Universidad de Navarra

Asignatura: **Calculus I A (F. ECONÓMICAS)**
Guía Docente
Curso académico: 2020-21

Introduction

http://www.unav.edu/asignatura/calculus1Aeconom/

Calculus I A (F. ECONÓMICAS)

Course description: The aim of this course is tio provide the basic tools of Differential and Integral Calculus, which are necessary to suceed in the following courses that are taking part in degrees of Economics, Management and Business Administration.

Department: Economics

- **Faculty:** Economics and Business

Type: Basic

ECTS: 6 (approximately 150 working hours)

Year: 1st

Semester: 1st

Language: English

Degrees: *ADEb, ADEb+Derecho, ECOb, ECOb+Derecho, ECOb + Gobernanza*

- **Module:** *IV. Métodos Cuantitativos para la Empresa - 1. Matemáticas*

Professor: María A. Castillo Latorre (mclatorre@unav.es) - classes held in Spanish

- **Course schedule and room:** Thursdays, 17:30 - 19:30 (room 02, Amigos Building)

Competencies

Basic Competencies:

BC1 - Students should demonstrate knowledge and understanding of the subject area based on a general secondary school education. They should have a general level that is well supported by advanced texts, but that also encompasses aspects that suggest knowledge of the leading edge of their field of study.

General Competencies:

GC3 - Mastering the digital, mathematical and technical tools necessary for academic and professional activity in economics and business.

Specific Competencies: (ADE)

SC10 - Incorporating mathematical reasoning and quantitative tools in a business's decision-making processes.

Specific Competencies: (ECO)

SC10 - Using mathematical reasoning and quantitative tools to analyze the economic context.

Program

0-. Introduction. Intervals and absolute value. Inequalities. Systems of inequalities. Linear and nonlinear systems of equations.

1-. Sums. Summation notation. Rules for sums. Double sums. Economic examples and applications.

2-. Functions of one variable. Basic definition. Graphs of functions. Linear functions. Quadratic

functions. Polynomials. Power functions. Exponential functions. Logarithmic functions. Economic examples and applications.

3-. Properties of functions. Shifting of functions. New functions from old. Inverse functions. Graphs of equations. General functions. Economic examples and applications.

4-. Differentiation. Slopes of curves. Tangents and derivatives. Increasing and decreasing functions. Rates of change. A dash of limits. Simple rules for differentiation. Sums, products and quotients. Chain rule. Higher-order derivatives. Exponential functions. Logarithmic functions. Economic examples and applications.

5-. Derivatives in use. Implicit differentiation. Differentiating the inverse. Linear approximations. Polynomial approximations. Taylor´s formula. Continuity. More on limits. Intermediate value theorem. L´Hôpital´s rule. Economic examples and applications.

6-. Integration. Indefinite integrals. Area and definite integrals. Properties of definite integrals. Integration by parts. Integration by substitution. Infinite intervals of integration. Economic examples and applications.

7-. Single-variable optimization. Simple tests for extreme points. The extreme value theorem. Local extreme points. Inflection points. Economic examples and applications.

Educational Activities

The course will include different face-to-face activities as well as online and personal study activities.

Face-to-face activities:

1. Presentation of the subject, theoretical/practical classes and/or problem-solving classes: 26 hours. Students that are exempt from being present at Pamplona campus (**only with the approval of *Dirección de Estudios***) will attend the classes by video conference (Zoom).

Total hours from face-to-face activities: 26 hours

Non face-to-face activities:

1. Work out of exercises: 56 hours. For each chapter, students are expected to work out the exercises from the corresponding problem set to strengthen the knowledge on the topic. The professor will be available to answer questions from the students, as detailed in the section of *Office Hours*.

   Personal study: 60 hours.The number of hours of personal study may vary in accordance to the

student's background on mathematics.

3. Exams (midterm and final) and other tests: 8 hours.Exams and tests will be face-to-face unless noted otherwise.

Total hours from non face-to-face activities: 124 hours

Students are expected to attend to **all** face-to-face classes/online classes and devote the due time for personal study activities to master the program of the subject and be prepared for all the tests and exams programmed throughout the semester.

Assessment

* The value of academic integrity is an important part of the education of our students. The sanctions that could affect the assessment of this subject are included in the University Regulation regarding Academic Discipline and the Summary of the Honesty Policy .

Due most of students are repeating this subject, the assessment in the previous academic year (2019-20) is going to be applied.

