*, Matematički fakultet, Beograd, 2015.

N. Blažić, N. Bokan, *Uvod u diferencijalnu geometriju*, VESTA, Matematički fakultet, Beograd 1996.

S. Kobayashi, K. *Nomizu-Foundations of Differential Geometry,* Interscience Publishers, New York-London, 1963-1969.

A. Pressley, *Elementary Differential Geometry*, Springer, London-Berlin-Heidelberg, 2001.

B. O'Neill, *Elementary Differential Geometry*, Academic Press, New York-London, 1966.

А. С. Мищенко, Ю. П. Соловьев, А. Т. Фоменко, *Сборник задач по дифференциальной геометрии и топологии*, Физматлит 2004,

Number of hours: 6	**Lectures:** 4	**Tutorials:** 2

Teaching and learning methods: Lectures / Tutorials

Assessment (maximal 100 points)

Course assignments	points	Final exam	points
Lectures	30	Written exam	
Exercises / Tutorials		Oral exam	70
Colloquia			
Essay / Project			