

Team work tasks for the course
"Applied Microeconomics" in 2024-2025 academic year

1. Students will be divided into teams based on a ranking list. The team number is indicated in the electronic journal. Each team will receive a separate case to solve. Responsibilities within the team are determined by the team captain, who is elected by the team members themselves.
2. The tasks of independent work are RESEARCH and CREATIVE in nature, and therefore it is necessary to conduct research on the problem, provide analysis of the works of scientists-researchers on this issue, determine its development prospects and retrospective analysis, offer **YOUR** vision of the solution to the problem. When developing your own model, **you should clearly state all the assumptions used**.
3. When completing the tasks, each team must hold at least one strategic session, one final presentation for the customer (teacher-lecturer) and several consultation meetings. All meetings are held at seminars on the discipline. The team carries out its own communication in the terms and methods determined by the captain. The strategic session must be held no later than 2 weeks from the day of assignment of tasks.
4. Each team keeps all related files in its own folder. To submit the project, it is necessary to send the final files via email a.stavytskyi@knu.ua. The final files must include: an electronic version of the report (presentation in MS PowerPoint format¹) *. pptx , an electronic version of the model in the file of the appropriate software environment, a project report in MS Word² format, which describes the relevant justifications, the results of the scientific search with specific references, user instructions, the model, its prerequisites, relationships between objects, limitations, etc. The minimum number of processed sources over the past 5 years is 15³. The model must be described with all assumptions, formulas, analysis of results, conclusions, analysis of shortcomings. A file with the distribution of work within

¹ The font size in the presentation **can not** be smaller than 24, and the number of words on one slide cannot exceed 50. If it is necessary to place additional large-sized materials, you should use the "notes" tool.

² The recommended volume of the text part of the work with all calculations is 40 thousand characters.

³ Use Google Scholar for finding relevant sources.

the team is also attached. **All text will be checked for plagiarism and the use of generative text creation programs (for example, chatGPT) by a special program; if there is direct borrowing, the maximum score for the project will be 0 points, regardless of other performance indicators.**

5. All presentations must be made **by May 21** of the current year. During the presentation, **reading text from the screen or other media is prohibited**, the oral report must differ from what is written on the slide. Remember that your presentation is primarily a presentation of you! When presenting a model, it is allowed to run demonstration videos-movies to illustrate the work of the corresponding program. All team members must participate in the presentation.
6. The results of the work are evaluated according to the following criteria:
 - adherence to the approved schedule for submission of works and their presentation;
 - timeliness of submission of work;
 - correctness and completeness of coverage of the topic, its presentation;
 - **actually creative** rethinking of the topic, **analysis of SCIENTIFIC publications on the topic over the last 5 years** ;
 - quality of the constructed model, number of considered options and initial conditions, ease of use of the model;
 - compliance with the task;
 - **own approach** to analyzing the proposed topic;
 - compliance with the formatting requirements for documents and presentations.
7. The grade for team work will be put after May, 28 based on a maximum score **of 20 points**. The score will take into account the contribution of each team member based on a special algorithm.

Project topics

Project 1

Develop a model to determine the short-term and long-term impact of changes in tax rates on national revenues in Ukraine. Consider VAT on domestic goods, VAT on imported goods, corporate income tax, personal income tax, military levy, transaction tax, single tax, and others. The model should take into account the change in the level of shadowing of the economy depending on tax rates separately for all types of business entities. The basis for revenues should be the NBU data on the Consolidated Budget of Ukraine⁴, the OpenBudget⁵ system, and others. The result of the modelling should be the dynamics of tax revenues (in detail), GDP, and other indicators depending on changes in tax rates (set for each tax by the user on specific dates) for the next 10 years (from the date of launch of the modelling) in a monthly structure. The work should describe shadowing/de-shadowing models for each type of tax and group of entities.

Project 2

Full-scale armed aggression has a significant negative impact on the demographic situation in Ukraine. The national economy has faced significant challenges of rapid population decline, which is associated with a decrease in the birth rate, an increase in mortality, a large number of forcibly displaced persons and the forced emigration of more than 6 million citizens, mainly women and children. The post-war reconstruction of Ukraine is not possible without understanding and taking into account demographic trends. Build models for analyzing and forecasting the demographic situation in Ukraine and determine its impact on the country's financial and economic indicators. Based on data⁶, migration estimates by different age groups, mortality and fertility rates for different demographic groups, make an assessment and forecast of the population of Ukraine by all possible demographic groups by 2050. Include in the model as exogenous parameters losses in the war, attracted migration to Ukraine (for certain years). Determine the impact of the quarterly population structure on pension payments and indicators of the State Budget of Ukraine.

⁴https://bank.gov.ua/files/macro/C_budget_m.xlsx

⁵<https://openbudget.gov.ua/?month=5&year=2024&budgetType=NATIONAL>

⁶<https://www.lv.ukrstat.gov.ua/dem/piramid/all.php>