ПРИВАТНИЙ ВИЩИЙ НАВЧАЛЬНИЙ
ЗАКЛАД-ІНСТИТУТ
**"УКРАЇНСЬКО-АМЕРИКАНСЬКИЙ
УНІВЕРСИТЕТ КОНКОРДІЯ"
(УАУК)**

PRIVATE HIGHER EDUCATIONAL
ESTABLISHMENT-INSTITUTE
**"UKRAINIAN-AMERICAN
CONCORDIA UNIVERSITY"
(UACU)**

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MATHEMATICS FOR ECONOMICS
Syllabus
ЗП 1.5
MATH-111
Specialty: 292 "International Economic Relations"
Educational program "International Economic Relations"

Quarter/Year: Spring/2024   ECTS Credits: 6
Instructor: Dr. Anastasiia Kinash, PhD   US Credits: 3
Contact information:
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Prerequisites: none

Course Description

This course provides students with the necessary base of mathematical knowledge for using it in business, economics and "life". This knowledge helps to understand the processes, which emerge in business situations, dipper and more holistically. Course contains the basic concepts of algebra. This course is aimed at forming a database of mathematical tools for students, through the consideration of a large number of examples and tasks of the economics.

Course Outcomes

Upon successful completion of this course, students will be able to:

PH3. Use modern information and communication technologies, software packages for general and special purposes.

PH4. Systematize and streamline the information received on the processes and phenomena in the world economy; evaluate and explain the influence of endogenous and exogenous factors on them; formulate conclusions and develop recommendations, considering the peculiarities of the national and international environment.

PH6. Plan, organize, motivate, evaluate and increase the effectiveness of teamwork, conduct research in a group under the leadership of a leader, taking into account today's requirements and features in a limited time.

PH7. Apply the acquired theoretical knowledge to solve practical problems and meaningfully interpret the results.

PH8. Understand, highlight and describe new phenomena, processes and trends of global development, mechanisms and tools for the implementation of economic policy and world integration / disintegration processes, including Euro-Atlantic integration.

PH9. Understand and be able to apply, in accordance with other requirements of the educational program, modern theories and methods of solving specialized complex problems and practical problems in the field of international trade in goods and services, international capital flow, international monetary and financial relations, mobility of human resources, international technology transfer.

PH10. Identify and highlight the features of the functioning of the subjects of international relations and models of their economic development.

PH11. Substantiate own opinion regarding the specific conditions for the implementation of forms of international economic relations at the mega-, macro-, meso- and micro-levels.

PH12. Carry out a comprehensive analysis of complex economic systems, compare and contrast their components, evaluate and justify evaluations of the effectiveness of their functioning.

PH13. Select and skillfully apply analytical tools for studying the state and development prospects of individual segments of the international markets for goods and services using modern knowledge about the methods, forms and tools for regulating international trade.

PH14. Understand and apply theories, principles, means and tools for the implementation of international monetary and financial and credit relations.

PH15. Determine the functional eatures, nature, level and degree of interconnections between subjects of international economic relations of different levels and establish communications between them.

PH18. Investigate economic phenomena and processes in the international sphere based on an understanding of categories, laws; highlighting and summarizing trends, patterns of functioning and development of the world economy, taking into account the cause-effect and space-time relationships.

PH19. Understand and apply current legislation, international regulations and agreements, reference materials, current standards and specifications, etc. in the field of international economic relations.

PH22. Apply appropriate methods, rules and principles of functioning of international economic relations for the development of foreign economic activity of Ukraine.

PH24. Substantiate the choice and apply information and analytical tools, economic and statistical calculation methods, complex analysis techniques and methods of monitoring world markets.

PH25. Present the results of the research on the basis of which recommendations and measures for adaptation to changes in the international environment are developed.

Competencies

IK.The ability to solve complex specialized tasks and practical problems in the field of international relations in general and international economic, in particular, as well as in the learning process, which involves the use of new theories and methods in conducting comprehensive research of world economic relations, is characterized by complexity and uncertainty.

ЗК4. Ability to plan and manage time.

ЗК8. Ability to abstract thinking, analysis and synthesis.

CK3. Ability to identify features of the functioning of the environment of international economic relations and models of economic development.

CK5. Ability to carry out a comprehensive analysis and monitoring of world markets, assess changes in the international environment and be able to adapt to them.

Internationality: Adherence to the international standards in educational process, using American textbooks and support materials, considering different examples of simple mathematical models' application in solving economic problems.

