

DESCRIPTION OF THE COURSE OF STUDY FOR EXCHANGE STUDENTS

Name of the course in	English	Mathematical packages
	Polish	Pakiety matematyczne

1. LOCATION OF THE COURSE OF STUDY WITHIN THE SYSTEM OF STUDIES

1.1 Field of study	Mathematics
1.2 Level of study	Undergraduate (Bachelor)

2. GENERAL CHARACTERISTICS OF THE COURSE OF STUDY

2.1 Language of instruction	English
2.2 Semesters in which the course of study is offered	Spring (IV)
2.3 ECTS credits	3

3. DETAILED CHARACTERISTICS OF THE COURSE OF STUDY

3.1. Form of classes	Lecture, laboratories
3.2. Form of assessment	Test (lecture), assessment (laboratories)

4. OBJECTIVES AND SYLLABUS CONTENT

<p>4.1. Course objectives</p> <p><i>C1.</i> Basics of modern mathematical packages.</p> <p><i>C2.</i> The ability to use a computer for symbolic and numerical calculations.</p> <p><i>C3.</i> Awareness of the possibilities and limitations of computational mathematical packages and the need for continuous improvement in their use.</p>
<p>4.2. Detailed syllabus</p> <p>1. Implementation of basic algebraic concepts in computer packages, like operations on matrices.</p> <p>2. Numerical and symbolic solutions of linear and nonlinear equations and systems.</p> <p>3. Implementation of basic operations of mathematical analysis (derivatives, integrals and their application to the study of local and global properties of functions, such as extrema or surface area computation).</p> <p>4. Methods of optimization.</p> <p>5. Graphical representation of analytic and geometric concepts.</p> <p>6. Elements of two-dimensional and three-dimensional graphics.</p>