The final mark of this course will be the average weight of the following:

Ordinary evaluation (December):

- **Tests(2):** 20%
- **Midterm exam:** 30%
- **Final exam:** 50% (It is necessary to obtain in this final exam at least 4 out of 10 points in order to take into account the rest of the grades and pass). Date: 9th December
- **Bonus:** 10% (5% attendance and participation, 5% control exercises)

Extra-ordinary evaluation (June):

- **Tests(2):** 10%

- **Midterm exam:** 20%
- **Final exam:** 70% (It is necessary to obtain in this final exam at least 4 out of 10 points in order to take into account the rest of the grades and pass). Date: 9th December
- **Bonus:** 10% (5% attendance and participation, 5% control exercises)

Bibliography and Resources

Basic bibliography:

- Sydsaeter, K., Hammond, P., Strom, A. (2012). *Essential Mathematics for Economic Analysis.* 5th Edition. Pearson. Find it in the Library

Additional bibliography:

- Chiang, A. and Wainwright, K. (2005). *Fundamental methods of Mathematical Economics.* 4th Edition. McGraw Hill. Find it in the Library
- Larson, R. and Edwards, B.H. (2011). *Calculus*. 9th Edition. McGraw Hill. Find it in the Library

Biblioteca | Catálogo | Biblioguías

Office Hours

María Castillo Latorre (mclatorre@unav.es):

- office 2280 (2nd floor, corridor), Amigos Building - option not available during the pandemic
- by e-mail
- on Thursdays, after the class, I will also solve doubts

Universidad de Navarra

Asignatura: **Financial Accounting I A (F.Económicas)**
Guía Docente
Curso académico: 2020-21

Presentación

http://www.unav.edu/asignatura/accountingeconm/

Financial Accounting I A (F.Económicas)

- **Brief description of the subject**

The aim of the Financial Accounting I course is to build a strong foundation for learning about financial reporting . Accounting is the language of business and we will work hard to learn that language, so that students can understand financial documents, stories and presentations. Students will recognise how accounting affects our perception of value creation and management performance. The course covers the key terms and concepts of accounting as defined by the International Financial Reporting Standards, the construction of financial statements, and the methods of recording transactions. Upon completion of the course, students should be able to explain accounting terms, interpret amounts found in financial statements, and predict the consequences of various transactions on the financial results and the financial standing of a company.

- **Type:** Compulsory
- **ECTS**: 6 ECTS
- **Course and semester:** First course, first semester (ECOB / ADEB); Second course, first semester (ECOB+G)
- **Language:** English
- **Grade**: Economía bilingue, Administración bilingue.
- **Módulo:** I.Contabilidad y Finanzas.
- **Materia de la asignatura**: I.1.Contabilidad
- **Professor**: Andrés Mesa Toro (amesat@unav.es)
- **Schedule: Avaliable in the faculty web** page*
- **Room**: Avaliable in the faculty web page.

***Students that are off campus (ONLY WITH THE APPROVAL OF *DIRECCIÓN DE ESTUDIOS*)**

- Off-campus students are expected to attend the (on-campus) sessions online (by Zoom) if their local time is compatible. Students will have the chance to participate in the sessions and ask questions in the same conditions as on-campus students.

- On-campus sessions will be recorded and will be available for off-campus students located in time zones not compatible with the regular time of the sessions.

Competencias

General competences:

CG4. To use independent critical reasoning on relevant topics in economics and business.

Specific competences:

SC1. To be highly familiar with the General Accounting Plan and the theoretical concepts of accounting and finance.

SC2. To analyse different real cases of accounting and/or financial situations of a company and its future

SC14. To solve specific accounting problems based on the application of the registration and valuation rules of the General Accounting Plan.

Programa

- Topic 1: Introduction to accounting.
- Topic 2: Key accounting terms .
- Topic 3 The accounting process
- Topic 4: The balance sheet and income statement
- Topic 5: Ending a period (Adjustments and closing)
- Topic 6: Cash flow statement (Indirect method)
- Topic 7: Financial statement analysis (Ratio analysis)
- Topic 8: Accounting for manufacturing companies (inventory)
- Topic 9 Inventory (FIFO, LIFO WAC)
- Topic 10 Revenue recognition
- Review and final exam preparation.

Actividades formativas

Face to face classes: 26 hours*

Online classes: 26 hours

*Given the COVID restriccions in terms of rooms capacity we can the students would be divided in two groups: A and B.

- Group A will attend face to face classes on Wednesdays 16:00-18:00 and will attend the Friday class (10-12) online.
- Group B will attend face to face classes on Friday 10:00-12:00 and will attend the Weednesday class (16-18) online.

Group A: Gr. Ade Bilingüe + Data Analytics / Gr. Ade Bilingüe / Gr. Eco Bilingüe + Data Analytics / Gr. Eco Bilingüe + Inter. Economics and Finance/ Gr. Eco Bilingüe.

Group B: Eco bilingue + governance.

*Students that are off-campus will attend class online (Classes will be recorded).

Personal study: preparation of classes, after class study, preparation of exams and minitests: 65 hours

Exams: Midterm, minitests and final exam: 8 hours.

Group assigment: 25 hours.

Office hours: 10 hours (voluntary)

Se recuerda a los alumnos que las sesiones pueden ser transmitidas por videoconferencia e incluso grabadas, y que se encuentran protegidas por derechos de autor. Puede obtenerse más información en la página de acceso a ADI.

