



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

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|--|---|---------------------------------|----------------------|----------------------------|---|--------------------------------|---|------------|---|
| Course Title | | Stochastic Processes in Finance | | | | | | | |
| Course Code | | UEK513 | | Course Level | | Second Cycle (Master's Degree) | | | |
| ECTS Credit | 5 | Workload | 126 (<i>Hours</i>) | Theory | 3 | Practice | 0 | Laboratory | 0 |
| Objectives of the Course | | | | | | | | | |
| Course Content | | | | | | | | | |
| Work Placement | | N/A | | | | | | | |
| Planned Learning Activities and Teaching Methods | | | | Explanation (Presentation) | | | | | |
| Name of Lecturer(s) | | | | | | | | | |

Assessment Methods and Criteria

| Method | Quantity | Percentage (%) |
|---------------------|----------|----------------|
| Midterm Examination | 1 | 40 |
| Final Examination | 1 | 60 |

Recommended or Required Reading

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| 1 | Mustafa Sevüktekin, Ekonometriye Giriş, Dora Yayınları, 2013, Bursa. |
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| Week | Weekly Detailed Course Contents | |
|------|---------------------------------|---|
| 1 | Theoretical | Introduction |
| 2 | Theoretical | Some basic concepts in finance |
| 3 | Theoretical | Introduction to stochastic processes |
| 4 | Theoretical | Discrete-time and continuous-time stochastic processes |
| 5 | Theoretical | Martingales |
| 6 | Theoretical | Martingales |
| 7 | Theoretical | Single period securities models |
| 8 | Theoretical | Midterm |
| 9 | Theoretical | Multiperiod securities models |
| 10 | Theoretical | Asset price dynamics and stochastic processes, Brownian processes |
| 11 | Theoretical | Asset price dynamics and stochastic processes, Brownian processes |
| 12 | Theoretical | Asset price dynamics and stochastic processes, Brownian processes |
| 13 | Theoretical | Asset price dynamics and stochastic processes, Brownian processes |
| 14 | Theoretical | Option pricing models |

Workload Calculation

| Activity | Quantity | Preparation | Duration | Total Workload |
|---------------------------------------|----------|-------------|----------|----------------|
| Lecture - Theory | 14 | 6 | 3 | 126 |
| Total Workload (Hours) | | | | 126 |
| [Total Workload (Hours) / 25*] = ECTS | | | | 5 |

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

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| 1 | Developing and deepening the knowledge of economics and finance to an expert level, building on the competencies of the undergraduate education. |
| 2 | Comprehending the interaction between related disciplines and financial economics. |
| 3 | To be able to apply the advanced level knowledge acquired in economics and finance. |
| 4 | Creating new knowledge by combining the knowledge of financial economics with the knowledge coming from other disciplines and also be able to solve problems which requires expert knowledge by applying scientific methods. |
| 5 | To be able to critically evaluate the knowledge in financial economics, to lead learning and carry out advanced level research independently. |



Programme Outcomes (Applied Econometry Interdisciplinary Master)

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| 1 | Will be able to collect data related to social and economic topics. |
| 2 | Will be able to get raw data ready for statistical and econometric analysis. |
| 3 | Will be able to build econometric models that describe the data generating process behind data. |
| 4 | Will be able to interpret the results that are obtained through econometric analysis. |
| 5 | Will be able to conduct an independent empirical research project from start to finish. |

Contribution of Learning Outcomes to Programme Outcomes 1:Very Low, 2:Low, 3:Medium, 4:High, 5:Very High

| | L1 | L2 | L3 | L4 | L5 |
|----|----|----|----|----|----|
| P1 | 3 | 2 | 1 | 4 | 5 |
| P2 | 2 | 2 | 2 | 3 | 5 |
| P3 | 3 | 5 | 4 | 2 | 2 |
| P4 | 5 | 3 | 3 | 3 | 5 |
| P5 | 5 | 4 | 2 | 2 | 4 |

