MINISTRY OF EDUCATION AND TRAINING

LAC HONG UNIVERSITY

COURSE SYLLABUS

<199024–DATA ANALYTICS AND DIGITAL TRANSFORMATION IN THE GLOBAL WORLD>

1. GENERAL INFORMATION

Course name (in Vietnamese):	Phân tích dữ liệu và chuyển đổi kỹ thuật số trong thế giới toàn cầu
Course name (in English):	Data Analytics and Digital Transformation in a Global World
Course code:	199024
Belongs to the knowledge area:	Specialized
Department/Faculty responsible for the course	Faculty of Administration - International Economics
Instructor in charge:	Luu Ngoc Liem Email: liemln@lhu.edu.vn
Lecturers involved in teaching:	Hoang Thi Thanh Chung Email: chunghtt@lhu.edu.vn
Number of Credits:	3
Theory:	2
Practice:	0
Exercises:	1
Nature of the course:	Mandatory for students in this major
Prerequisite courses:	None
Previous course:	None

2. COURSE DESCRIPTION

The goal of the module is to understand and apply statistical techniques to improve the quality of decision-making in management. The course covers the concepts, techniques, and applications of quantitative tools that are common to data sets today and have become popular in everyday business. The course starts with basic statistical knowledge (measures of dispersion, position, random variables, etc.) and continues with commonly used management models (regression, ANOVA, etc.). The focus of the course is on the application of these techniques to a wide range of datasets in a variety of disciplines. Students will learn how to use statistical software (SPSS) to perform advanced analysis, helping to uncover valuable information in big data warehouses. Once you've turned data into information, you'll assess its relevance and build a foundation for the right decision-making. Therefore, this will be a useful course whether you plan to become a data analyst or just a data user at work.

3. COURSE LEARNING OUTCOMES

Table 1: Course Learning Outcomes (CLOs)

Module Output Standards (CLOs)	Contents Module Output Standards	Bloom domain/Bloom level	Program Output Standard PLOs/SOs/PI (*)
CLO1	Applying statistics in a work environment that requires data processing	Knowledge (3)	PLO1 (PI1.1)
CLO2	Data Analysis in a Global Context	Knowledge (4)	PLO2 (PI2.2)
CLO3	Standardize data for effective management decision-making	Skills (3)	PLO4 (PI4.1)
CLO4	Promoting the spirit of self-learning	Attitude (3)	PLO9 (PI9.1)

4. COURSE CONTENT AND TEACHING PLAN

Table 2: Course content and lesson plan

No.	Lesson/ Chapter	Title of the Lesson/Chapter	Learning Outcomes (LLO)	Work teaching and learning	Teaching methods	Evaluation method	References (*)
1	Introduce the perp course	**Module introduction and group registration** Students will have two group assignments in this class: (1) Checkpoint Exercise (which involves an outline for your final project) and (2) Project Decision-Making: Reports and video presentations will identify the appropriate datasets, questions, and analyses to answer business questions. **1A Data Application Exercise (Preparation)** In this Data Application Exercise, you'll use SPSS to examine data and familiarize yourself with the basic functions. **Complete** this step before taking the 1B Data Application Assignment Assessment: 1. Installing SPSS on Your Computer – Steps are available in the SPSS Resources page 2. Go to the About IBM SPSS Guide section that links to an external website.	LLO 1.1 CLO 1	Repeat following the SPSS installation instructions on the computer	Lecturing Computer-Aided Learning **Upper Layer** Teachers introduce the overview of the subject, regulations and learning pathways. Students get acquainted with new knowledge by listening, observing and asking questions. SV Instructions for SPSS Installation **Home Section** Review the content of lectures on learn and how to use SPSS software	Short Question Answer Quiz Observation	[1]
2	Chapter 1	**1A Data Application Exercise (Preparation) (continued)** In this Data Application Exercise, you'll use SPSS to examine data and familiarize yourself with the basic functions. **Complete** this step before taking the 1B Data Application Assignment Assessment:	LLO 1.2 CLO 1	SPSS Software Summary	Lecturing Computer-Aided Learning Practice **Upper Layer** The teacher instructed how to access data and instructed how to read documents and	Short Question Answer Quiz Observation	[1]

