Program	Level	First cycle
	Name of the program	Applied Mathematics

COURSE				
Course title	**Mathematical Modeling in Biology**			
Course code	Semester	Course status	ECTS	Contact hours (L+AE+LE)
AMAT355	VI	Elective course	5	2+2+0
Lecturer				
Course Goals	Introducing students to the application of mathematical content to problems in medicine and biology and the adoption of the basic elements of mathematical modeling. The course includes an overview of relevant biological content			
Learning Outcomes				

COURSE CONTENT

- Introduction to biology: biological processes, cell biology, metabolism.
- Heart and circulation.
- Gas exchange in the lungs.
- Control of cell volume and electrical properties of the cell membrane.
- Population dynamics.

LITERATURE

[1] F. C. Hoppensteadt, C. S. Peskin, Modeling and Simulation in Medicine and the Life Sciences, 2nd edition, Springer-Verlag, 2002.
[2] J. D. Murray, Mathematical biology, poglavlje I. An introduction. 3rd edition, Springer-Verlag, 2002.
[3] D. L. Wilson, Introduction to Biology, Blackwell Science, 2000.

STUDENT WORKLOAD (hours in a semester)

Lectures	30	Tutorial	30	Individual work	65	T o t a l	125

GRADING			REMARKS
Criterion	Maximum points	Minimum points	
Midterm exams	50	25	
Final exam	50	25	
T o t a l	100	55	