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|  |  | **Кафедра міжнародної економіки** |
| **Economic Measurement of Sustainable Development**  **Work program of the discipline (Syllabus)** | | |

# Реквізити навчальної дисципліни

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| --- | --- |
| **Level of higher education** | ***Second (master's)*** |
| **Field of knowledge** | *05 Social and behavioral sciences* |
| **Specialty** | *051 Economics* |
| **Educational program** | *International Economics* |
| **Discipline status** | *Compulsory* |
| **Form of study** | *Full-time* |
| **Year of study, semester** | *2021-2022 academic year, 5th year, 1st semester* |
| **The scope of discipline** | *60 hours (2 credits)*  *(lectures– 18 год., practices – 18 год., self-work – 24 год.)* |
| **Semester control / control measures** | *Test* |
| **Timetable** | *http://rozklad.kpi.ua/* |
| **Language** | *English* |
| **Information about**  **course leader / teachers** | Lectures and practicals: Kukharuk Anna Dmitrievna, Associate Professor of International Economics Department, Ph.D., Associate Professor, annakukharuk@gmail.com |
| **Course placement** | Google classroom |

# Curriculum

# Description of the discipline, its purpose, subject of study and learning outcomes

*The provisions of the concept of sustainable development of society are the foundation for the development of mechanisms for the balanced functioning of the world in order to ensure a high level and security of life for future generations. According to the recommendations of the UN Conference on Sustainable Development (Rio de Janeiro, 2012), the study of sustainable development should be an integral part of training programs. Training students in educational programs, in particular "Industrial Marketing" involves the formation of managerial competencies and appropriate thinking, based primarily on understanding the economic processes of development of the world. Mastering the principles of economic dimension of sustainable development allows future managers to explore the place of macroeconomic determinants in the system of sustainable development, identify the relationship between economic potential and the level of harmonization of its development, take into account the national economy in the context of sustainable development.*

*The purpose of the discipline is the formation of students' ability to analyze the economic component of sustainable development of the country, industry, enterprise; to calculate indicators, categories of policy and the index of sustainable development at the level of the country, industry, enterprise, to perform scenario modeling of processes that affect the balanced development of economic systems.*

*The discipline contributes to the formation of students with the following competencies:*

*- ability to develop scenarios and strategies for the development of socio-economic systems;*

*- ability to learn and master modern knowledge;*

*- ability to make informed decisions;*

*- ability to generate new ideas (creativity);*

*- ability to search, process and analyze information from various sources;*

*- ability to work in an international context;*

*- ability to motivate people and move towards a common goal;*

*- ability to act socially responsibly and prudently.*

*Know:*

*- theoretical and methodological, methodological and organizational approaches to the formation of the principles of sustainable development of countries in the context of globalization and strategies for its implementation.*

*- methodologies for the formation of indicators of the economic dimension of sustainable development and their impact on the international economic activity of countries, regions, intersectoral complexes.*

*After mastering the discipline, students must demonstrate the following learning outcomes:*

*- generate, process indicators that characterize the level of economic development of the country, industry, enterprise and form strategies for their development;*

*- to calculate indicators, index of economic dimension of sustainable development and use them in the process of international economic activity of countries, regions, intersectoral complexes;*

*- to analyze the economic aspect of the goals of sustainable development of the world;*

*- to form data sets for the analysis of an economic component of sustainable development of the country, branch, the enterprise taking into account processes of globalization;*

*- process data sets that characterize the economic dimension of sustainable development of the country, industry, enterprise;*

*- identify the relationship between key indicators of economic development of society and the factors that affect them;*

*- choose a method for forecasting the sustainable development of the world depending on the characteristics of the original data and the identified dependencies;*

*- develop scenarios of economic processes of sustainable development of the country and make management decisions.*

# Prerequisites and postrequisites of the discipline (place in the structural and logical scheme of education according to the relevant educational program)

*Necessary skills for studying the discipline: mastery of text editors, the ability to calculate and explain the basic statistical indicators (comparison values, dynamics values, average values), the necessary skills of independent search work on the Internet.*