		3. Following the demo.sav Data Usage Guide, complete the steps using the SPSS installed on your computer for each section. Visit each section of the Guide for detailed information (use the next link at the end of each section to navigate); There are video tutorials.			operate on SPSS software Students listen and ask questions Students operating on the software **Home Section** Review the content of lectures on learn Using SPSS Software		
3		**Data Application Exercise 1B (Review)** Students will have **60 minutes** to complete the 1B Data Application Assignment Assessment. The SPSS must be opened using the demo.sav dataset as described in the IBM SPSS Tutorial Links to an external website. **Complete** the following questions related to demo.sav dataset.	LLO 1.3 CLO 2	Data analysis on SPSS software	Computer-Aided Learning Practice **Upper Layer** The teacher instructed how to access data and instructed how to read documents and operate on SPSS software Students listen and ask questions Students operating on the software **Home Section** Review the content of lectures on learn	Practice Tests	[1]
4		**Revision and Exam 1** Complete the test of this module. You have 60 minutes to complete the 15-question multiple-choice test. **Test scores are provided after the due date, after the test is over, for all students.**	LLO 1.4 CLO 3	Perform the demo operation correctly on the software	Computer-Aided Learning Practice	Practice Tests	[1]
5	Chapter 2	**Data Application Exercise 2A (Preparation)** You're a data analyst for an online store. Recently, satisfaction with the	LLO 2.1 CLO 2	Data analysis based on	Computer-Aided Learning Practice **Upper Layer**	Observation	[1]

		website and store was collected through a customer survey. **Download** and prepare the following analyses using the SPSS data file: Guest Satisfaction Site Data hàng.savDownload hàng.sav Guest Satisfaction Site Data		data files on SPSS soft ware	The teacher instructed how to access data and instructed how to read documents and operate on SPSS software Students listen and ask questions Students operating on the software **Home Section** Review the content of lectures on learn		
6	Chapter 3	**2B Data Application Exercise Review** **Time:** You have **60 minutes** to complete the Assessment. **Preparation**: You have completed **the 2A Data Application Assignment** and have the SPSS output window of the completed analyses for review and interpretation. **Context**: You're a data analyst for an online store. Recently, satisfaction with the website and store was collected through a customer survey. **Answer**: Questions related to the analyses you completed for the Data Application Exercise 2A using the SPSS data file: Guest Satisfaction Site Data hàng.sav Download hàng.sav Guest Satisfaction Site Data After completing the assignment, you'll see your total score in Canvas. Specific feedback on the additional item (what you missed, if any) will be available **AFTER the** assignment is over for all students.	LLO 3.1 CLO 1	Interpretation of data retrieved from SPSS soft ware	Lecturing Computer Support Practice **Upper Layer** The teacher instructed how to access data and instructed how to read documents and operate on SPSS software Students listen and ask questions Students operating on the software **Home Section** Review the content of lectures on learn	Short Answer Test	[1]
			LLO 3.2 CLO 1	Commenting on data retrieval	Lecturing Computer-Aided Learning Practice **Upper Layer** The teacher instructed how to	Short Answer Test Observation	[1]

				data from SPSS soft ware	access data and instructed how to read documents and operate on SPSS software Students listen and ask questions Students operating on the software **Home Section** Review the content of lectures on learn		
			LLO 3.3 CLO 2	Concludin g issue s base d on the eval uatio n of the data	Lecturing Computer-Aided Learning Practice **Upper Layer** The teacher instructed how to access data and instructed how to read documents and operate on SPSS software Students listen and ask questions Students operating on the software **Home Section** Review the content of lectures on learn	Short Answer Test Observ ation	[1]
7	Chap ter 4	**Project Checkpoints** The Project Checkpoint is preparing you for the Final Project (Team Assignment). **Project Inspection Guide** Select one of the following three scenarios by clicking on the links below or by viewing the pages in Module 4: **Option 1**: Business Analyst for a Global Retail Sales Company **Option 2**: Business Analyst for a Global Startup Looking to Launch a New Global Candy	LLO 4.1 CLO 4	Cons ider the proje ct in line with the team' s capa biliti es	Group discussions	Case studies	[1]
		Option 3: Business Analyst for an Electric Vehicle Sharing Company Is Understanding the Need	LLO 4.2	Perf orm the	Group discussions **Home Section** Assign tasks	Case studies	

