

* Please ensure that you use the official UGR nomenclature and terminology (ES-EN) available in [UGRTerm](#) for the names of programmes, courses, faculties/schools, departments, competences/skills, teaching methodology, etc.

| SEMESTER | CREDITS (ECTS) | TYPE | MODE OF DELIVERY | LANGUAGE(S) OF INSTRUCTION |
|--|----------------|--|------------------|----------------------------|
| 2nd | 4 | Elective | Face-to-face | English |
| MODULE | | Master in Economics | | |
| SUBJECT | | Dynamic Macroeconomics | | |
| CENTRE / FACULTY / SCHOOL RESPONSIBLE FOR THE PROGRAMME | | International School for Postgraduate Studies (EIP) | | |
| MASTER'S DEGREE | | Master in Economics | | |
| FACULTY / SCHOOL | | Faculty of Economics and Business | | |
| TEACHING STAFF ⁽¹⁾ | | | | |
| Henry Aray Casanova (Coordinator) | | | | |
| CONTACT DETAILS | | Dpto. de Teoría e Historia Económica, 3ª planta, Facultad de Ciencias Económicas y Empresariales. Despacho nº B313. Email address: haray@ugr.es | | |
| OFFICE HOURS | | http://tehieco.ugr.es/pages/profesorado | | |
| GENERAL AND SPECIFIC COMPETENCES | | | | |
| BASIC AND GENERAL COMPETENCES | | | | |
| <p>GENERAL COMPETENCES</p> <ul style="list-style-type: none"> CG1 – That the student attain the ability for analysis and synthesis, which includes being capable of defining, distinguishing and relating both the basic concepts and the premises upon which the exposition of any argument is built, as well as stating and basing its content in a concise and critical way, in the context – scientific, political, economic, organizational or whatever the type may be – in which it is presented. <p>BASIC COMPETENCES</p> <ul style="list-style-type: none"> CB6 – To possess and understand knowledge that gives a basis or opportunity to be original in the development and/or application of ideas, often in a research context. | | | | |

¹ Consulte posible actualización en Acceso Identificado > Aplicaciones > Ordenación Docente

(∞) Esta guía docente debe ser cumplimentada siguiendo la "Normativa de Evaluación y de Calificación de los estudiantes de la Universidad de Granada" ([http://secretariageneral.ugr.es/pages/normativa/fichasugr/ngc7121/!](http://secretariageneral.ugr.es/pages/normativa/fichasugr/ngc7121/))

- CB7 – That the students know how to apply the knowledge acquired and their ability to solve problems in new or little-known situations within broader (or multidisciplinary) contexts related to their area of study.
- CB8 – That the students are able to integrate knowledge and handle the complexity of formulating judgements from information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgements.
- CB9 – That the students know how to communicate their conclusions and the knowledge and underlying reasons that sustain them to specialist and non-specialist audiences in a clear and unambiguous way.
- CB10 – That the students possess the learning skills to enable them to continue studying in a way that will necessarily be largely self-managed and autonomous.

SPECIFIC COMPETENCES

- CE1 – Acquire bibliographical information on the current state of economics research
- CE3 – Understand the relevant existing theories, tendencies and debates
- CE4 – Apply and extend existing theories to solve real problems
- CE7 – Formulate and answer questions in a way applicable to economic policy
- CE8 – Formulate and contrast hypotheses related to theoretical assumptions and predictions
- CE9 – Plan and organize empirical studies
- CE22 – Public presentation and defence of own work

CROSS-CURRICULAR COMPETENCES

- CT1 - Students have demonstrated a systematic understanding of a field of study and mastery of skills and research methods related to this field.
- CT2 - That students have demonstrated the ability to conceive, design, implement and adopt a substantial process of research with academic seriousness.
- CT3 - That students have made a contribution through original research that extends the boundaries of the knowledge developing a substantial corpus, of which part deserves the referenced publication at national or international level.
- CT4 - That students are able to carry out a critical analysis, evaluation and synthesis of new and complex ideas.
- CT5 - That students know how to communicate with their colleagues, with the academic community as a whole and with society in general about your areas of knowledge.
- CT6 - That they are supposed capable of promoting, in academic and professional contexts, technological, social or cultural advancement within a knowledge-based society.

