[A-3]COURSE SYLLABUS

1. Course Description (Approximately 100 words)

The course “Mathematical methods in economics. Part I” is oriented on the freshmen students of Faculty of Management and Marketing National Technical University of Ukraine "Igor Sikorsky Kiev Polytechnic Institute".
The first part of the course is dedicated applications of linear algebra and analytic geometry models in economics . Generally the course “Mathematical methods in economics” covers all the part of mathematics necessary to economics students.
The course contains:
- Lecture material
- A set of solved tasks
- A set of examples of mathematical methods applications in economics

2. Course Goals and Objectives (Approximately 100 words)

The study of modern economic sciences is impossible without the application of mathematical models and methods. Teaching the course “Mathematical methods in economics. Part I” is a basic at:
- students’ mastering the fundamentals of mathematical apparatus;
- development of logical thinking;
- economic problem statement and application of this problems;
- application of methods and algorithms for economic problems solution.

For the study of the course “Mathematical methods in economics. Part I” the knowledge of mathematics at the level of secondary school is necessary.
The course belongs to the cycle of fundamental disciplines and provides a study of general and special economic disciplines.

3. Textbook (Title, Author, Publisher, Year of Publication, etc.)

1.Вища математика для економістів. Частина І. Методи лінійної алгебри та аналітичної геометрії. Конспект лекцій (І курс) / Уклад.: Ю. П. Буценко, О. О. Диховичний, О. А. Тимошенко. — К: НТУУ «КПІ», 2017. — 106 с.
2.Математичні моделі в економічних задачах. Практикум.Уклад.: Ю. П. Буценко, О. О. Диховичний, О. А. Тимошенко. — К: НТУУ «КПІ», 2014. — 57 с.
3. Вища математика для економістів. Конспект лекцій (І курс) / Уклад.: Ю. П. Буценко, О. О. Диховичний, О. А. Тимошенко. — К: НТУУ «КПІ», 2014. — 256 с.

4. Reference

1. Булдигін В.В., Алєксєєва І.В., Гайдей В.О., Диховичний О.О., Федорова Л.Б. Лінійна алгебра та аналітична геометрія. Навчальний посібник. — К: ТВіМС, 2011. — 224с.
2. В.В. Барковський , Н.В. Барковська. Вища математика для економістів.-Київ: центр учб. Літ, 2010.
3. Грисенко М.В. Математика для економістів. Методи і моделі, приклади та задачі. – Київ : «Либідь», 2007 .
4. Колесников А.Н. Краткий курс высшей математики для экономистов: Учебное пособие. – М.: Инфра – М,1997.

5. Course Requirements and Grades

Course "Mathematics for engineers and economists. I-VIII"
The most important requirement is a bit of mathematical maturity: a combination of patience, logical and analytical thinking, motivation, systematism, decision-making, and the willingness to persevere through failure until success is achieved.

6. Course Calendar

Week	Main Content
1	Matrix representation in economics
2	Characteristics of matrices
3	Equilibrium models in economics and systems of linear algebraic equations
4	SLAE theory and market choice
5	Linear algebra and economic problems
6	Representation of economic indexes by means coordinates and vectors
7	Models and methods of vector algebra in economic problems
8	Economic problems and linear geometric images on the plane
9	Economic problems and geometric images of the second order in the plane
10	Economic problems and linear and nonlinear simple geometric images in the
11	Application of curvilinear coordinate systems
12	Some special models of analytic geometry in economic problems
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