		Complete the following items for your chosen scenario. **Create** a Google Slides or MS PowerPoint presentation that answers the following questions. Note: this content will be included in your final presentation. 1. State your research objectives a. What's the most important thing you're trying to understand? What is a burning platform? What is its main purpose? b. What are the desired outcomes? What would be the benefits if you were successful with your analytics? 2. State your hypothesis/hypotheses a. What do you expect to find? State this as a TESTABLE hypothesis in terms of trends or expected differences between things or groups. (e.g., Null Hypothesis, Alternate Hypothesis, and a statement such as "Hypothesis that "group 1" will be significantly higher than "group 2" because of "x, y, z.") b. See PROJECT REQUIREMENTS below for a list of minimum tests to consider and will help you form a hypothesis. 3. Prepare your data a. What data is needed to achieve the goal? b. What variables will be tested? Identify the variables you are using such as determining whether they are continuous (scaled), categorical (nominal, ordinal), or counted. c. What characteristics are important to understand about your variables? What is your assumption? What, if any, is unusual or worrying about the data? d. What steps do you plan to take, if any, to prepare the data for analysis? **Final Project Guide** Below is a guide for the final project. Note: Analyses in Part 1, Project Checkpoints are not included.		tasks correctly to complete the requirements CLO 3	Discuss and present data in accordance with the requirements of the project **Upper Layer** Provide group work to teachers and groups for feedback and completion	Presentations	

		1. Frequency analysis and/or Exploratory Analysis explores all relevant variables used in your project with a discussion of any anomalous data or outlier values [see Units 2-3] 2. At least one correlation analysis between relevant variables with appropriate interpretations [see Module 2] 3. At least one regression analysis (Linear or Logistic) with appropriate interpretations Select an appropriate variable to predict and at least one appropriate variable to predict it [see Modules 4-5] 4. At least one t-test or Anova analysis between groups with appropriate explanations Select an appropriate variable to predict and at least one appropriate variable to predict it [see Modules 4-5]					
8		**4A Data Application Exercise (Preparation)** You're a data analyst for an online store. Recently, satisfaction with the website and store was collected through a customer survey. **Download** and prepare the following analyses using the SPSS data file: hàng.sav Guest Satisfaction Site Data. 1. You want to understand how your shopping customer satisfaction pattern relates to overall shopping customer satisfaction. Run the Confidence Interval analysis on the "Customer Satisfaction" variable (i.e., OverallSat) and calculate the 95% and 99% Confidence Intervals. 2. You're interested in how the shopper time pattern for your website relates to the overall time shoppers spend on your website. Run a Confidence Interval analysis on "Time spent on site in minutes" (i.e. timespentOnline) and calculate 95% and 99% Confidence Intervals. 3. A market research reader said that the number of minutes that consumers spend online at Top Web	LLO 5.1 (CLO1)	Implement activities according to the requirements of the question	Lecturing Computer-Aided Learning Practice	Short Answer Test Observation	[1]
			LLO 5.2 (CLO2)	Assess data discrepancies after running	Lecturing Computer-Aided Learning Practice **Upper Layer** The teacher instructed how to access data and instructed how to	Short Answer Test Observation	[1]

		Stores is 8 minutes. You want to know how different your customers are, if any. Run a One-Sample T-Test to analyze how "Time spent on site" (i.e., timeSpentOnline) differs, if any, from Top Web Stores. 4. You read that students spend more time online than other groups. Can you determine if students who visit your website are different in any way when compared to non-students? Run an independent sample T Test to assess if there are any differences. Use "Time spent on site in minutes" (i.e. timeSpentOnline) and Student (i.e. isStudent) as variables. <NOTE THAT AT THE 6:40 MINUTE OF THE VIDEO, I INCORRECTLY SELECTED THE "TIME SPENT ON ORDER" VARIABLE INSTEAD OF THE "TIME SPENT ON SITE" VARIABLE. THE PROCESS I PRESENT IS THE SAME BUT OBVIOUSLY YOU SHOULD CHOOSE THE RIGHT VARIABLE TO PREPARE FOR THE FOLLOWING QUESTIONS.> Your supervisor believes that students and non-students are equally likely to purchase the product, whether premium or non-premium. You want to investigate this and share the results. Run Crosstabs and Chi-square tests between Students (i.e. isStudent) and Buy Premium Items (i.e. BuyPremiumMemb). Handles isStudent as Variable Independent.		inde pend ent samp le T tests	read documents and operate on SPSS software Students listen and ask questions Students operating on the software **Home Section** Review the content of lectures on learn		
9		**4B Data Application Exercise Review** Time: You have 60 minutes to complete the Assessment. Preparation: You have completed the 4A Data Application Exercise Prep and have the SPSS output window of the completed analyses for review and interpretation. Context: You're a data analyst for an online store. Recently, satisfaction	LLO 5.3 CLO 4	Com mitm ent to prop erly eval uate acco rding to retrie	Computer-Aided Learning **Upper Layer** The teacher instructed how to access data and instructed how to read documents and operate on SPSS software Students listen and ask questions	Observ ation	[1]