Communications

For individual issues, students should contact the professor ONLY by given e-mail or by Moodle. In the Subject line they should put: UACUFirstNameLastName. E-mail messages will normally be answered within 24 hours.

Note! Only emails sent from the student's corporate email address will be answered.

Student Responsibilities

Time Commitment

The study of technical courses is cumulative (i.e., an understanding of earlier material is necessary to grasp concepts covered later). Past experience has shown a high correlation between procrastination and low grades. Students must be committed to completing tasks on time.

Technical Aspects

The student is obliged to provide himself/herself with all the necessary technical equipment for the educational process (laptop or computer, webcam, headsets or headphones and microphone), as well as access to the Internet.

Only students signed-in with their own first and last name are allowed into video lectures in Zoom.

Grading Policy

The course is based on mastery of course outcomes. Student grades for this course will be calculated based on performance.

Note: the minimal grade to pass a subject is 60%.

Graduate Grading Guidelines

The assignment of a letter grade for a course is an indication of the student's overall success in achieving the learning outcomes for the course. The course letter grade may be viewed as a summary statement of the student's achievement in individual assessments (assignments & activities). These assessments are intended to identify for students their strengths as well as those areas in need of improvement. Student work is assessed according to the guidelines below.

Course-level Grading guidelines:

Grade	ECTS Grade	International Grade
90% - 100%	A	5 (Excellent)
83% - 89%	B	4 (Very Good)
75% - 82%	C	4 (Good)
70% - 74%	D	3 (Good)
60% - 69%	E	3 (Acceptable)
35% - 59%	FX	Not acceptable, possible repetition of course

Criteria for grading:

ECTS grade	Requirements for the student
A	The student demonstrated a comprehensive systemic and in-depth knowledge of program material; processed basic and additional literature; obtained a solid grasp of the conceptual apparatus, methods, techniques and tools provided by the program; found creative abilities in the presentation of the educational program material both on this issue and on related modules of the course and related courses, or the student had a current control of 90-100 points
B	The student demonstrated good knowledge of program material; processed the basic literature, mastered the conceptual apparatus, methods, techniques and tools provided by the program, but with some inaccuracies
C	
D	The student showed mediocre knowledge of the core program material; learned information mainly from a lecture course or just one textbook; mastered only certain methods, techniques and tools provided by the program
E	
FX	The student has significant gaps in knowledge of the main program material; fragmentary mastered the basic concepts, techniques and tools; significant mistakes are made when using them

Maximum total possible points – 250 points incl. (Midterm and Final exam are 60% of overall evaluation, where Midterm – 20% and Final – 40%)

· Test / Assignment / Project – 100 points (several times during the course)

· Midterm exam – 50 points

· Final exam – 100 points

Student Workload

It is assumed that for each out of 17 class sessions a student spends about 10.5 academic hours of work. This includes 3.5 academic hours of lectures with the instructor and 7 academic hours of personal work. Personal work includes reviewing lectures, practice in solving exercises and problems, preparing for quizzes.

Please pay attention that 1 academic hour equals to 40 minutes.

Assignment Format
• All work should be shown in time. If the student misses the deadline – the task is failed.
• Midterm covered topics from previous lectures (weeks 1-7). It included multiple choice questions and cases (problems) and took about 1.5 hours.
• The Final exam covered all course material and included multiple choice questions and cases (problem). It lasts for 2 hours. Admission to the Final exam is possible only if all the tasks of the curriculum are covered.
• After the Midterm and Final is graded a student has access to the grade only. Access to the attempt, corrects answers and information whether the answer is correct cannot be granted.

Academic dishonesty
· Academic integrity is submitting one's own work and properly acknowledging the contributions of others. Forms of academic dishonesty include:
1. Plagiarism – submitting all or part of another's work as one's own in an academic exercise such as an examination, a computer program, or written assignment.
2. Cheating – using or attempting to use unauthorized materials on an examination or assignment, such as using unauthorized texts or notes or improperly obtaining (or attempting to obtain) copies of an examination or answers to an examination.
3. Facilitating Academic Dishonesty – helping another commit an act of dishonesty, such as substituting for an examination or completing an assignment for someone else.
4. Fabrication – altering or transmitting, without authorization, academic information or records.

Any violation of these rules constitutes academic dishonesty and is liable to result in a failing grade and disciplinary action. In case of any academic dishonesty a student is not allowed to continue or retake the assessment activity and for the Final the unsatisfactory grade ("0") is assigned for the course total. Cases of the academic dishonesty are not considered by the Academic Council.