OBJECTIVES OR LEARNING OUTCOMES (ACCORDING TO THE MASTER'S PROGRAMME VALIDATION REPORT)

Student will know/understand:

- CE1 – Acquire bibliographical information on the current state of economics research
- CE2 – Acquire bibliographical information on the current state of business research
- CE3 – Understand the existing theories, trending topics and relevant debates
- CE5 – Apply advanced techniques to real problems
- CE7 – Formulate and answer questions in a way applicable to economic policy
- CE20 – Draw up scientific articles
- Student will be able to:
- Identify relevant problems analysed in Dynamic Macroeconomics.
- Distinguish the concepts and basic models
- Collect evidence (bibliography, data, models) to face the analysis



- Choose the model to analyse different economics problems

BRIEF DESCRIPTION OF THE COURSE CONTENT (ACCORDING TO THE MASTER'S PROGRAMME VALIDATION REPORT)

Analysis of the different models used in dynamic macroeconomics and applications to different Macroeconomic topics.

SYLLABUS

THEORY SYLLABUS:

- Introduction to decision making under uncertainty: a real option approach.
- Analogy to financial options
- Introduction to stochastic calculus: Brownian motion and Ito's lemma
- Dynamic optimization under uncertainty: Dynamic programming and contingent claim analysis
- Investment opportunities and investment timing
- The value of a project and the decision to invest

PRACTICAL SYLLABUS

Seminars/Workshops:

- TBA

REQUIRED AND RECOMMENDED READING

REQUIRED READING:

- Dixit, A. and R.S. Pindyck. 1994. Investment under Uncertainty. Princeton University Press.

RECOMMENDED READING:

- McDonald, R. and D. Siegel 1986. The Value of Waiting to Invest. Quarterly Journal of Economics Vol 101,(Nov), 707-727.
- Trigeorgis, L. 1996. Real Options. The MIT Press, Cambridge, Massachusetts.

USEFUL LINKS (OPTIONAL)

Prado2 will be the official web for all related to teaching.

TEACHING METHODOLOGY

The teaching methodology is similar for each part of the course. First, we introduce basic exercises in order to make easier the understanding of the key concepts. Second, we present the mathematical tools underlying the theory. Third, we present the general theory. Finally, we apply and discuss relevant economic applications of the concepts studied before. Special attention to investment decision making problems will be paid. Two problem set will be proposed to the students in order to reinforce the knowledge acquired. Attendance to scheduled seminar is compulsory.

ASSESSMENT (EVALUATION INSTRUMENTS, EVALUATION CRITERIA, PERCENTAGE OF FINAL MARK, ETC)

ORDINARY ASSESSMENT SESSION

Article 17 of the UGR Assessment Policy and Regulations establishes that the ordinary assessment session (*convocatoria ordinaria*) will preferably be based on the continuous assessment of students, except for



those who have been granted the right to a single final assessment (*evaluación única final*), which is an assessment method that only takes a final exam into account.

Class attendance is mandatory in at least 70% of the sessions, requiring an active participation. Furthermore, it is also necessary to overcome the requirement of a written exam to pass the course. Covered those two conditions, the final mark is obtained from:

- -Written examination: 60%.
 - -Resolution of exercises (problem sets) along the course to be uploaded in Prado 2: 40%
- Students who failed or did not attend classes should realize a final evaluation based on a written examination.

EXTRAORDINARY ASSESSMENT SESSION

Article 19 of the UGR Assessment Policy and Regulations establishes that students who have not passed a course in the ordinary assessment session (*convocatoria ordinaria*) will have access to an extraordinary assessment session (*convocatoria extraordinaria*). All students may take part in this extraordinary assessment session, regardless of whether or not they have followed continuous assessment activities. In this way, students who have not carried out continuous assessment activities will have the opportunity to obtain 100% of their mark by means of an exam and/or assignment.

