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| Course: | | ***Analytic hierarchy process*** | | | | | | | | |
| Course id: 2МРР2И31 | |
| Number of ECTS: 4 | |
| Teacher: | | Prof. dr Zorica Srđević, prof. dr Bojan Srđević | | | | | | | | |
| Course status | | Elective | | | | | | | | |
| Number of active teaching classes (weekly) | | | | | | | | | | |
| Lectures:2 | | Tutorials :2 | | | Other teaching types: | Study research work: | | | Other classes: | |
| Precondition courses | | Basics of mathematics; IT | | | | | | | | |
| 1. Educational goal: Introduction to the principles, methodologies, methods and tools for hierarchically structured decision-making problems in the field of rural development and agro-tourism | | | | | | | | | | |
| 1. Educational outcomes: After passing the exam, it is expected that the student: a) receive a basic knowledge of methods and tools for decision-making, with emphasis on AHP; b) capable of critical uses AHP method; c) capable of analyzing the results obtained; d) improve the ability of independent learning and presentation skills acquired. | | | | | | | | | | |
| 1. Course content   *Theoretical instruction*  *-* Introduction. Hierarchical decision-making processes. Horizontal and vertical structure.  - Multi-criteria analysis. Elements of decision-making: the objectives, criteria, sub-criteria, alternatives. Methods of analysis.  - Decision making under conditions of uncertainty, complete and incomplete information, etc.  - Method of Analytic Hierarchy Process (AHP) concept, mathematical basis, hierarchies, methods of prioritization, synthesis weight, consistency.  - Individual and group decision making with the AHP.  *Practical classes*  - Creating a hierarchy for typical problems of decision making.  - Examples of making models of decision-making  - Scenarios decision-making in well and poorly structured problems. Examples of the application of AHP method.  - Examples of individual and group decisions and methodology for decision making. | | | | | | | | | | |
| 1. Teaching methods: Lectures and exercises. Students will have less specialized projects and will display the results in writing and orally. The work represents 25% of the final grade. Retaking the only orally. | | | | | | | | | | |
| Knowledge evaluation (maximum 100 points) | | | | | | | | | | |
| Pre-examination obligations | | | Mandatory | Points | | | Final exam | Mandatory | | Points |
|  | | |  |  | | | *Oral exam* | Yes | | 50 |
| Test | | | Yes |  | | |  | | | |
| Seminar paper | | | Yes | 50 | | |
| *Term paper* | | | Yes |  | | |
| Literature | | | | | | | | | | |
| Ord. | Author | | Title | | | | Publisher | | | Year |
|  | Srdjevic B., Srdjevic Z. | | Bi-criteria evolution strategy in estimating weights from the AHP ratio-scale matrices | | | | Applied Mathematics and Computation 218, 1254–1266. | | | 2011 |
|  | Saaty T. | | The Analytic Hierarchy Process | | | | McGraw Hill | | | 1980 |
|  | Zelenovic Vasiljevic T., Srdjevic Z., Bajcetic R., Vojinovic Miloradov M | | GIS and the Analytic Hierarchy Process for regional landfill site selection in transitional countries: a case study from Serbia | | | | Environmental Management | | |  |
|  | Srdjevic Z., Kolarov V., Srdjevic B | | Finding the Best Location for Pumping Stations in the Galovica Drainage Area of Serbia: The AHP Approach for Sustainable Development, , Bussines Strategy and Environment | | | |  | | | 2007 |