Midterm and Final are valid only if they are taken on-campus (room defined by the dean's office) and on UACU's computer/laptop or online on the student's computer/laptop using Zoom and other conditions defined by the dean's office to avoid the cases of academic dishonesty. Students who will not meet this requirement will be expelled from the course with grade "0".

In case of missed Midterm or Final exam (for a valid reason like sickness or an emergency) a request to repeat the exam is possible. Permit to repeat a midterm or final exam is done through a letter to the dean's office with request and approval of subject lecturer.

Submission or retaking of any assessment activities after deadlines are forbidden.

Submission & Return Policy

Assignments must be submitted to the professor on or before the due date indicated in the Course Schedule. The assignments submitted after the due dates receive zero points.

**** NO MAKE –UP QUIZZES AND EXAMS ****

Schedule

Topics #	Research Projects	Assignments Due	Points
Topic 1	**Sets and Real Numbers** sets, operations with sets, the real numbers		
Topic 2	**Sets and Real Numbers** operations with the real numbers, properties of the real numbers		
Topic 3	**Decimals, Fractions and Percentages** decimals, operations with decimals, fractions, mixed numbers, LCD		
Topic 4	**Decimals, Fractions and Percentages** operations with fractions and mixed numbers, percentages, Simple and Compound Interest	**Quiz 1** (Consultation) – topics 1-4	5
Topic 5	**Linear Equations** linear equations in one variable, linear equations in two variables		
Topic 6	**Linear Equations** linear function, three forms for the equation of the line, absolute value equations, investment problems, mixture problems, commission problems	**Problem Solving 1** **Quiz 2** (Consultation) – topics 5 and 6	5 3
Topic 7	**Linear Inequalities** linear inequality of one variable, properties of linear inequalities of one variable, compound inequalities, absolute value inequalities	**Quiz 3** **Quiz 4** (Consultation) – topic 7	20 2
	Midterm Exam (30%)		75
Topic 8	**Systems of Linear Equations** systems of linear equations in two variables, solving systems of linear equations in two variables by graphing, applications		
Topic 9	**Systems of Linear Equations** solving a system by substitution, the Addition Method, applications	**Problem Solving 2** **Quiz 5** (Consultation) – topics 8 and 9	5 3
Topic 10	**Exponents and Polynomials** integer exponents, the power rules, scientific notation, polynomials, multiplying binomials, special products, factoring polynomials, solving equations by factoring		
Topic 11	**Rational Expressions** rational expressions, operations of the rational expressions	**Quiz 6** (Consultation) – topics 10 and 11	4
Topic 12	**Polynomial Functions** addition and subtraction of polynomial functions, the Remainder Theorem, fractions and		

	proportions, solving equations involving rational expressions		
Topic 13	**Rational Exponents and Radicals** radicals, rational exponents, rules for radicals and rational exponents, operations of radicals, rationalizing the denominator	**Quiz 7** (Consultation) – topics 12 and 13	4
Topic 14	**Quadratic Equations and Functions** quadratic equations, solving quadratic equations, applications		
Topic 15	**Quadratic Equations and Functions** quadratic functions and their graphs, applications	**Quiz 8** **Quiz 9** (Consultation) – topics 14 and 15	20 4
	Final (40%)		100

12 extra points are assigned for the "Practice". Calculated as an average of all the "Practice" tasks (attempts with a maximum grade received) of the course.

Recommended Materials

1. Dugopolski, Mark. (2009) Algebra for College Students (5rd Ed.). McGraw-Hill/Higher Education.
2. Dugopolski, Mark. (2009) Elementary and Intermediate Algebra (3rd Ed.). McGraw-Hill/Higher Education.
3. Nelcon, Marceda, Hoy M. Calvin, Alvey C. George. (2007) Essentials of Math with Business Applications (7th ed.). McGraw-Hill/Irwin.
4. Yoshiwara, K. (2018). Modeling, Functions, and Graphs. Bruce Yoshiwara (last update: 2020)
5.
6. Yoshiwara, K., & Yoshiwara, B. (2019). Elementary Algebra. Bruce Yoshiwara (last update: 2021)
7. Yoshiwara, K., & Yoshiwara, B. (2020). Intermediate Algebra. Bruce Yoshiwara

* The above schedule and procedures are subject to change in the event of extenuating circumstances

Протокол засідання кафедр № 1 від 24.01.2024 року

Проректор з навчально-методичної
роботи   Л.І.Кондратенко

Завідувач кафедри   А.В.Кінаш

Викладач   А.В.Кінаш