*The main prerequisite for the study of the discipline is the study of disciplines "Statistics", "Business Economics", "Macroeconomics", "Global Economics", as well as:*

|  |  |
| --- | --- |
| *Computer simulation* | *Effective methods of studying complex systems. Implementation of an abstract model of a system. Computer models as a tool of mathematical modeling and their application in solving practical problems.* |
| *Politology* | *Political institutions and their construction. Political consciousness and culture. Rights, freedoms and responsibilities of citizens. Political processes. Global problems.* |
| *Life Safety* | *The structure of the vital system and indicators of the general development of mankind. Dangers and consequences of their manifestation in the conditions of industrial and domestic activity. Emergencies and their impact on life. Fundamentals of state policy in the field of protection of the population and territories from emergencies. Improving the resilience of industrial facilities in emergencies.* |
| *Economics and organization of production* | *Enterprise in the system of market relations. Technological and organizational preparation of production.* |

# *The discipline is closely related to the credit module "Scientific work on the topic of master's dissertation", as it aims to develop skills of a systematic approach to the study and solution of sustainable development, as well as the ability to properly assess local and long-term consequences of direct and indirect impacts. on the environment. The competencies acquired by students in the process of studying this discipline are used by them during the master's dissertation.*

# The content of the discipline

# *Topic 1. Current issues of sustainable development of society.*

# *Topic 2. Analysis of sustainable development data.*

# *Topic 3. Modeling and evaluation of sustainability of society.*

# *Topic 4. Management aspects of sustainable development.*

# Training materials and resources

***Basic literature***

1. Sustainable development analysis: global and region contexts / International Council for Science etc., scientific adviser M. Zgurovsky. – K. : NTUU “KPI”, 2014. - Part 1. Global analysis of gualityand security of life (2013). - 168 p.
2. United Nations (2015). The 2030 agenda for sustainable development. Retrieved from: https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf.

***Additional literature***

1. Zgurovsky M., Gavrysh O., Solntsev S., Kukharuk A., Skorobogatova N. Selection of indicators for the scenario modeling of the progressive countries’ economic development. Problems and Perspectives in Management. 18(2). pp. 441-452.
2. Adams, Barbara, and others, eds. (2016). Spotlight on Sustainable Development 2016: Report of the Reflection Group on the 2030 Agenda for Sustainable Development. Social Watch and others. Available from https:// www.2030spotlight.org/sites/default/files/contentpix/spotlight/pdfs/Agenda-2030\_engl\_160713\_WEB.pdf.
3. Alcid, Annie (2014). A Randomized Controlled Trial of Akazi Kanoze Youth in Rural Rwanda. Akazi Kanoze Youth Livelihoods Project, Final Evaluation Report prepared by the Education Development Center, Inc. Washington, D.C.: United States Agency for International Development. Available from http://idd.edc.org/ resources/publications/report-randomized-controlled-trial-akazi-kanoze-youth-rural-rwanda.
4. Alkire, Sabine (2007). Choosing dimensions: the capability approach and multidimensional poverty. CPRC Working Paper, No. 88. Manchester: Chronic Poverty Research Centre.
5. Arab Youth Climate Movement (n.d.). Available from <http://aycm.org/>.
6. Archer, David (2016). The learning generation—domestic tax and education. ActionAid research report prepared for the International Commission on Financing Global Education Opportunity. Background paper for The Learning Generation: Investing in Education for a Changing World. New York: The Education Commission. Available from http://www.actionaid.org/sites/files/actionaid/domestic\_tax\_and\_education\_ final\_report.pdf.
7. Banks, Lena Morgon, and Sarah Polack (2014). The Economic Costs of Exclusion and Gains of Inclusion of People with Disabilities: Evidence from Low and Middle Income Countries. ICED Research Report. London: International Centre for Evidence in Disability/London School of Hygiene & Tropical Medicine, with funding from BCM International. Available from http://disabilitycentre.lshtm.ac.uk/files/2014/07/ Costs-of-Exclusion-and-Gains-of-Inclusion-Report.pdf.
8. Bissio, Robert (2016). Reports from the bottom up: “The road is hazy and full of obstacles”. In Spotlight on Sustainable Development 2016: Report of the Reflection Group on the 2030 Agenda for Sustainable Development, Barbara Adams and others, eds. Social Watch and others. Available from https://www.2030spotlight. org/en/node/605.
9. Blimpo, Moussa, and Todd Pugatch (n.d.). Teacher training and entrepreneurship education: evidence from a curriculum reform in Rwanda. Cambridge, Massachusetts: Massachusetts Institute of Technology, Abdul Latif Jameel Poverty Action Lab (J-PAL). Available from https://www.povertyactionlab.org/evaluation/teacher-training-and-entrepreneurship-education-evidence-curriculum-reform-rwanda.
10. Bonvin, Jean-Michel, and Déborah Galster (2010). Making them employable or capable? Social integration policies at a crossroads. In Education, Welfare and the Capabilities Approach: A European Perspective, Hans-Uwe Otto and Holger Ziegler, eds. Opladen, Germany: Barbara Budrich Publishers.
11. Brennan, Ashley (2017). What happens when students lead PB? Impacts, outcomes, and winning projects shine in Phoenix. Participatory Budgeting Project, 19 April. Available from https://www.participatorybudgeting.org/what-happens-when-students-lead-pb/.
12. BudgIT/Tracka (2017). 2016 Federal Constituency Projects: Lessons and Findings from Focus States as at July 2017. Lagos: Omidyar Network. Available from http://yourbudgit.com/wp-content/uploads/2017/09/ Tracka-2016-Constituency-Projects-Report.pdf.