		with the website and store was collected through a customer survey. Answers: Questions related to the analyses you completed for the 4A Data Application Exercise using the SPSS data file: Guest Satisfaction Site Data hàng.savDownload the hàng.sav Guest Satisfaction Site Data After completing the assignment, you'll see your total score in Canvas. Specific feedback on the additional item (what you missed, if any) will be available AFTER the assignment is over for all students.		ved data	Students operating on the software **Home Section** Review the content of lectures on learn		
10	Chapter 5	**Exercise 5A Data Application (Preparation)** You're a data analyst for an online store. Recently, satisfaction with the website and store was collected through a customer survey. **Download** and prepare the following analyses using the SPSS data file: Guest Satisfaction Site Data hàng.savDownload hàng.sav Guest Satisfaction Site Data 1. You believe that customer satisfaction is related to the type of purchase they make. In particular, people who buy premium products from your website will have greater satisfaction than those who don't. Run the Oneway ANOVA analysis using "Shopping Satisfaction Rating" (i.e. OverallSat) and "Buy Premium Items" (i.e. Buys PremiumMemb) to test your hypothesis. 2. You believe that your customers' reviews of your website design will vary depending on the type of purchase they make and the type of customer they are. You also think that the rating may depend on how those things interact. Run a Generalized Linear Model Univariate Variance Analysis using "Website Ranking Design" (ieDesignRating), "Purchase Premium Items" (ie BuysPremiumMemb), and "Customer Type" (ie CustomerType).	LLO 6.1 CLO 2	Hypothesis test by running One way ANOVA analysis	Computer-Aided Learning Practice **Upper Layer** The teacher instructed how to access data and instructed how to read documents and operate on SPSS software Students listen and ask questions Students operating on the software **Home Section** Review the content of lectures on learn	Observational Case Studies	[1]

		3. Many marketing consulting firms write that customer satisfaction on websites can easily be explained by website design. They want to help you redesign your website, naturally. To find out: The linear regression run uses "Website Ranking Design" (i.e. DesignRating) as the independent variable and "Shopping Satisfaction Rating" (i.e. OverallSat) as the dependent variable to test your hypothesis. 4. Unlike marketing consulting firms, your supervisor believes that while website design (i.e., DesignRating) is important for customer satisfaction, the variety of merchandise (i.e., VarietyRating) is even more important. She wants to spend more of her budget to find more products to sell and improve customer satisfaction that way. Run multiple linear regression using NEXT and ENTER to test your hypothesis using "Website Ranking Design" (ieDesignRating) and then "Variety of goods" (ie.e. VarietyRating) as the independent variable and "Shopping Satisfaction Rating" (ie OverallSat) as the dependent variable to test your hypothesis. 5. Your supervisor wants to understand how "Frequency" of website visits relates to the type of customers they are and how responsive the site is: Run a General Linear Model (Poisson Analysis) with "Frequency" as the dependent variable and "Customer Type" (i.e. CustomerType) and Website Rank Responsiveness (i.e. ResponseRating) as predictors to test your hypothesis.					
11	Chapter 6	**Test 2** Complete the test of this module. This test consists of multiple-choice questions. You will have 60 minutes to complete after starting.	LLO 6.2 CLO 2	Poisson analysis with	Computer-Aided Learning Practice Computer-Aided Learning	Observational Case Studies	[1]