Evaluación

Components of evaluation:

1. Final exam: 50%.
2. Midterm exam: 20%. (Online midterm exam: October 14th at 16:00)
3. Minitets 10% (There will be two online ministests September 28 and november 27)
4. Group assigment: 15%
5. Class participation: 5% *

In the extraordinary June exam, grades will be determined as follows:

1. Class participation: 5%
2. Group assigments: 15% (business analysis)
3. Minitests: 10%
4. Exam (June): 70%

Bibliografía y recursos

The main course-books:

- *Global financial accounting and reporting: principles and analysis by Aerts, W., & Walton, P. J. (2017), Cencage Learning, Andover, UK 4th edition, 2017. Find it in the library*
- *Intermediate Accounting (IFRS edition)* by Kieso, Weygandt, Warfield, Wiley & Sons, 2014. Find it in the Library
- *Financial Accounting and Reporting: A Global Perspective* by H. Stolowy, M. Lebas and Y. Ding, Cengage Learning, Andover, UK, 5th edition, 2017. Find it in the Library (ed. 2017)

Additional reading:

- International Financial Reporting Standards (online from ifrs.org, the European Commission, or in a book edition).
- Scholarly articles and media material provided during classes

Important webpages:

- Financial Accounting Standards Board: www.fasb.org/home
- International Accounting Standards Board: www.ifrs.org
- Instituto de Contabilidad y Auditoría de Cuentas (Ministerio de Economía, Gobierno de España): http://www.icac.meh.es/

Biblioteca | Catálogo | Biblioguías

Horarios de atención

Online office hours (Zoom*) Thursdays 16:30hrs to 18:30hrs

(*) students are required to send their questions in advance by email.

Universidad de Navarra

Asignatura: **Financial Accounting II A (F.Económicas)**
Guía Docente
Curso académico: 2020-21

Presentación

http://www.unav.edu/asignatura/accounting2econom/

Financial Accounting II

- **Breve descripción de la asignatura:**

Financial Accounting II is an intermediate accounting course which builds on introductory accounting and develops students' critical evaluation of selected financial accounting issues within the international accounting context. The topics covered in the course include property, plant and equipment, intangible assets, liabilities, investments in debt and equity instruments, and revenue recognition. The course will provide you with a sound understanding of accounting concepts and issues related to these topics. You will learn the accounting treatment for major financial transactions and events regarding the discussed topics in accordance with the International Financial Reporting Standards. You will learn to process, analyze and summarize financial information. The course is essential for individuals exposed to financial information in the workplace including accountants, auditors, financial analysts, managers, and accounting regulators. It would also be useful for those not wishing to become accounting practitioners but planning to specialize in areas where accounting knowledge would be an advantage (such as bankers and finance professionals). The course will help students not only to acquire accounting specific competence but also to improve multiple general skills and competencies such as logical reasoning, analytical, autonomous learning, task planning, and time management.

- **Carácter**: Obligatoria
- **ECTS**: 6
- **Curso y semestre**: Degree in Economics (*ECO(b)*) and Degree in Economics + Leadership and Governance Program (*ELG*) Second Semester

  - **Idioma**: English
  - **Título**: Financial Accounting II
  - **Módulo y materia de la asignatura**: I.Contabilidad y Finanzas; I.1. Contabilidad
  - **Profesor responsable de la asignatura**: Jiyuan Dai
  - **Profesores: Jiyuan Dai**
  - **Horario**: https://www.unav.edu/en/web/facultad-de-ciencias-economicas-y-empresariales/alumnos/horarios
  - **Zoom**

Competencias

Basic Competencies (Management and Economics)

BC2. Students should be able to apply their knowledge to their job or vocation in a professional way. They should be able to prove their general competencies by developing and defending arguments and solving problems within their subject area.

BC5. Students should have developed the learning skills necessary to undertake higher programs of study with greater independence.

General Competencies (Management and Economics)

GC2. Identifying, incorporating and using acquired knowledge in argument, discussion and problem solving as they apply to economics and business.

GC5. Developing the capacity for independent critical thought on matters relevant to economics and business.

Specific Competencies (Economics)

SC14. Understanding the theory and practice of business operations.

Specific Competencies (Management)

SC1. Possessing a thorough knowledge of the General Accounting Plan as well as accounting and finance theory.

SC3. Analyzing a business's real-life accounting and finance situation and making projections about its future.

Programa

Financial Accounting II (Spring 2021)

Week	Topic	Readings

1	Introduction + Property, Plant and Equipment	Ch. 10
2	Property, Plant and Equipment	Ch.10 + 11
3	Property, Plant and Equipment	Ch. 11
4	Intangible Assets	Ch.12
5	Intangible Assets	Ch.12
6	Current Liabilities	Ch. 13
7	Current Liabilities	Ch. 13
8	Non-current Liabilities	Ch. 14
9	Non-current Liabilities	Ch. 14
10	Investments	Ch. 17
11	Investments + Revenue Recognition	Ch. 17 + 18
12	Revenue Recognition	Ch. 18
13	Revision and Integration	
14	Revision and Integration	

Actividades formativas

The course contains a considerable amount of technical material and some can be tricky. The suggested reading and problem assignments for each session will be available on ADI with enough time for preparation.

On the course website on ADI, you will find the course bibliography as well as all course materials, including:

- lecture notes,

- practice exercises,
- assignments,
- and other supporting materials.

Do not forget to check the Notice board (*Anuncios*) for the latest updates while the course is running.