***Informational resources***

1. http://wdc.org.ua
2. https://sustainabledevelopment.un.org/
3. http://daccess-dds-ny.un.org
4. https://sustainabledevelopment.un.org/globalsdreport.html
5. http://www.unfpa.org/world-7-billion
6. http://www.oecd.org/std/42495745.pdf
7. http://www.hiik.de/en/konfliktbarometer/pdf/ConflictBarometer\_2016.pdf
8. https://www.sipri.org/
9. http://www.nonproliferation.org/

# Educational content

# Methods of mastering the discipline (educational component)

*The discipline covers 18 hours of lectures and 18 hours of seminars, as well as the implementation of modular control work, which consists of four parts on the topics of the credit module lasting 0.5 acad. year each.*

*Seminars on the discipline are held in order to consolidate the theoretical provisions of the discipline and students gain skills and experience to operate with modern concepts in the field of sustainable development, which are necessary for the correct perception of social progress and ensuring safe living conditions in the future. discussion of properly formulated issues of seminars. Based on the distribution of time for studying the discipline, nine seminars are recommended (taking into account the time for modular tests and tests).*

*Learning outcomes, tests and deadlines are announced to students in the first lesson.*

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| № з/п | Learning outcomes | Methods of  teaching | Forms of assessment (control  measures) | Deadline |
| 1 | Skills of analysis of the conceptual and categorical apparatus | Presentation of lecture material, independent research work, discussion | Case solving | Week 2 |
| 2 | Skills of collecting and processing data on the development of countries of different nature | Presentation of lecture material, independent search work (work with open databases, for example World Bank Database) | Case solving | Week 4 |
| 3 | Formation of a system of indicators for assessing the economic dimension of sustainable development of the world | Presentation of lecture material, independent work to identify the interdependencies between the indicators of the previously created data set | Thematic task | Week 6 |
| 4 | Knowledge of the methodology of economic analysis of sustainable development of enterprises, industries, regions, countries | Presentation of lecture material, independent research work (study of scientific articles, viewing of thematic videos) | Thematic task | Week 8 |
| 5 | Study of methods of scenario modeling of sustainable development of the world | Presentation of lecture material, | Thematic task | Week 12 |
| 6 | Development of a scenario of economic processes to ensure sustainable development of the world | Independent search work | Thematic task | Week 16 |