		1. Use SPSS to view Module 5 Test Outputs A and B during the test. SPSS will not be used to run the analysis during the test but you will need to use Outputs A and B to answer the test questions. Module 5 Test Output for A.spvDownload Module 5 Test Output for A.spv Module 5 Test Output for B.spvDownload Module 5 Test Output for B.spv 2. Make sure you understand the key concepts below: ✔ One-way and two-way Anova ✔ Simple Linear Regression ✔ Multiple regression ✔ Curved quadratic regression ✔ Logistic regression Poisson regression	LLO 7.1 CLO 3	"Frequency" as the dependent variable and "Customer Type" (i.e. Customer Type) and Responsiveness of to test hypothesis Module 5 test based on the use of data (A,B) output from SPSS software	Practice **Upper Layer** The teacher instructed how to access data and instructed how to read documents and operate on SPSS software Students listen and ask questions Students operating on the software **Home Section** Review the content of lectures on learn **Home Section** Operation using SPSS software Updates and research on: ✔ One-way and two-way Anova ✔ Simple Linear Regression ✔ Multiple regression ✔ Curved quadratic regression ✔ Logistic regression ✔ Poisson regression **Upper Layer** Practice on a computer with the requirements of the test	Observational Case Studies Practice Tests	

12		**Preparation for Test 2** Before you start taking the Module 5 Exam 2 exam in the next section, complete the following steps: 1. Using SPSS, review Outputs A and B of the Module 5 Test before starting the test. SPSS will not be used to run the analysis during the test but you will need SPSS to see Outputs A and B to answer the test questions. NO DATA FILE, only the output data required to interpret from the analysis in the two SPSS .spv files provided below. Module 5 Test Output for A.spvDownload Module 5 Test Output for A.spv Explore the analysis of household income in thousands One-way Variance Analysis of Credit Card Debt in Thousand Two-way Variance Analysis of Credit Card Debt in Thousand Module 5 Test Output for B.spvDownload Module 5 Test Output for B.spv Simple regression of household income in thousands Multiple regression of household income in thousands 2. Make sure you understand the key concepts below: ✔ One-way and two-way Anova ✔ Simple Linear Regression ✔ Multiple regression ✔ Curved quadratic regression ✔ Logistic regression ✔ Poisson regression (Generalized Linear Model procedure in SPSS) **5B Data Application Exercise Review** **Time:** You have **60 minutes** to complete the Assessment.	LLO 7.2 CLO 2	Analyze data on dem and	Computer-Aided Learning Practice **Home Section** Operation using SPSS software Updates and research on: ✔ One-way and two-way Anova ✔ Simple Linear Regression ✔ Multiple regression ✔ Curved quadratic regression ✔ Logistic regression ✔ Poisson regression **Upper Layer** Practice on a computer with the requirements of the test	Observational Case Studies Practice Tests	[1]

		Preparation: You have completed the 5A Data Application Exercise and have the SPSS output window of the completed analyses for review and interpretation. **Background**: You're a data analyst for an online store. Recently, satisfaction with the website and store was collected through a customer survey. **Answers**: Questions related to the analyses you completed for the 5A Data Application Exercise using the SPSS data file: Guest Satisfaction Site Data hàng.savDownload hàng.sav Guest Satisfaction Site Data After completing the assignment, you'll see your total score in Canvas. Specific feedback on the additional item (what you missed, if any) will be available **AFTER the** assignment is over for all students. **Peer Assessment Exercises** Complete the Peer Review Form to assess team members' participation and performance towards team goals. This is a MANDATORY EXERCISE; Failure to complete the assessment will result in a loss of 30 points.					
13		**Final Project** This is Team Assignments: One presentation and support files count for the entire Team. After choosing between the scenario options and completing the Part 1 Checkpoint, follow the instructions to complete Part 2 of the final project. Note: the final project consists of several steps. **<u>Step 1</u>:** Make a decision with a written presentation **Create** a Google Slides or MS PowerPoint presentation that contains the following: 1. Conduct the analysis that you planned in Checkpoint Part 1. It is mandatory to use SPSS for statistical analysis but you can use other software to prepare the data or additional analysis as needed (show all	LLO 8.1 CLO 2	Statistical analysis using software (SPSS, others...)	Group discussions Case studies **Home Section** Understand requirements and assign tasks to team members Solve the requirements of the question **Upper Layer** Send videos to teachers	Case studies Presentations	[1]