DESCRIPTION OF THE EXAMS/TESTS THAT WILL FORM PART OF THE SINGLE FINAL ASSESSMENT "EVALUACIÓN ÚNICA FINAL" (AN ASSESSMENT METHOD THAT ONLY TAKES A FINAL EXAM INTO ACCOUNT) AS ESTABLISHED IN THE UGR ASSESSMENT POLICY AND REGULATIONS)

Article 8 of the UGR Assessment Policy and Regulations establishes that students who are unable to follow continuous assessment methods due to justifiable reasons shall have recourse to a single final assessment (*evaluación única final*), which is an assessment method that only takes a final exam into account.

In order to opt for a single final assessment (*evaluación única final*), students must send a request, using the corresponding online procedure, to the coordinator of the master's programme, in the first two weeks of the course or in the two weeks following their enrolment (if the enrolment has taken place after the classes have already begun). The coordinator will communicate this information to the relevant teaching staff members, citing and verifying the reasons why the student is unable to follow the continuous assessment system.

In this case, the assessment will be:

- -A written examination: 100%.

SCENARIO A (ON-CAMPUS AND REMOTE TEACHING AND LEARNING COMBINED)

TUTORIALS

| TIMETABLE (According to Official Academic Organization Plan) | TOOLS FOR TUTORIALS (Indicate which digital tools will be used for tutorials) |
|---|--|
| The same as in the case of regular attendance | Email, Google Meet. |

MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY

If the number of students is low enough such as the social distancing is guaranteed following the



recommendation in the UGR's teaching plan, face-to-face teaching will be carried out. Otherwise, blended teaching will be carried out. The group will be split in sub-groups to allow some of them go on-campus and other via streaming in a rotatory system. The structure and timing will depend on the measures adopted by the School of Economics and Management and the Department.

MEASURES TAKEN TO ADAPT ASSESSMENT (Instruments, criteria and percentage of final overall mark)

Ordinary assessment session

Assessment will follow the same structure as the regular attendance scenario. The written examination will be done, preferably, in person. If this is not possible, it will be done through Prado.

Extraordinary assessment session

Students who failed or do not carry out the assessment of the first call (ongoing evaluation or single final assessment) may do a special exam. Special exam sessions will take place in September. 100% of the grade will correspond to that obtained in a final exam. The exam will be carried out, preferably, in person. If this is not possible, it will be done through Prado.

Single final assessment

A single final assessment which is worth 100% of the grade and of the same type as the special exam described in the previous section. The exam will be done, preferably, in person. If this is not possible, it will be done through Prado.

SCENARIO B (ONCAMPUS ACTIVITY SUSPENDED)

TIMETABLE
(According to Official Academic Organization Plan)

TOOLS FOR TUTORIALS
(Indicate which digital tools will be used for tutorials)

The same as in the case of regular attendance

Email, Google Meet.

MEASURES TAKEN TO ADAPT TEACHING METHODOLOGY

The teaching methodology will be similar to that implemented in the case of classroom and non-classroom teaching, although some adaptation measures will be adopted. The adaptation measures of the teaching methodology in the case of the suspension of the face-to-face activity are the following:

- Theoretical classes through the Google Meet platform.
- Online availability of the list of exercises corresponding to the syllabus through the Prado platform.

MEASURES TAKEN TO ADAPT ASSESSMENT (Instruments, criteria and percentage of final overall mark)

Ordinary assessment session

Assessment will follow the same structure as the regular attendance scenario. However, the written examination will be done through Prado.

Extraordinary assessment session

Students who failed or do not carry out the assessment of the first call (ongoing evaluation or single final assessment) may do a special exam. Special exam sessions will take place in September. 100% of



the grade will correspond to that obtained in a final exam. The exam will be done through Prado.

Single final assessment

A single final assessment which is worth 100% of the grade and of the same type as the special exam described in the previous section. The exam will be done through Prado.

