



**COURSE SYLLABUS**  
**“ANALYSIS IN APPLICATION SOFTWARE SOLUTIONS”**

**Degree of higher education - Bachelor**  
**Specialty 071 Accounting and Audit**  
**Educational programs " Analytical, accounting, and legal support of business"**  
**Year of study \_\_2024 \_\_, semester \_6**  
**Form of study \_\_\_\_\_ full-time \_\_\_\_\_ (full-time, external)**  
**Number of ECTS credits \_\_5\_\_**  
**Language of teaching \_\_English \_\_ (Ukrainian, English, German)**

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**<https://elearn.nubip.edu.ua/course/view.php?id=1744>**

**Course lecturer**

**Lecturer contact information (e-mail)**

**Course page in eLearn**

**DESCRIPTION OF THE COURSE**

**(up to 1000 printed characters)**

**The purpose** acquisition of practical use of applied software solutions for analysis in the agricultural sector.

**Objectives:**

- Assessments of types of economic information. Database.
- To learn the levels of analysis in applied software solutions.
- To consider analytical application solutions for business entities of the agricultural sector.
- Using of Advanced Excel for Business Analysis.
- Considering Power BI for Business decisions and analytical reporting.
- To learn Google Analytics and You control as an analytical system for compliance, market analysis, business intelligence and investigations.

**Acquisition of competencies:**

**- Integral competence (IC):**

The ability to solve complex specialized tasks and practical problems in the field of accounting, auditing, analysis and taxation *in* process of professional activity, which involves the application of theories and methods of economic science and is characterized by complexity and uncertainty of conditions.

- **General competencies (GC):**
  - GC 1. Ability to learn and be ready to learn and apply acquired knowledge.
  - GC 2. Ability to analyze and synthesize as a tool for identifying problems and making decisions to solve them based on logical arguments and verified facts.
  - GC 9. Skills in using modern information and communication technologies.
- **Special (professional, subject) competencies (SC)**
  - SC 3. Ability to use mathematical tools to study economic processes, solve applied economic and optimization problems in the field of accounting, auditing, and taxation.
  - SC 7. Ability to implement accounting procedures using specialized information systems and computer technology.
  - SC 8. Ability to apply and form information support for enterprise management using modern technical and methodological tools.
- **Program learning outcomes (PLO):**
  - PLO 8. Substantiate the effectiveness of decision-making using accounting and analytical information and understand the organizational and economic mechanism of enterprise management.
  - PLO 11. Apply specialized information systems and computer technologies for accounting, analysis, audit and taxation.

### COURSE STRUCTURE

Topic	Hours (lectures / laboratory, practical, seminar)	Learning results	Task	Evaluation
<b>Module 1</b>				
<b>Topic 1. Types of economic information. Database</b>	<b>17</b>	Students should know: the role of econometric studies in economics. Object, subject, goals, tasks and structure of the course. Place and course importance among basic disciplines. General view of a linear econometric model, its structure and stages of construction. The concept of the main principles of the classical correlation econometric analysis. The concept of multicollinearity, methods and characteristics of its identification. The concept of heteroscedasticity and methods of its study. The impact of	Students will enhance their understanding and acquire practical skills by working through the exercises, which are of three types. Theory exercises on derivations and model extensions. Simulation exercises illustrating statistical properties of econometric models and methods. Empirical	Execution and delivery of laboratory works - credited. Module: descriptive part 100; test part 30 * 0.1; Independent work - according to the evaluation journal in eLearn.
<b>Topic 2. Levels of analysis in applied software solutions</b>	<b>22</b>			
<b>Topic 3. Analytical application solutions for business entities of the agricultural sector</b>	<b>20</b>			

