Universidad Rey Juan Carlos

TEACHING GUIDE

MATHEMATICAL METHODS IN ECONOMICS II

GRADO EN ECONOMÍA (INGLÉS)

ACADEMIC YEAR 2026-27

Q2803011B UNIVERSIDAD REY JUAN CARLOS
Fecha firma: 19/10/2026 22:38 | Hash: 920eb9fded29ecfc1328f36db24a62b0.

Publication date: 05-07-2026

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I.-Subject Identification	
Type	OBLIGATORIA
Teaching period	3 course, 2Q semester
Nº of credits	6
Language in wich the subject is taught	English

II.-Presentation

Goals:
1. Macroeconomics II is an intermediate level course which extends analysis of the main endogeneous variables in a closed macroeconomy (i.e output, interest rates, price level) to incorporate new variables determined in international markets (i.e real exchange rate, net exports...). The IS-LM framework from Macroeconomics I is the base to develop the IS-LM-BP model incorporating the external sector behavioural parameters. The role of expectations in the exchange rate market will be then be explored with Mundel-Fleming extended model. Restrictions on the Balance of Payments such as the Marshal-Lerner condition are covered mathematically and empirically (case studies).
Students are encouraged to participate in class and spark debates on international economic policy. No other subject offers more questions and anwers on the workings of financial capitalism.

III.-Learning outcomes

CT01. Ability to analyse and synthesise
CT02. Ability to organise and plan
CT03. Oral and written communication in native language
CT04. Oral and written communication in a foreign language
CT06. Ability to analyse and search for information from different sources
CT07. Ability to solve problems
CT11. Work in an international context
CT12. Public relations skills
CT13. Commitment to values in the workplace
CT14. Ability to work under pressure
CT15. Ability to learn independently
CT16. Ability to adapt to new situations

- Key for degrees not adapted to RD 822/21: **CB** - basic competences, **CG** - generic competences, **CE** - specific competences, **CT** - transversal competences.
- Key for degrees adapted to RD 822/21: **CON** - knowledge, **COM** - competences, **HAB** - skills.

IV.-Contents

IV.A.-Syllabus

The course is estructured around three main blocks (see bibliographical references for an extended description of content blocks):

Content Block Units Parts

Unit 1: IS-LM model and competences from Macroeconomics I review.

I.- “Open Economy”

Unit 2. “Basic questions: "Real & Nominal Eschange rates: definition"

Exchange rate determination.

Exchange rate mechanisms: fixed exchange rate, flexible exchange rate.

Unit 3: “IS-LM model in an open Economy"

Trade balance & Goods market equilibrium. IS in open economy.

Intenational capital flows. Capital mobility. Financial markes equilibrium. Open Economy LM.

Mundel-Fleming Model: fixed exchange rate, flexible exchange rate. II.

Unit 4 Supply and Demand model in an open economy.

Aggregated supply - Aggregated Demand: Monetary Policy Economic Effects. Fiscal Policy Economic Effects: public deficit.

Unit 5 Production, Unemployment and Inflation.

Phillips Curve. Okun´s Law

IV.B.-Training activities

Type	Title
Other activities	F01: Theoretical classes.
Prácticas / Resolución de ejercicios	F02: Practical classes.
Other activities	F04: Academic tutorials.
Other activities	F05: Related activities: conferences, seminars.
Other activities	F11: Tests,
Other activities	F08: Preparation of practical classes and lecture classes,

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V.-Student workload	
Theoretical sessions	18
Resolution of exercises, problems, case studies, etc.	23
Practical sessions in experimental, technological and clinical laboratories, fieldwork, etc.	0
Tests and/or exams	4
Academic tutorials	11
Related activities: conferences, seminars, etc.	2,5
Preparation of theoretical sessions and self-study	28,5
Preparation of practical tasks, exercises, case studies, projects, etc.	40
Preparation for tests and/or exams	8
Total student workload	135

VI.-Methodology and academic programme		
Type	**Period**	**Content**
Theoretical sessions	Week 1 to Week 12	MD01: Class work.
Practical sessions	Week 1 to Week 12	MD03: Practical cases
Theoretical sessions	Week 1 to Week 12	MD03: Problem, exercises solving.
Theoretical sessions	Week 1 to Week 12	MD04: Practical solving.

