



AYDIN ADNAN MENDERES UNIVERSITY COURSE INFORMATION FORM

Course Title		Mathematics Applications in Economy							
Course Code		BFN530		Couse Level		Second Cycle (Master's Degree)			
ECTS Credit	5	Workload	125 (<i>Hours</i>)	Theory	3	Practice	0	Laboratory	0
Objectives of the Course		To equip the student with powerful tools to write a macroeconomic model, to define an equilibrium, to approximate the equilibrium using computational methods.							
Course Content		Introduction to quantitative macroeconomics. Benchmark deterministic model and competitive equilibrium. Steady state. Calibration and simulation of a simple real business cycle (RBC) model.							
Work Placement		N/A							
Planned Learning Activities and Teaching Methods				Explanation (Presentation), Demonstration, Problem Solving					
Name of Lecturer(s)		Lec. Yılmaz ERDEM							

Assessment Methods and Criteria

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

Recommended or Required Reading

1	The ABCs of RBCs, An Introduction to Dynamic Macroeconomic Models, McCandless, George Harvard University press, 2008
2	Macroeconomic Theory, A Dynamic General Equilibrium Approach, Michael Wickens, princeton University press, 2008

Week	Weekly Detailed Course Contents	
2	Theoretical	Competitive Equilibrium in One Period World I
3	Theoretical	Competitive Equilibrium in One Period World II
4	Theoretical	Competitive Equilibrium in a Two Period World
5	Theoretical	Competitive Equilibrium in a Finite Period World
6	Theoretical	The Social Planner Problem and the Welfare Theorems
7	Theoretical	The Steady State
8	Intermediate Exam	Midterm Exam
9	Theoretical	Introduction to Matlab and Dynare I
10	Theoretical	Introduction to Matlab and Dynare II
11	Theoretical	Calibrating and simulating a Basic Real Business Cycle Model I
12	Theoretical	Calibrating and simulating a Basic Real Business Cycle Model II
13	Theoretical	Project Presentations
14	Theoretical	Project Presentations
15	Theoretical	Project Presentations
16	Final Exam	Final Exam

Workload Calculation

Activity	Quantity	Preparation	Duration	Total Workload
Lecture - Theory	14	2	3	70
Individual Work	7	2	2	28
Midterm Examination	1	10	1	11
Final Examination	1	15	1	16
Total Workload (Hours)				125
[Total Workload (Hours) / 25*] = ECTS				5

*25 hour workload is accepted as 1 ECTS

Learning Outcomes

1	To be able to build a macroeconomic model
2	To be able to define and explain equilibrium in macroeconomics



3	To be able to distinguish between stochastic and deterministic shocks
4	To be able to calibrate and simulate a simple macroeconomic model
5	Disiplin içi ve disiplinler arası takım çalışması yapabilme

Programme Outcomes (*Economics - Finance and Banking Interdisciplinary Master's Without Thesis*)

1	To be able to use correctly the basic concepts in the field of economics, finance and banking
2	To be able to comprehend philosophical, social, historical and psychological principles influencing economics, finance and banking
3	To be able to analyze economical, financial and bank-related events theoretically and empirically
4	To be able to evaluate any economical, financial or banking-related problem in accordance with scientific principles
5	To be able to prepare solutions for an economical, financial or banking-related problem cooperatively in accordance with principles and criteria
6	To be able to follow contemporary implementations, and national and international academic publications in economics, finance and banking
7	To be able to prioritize scientific methods and ethical principles in economics, finance and banking while considering and implementing field specific professional issues
8	To be willing to do scientific research in the field of economics, finance and banking
9	To be able to create value for economics-finance and banking profession as an occupational identity

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	4	3	4	4	5
P2	5	5	3	3	5
P3	4	4	5	4	3
P4	5	5	4	4	4
P5	3	3	3	3	3
P6	4	4	4	5	5
P7	4	3	4	4	4
P8	3	4	3	3	3
P9	4	3	3	4	3

