|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Course Details | | | | | | | | | | | | | | | | | | | |
| Code | | | | | | | | | | | | | | **Academic Year** | | | | | **Semester** |
| BE022 | | | | | | | | | | | | | | 2021-2022 | | | | |  |
| Title | | | | | | | | | | | | | | **T** | **A** | | **L** | | **ECTS** |
| Time Series Analysis | | | | | | | | | | | | | | 3 | 1 | | 0 | | 10 |
|  | | | | | | | | | | | | | | | | | | | |
| Language | | | | | English | | | | | | | | | | | | | | |
| Level | | | | | **Master** |  | | | **Doctorate** | | | **X** | | | | | | | |
| Department / Program | | | | | PhD in Business and Economics | | | | | | | | | | | | | | |
| Forms of Teaching and Learning | | | | |  | | | | | | | | | | | | | | |
| Course Type | | | | | **Compulsory** | | |  | | | | | **Elective** | | | | | **X** | |
| Objectives | | | | | In this course, students learn about the methods used in time series analysis and apply them. | | | | | | | | | | | | | | |
| Content | | | | | General information about time series, separation of time series into components, autoregressive models, moving average models, autoregressive moving average models, conditional heteroscedasticity models, ARIMA models with exogenous variables, Granger causality analysis, vector autoregressive models, cointegration analysis, panel data analysis | | | | | | | | | | | | | | |
| Prerequisites | | | | |  | | | | | | | | | | | | | | |
| Coordinator | | | | |  | | | | | | | | | | | | | | |
| Lecturer(s) | | | | |  | | | | | | | | | | | | | | |
| Assistant(s) | | | | |  | | | | | | | | | | | | | | |
| Work Placement | | | | |  | | | | | | | | | | | | | | |
| Recommended or Required Reading | | | | | | | | | | | | | | | | | | | |
| Books / Lecture Notes | | | Orhunbilge, N., Zaman Serileri Analizi Tahmin ve Fiyat İndeksleri, İstanbul Üniversitesi Yayınları, 1999.  Sevüktekin, M., Çınar, M., Ekonometrik Zaman Serileri Analizi EViews Uygulamalı, Dora Yayıncılık, 2014.  Akgül, I., Zaman Serilerinin Analizi ve ARIMA modelleri, Der Yayınları, 2011. | | | | | | | | | | | | | | | | |
| Other Sources | | |  | | | | | | | | | | | | | | | | |
| Additional Course Material | | | | | | | | | | | | | | | | | | | |
| Documents | | |  | | | | | | | | | | | | | | | | |
| Assignments | | |  | | | | | | | | | | | | | | | | |
| Exams | | |  | | | | | | | | | | | | | | | | |
| Course Composition | | | | | | | | | | | | | | | | | | | |
| Social Sciences | | |  | | | | | | | | | | | | | 40% | | | |
| Educational Sciences | | |  | | | | | | | | | | | | | % | | | |
| Natural Sciences | | |  | | | | | | | | | | | | | % | | | |
| Health Sciences | | |  | | | | | | | | | | | | | % | | | |
| Expert Knowledge | | |  | | | | | | | | | | | | | 60% | | | |
| Assessment | | | | | | | | | | | | | | | | | | | |
| Activity | | | **Count** | | | | | | | | | | | | | **Percentage (%)** | | | |
| Midterm Exam | | | 1 | | | | | | | | | | | | | 40% | | | |
| Quiz | | |  | | | | | | | | | | | | | % | | | |
| Assignments | | |  | | | | | | | | | | | | | % | | | |
| Attendance | | |  | | | | | | | | | | | | | % | | | |
| Recitations | | |  | | | | | | | | | | | | | % | | | |
| Projects | | |  | | | | | | | | | | | | | % | | | |
| Final Exam | | | 1 | | | | | | | | | | | | | 60% | | | |
| Total | | | | | | | | | | | | | | | | **100** | | | |
| ECTS Points and Work Load | | | | | | | | | | | | | | | | | | | |
| Activity | | | **Count** | | | | | | | | **Duration** | | | | | **Work Load (Hours)** | | | |
| Lectures | | | 14 | | | | | | | | 3 | | | | | 42 | | | |
| Self-Study | | | 14 | | | | | | | | 4 | | | | | 56 | | | |
| Assignments | | |  | | | | | | | |  | | | | |  | | | |
| Presentation / Seminar Preparation | | | 2 | | | | | | | | 30 | | | | | 60 | | | |
| Midterm Exam | | | 1 | | | | | | | | 44 | | | | | 44 | | | |
| Recitations | | | 14 | | | | | | | | 1 | | | | | 14 | | | |
| Laboratory | | |  | | | | | | | |  | | | | |  | | | |
| Projects | | |  | | | | | | | |  | | | | |  | | | |
| Final Exam | | | 1 | | | | | | | | 64 | | | | | 64 | | | |
| Total Work Load | | | | | | | | | | | | | | | | **280** | | | |
| ECTS Points (Total Work Load / 28) | | | | | | | | | | | | | | | | **10** | | | |
| Course Learning Outcomes | | | | | | | | | | | | | | | | | | | |
| 1 | Students acquire information about the methods used in time series analysis. | | | | | | | | | | | | | | | | | | |
| 2 | Students can apply these methods. | | | | | | | | | | | | | | | | | | |
| Weekly Content | | | | | | | | | | | | | | | | | | | |
| 1 | General information about time series | | | | | | | | | | | | | | | | | | |
| 2 | Separation of time series into components | | | | | | | | | | | | | | | | | | |
| 3 | Smoothing methods | | | | | | | | | | | | | | | | | | |
| 4 | Autoregressive models | | | | | | | | | | | | | | | | | | |
| 5 | Moving average models | | | | | | | | | | | | | | | | | | |
| 6 | Autoregressive moving average models | | | | | | | | | | | | | | | | | | |
| 7 | Conditional heteroscedasticity models | | | | | | | | | | | | | | | | | | |
| 8 | Conditional heteroscedasticity models | | | | | | | | | | | | | | | | | | |
| 9 | Midterm exam | | | | | | | | | | | | | | | | | | |
| 10 | ARIMA models with exogenous variables | | | | | | | | | | | | | | | | | | |
| 11 | Granger causality analysis | | | | | | | | | | | | | | | | | | |
| 12 | Vector autoregressive models | | | | | | | | | | | | | | | | | | |
| 13 | Cointegration analysis | | | | | | | | | | | | | | | | | | |
| 14 | Panel data analysis | | | | | | | | | | | | | | | | | | |
| 15 | Panel data analysis | | | | | | | | | | | | | | | | | | |
| Contribution of Learning Outcomes to Program Objectives (1-5) | | | | | | | | | | | | | | | | | | | |
| CLO | **P1** | | | **P2** | | | **P3** | | |
| 1 | 5 | | | 5 | | | 5 | | |
| 2 | 5 | | | 5 | | | 5 | | |
| Contribution Level | | 1: Low 2: Low-intermediate 3: Intermediate 4: High 5: Very High | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | |
| Compiled by: | | Dr. Mehmet Hakan Özdemir | | | | | | | | | | | | | | | | | |
| Date of Compilation: | | 16.05.2021 | | | | | | | | | | | | | | | | | |