In order to make the most of this course, I suggest the following routine:

- Before class: Read the assigned sections in the textbook. Try to solve the case/ problem assigned.
- In class: Pay attention to the lectures, **actively participate** in class discussion, take notes, and ask questions to clarify issues that you find confusing. Please note that cell phones are allowed only for online quizzes and tests.
- After class: Review the topics (your notes, lectures, examples and problems solved in class) and do the online practice exercises (in the Self-assessment folder). If you have difficulties, please come to see me and/or ask your colleagues to help you.

It is very important that you set up and follow a regular study schedule. Learning accounting, similarly to learning any language, requires constant practice for proficiency.

Zoom videos will be uploaded on ADI if you are not able to attend the class.

Evaluación

Your course grades will be based on the following components:

- Class participation: 10%
- Individual Assignments: 30%
- Group Work: 20%
- Final exam (minimum score required: 40%): 40%
- Please note that you must achieve a grade of 40% or higher in the final exam for the final test results to be included in the course grade.
- To get a pass, you must: (a) achieve a grade of at least 40% in the final exam; and (b) achieve a grade of at least 50% in the total course grade.

For students not able to attend the class, class participation (10%) is replaced by brief reports required by the course instructor.

Bibliografía y recursos

Main textbook:

Kieso, Weygandt, Warfield (2014): Intermediate Accounting: IFRS edition, ed. Wiley & sons, second edition Find it in the Library

Further references:

Books:

Weygandt, Kimmel, Kieso (2011): Financial Accounting: IFRS edition, ed. Wiley & sons Find it in the Library

Stolowy, Lebas and Ding (2013): Financial Accounting and Reporting: A Global Perspective, ed. Cengage Learning, fourth edition. Find it in the Library

Wahlen, Baginski and Bradshaw (2011): Financial Reporting, Financial Statement Analysis, and Valuation, ed. South-Western Cengage Learning, seventh edition Find it in the Library

Supporting materials uploaded on ADI.

Important webpages:

Financial Accounting Standards Board: www.fasb.org/home

International Accounting Standards Board: www.ifrs.org/home

Instituto de Contabilidad y Auditoría de Cuentas (Ministerio de Economía, Gobierno de España): http://www.icac.meh.es/

Horarios de atención

Wednesdays: 8:00 am - 9:30 am

Fridays: 8:00 am - 9:30 am

Connection Via Zoom

Please write to jdai@unav.es to make an appointment in advance.

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Asignatura: **Fundamentals of Finance A (F. ECONÓMICAS)**
Guía Docente
Curso académico: 2020-21

Presentation

http://www.unav.edu/asignatura/fundafinanceAeconom/

Fundamentals of Finance A (F. ECONÓMICAS)

This course aims to provide the first year students a sound introduction to the use of mathematics in busi ness and personal finance applications.
After attending this course, the student should be able to: (1) Set out and solve problems and real cases involving concepts of single and multiple cash flows, fixed income and real asset valuation; (2) Know the financial vocabulary.

Type: OB (required subjects)

ECTS: 6

Year and semester: Second year, first semester

Language: English

"Módulo y materia" of the subject: Economics, Leadership and Governance

Profesor: Carmen Aranda (maranda@unav.es)

In-person class: 2 hours per week: Depending on the number of sudents we will take the two slots assigned to this subject or only one, and will save the second for other activities.

Monday from 12:00 to 14:00 in Room 12, Edificio Amigos

Tuesday from 12:00 to 14:00 in Room B2, Edificio Amigos

Estimated total work time: 150 hours (25hours/ects x 6ects)

Estimated weekly work time: 10 hours (2 hours in classroom and 8 hours aoutside classroom). Assumption:15 weeks per semester.

Competences

Basic Competencies (Management and Economics)

BC2. Students should be able to apply their knowledge to their job or vocation in a professional way. They should be able to prove their general competencies by developing and defending arguments and solving problems within their subject area.

BC5. Students should have developed the learning skills necessary to undertake higher programs of study with greater independence.

General Competencies (Management and Economics)

GC3. Mastering the digital, mathematical and technical tools necessary for academic and professional activity in economics and business.

GC4. Teamwork.

GC7. Knowing the different settings in which work is done: circumstances and markets, as well as historic, legal and humanistic contexts.

Specific Competencies (Economics)

SC4. Knowing and soundly handling the fundamental concepts of and methods of finance.

Specific Competencies (Management)

SC10. Incorporating mathematical reasoning and quantitative tools in a business's decision-making processes.

Program

Week 1 (Aug 30-Sept 5): Subject presentation and the art of valuing assets

Week 2 (Sep 6-Sep 12): Challenge 1: How do we measure and interpret money growth and interest rate?

Week 3 (Sep 13-Sep 19): Challenge 2: Frequency of compounding & Effective rate. How to use it when making investment/financing decisions.

Week 4 (Sep 20-Sep26): Challenge 3: Fixed Income valuation I

Week 5 (Sep 27-Oct 3): Preparation for mid-term. Review of Challenges 1-3.