		heteroscedasticity on the properties of parameter estimates.	exercises on applications with business and economic data sets to solve questions of practical interest.	
<b>Total for module 1</b>	<b>59</b>			<b>100</b>
<b>Module 2</b>				
<b>Topic 4. Advanced Excel for Business Analysis</b>	29	Students should know: concept of autocorrelation. The nature and consequences of autocorrelation in econometric models. Check for autocorrelation. Durbin-Watson criterion. Causes of correlation appearance between explanatory variables and residues. Estimation of model parameters using instrumental variables. The concept of lag and lagged variables	Tasks of practical work. Writing tests, essays. Doing independent work (including in elearn) Problem solving, presentations etc.	Execution and delivery of laboratory works - credited. Module: descriptive part 100; test part 30 * 0.1; Independent work - according to the evaluation journal in eLearn.
<b>Topic 5. Power BI for Business decisions and analytical reporting</b>	25			
<b>Topic 6. Google Analytics</b>				
<b>Topic 7. Your Control as an analytical system for compliance, market analysis, business intelligence and investigations</b>	19			
	18			
<b>Total for module 2</b>	<b>95</b>			<b>100</b>
<b>Educational work</b>				<b>70</b>
<b>Exam Test</b>				<b>30</b>
<b>Total for Course</b>				<b>100</b>

### ASSESSMENT POLICY

<b><i>Policy regarding deadlines and resits:</i></b>	Works that are submitted in violation of deadlines without good reason are evaluated at a lower grade. Rearrangement of modules takes place with the permission of the lecturer if there are good reasons (for example, hospital).
<b><i>Academic honesty policy</i></b>	Write-offs during tests and exams are prohibited (including the use of mobile devices). Course papers, abstracts must have correct text references to the literature used
<b><i>Attendance policy:</i></b>	Attendance is mandatory. For objective reasons (for example, illness, international internship) training can take place individually (in online form in consultation with the dean of the faculty)

### SCALE OF ASSESSMENT OF STUDENT KNOWLEDGE

Student rating, points	National grade based on exam results	
	exams	credits
90-100	excellent	passed
74-89	good	
60-73	satisfactory	
0-59	unsatisfactory	not passed

### RECOMMENDED SOURCES OF INFORMATION

#### Main

1. Том Фоусет, Фостер Провост. Data Science для бізнесу. Як збирати, аналізувати і використовувати дані. К. : Наш Формат, 2019. 400 с.
2. Бреус С. В. Методи та моделі прийняття управлінських рішень. Інфраструктура ринку. 2018. Вип. 24. С. 117-122. URL: <http://www.market-infr.od.ua/uk/24-2018>
3. Конрад Карлберг. Бізнес-аналіз з використанням Excel. Рішення бізнес-завдань. К., 2018. 578с.
4. BABOK Guide: Global Standard for Business Analysis – IIBA, International Institute of Business Analysis. 2015. URL: <https://www.iiba.org/standards-and-resources/babok/>

#### Supporting literature

1. The Best Guide to Understand Advanced Excel Functions. URL: Advanced Excel Functions [The Only Excel Guide for 2023] (simplilearn.com).
2. Advanced Excel for business. URL: Top Advanced Excel Courses - Learn Advanced Excel Online | Coursera.
3. Microsoft Excel 2019 Pivot Table Data Crunching (Business Skills)
4. Power Pivot and Power BI: The Excel User's Guide to DAX, Power Query, Power BI & Power Pivot in Excel 2010-2016 Paperback – January 1, 2016
5. Excel Dashboards and Reports, 2nd Edition.
6. "The Accidental Analyst: Show Your Data Who's Boss" by Eileen and Stephen McDaniel.
7. Edward Tufte, The Visual Display of Quantitative Information.
8. Information Graphics Hardcover – April 18, 2012
9. Practical Tableau: 100 Tips, Tutorials, and Strategies from a Tableau Zen Master 1st Edition
10. Brian Larson, Data Analysis with Microsoft Power BI 1st Edition.
11. Devin Knight, Brian Knight, et al. Microsoft Power BI: Quick Start Guide

#### Information resources

1. Верховна Рада України <http://zakon.rada.gov.ua/>
2. Кабінет Міністрів України <http://www.kmu.gov.ua/control/>

3. Державний Комітет статистики України <http://ukrstat.gov.ua/>
4. Продовольча та сільськогосподарська організація ООН (ФАО) <http://www.fao.org/>
5. Світовий банк <http://www.worldbank.org/>
6. Євростат <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home>