		the work). Note: You can change or include in the analysis beyond what you outlined for the test score and state why you chose a different direction in your presentation. a. What does analytics tell you about the data? b. What statistical tests did you choose to take? c. What are those findings? d. What are your results? Include appropriate visualizations (using SPSS or some other appropriate method such as flow diagrams, graphs, charts) to help illustrate what the data analysis shows. 2. Make recommendations a. What conclusions can you draw from the analysis? What decisions can be made? Describe the business for the recommendation or change you propose to improve the company. b. Give advice that you would give to executives in your chosen Options. Since each option is related to a global topic, think globally, what assumptions are you making that may need special consideration (e.g., economic circumstances, privacy, security, or regulation)? Conclusions in any other relevant aspect of the project can impact the success of the project. You can use the presenter's notes section of the presentation or submit the article in a separate document to share relevant insights you've developed regarding the improvement as a result of the analysis.					
13 14 , 15	Chapter 6	**Final Project** This is Team Assignments: One presentation and support files count for the entire Team. After choosing between the scenario options and completing the Part 1 Checkpoint, follow the instructions to complete Part 2 of the final project.	LLO 8.2 CLO 2	Conclusions from the analytical data	Group discussions Case studies **Home Section** Understand requirements and assign tasks to team members	Case studies Presentations	[1]

		Note: the final project consists of several steps. **<u>Step 1</u>:** Make a decision with a written presentation **Create** a Google Slides or MS PowerPoint presentation that contains the following: 3. Conduct the analysis that you planned in Checkpoint Part 1. It is mandatory to use SPSS for statistical analysis but you can use other software to prepare the data or additional analysis as needed (show all the work). Note: You can change or include in the analysis beyond what you outlined for the test score and state why you chose a different direction in your presentation. e. What does analytics tell you about the data? f. What statistical tests did you choose to take? g. What are those findings? h. What are your results? Include appropriate visualizations (using SPSS or some other appropriate method such as flow diagrams, graphs, charts) to help illustrate what the data analysis shows. 4. Make recommendations c. What conclusions can you draw from the analysis? What decisions can be made? Describe the business for the recommendation or change you propose to improve the company. d. Give advice that you would give to executives in your chosen Options. Since each option is related to a global topic, think globally, what assumptions are you making that may need special consideration (e.g., economic circumstances, privacy, security, or regulation)? 5. Conclusions in any other relevant aspect of the project can impact the success of the project. You can use the presenter's notes section of the presentation or			Solve the requirements of the question **Upper Layer** Send videos to teachers		
			LLO 8.3 CLO 2	The analysis explores all the relevant variables used in the project	Group discussions Research Projects **Home Section** Understand requirements and assign tasks to team members Solve the requirements of the question **Upper Layer** Send videos to teachers	Case studies Presentations	

		submit the article in a separate document to share relevant insights you've developed regarding the improvement as a result of the analysis. **Project requirements for Part 2** 1. Frequency analysis and/or Exploratory Analysis explores all relevant variables used in your project with a discussion of any anomalous data or outlier values [see Units 2-3] 2. At least one correlation analysis between relevant variables with appropriate interpretations [see Unit 2] 3. At least one regression analysis (Linear or Logistic) with appropriate interpretations Select an appropriate variable to predict and at least one appropriate variable to predict it [see Units 4-5] 4. At least one t-test or Anova analysis between groups with appropriate explanations Select an appropriate variable to predict and at least one appropriate variable to predict it [see Units 4-5] **Step 2:** Record Your Presentation **Record** a 10- to 12-minute video stating the work you completed in Step 1. **The recording can include all, some, or one member of your team. This is a group exercise, and all members will earn the same points regardless of who appears in the recording.** VIDEO RECORDING RECOMMENDATIONS: ▪ Record a presentation using ZOOM Meeting or Screencast-O-MaticLink to an external website. ▪ Voice recordings embedded in PowerPoint are not acceptable. ▪ It is required to upload the recording where it can be viewed and avoid sending it via email. YouTube is recommended but the project can also					

		be linked to Google Drive or another storage area. **<u>Step 3</u>: Submit the completed assignment** **Submit** the following information: ▪ Attach your presentation material (MS PowerPoint or Google Slides) titled "Team Name – Final Project" ▪ Attach SPSS Output, more than one file is enough, showing your analyses (Example: Team Name – Last Project.spv) ▪ Attach other relevant files such as supporting writing materials for the presentation. Copy and paste the link to your video presentation into the comments section on the Canvas.					
14, 15		**Project requirements for Part 2** 5. Frequency analysis and/or Exploratory Analysis explores all relevant variables used in your project with a discussion of any anomalous data or outlier values [see Units 2-3] 6. At least one correlation analysis between relevant variables with appropriate interpretations [see Unit 2] 7. At least one regression analysis (Linear or Logistic) with appropriate interpretations Select an appropriate variable to predict and at least one appropriate variable to predict it [see Units 4-5] 8. At least one t-test or Anova analysis between groups with appropriate explanations Select an appropriate variable to predict and at least one appropriate variable to predict it [see Units 4-5] **<u>Step 2</u>:** Record Your Presentation **Record** a 10- to 12-minute video stating the work you completed in Step 1.	LLO 8.4 CLO 3	Standardize video on demand	Group discussions Research Projects Illustration **Home Section** Understand requirements and assign tasks to team members Solve the requirements of the question **Upper Layer** Send videos to teachers	Case studies Presentations	[1]