Week 6 (Oct 3-Oct 10): EXAM

Week 7 (Oct 11-Oct 17): Challenge 4: Fixed Income valuation II

Week 8 (Oct 18-Oct 24): Challenge 5: Fixed Income valuation III

Week 9 (Oct 25-Oct 31): Challenge 6: Excel for financial analysis

Week 10 (Nov 1-Nov 7): Challenge 7: How does all this relate to my daily life? Applications to personal finance

Week 11 (Nov 8-Nov 14): More practice on Challenge 7

Week 12 (Nov15-Nov 21): Challenge 8: Can we apply the same methodology to valuing real assets? NPV & IRR

Week 13 (Nov22-Nov 28): Review. We will do group activities to prepare for the final

Educational Activities

Pending

Assessment

As with all subjects, students will receive a final grade out of 10 that consists of 100% of the assessments. The schedule for Final Exams can be found on the School webpage.

December Announcement

In-class Socrative test: 15% (1.5 point)

Individual Assignments: 20% (2 points) . Deadlines included in the L-B-L plan.

Group Assignments: 10% (1 points). Deadlines: September 27th and October 25.

Mid-term exam: 25% (2.5 points) Challenges 1-3. Date: October 6th.

Final exam: 30% (3 points). It includes all challenges. Date: December 9th. TIme: 9:00 to 12:00. Rooms: M1 and M2 in Amigos

IMPORTANT NOTE: To pass this subject, you must first get a minimum of 5 points out of 10 in the final exam.

June Announcement (Total: 100%):

June Exam: 100%

Like the December announcement, to pass the subject you must first get a minimum of 5 out of 10 in the June Exam.

Examinations:

All examinations are closed-book and consist of problems that require showing step-by- step solutions that demonstrate financial thinking. Some formulae may be given. The problems will be similar to those that appear in the Problem Sets and past

exams (which are all available on ADI).

Grading criteria: Students solutions to problems will be graded according to *numerical accuracy* of solution, *clear step-by-step development* of solution.

Bibliography and Resources

6. Resources

6.1. Recommended books

("Recommended" means you do not need to get it, but are further sources you can use for your personal study).

- T.J. Biehler (2008) "The Mathematics of Money. Math for Business and Personal Finance", McGraw-Hill Higher Education. All exercises will be set from this first edition. You can use a paper version or electronic version. UNAV Library has the book: click here. http://www.mhhe.com/biehler1e : You can purchase premium access to the text- book's website.
- J.E. Rogers, Haney B. F (2000). "Mathematics of Business" Pearson Prentice Hall. Localízalo en la Biblioteca
- Samuel A. Broverman, "Mathematics of investment and credit" ACTEX Academic series, 5th edition (2008). Localízalo en la Biblioteca
- Jesús Mª Ruiz Amestoy, "Matemática Financiera – Ejercicios resueltos", Ed. Centro de Formación del Banco de España. Localízalo en la Biblioteca
- Pablo Fernánde

6.2. Useful Websites

- http://www.studyfinance.com http://www.teachmefinance.com/bondvaluation.html http://ahe.com
- http://www.investopedia.com http://www.beanactuary.org/exams/exams/

Biblioteca | Catálogo | Biblioguías

Office hours calendar

Esta información estará disponible para finales de agosto.

To book office (online hours) please follow the instructions and book a slot in the following excel file (LINK).

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4. Assessment

4. Assessment / Grading System

As with all subjects, students will receive a final grade out of 10 that consists of 100% of the assessments. The schedule for Final Exams can be found on the School webpage.

December Announcement (Total: 100%):

Challenge 1 & 2 test: 10% (1 point out of 10). Date: 09/23/2019. Classrooms 11 & 16.Time 8:00-10:00

Challenge 3 test: 15% (1.5 points out of 10). Date: 10/14/2019. Classrooms 11 & 16. Time 8:00-10:00

Challenge 4 test: 20% (2 points out of 10). Date: 10/30/2019. Classrooms 12 & 16, time: 16:00-18:00

Challenge 5 test: 15% (not covered in class) (1.5 points out of 10). Date: 11/13/2019. Sala de informatica. Time 17:00 a 20:00. And 11/14/2019. Sala de informatica. Time 16:00 a 18:00.

Challenge 6, 7 & 8 test: 30% (3 points out of 10). Date: 12/02/2019. Classrooms TBA. Time 09:00 a 12.00.

Class Participation: 10% (Description below) (1 point out of 10)

IMPORTANT NOTE: To pass this subject, you must first get a minimum of 5 points. That is the weighted average should be at least 5 points.

Dates of Assessments. See the Calendar

June Announcement (Total: 100%):

June Exam: 100%

Like the December announcement, to pass the subject you must first get a minimum of 5 out of 10 in the June Exam.

IMPORTANT ADDITIONAL INFORMATION DUE TO THE CONFINEMENT:

Due to the COvid-19 outbreak, the re-take exam will be online (through ADI).

Date: June 15th.

Time: Pending. It will be published on ADI next week. Since there are students with different with different time zones, I will try to find a time that is convenient for all.

Duration: 100 minutes.

Content: the exam will include all the challenges covered in class; that is, the whole syllabus.

Grade: The June exam will be 100% of the grade.

Format: The June exam will consist of 12 multiple choice questions and 3 problems. Please, be on the lookout for ADI announcements with more details on the format and instructions.

Office hours: virtual office hours will be held via google meet. Dates, times and links will be sent to you via ADI (announcements).

