ABSE405 - Econometric methods

Course Title	Econometric methods				
Course Code	ABSE405				
Course Type	Elective				
Level	BA (Level 1)				
Year / Semester	3rd /4th year				
Teacher's Name	Dr. Elena Ketteni				
ECTS	6	Lectures / week	3	Laboratories/week	
Course Purpose	This course extends students' knowledge in econometric techniques used in the areas of economics, business and finance.				
	The course provides a more in depth exposure on estimation of simple and multiple regression models, properties of the models, testing of regression assumptions and explanations / interpretation of the results obtained. Through this course the students will become familiar with the OLS method for estimating relationships using actual data and various functional forms, applying testing techniques for validity and interpreting their results. Additionally, they will be able to apply the above techniques using statistical software such as SPSS.				
	Finally, this course introduces students to some more specialized topics which include logistic, probit and panel models.				
Learning Outcomes	1. Estimate the simple and multiple regression model by least squares and test assumptions of a single parameter				
	2. Perform hypothesis tests and model selection				
	3. Extent the regression model, to include logarithms, quadratics and binary variables				
	4. Interpret the results from models estimated				
	5. Implement the Generalized Regression Model with Heteroskedasticity				
	6. Apply systems of Regression Equations				
	7. Perform analysis of models for panel data				
	8. Analyze data with binary outcomes and discrete choices				
	9. Empirically apply all techniques learned in SPSS using actual data				
Prerequisites	AMAT210		Corequisites	None	

Course Content	1. Regression model by least squares: single variable, multiple regression, matrix estimation, R square fit , interpretation of the coefficients 2. Hypothesis testing: inference, simple hypothesis, inequality hypotheses, multiple parameters, concept of significance 3. Further issues in multiple regression analysis: functional forms estimated, Models with logarithmic function form, quadratics, interaction terms, binary variables 4. Generalized regression model: testing assumption of heteroskedasticity and autocorrelated errors, estimator properties, generalized regression accounting for heteroskedasticity, systems of regressions 5. Analysis of models for panel data: cross section versus time series, pooling cross section over time, panel data estimation methods (fixed effects, random effects), Hausman test for choice of method 6. Data with binary outcomes and discrete choices: modeling framework, estimation (probit, logit), interpretation of results and model fit
Teaching Methodology	The course is delivered to the students by means of lecturers, conducted with the help of computer presentations and the use of the board. The lecturer provides demonstrations and examples using econometric software such as SPSS and Stata. Students are then asked to expand on this knowledge by solving problems and applying their knowledge in a group project.
Bibliography	(a) Textbook: W. Greene. Econometric Analysis, 8th Edition, Pearson Press, 2018 J. M. Wooldridge. Introductory Econometrics. A modern Approach, 6th Edition, 2016, Cengage Learning (b) References: R. L. Thomas. Modern Econometrics: An Introduction, Addison-Wesley Longman Ltd, 1997
Assessment	(a) Methods: Students will be assessed with course work that involves written and assignments (quizzes), a small group project and a midterm and a final test. The course involves both explaining concepts and numerical problems. (b) Criteria: Assessment criteria are available in each written assignment, midterm or in the final exam (c) Weights: • Assignments (including computer based) 20% • Midterm 20% • Final Exam 60%

| Language | English language |