		The recording can include all, some, or one member of your team. This is a group exercise, and all members will earn the same points regardless of who appears in the recording. VIDEO RECORDING RECOMMENDATIONS: ▪ Record a presentation using ZOOM Meeting or Screencast-O-MaticLink to an external website. ▪ Voice recordings embedded in PowerPoint are not acceptable. ▪ It is required to upload the recording where it can be viewed and avoid sending it via email. YouTube is recommended but the project can also be linked to Google Drive or another storage area. **<u>Step 3</u>: Submit the completed assignment** **Submit** the following information: ▪ Attach your presentation material (MS PowerPoint or Google Slides) titled "Team Name – Final Project" ▪ Attach SPSS Output, more than one file is enough, showing your analyses (Example: Team Name – Last Project.spv) ▪ Attach other relevant files such as supporting writing materials for the presentation. Copy and paste the link to your video presentation into the comments section on the Canvas.					

5. MAPPING BETWEEN COURSE LEARNING OUTCOMES AND LESSON LEARNING OUTCOMES

Table 3: Mapping of CLOs and LLOs

Output standards Lessons	Module output standards				Evaluation Components
	CLO1	CLO2	CLO3	CLO4	

LLO1.1	X				A1
LLO1.2	X				A1
LLO1.3		X			A2
LLO1.4			X		A1, A2
LLO2.1		X			A2, A3
LLO3.1	X				A1
LLO3.2	X				A1
LLO3.3		X			A2, A3
LLO4.1				X	A1, A2
LLO4.2			X		A1, A2
LLO5.1	X				A1, A2
LLO5.2		X			A2
LLO5.3				X	A1, A3
LLO6.1		X			A2, A3
LLO6.2		X			A1, A2
LLO7.1			X		A1, A2
LLO7.2		X			A2, A3
LLO8.1		X			A2, A3
LLO8.2		X			A2, A3
LLO8.3		X			A2, A3
LLO8.4			X		A2, A3

6. COURSE ASSESSMENT

Table 4: Course Assessment

Evaluation Components	Assessment Form	CLOs	Rate (%)

A1. Process	- Participate in article building - Short answer quiz - Observation - Case studies	CLO1, CLO2, CLO3, CLO4	*30%*
A2. Mid-term	- Presentations - Case studies - Practice testing	CLO1, CLO2, CLO3	*30%*
A3. End of term	- Presentations - Case studies	CLO2, CLO3	*40%*

7. COURSE REQUIREMENTS

- Attendance: according to course regulations and LMS activities.
- Students must read materials provided by the instructor before each class session.
- Students must participate in discussions and complete group assignments as required.
- Midterm assessment includes group assignments.
- Final examination includes multiple-choice or essay tests.

8. LEARNING MATERIALS AND REFERENCES

Textbook

[1]. Erik Beulen (Author), Marla A. Dans (Author), *Data Analytics and Digital Transformation (Business and Digital Transformation),* Routledge; 1st edition

References

[1]. Hoang Trong, Chu Nguyen Mong Ngoc, *Research Data Analysis with SPSS,* Hong Duc Publishing House, 2022

9. SOFTWARE OR PRACTICAL SUPPORT TOOLS

- Chalk and board
- Projector
- Heyhi; Zalo; Facebook; LMS; VooV; Zoom; Quiz tools

- Internet
- Google Chrome

GENERAL CONVENTIONS

Symbols	Description
PLO/SO	Output standards of the program
Anonymous	Evaluation Index (Intermediate Output Standard)
CLO	Module output standards
LLO	Lesson output standards
Teacher	Teachers
SV	Students

Dong Nai, ... month... Year 2025

Dean/Dean

Lecturer
(sign and specify full name)

Luu Ngoc Liem