Mock exam: There will be a mock exam for you to get familiar with the system. It isn't mandatory, but I recommend you take it so you know what to expect on the real exam. To set a date that is convenient for all, please fill in the following google form:

https://forms.gle/mt9W5p9zFPo7hesG7

Class Participation:

Students are required to prepare before each lesson according to the Lesson-By-Lesson (LBL) Plan. Preparation includes reading the set readings and doing the assigned drills and problem sets for the lesson.

Students are required to participate in class by answering questions regarding the lesson preparation material, asking interesting and well thought questions, and showing a keen interest in the topics. Good quality questions include ones that show you have thought about the problem but that there is something unclear that you want explained. Bad quality questions are those that show little thought about what has been said (repeatedly) before. Each lesson, several students will be randomly selected to answer questions. The following is a guide to how I will grade *each* class participation:

Class Participation (10%)
0 point = not present to answer any questions and did not inform me before class of absence
0 points = couldn't answer a simple question, showing little effort to participate

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0 points = asked a question that showed no prior thought/ answer was incomplete or inadequate
1 point = asked a decent question/ answered a question to the standard expected
2 points = asked a very good question/ answered a question very well

To get 1 point (maximum grade) from participations, students need to have a minimum score of 6 points. Students will get 0 point if their score is below 3 points. However, students can earn extra points (up to 1.5 out of ten) if they score 10 or more points.

Excel Exam:

Excel (or its equivalents like Google Sheets) is an extremely important tool to learn for finance and business (and life) in general. You will be required to take a short 40 minute excel exam in the School computer room using the computers provided. It will be very similar to the excel exercises that you will be asked to do as part of your class preparation exercises. Students are expected to learn on their own with materials provided.

Examinations:

All examinations are closed-book and consist of problems that require showing step-by- step solutions that demonstrate financial thinking. Some formulae may be given. The problems will be similar to those that appear in the Problem Sets and past exams (which are all available in ADI).

Grading criteria: Students solutions to problems will be graded according to *numerical accuracy* of solution, *clear step-by-step development* of solution, and *clear diagrams* that reflect fundamental financial thinking.

Lesson-by-lesson plan

Super-important files

Lesson-by-Lesson Plan which is **continuously updated (once the course has started, updates will be posted ONLY on this link)**, click **HERE**
Calendar which is **continuously updated , click HERE**

LINK

Universidad de Navarra

Asignatura: **Principles of Microeconomics A_20 (F. Económicas)**

Guía Docente

Curso académico: 2020-21

Presentación

http://www.unav.edu/asignatura/pmicroeconomics-1aeconom/

- **Breve descripción de la asignatura:** The subject "Principles of Microeconomics" is the first contact that the undergraduate student has with economic theory. Therefore, it is proposed as the basis that will allow progress in the future in the knowledge and application of Economic Theory, both in the area of Microeconomics and Macroeconomics. Those who follow this course will learn how economists approach the study of the reality that surrounds them, especially the decisions that individuals make and their interaction in the markets. Likewise, you will become familiar with the language and tools of this discipline.
- **Carácter**: Básica
- **ECTS**: 6
- **Curso y semestre**: 1st year, 1st semester
- **Idioma**: english
- **Título**: PRINCIPLES OF MICROECONOMICS
- **Módulo y materia de la asignatura**: V. Economía, V.1. Economía
- **Profesor responsable de la asignatura**: JOSE LUIS PINTO
- **Profesores: Jose Luis Pinto**
- **Horario**: Thursday and Friday 11.00-13.00
- **Aula**: Thursday: Planta 1, Aula 16. Friday: Sotano 1, Aula B2

Competencias

Students must demonstrate that they possess and understand knowledge in an area of study based on a general secondary school education whose content often comes from advanced textbooks, but also includes cutting-edge knowledge in this field of study.

To be familiar with different areas of the theory and/or application of economic analysis.

To explain the value generated by an economic activity for each agent involved in it.

Programa

I. Introduction:

Think like economists
Scarcity and opportunity cost
The economy as a social science

II. Market operation.
Demand, Supply and Prices
The Market: Demand and Supply
Balance: price and quantity
Shifts in demand and supply
Market adjustment

Elasticity
Price elasticity of demand and supply
Cross price elasticity: complementary and substitute goods
Income elasticity: normal, necessary, luxury and inferior goods

Economic Regulation
Maximum and minimum prices: results
Taxes and subsidies: impact on the market

The Market and Economic Well-being.
Well-being and efficiency
Consumer and producer surplus
Applications: economic regulation and efficiency

Market failures.
Externalities and Public Goods
Asymmetric information: adverse selection and moral hazard
Correction of market failures

IV. Firm behavior
Production Costs
The short-term and long-term production function
Fixed and variable costs. Average and marginal costs
The short-term and long-term cost function

Competitive Markets
Profit maximization
Short-term balance
Long-term balance

The monopoly
Barriers to entry and types of monopoly

Introduction to monopoly behavior
Monopoly regulation

Power and market structure
Market power and price discrimination
Introduction to Oligopoly: The Case of the Duopoly and the Prisoner's Dilemma
Introduction to monopolistic competition

IV. Consumer choice
The Consumer Theory.
Utility function and budget constraint
Maximizing profit

Applications and extensions of the Consumer Theory.
Introduction to uncertainty
Introduction to behavioral economics

Actividades formativas

Esta información estará disponible para finales de agosto

Evaluación

We will follow the Spanish grading system. You will be graded from 0 to 10 and you need a 5 to pass the course. Your final grade will be the weighted average of three components:

1. Final exam: 40%.
2. Homework: 30%.
3. Classroom work: 30% of which:
   a. 15% will be weekly quizzes that you will do during the lectures.
   b. 15% will be other types of class participation.