| *Deadline (week)* | *Names of sections and topics* |
| --- | --- |
| **Topic 1.** Current issues of sustainable development of society | |
| 1 | Lecture 1. Content and problems of the concept of sustainable development. |
| 2 | Practical lesson 1. Components and threats of sustainable development. |
| **Topic 2.** Analysis of sustainable development data | |
| 3 | Lecture 2. System of indicators of sustainable development |
| 4 | Seminar 2. Formation of the list of indicators of economic dimension of sustainable development of the countries of the world. |
| 5 | Lecture 3. Numerical calculations of indicators, policy categories, indices of sustainable development |
| 6 | Practical lesson 3. Identification of relationships between indicators and factors of sustainable development of economic systems. |
| 7 | Lecture 4. Methods of analysis of economic processes of development of the world. |
| 8 | Seminar 4. Formation of a logical-structural scheme of indicators of sustainable development of the world. |
| **Topic 3.** Modeling and evaluation of sustainability of society | |
| 9 | Lecture 5. Methods of modeling and evaluation of sustainable development of society. |
| 10 | Seminar 5. Choice of methods for assessing and modeling sustainable development of selected countries. |
| 11 | Lecture 6. Formation of the index of economic dimension of sustainable development |
| 12 | Seminar 6. Index of economic dimension of sustainable development for selected countries. |
|  | Lecture 7. Modeling of the economic component of sustainable development. |
|  | Seminar 7. Development of a scenario of economic dimension of sustainable development of selected countries of the world. |
| **Topic 4.** Management aspects of sustainable development | |
| 15 | Lecture 8. Achieving the goals of sustainable development of the world. |
| 16 | Seminar 8. Decision-making on the reserves of sustainable development of the world. |
| 17 | Modular control work. Part 4. |
| 18 | Lecture 9. Principles of using the economic dimension of sustainable development in the context of quality and safety of human life |

# Self-work

*The student's independent self work includes such components as preparation for current surveys, preparation for practical classes, in particular preparation of thematic tasks in the term specified by the teacher, preparation for modular control work, for defense of calculation work, for a credit.*

# Політика та контроль

# Політика навчальної дисципліни (освітнього компонента)

*Attending classes. Attendance at lectures, practical classes, as well as absence from them, is not evaluated. However, students are encouraged to attend classes because they teach theoretical material and develop the skills needed to complete a semester individual assignment. The grading system is focused on obtaining points for student activity, as well as performing tasks that are able to develop practical skills and abilities.*

*Evaluation control measures missed. Each student has the right to work off missed for a good reason (hospital, mobility, etc.) classes through independent work). More details on the link: https://kpi.ua/files/n3277.pdf.*

*The task, which is submitted for verification in violation of the deadline, is evaluated with decreasing scores.*

*In case of skipping for a good reason the lesson at which the control event took place:*

*- testing can be written another day on an individual schedule;*

*- Thematic tasks are performed remotely, stored on Google Drive and defended in person at the next class.*

*Procedure for appealing the results of evaluation control measures. The student can raise any issue related to the control procedure and expect it to be considered according to predefined procedures. Students have the right to challenge the results of control measures, explaining which criterion they do not agree with according to the assessment.*

*Calendar control is carried out in order to improve the quality of student education and monitor student compliance with syllabus requirements.*

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| --- | --- | --- | --- |
| *Criterion* | | *The first calendar control* | *The second calendar control* |
| Term of calendar control | | Week 8 | Week 14 |
| Conditions for obtaining a positive assessment | Current rating | ≥ 10 points | ≥ 30 points |

***Academic integrity.*** *The policy and principles of academic integrity are defined in Section 3 of the Code of Honor of the National Technical University of Ukraine "Kyiv Polytechnic Institute named after Igor Sikorsky". Details: https://kpi.ua/code.*

***Norms of ethical behavior.*** *Norms of ethical behavior of students and employees are defined in Section 2 of the Code of Honor of the National Technical University of Ukraine "Kyiv Polytechnic Institute named after Igor Sikorsky". Details: https://kpi.ua/code.*

***Inclusive education.*** *The acquisition of knowledge and skills during the study of the discipline may be available to most people with special educational needs, except for students with severe visual impairments who do not allow to perform tasks using personal computers, laptops and / or other technical means.*

***Extracurricular activities.*** *Participation in conferences, forums, round tables, etc. is envisaged within the study of the discipline.*

***Assignment of incentive points.*** *According to the Regulations on the system of assessment of learning outcomes, the sum of all incentive points may not exceed 10% of the rating scale.*

