# MULTI-CRITERIA DECISION MAKING

| | | | |
|---|---|---|---|
| **1** | Course Title: | MULTI-CRITERIA DECISION MAKING | |
| **2** | Course Code: | EKO5121 | |
| **3** | Type of Course: | Optional | |
| **4** | Level of Course: | Second Cycle | |
| **5** | Year of Study: | 1 | |
| **6** | Semester: | 1 | |
| **7** | ECTS Credits Allocated: | 4.00 | |
| **8** | Theoretical (hour/week): | 2.00 | |
| **9** | Practice (hour/week): | 0.00 | |
| **10** | Laboratory (hour/week): | 0 | |
| **11** | Prerequisites: | None | |
| **12** | Language: | Turkish | |
| **13** | Mode of Delivery: | Face to face | |
| **14** | Course Coordinator: | Doç. Dr. DİLEK MURAT | |
| **15** | Course Lecturers: | Yok | |
| **16** | Contact information of the Course Coordinator: | e-posta : dilekm@uludag.edu.tr<br>Telefon: 0 224 29 40732<br>Adres: Uludağ Üniversitesi, İktisadi ve İdari Bilimler Fakültesi, Ekonometri Bölümü,16059, Görükle/Bursa. | |
| **17** | Website: | | |
| **18** | Objective of the Course: | The aim of the course is to to provide students with decision-making skills via introduce various decision-making methods used in multi-criteria decision-making problems and apply them to complex real-life problems. | |
| **19** | Contribution of the Course to Professional Development: | This course contributes to the design of a multi-criteria decision problem, determining the criteria priorities and solving the problem. | |
| **20** | Learning Outcomes: | | |
| | | **1** | To be able to define the basic concepts and assumptions related to decision analysis |
| | | **2** | To be able to define multi-criteria decision making problems and learn the basic concepts |
| | | **3** | To be able to detect the factors affecting multi-criteria decision making problems |
| | | **4** | To be able to collect the data about the multi-criteria decision making problem |
| | | **5** | To be able to model of multi-criteria decision making problems |
| | | **6** | To be able to determine of criterion weights for multi-criteria problems using appropriate methods |
| | | **7** | To be able to choose the most appropriate multi-criteria decision-making method according to the purpose |
| | | **8** | To be able to interpret the results by solving multi-criteria decision making problems |
| | | **9** | |
| | | **10** | |
| **21** | Course Content: | | |
| | **Course Content:** | | |
| Week | Theoretical | | Practice |

| | | |
|---|---|---|
| **1** | Introduction to decision theory | |
| **2** | Decision making under uncertainty | |
| **3** | Basic concepts in decision making problems | |
| **4** | Modeling of decision making problems and creation of data set | |
| **5** | Determination of criteria and weighting | |
| **6** | Analytical Hierarchy Process (AHP) | |
| **7** | Analytical Network Process (ANP) | |
| **8** | ARAS Method | |
| **9** | COPRAS Method | |
| **10** | Gray Relational Analysis | |
| **11** | MOORA Method | |
| **12** | ELECTRE Method | |
| **13** | TOPSIS Method | |
| **14** | VIKOR Method | |

| | | |
|---|---|---|
| **22** | Textbooks, References and/or Other Materials: | 1. Bahadır Fatih Yıldırım, Emrah Önder, (2018), Çok Kriterli Karar Verme Yöntemleri, Dora Yayıncılık.<br>2. Ejder Ayçin, (2019), Çok Kriterli Karar Verme, Nobel Yayıncılık, Ankara.<br>3. K . Paul Yoon, ChingLai Hwang, (1995), Multiple Attribute Decision Making: An Introduction –SAGE Publications.<br>4. Alessio Ishizaka, Philippe Nemery. (2013), Multi-criteria Decision Analysis: Methods and Software, Chichester, West Sussex. |
| **23** | Assesment | |

| **TERM LEARNING ACTIVITIES** | **NUMBER** | **WEIGHT** |
|---|---|---|
| Midterm Exam | 0 | 0.00 |
| Quiz | 0 | 0.00 |
| Home work-project | 0 | 0.00 |
| Final Exam | 1 | 100.00 |
| Total | 1 | 100.00 |
| Contribution of Term (Year) Learning Activities to Success Grade | | 0.00 |
| Contribution of Final Exam to Success Grade | | 100.00 |
| Total | | 100.00 |
| Measurement and Evaluation Techniques Used in the Course | | Measurement and evaluation is carried out according to the priciples of Bursa uludag University Associate and Postgraduate Education Regulation. |

| | |
|---|---|
| **24** | **ECTS / WORK LOAD TABLE** |

| Activites | Number | Duration (hour) | Total Work Load (hour) |
|---|---|---|---|
| Theoretical | 14 | 2.00 | 28.00 |
| Practicals/Labs | 0 | 0.00 | 0.00 |
| Self study and preperation | 14 | 3.00 | 42.00 |
| Homeworks | 2 | 15.00 | 30.00 |
| Projects | 0 | 0.00 | 0.00 |
| Field Studies | 0 | 0.00 | 0.00 |
| Midterm exams | 0 | 0.00 | 0.00 |
| Others | 0 | 0.00 | 0.00 |
| Final Exams | 1 | 25.00 | 25.00 |
| Total Work Load | | | 125.00 |
| Total work load/ 30 hr | | | 4.17 |
| ECTS Credit of the Course | | | 4.00 |

| **25** | **CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS** | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **PQ1** | **PQ2** | **PQ3** | **PQ4** | **PQ5** | **PQ6** | **PQ7** | **PQ8** | **PQ9** | **PQ10** | **PQ11** | **PQ12** | **PQ13** | **PQ14** | **PQ15** | **PQ16** |
| **ÖK1** | 4 | 4 | 5 | 4 | 4 | 4 | 2 | 2 | 2 | 2 | 3 | 2 | 0 | 0 | 0 | 0 |
| **ÖK2** | 4 | 4 | 4 | 3 | 4 | 4 | 2 | 2 | 1 | 2 | 3 | 3 | 0 | 0 | 0 | 0 |
| **ÖK3** | 2 | 3 | 4 | 2 | 3 | 3 | 2 | 1 | 1 | 2 | 3 | 4 | 0 | 0 | 0 | 0 |
| **ÖK4** | 4 | 4 | 5 | 4 | 3 | 3 | 3 | 2 | 1 | 2 | 4 | 4 | 0 | 0 | 0 | 0 |
| **ÖK5** | 4 | 3 | 5 | 4 | 4 | 4 | 3 | 2 | 1 | 2 | 5 | 5 | 0 | 0 | 0 | 0 |
| **ÖK6** | 2 | 2 | 3 | 2 | 5 | 2 | 1 | 1 | 1 | 2 | 3 | 3 | 0 | 0 | 0 | 0 |
| **ÖK7** | 4 | 3 | 5 | 4 | 4 | 4 | 3 | 3 | 1 | 2 | 5 | 5 | 0 | 0 | 0 | 0 |
| **ÖK8** | 5 | 3 | 5 | 5 | 4 | 4 | 3 | 3 | 1 | 2 | 5 | 5 | 0 | 0 | 0 | 0 |
| **LO: Learning Objectives PQ: Program Qualifications** | | | | | | | | | | | | | | | | |
| **Contribution Level:** | **1 very low** | | **2 low** | | **3 Medium** | | **4 High** | | | **5 Very High** | | | | | | |