You need at least a 4 in each of the three blocks to pass the course.

Bibliografía y recursos

Robert Frank, Ben Bernanke, Kate Antonovics and Ori Heffetz Principles of Economics McGraw-Hill , 7th edition 2019.

Universidad de Navarra

Horarios de atención

Esta información estará disponible para finales de agosto

Universidad de Navarra

Asignatura: **Principles of Microeconomics B (F. Económicas)**
Guía Docente
Curso académico: 2020-21

Presentación

http://www.unav.edu/asignatura/pmicroeconomBeconom/

Principles of Microeconomics B (F. Económicas)

- **Breve descripción de la asignatura:** The purpose of this course is making the students familiar with the way how economist perceive and study the reality that surrounds them. “Principles of Microeconomics” is your first contact with economic theory and, therefore, it forms the basis on which your future studies of Economic Theory build. In this course you will study in a rigorous way the decisions taken by individuals and the interaction of individuals and firms in markets.
- **Carácter**: (Básica, Obligatoria, Optativa, Prácticas externas,TFG/TFM)
- **ECTS**: 6
- **Curso y semestre**: 2 Curso, primer semestre
- **Idioma**: inglés
- **Título**: Principles of Microeconomics
- **Módulo y materia de la asignatura**: Economic Theory - Microeconomics
- **Profesor responsable de la asignatura**: Pedro García del Barrio
- **Profesores: Pedro García del Barrio**
- **Horario de atención:** Jueves, de 12:00 a 14:00hs.; o previa cita por email. Despacho: 3080 (3ª planta de la torre), Edificio Amigos
- **Horario de clases**: Lunes, de 17:30 a 19:30hs. en Aula 05 (solo dos grupos por semana) | Martes, de 17:30 a 19:30hs. en Aula 02 (todos)
- **Aula**: Aula 05 - Edif. Amigos (lunes) | Aula 02 - Edif. Amigos (martes).

Competencias

Basic Competencies (Management and Economics)

BC1. Students should demonstrate knowledge and understanding of the subject area based on a general secondary school education. They should have a general level that is well supported by advanced texts, but that also encompasses aspects that suggest knowledge of the leading edge of their field of study.

BC2. Students should be able to apply their knowledge to their job or vocation in a professional way. They should be able to prove their general competencies by developing and defending arguments and

solving problems within their subject area.

BC5. Students should have developed the learning skills necessary to undertake higher programs of study with greater independence.

General Competencies (Management and Economics)

GC1. Understanding the different areas of economic analysis in theory and practice.

GC2. Identifying, incorporating and using acquired knowledge in argument, discussion and problem solving as they apply to economics and business.

Specific Competencies (Economics)

SC1. Thoroughly understanding the fundamental concepts and methods of economic theory.

SC3. Reaching conclusions relevant to economic policy based on real information.

SC5. Handling the concepts, theories and models necessary to form firm opinions about the economic context.

Specific Competencies (Management)

SC14. Understanding the influence of the economic context on business activities.
SC20. Understanding the basics of economic theory and the economic environment.

Programa

I. INTRODUCTION

Chapter 1. Economic principles

Pindyck & Rubinfeld: Ch. 1. Preliminaries

Chapter 2. Think like an economist

Frank & Bernanke: Ch. 1. Thinking like an Economist

II. WORKING OF MARKETS

Chapter 3. Demand, supply and prices

Pindyck & Rubinfeld: Ch. 2. The Basics of Supply and Demand

Chapter 4. Individual and market demand

Pindyck & Rubinfeld: Ch. 4. Individual and Market Demand

Chapter 5. Economic regulation

Pindyck & Rubinfeld: Ch. 9. The Analysis of Competitive Markets

Chapter 6. Market and economic welfare

Pindyck & Rubinfeld: Ch. 9. The Analysis of Competitive Markets

Chapter 7. Market failures

Pindyck & Rubinfeld: Ch. 18. Externalities and Public Goods

III. CONSUMER THEORY

Chapter 8. Consumer behaviour

Pindyck & Rubinfeld: Ch. 3. Consumer Behavior (Ch. 5. Uncertainty and Consumer Behavior)

IV. PRODUCER THEORY

Chapter 9. Production and cost functions

Pindyck & Rubinfeld: Ch. 7. The Cost of Production (Ch. 6. Production)

Chapter 10. Perfectly competitive markets

Pindyck & Rubinfeld: Ch. 8. Profit Maximization and Competitive Supply

Chapter 11. Market power: monopoly

Pindyck & Rubinfeld: Ch. 10. Market Power: Monopoly and Monopsony (Ch. 11. Pricing with Market Power)

Chapter 12. Oligopoly

Pindyck & Rubinfeld: Ch. 12. Monopolistic Competition and Oligopoly (Ch. 13. Game Theory and Competitive Strategy)

Actividades formativas

Students must complete four Problem Sets and submit them within the scheduled time. There will be a midterm exam around the second week of October.

