Basic information about the subject (independent of the cycle)

Module name	**Mathematical economics**
Erasmus code	
ISCED code	
Language of instruction	English
Website	http://ekonomia.kampus.umcs.lublin.pl
Prerequisites	Formal requirements - modules "Mathematics" and "Microeconomics" Introductory requirements - basic knowledge of mathematic and algebra at the upper secondary educational level, knowledge of basic economic concepts
ECTS points hour equivalents	Contact hours (work with an academic teacher) Total number of hours with an academic teacher: **30h** Number of ECTS points with an academic teacher: 2ECTS Non-contact hours (students' own work) Total number of non-contact hours: 60h Number of ECTS points for non-contact hours: 4 ECTS Total number of ECTS points for the module: **6 ECTS**
Educational outcomes verification methods	Essay, paper, classroom activities, classroom discussion.
Description	Main objectives: To familiarize students with basic issues of mathematical economics Specific objectives: To provide students with knowledge of create a model of production process. To show them how to interpret the economic parameters of the production function, how to use average and marginal quantities to solve production problems and how to minimize production costs and solve problems with optimization. To show them the examples of assessing the market capability of reaching state of equilibrium in a dynamic market model, determining market equilibrium parameters, identifying and measuring dynamic phenomena related to economic growth, assessing the state of the economy and choosing right business activities.

Reading list	Our main reference will be 1. Chiang A. C., Wainwright K., *Fundamental methods of mathematical economics* (3rd ed.), McGraw-Hill. 1984.
Educational outcomes	**KNOWLEDGE** • Student knows selected mathematical models used in economic theory Elementary knowledge of the estimation • Student knows and understands issues related to mathematical consumer theory, production theory and general equilibrium theory **SKILLS** • Student can use optimization methods to determine the desired variable values in models • Student can determine the values of economic variables in equilibrium • Student can correctly solve the basic types of differential and difference equations used in economic issues **ATTITUDES** • Student is convinced of the need to use mathematical methods in the precise and clear analysis of issues considered in the theory of economics • Student is deeply convinced of the level of his / her knowledge and skills, he / she understands the need for continuous professional and personal development.

A list of topics	Course Content: 1. Numerical functions used to describe mathematical models 2. Mathematical demand theory 3. Consumer preferences 4. Functions of usability
Teaching methods	Lectures including multimodal presentations, Case studies. Mathematical economics is learned through reading the book, hearing the lectures, and doing the homework. If a student is not doing the reading, then he is more likely to have more difficulty following and comprehending the lectures.
Assessment methods	1. **General requirements:** Students are requested to complete required readings and prepare for lectures before attending. Three hours of outside self-study is recommended for each hour of class and counseling time. 2. **Lecture attendance:** Students have to arrive on time to class, stay the entirety of the class and keep absences to a minimum. I expect to be informed beforehand if you need to miss a class. To encourage this policy, a student who is not present in class more than one time will not be grade for course based on "collection of the points" but based on final exam. 3. **Counseling:** Individual or small group volunteer access to the lecture. It is the responsibility of the student to seek help and ask questions when concepts presented in lecture or the textbook are not clear. However, if the student encounters the decline in scores, a counseling meeting may be initiated by the lecturer.

4. **Exams:** A series of short exercises are required to make up the total course grade – only for the students who attended the classes (one absence is acceptable). These exercises would be available for students during the whole course: lecture and e-learning module. Student collects the points which will be given for solving exercises, and at the end of course an appropriate grade would be given. Grades for course are setup according to the following scale:

Points	Grade
Below 50	2.0 / F (Fail)
50 - 60	3.0 / E (Sufficient)
61 - 70	3.5 / D (Satisfactory)
71 - 80	4.0 / C (Good)
81 - 90	4.5 / B (Very good)
91 - 100	5/ A (Excellent)

Students who fail to collect a sufficient number of points or for those who has more than one absence, can attempt one time to pass that exam (counseling meetings), however there will be no "makeup" of exams if students receive grade 3.0 / E (Sufficient) or higher. Cheating is not acceptable in any form. Any evidence of cheating in exams will lead to annulling the grade and disciplinary procedure. Exams may include material from all reading assignments, all lectures, and all assignments. Grades for exam are setup according to the following scale:

%	Grade
Below 50	2.0 / F (Fail)
50 - 60	3.0 / E (Sufficient)
61 - 70	3.5 / D (Satisfactory)
71 - 80	4.0 / C (Good)
81 - 90	4.5 / B (Very good)
91 - 100	5.0 / A (Excellent)

	Student who gets 2.0 (Fail) as finale course grade can attempt two times to pass the extra final exam, but there will be no makeup of that exam if student receive grade 3.0 (Sufficient) or higher. If student is not present for an exam, the missed grade will be dropped from the averaging process. If student miss in excess of one exam, a grade of 2.0 will be recorded for the second missed exam and averaged into the final grade. 5. **Course changes:** This course syllabus provides a general plan for the course. The instructor reserves the right to make changes to the syllabus; including: assignments (projects), timetable, and examinations, etc., in order to accommodate the needs of the class as a whole and fulfill the goals and objectives of the course. If changes are necessitated during the term of the course, the instructor will immediately notify students of such changes by e-mail communication and/or announcement in class.