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VII.-Assessment methods

The general assessment method is continuous as established in the *Regulation for the Assessment of Learning Outcomes* of Rey Juan Carlos University.
All the assessment systems established in the degree report must be employed, except for those that have a minimum weight of 0%, which can be used by professors in the academic years they consider relevant. Each assessment system may be applied through one or more assessment activities, consistent with the system. No assessment activity can exceed individually 60% of the overall grade for the subject.
The sum of non re-evaluable activities cannot exceed 40% of the overall grade for the subject and, in general, should not have an established minimum grade (except for practical activities in which, strictly speaking, the conditions of the ordinary call cannot be reproduced in the extraordinary call).
Those students who do not manage to pass the subject in the ordinary call, or do not attend this first call, may attend the extraordinary call only for failed re-evaluable assessment activities.
The distribution and characteristics of the assessment activities are described below.

VII.A.-Description and weight of the assessment activities

Marks are calculated on the basis of final exam & intermediate class exercise which is returned to students with valuable feedback. Class participation and classwork are part of tinal mark.

VII.B. Assessment of students with academic exemption from class attendance

Having Academic Exemption from Class Attendance (DAAC) does not imply that students are automatically exempt from participating in the continuous assessment activities or in the training activities of compulsory attendance as established in the teaching guide. Once the exemption has been granted, students must contact the subject's teaching staff, who will propose the adaptations he/she may consider relevant, as long as they guarantee the acquisition and adequate assessment of the learning goals established. Students must maintain adequate communication with the teaching staff so that they may provide information on the dates for training and assessment activities, if these are not established in the programme and available for students at the time of achieving the exemption.
Subject with possibility of academic exemption: Yes.

VII.C. Review of assessment activities

In accordance with the Regulation for the Assessment of Learning Outcomes of Rey Juan Carlos University.

VII.D.-Students with a disability or special educational needs

In order to guarantee equal opportunities, non-discrimination, universal accessibility and academic success, students with disabilities or especial education needs may request curricular adaptations to follow their studies. These adaptations will be provided by the Unit of Attention to People with Disabilities of Rey Juan Carlos University, in accordance with the regulation which regulates the service for the Attention of People with Disabilities at the University. This Unit will issue a report for curricular adaptations, so that students with disabilities or special education needs must contact the service (at e-mail discapacidad.programa@urjc.es) in order to provide relevant information for different educational alternatives.

VII.E.-Academic behaviour, academic integrity and honesty

Rey Juan Carlos University is fully committed to the highest standards of academic integrity and honesty, so studying at the URJC means assuming and subscribing to the values of integrity and academic honesty set out in the University's Ethical Code. To support this process, the University has Rey Juan Carlos University's Academic Conduct Regulation as well as different tools (anti-plagiarism, supervision...) that offer a collective guarantee for the full development of these essential values.

VIII.-Teaching resources and materials
Basic bibliography
O.Blanchard: "Macroeconomics". Chapters developed for open market economies will constitute the main part of the course. Brandson. "Macroeconomics: Theory and Policy". Some mathematical proofs are well-explained in this book. The course instructor will recomend specific bibliography to cover the content on economic growth.
Consultation bibliography

IX.-Professors	
Name and surname	MARCOS SANZ MARTÍN-BUSTAMANTE
E-mail address	marcos.sanz.martinbustamante@urjc.es
Department	Economía de la Empresa (ADO), Economía Aplicada II y Fundamentos Análisis Económico
Campus	Madrid - Quintana
Category	Titular Escuela Universitaria
Academic degree	Doctor
Person responsible for the subject	No
Tutorial timetable	Para consultar las tutorias póngase en contacto con el/la profesor/a a través de correo electrónico
Number of quinquennia	5
Number of sexennia	0
No. of positive evaluations by Docentia	2

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