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| *Incentive points* | | *Decrease in points* | |
| *Criterion* | *Points* | *Criterion* | *Points* |
| *Writing abstracts, articles, registration of course work as a scientific work for participation in the competition of student research papers (on the subject of the discipline)* | *3* | *Violation of deadlines for thematic tasks (for each work)* | –1 |
| *Participation in international, all-Ukrainian and / or other events and / or competitions (on the subject of academic discipline)* | *3* | *Violation of deadlines for the thematic task* | –1 |

# *Preparation for seminars and tests is carried out during the independent work of students with the possibility of consulting with the teacher at a certain time of consultation or by e-mail (e-mail, messengers).*

# Види контролю та рейтингова система оцінювання результатів навчання (РСО)

*Semester certification is conducted in the form of a test. A 100-point rating system and a university scale are used to assess learning outcomes.*

*Current control: participation in seminars, reports, preparation of thematic tasks, MCR.*

*Calendar control: conducted twice a semester as a monitoring of the current state of compliance with the requirements of the syllabus.*

*Semester control: credit*

*Conditions of admission to the semester control: If the semester rating is more than 60 points, the student may not go to the test, and get a grade "automatically".*

*Modular control work. Each of the four parts of the module test contains five complex questions of test, calculation or open (a question that requires a detailed text answer) type, which are evaluated in one point. For the correct answer to the question the student receives 1 point, incorrect - 0 points.*

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| *№* | *Evaluation control measure* | *%* | *Weight scope* | *Quantity* | *Total* |
| 1. | *Speeches and participation in discussions within seminars;* | *80%* | *5;   10* | *8* | *80\** |
| 2. | *reporting on thematic tasks* | *20%* | *20* | *1* | *20* |
|  | *Total* | | | | *100* |

*\* Weight 80 points cover*

*The first component is participation in practical classes. Active participation in each lesson is estimated at 5 points, inactive participation, incorrect questions and comments that indicate the unpreparedness of the student for the lesson, reduce the score for work in the seminar to 3-5 points.*

*The second component - preparation and presentation of four thematic tasks, which are evaluated on 10 points: "excellent", creative disclosure of the task, free possession of the material - 10 points; "Good", deep disclosure of the task - 9 points; "Satisfactory", reasonable disclosure of the task - 6 points.*

*To receive credit from the credit module "automatic" you need to have a rating of at least 60 points. Students who have a rating of less than 60 points at the end of the semester, as well as those who want to increase the grade, perform a test.*

*Table of correspondence of rating points to grades on the university scale:*

|  |  |
| --- | --- |
| *Scores* | *Rating* |
| 100-95 | Excellent |
| 94-85 | Very good |
| 84-75 | Good |
| 74-65 | Satisfactorily |
| 64-60 | Enough |
| Less than 60 | Unsatisfactorily |

# Additional information on the discipline (educational component)

*The list of questions to be submitted for semester control is presented in Appendix A.*

*Strategies of active and collective learning are applied, which are determined by the following methods and technologies:*

*1) methods of problem-based learning (problem-based presentation, part-search (heuristic conversation) and research method);*

*2) personality-oriented (developmental) technologies based on active forms and methods of learning ("brainstorming", "situation analysis" business, role and simulation games, discussion, express conference, educational debates, round table, case technology, design technology, etc.);*

*3) information and communication technologies that provide problem-solving nature of the learning process and activation of independent work of students (electronic presentations for lectures, use of audio, video support of classes, in particular, analysis of YouTube network service on the availability and quality of training videos on financial analysis).*

**Work program of the discipline (syllabus):**

**Conducted by**

*Lecturer: Associate Professor of International Economics Department, Ph.D., Associate Professor*

*Anna KUKHARUK*

*Head of the Department of International Economics, Dr. econ. Sciences, Professor,*

*Serhii Voitko*

*Associate Professor of International Economics Department, Ph.D., Associate Professor*

*Natalia SCOROBOGATOVA*

*Associate Professor of Mathematical Methods of Systems Analysis, Ph.D. Technical Sciences, Associate Professor,*

*Iryna DZHYGYREY*

**Approved** by the Department of International Economics (protocol № 11 of 26.05.2021)

**Agreed** at the Methodical Commission of the faculty (protocol № 10 from 15.06.2021)