|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Course: | | REGRESSION ANALYSIS | | | | | | | | |
| Course id: 3МАЕ1I12 | |
| Number of ECTS: 6 | |
| Teacher: | | Professor Olgica T. Bošković, PhD | | | | | | | | |
| Assistant: | | Emilija B. Nikolić-Đorić, MSc | | | | | | | | |
| Course status | | Elective | | | | | | | | |
| Number of active teaching classes (weekly) | | | | | | | | | | |
| Lectures: 2 | | Tutorials: 2 | | | Other teaching types: | | Study research work: | | Other classes: | |
| Precondition courses | | A passing grade in mathematics | | | | | | | | |
| 1.Educational goal  The curriculum of this course is designed to introduce students to the application of modern statistical methods in solving problems in the field of agricultural sciences and agricultural economics. Students should be educated about the possibilites and limitations of the regression and correlation analysis. | | | | | | | | | | |
| 2.Educational outcomes  During the course, students should be capable of choosing and applying an adequate statistical method in the fields of agriculture and agricultural economics. Students will be able to use the acquired skills in other courses during their studies and in their scientific and research work. | | | | | | | | | | |
| 3.Course content  *Theoretical Instruction*  Theoretical basics of regression. Multiple linear regression. Curvilinear regression. Exponential regression. Inference about regression parameters. Selection of variables in the regression model. Transformation of variables. Residual analysis. Artificial variables. Correlation. Partial correlation coefficients. Multicollinearity. Ridge regression. Serial correlation. Regression analysis of time series. Illusory correlation. Cobb-Douglas production function. Logistic regression. Probit model.  *Practical Instruction: Tutorials*  Multiple linear regression. Curvilinear regression. Exponential regression. Inference about regression parameters. Selection of variables in the regression model. Transformation of variables. Residual analysis. Artificial variables. Correlation. Partial correlation coefficients. Multicollinearity. Serial correlation. Regression analysis of time series. Illusory correlation. Cobb-Douglas production function. Logistic regression. Probit model. | | | | | | | | | | |
| 4.Teaching methods  Lectures, tutorials and consultations. Introducing students to the statistical software STATISTICA and the programming language R. | | | | | | | | | | |
| Knowledge evaluation (maximum 100 points) | | | | | | | | | | |
| Pre-examination obligations | | | Mandatory | Points | | Final exam | | Mandatory | | Points |
| Lecture attendance | | | Yes/No | 10 | | Written exam | | Yes | |  |
| Practical work | | | Yes/No | 10 | | Oral Defence of the Seminar Paper | | Yes/No | | 50 |
| Seminar paper | | | Yes/No | 30 | | ... | |  | |  |
|  | | | Yes/No |  | | Total | |  | | 100 |
| Literature | | | | | | | | | | |
| Ord. | Author | | Title | | | Publisher | | | | Year |
| 1. | Hadživuković S., Zegnal R., Čobanović K. | | Regresiona analiza | | | Privredni pregled, Beograd | | | | 1982 |
| 2. | Mladenović Z., Petrović P. | | Uvod u ekonometriju | | | Ekonomski fakultet, Beograd | | | | 2011 |
| 3. | Draper, N., Smith, H. | | Applied Regression Analysis | | | Wiley, New York | | | | 1998 |
| 4. | Bingham N. H., Fry J.M | | Regression, Linear Models in Statistics | | | Springer-Verlag, London | | | | 2010 |