Evaluación

As any other discipline in the field of Economic Theory, the study of Microeconomics must be done gradually. For learning purposes, comprehension and capacity of analysis are more important than memory. Experience shows that students who work on a regular basis get the best results.

The evaluation system encourages the students to attend the lectures and to study consistently. The global final mark is composed by three elements:

On-going evaluation: 20% of the global mark.

Partial examination: 30% of the global mark.

Final examination: 50% of the global mark.

The type of questions asked in the exams will be explained in the lectures. To pass the course, a score of 4.5/10 on the final exam is required.

Bibliografía y recursos

Main Textbook:

Robert **Pindyck** and Daniel **Rubinfeld** (2020): «Microeconomics» (9th edition). Pearson Series in Economics. ISBN-13: 978-0134184241. Localízalo en la Biblioteca

Other References:

Robert **Frank** and Ben **Bernanke** (2012): «Principles of Microeconomics» (5th edition). McGraw-Hill Education. ISBN-13: 978-0077318512. Localízalo en la Biblioteca

David **Besanko** and Ronald **Braeutigam** (2020): «Microeconomics» (6th edition). Wiley. ISBN-13: 978-1119554844. Localízalo en la Biblioteca

N. Gregory **Mankiw** (2020): «Principles of Economics» (9th edition). Cengage Learning. ISBN-13: 978-0357038314. Localízalo en la Biblioteca (ed. 2015)

Biblioteca | Catálogo | Biblioguías

Horarios de atención

Office hours: Thursday, from 12:00 to 14:00hs., or at any time previously appointed by email.

Universidad de Navarra

Asignatura: **Álgebra B (F. ECONÓMICAS)**
Guía Docente
Curso académico: 2020-21

Introduction

http://www.unav.edu/asignatura/algebraBeconom/

Álgebra B (F. ECONÓMICAS)

Course description: Algebra enhances the capacity for analysis and synthesis. Helps speed the reasoning and facilitate abstract thinking. As for inclusion in Business Administration/Economics studies is essential for quantitative modeling of economic reality, and it can solve complex problems with many variables (impossible to synthesize intuitively). To achieve these objectives usual topics are thoroughly discussed in mathematics, such as linear programming, matrices and determinants, systems of linear equations, matrix and systems of equations for economic applications and graphs and networks.

- **Type**: Basic
- **ECTS credits**: 6 (approximately 150 working hours)
- **Year:** 1st
- **Semester:** 2nd
- **Language**: English
- **Degrees:** *ADE bilingüe, ADE bilingüe + Derecho, ECO bilingüe, ECO bilingüe + Governance Program, ECO bilingüe + Derecho*
- **Module:** *IV. Métodos Cuantitativos para la Empresa - 1. Matemáticas*
- **Profesor responsable de la asignatura:** María A. Castillo Latorre (mclatorre@unav.es) - classes held in Spanish
- **Course schedule and room:**

  Thursdays, 16:00 -18:00 (room 02, Amigos Building)

Competencies

Basic Competencies (ADE/ECO)

BC1. Students should demonstrate knowledge and understanding of the subject area based on a general secondary school education. They should have a general level that is well supported by advanced texts, but that also encompasses aspects that suggest knowledge of the leading edge of their field of study.

BC5. Students should have developed the learning skills necessary to undertake higher programs of study with greater independence.

General Competencies (ADE/ECO)

GC3. Mastering the digital, mathematical and technical tools necessary for academic and professional activity in economics and business.

GC5. Developing the capacity for independent critical thought on matters relevant to economics and business.

Specific Competencies (ECO)

SC10. Using mathematical reasoning and quantitative tools to analyze the economic context.

SC11. Properly using software applications in quantitative analysis of economic questions.

Specific Competencies (ADE)

SC10. Incorporating mathematical reasoning and quantitative tools in a business's decision-making processes.

Program

Chapter 1: Introduction to Algebra. Basic concepts

Principles of logic. Proposition. Theorem. Induction. Reductio ad absurdum. Set Definition. Numerical sets. Cartesian product. Application

Chapter 2: Matrices, Determinants and Linear systems of equations

Matrix definition. Operation with matrices: add and product. Different classes: row matrix, column matrix, square matrix, diagonal matrix, scalar matrix, identity matrix, symmetric matrix, skew symmetric matrix,

transpose matrix. Determinant definition. Sarrus law. Properties. How to calculate a determinant. Rank. Inverse matrix definition. Properties. Equivalent matrix. Similar matrix. Definition of a linear system of equations. Solution of a complete system. Solution of a homogeneus system. Resolution methods. Systems discussion, Rouché-Frobenius theorem.

Chapter 3: Matrices' and linear systems of equations' applications

Matrix applications: election forecasting, Markov chains and dynamic systems, eigenvalues and eigenvectors, analysis of brand change, conditions of equilibrium in population migration. Applications of system of equations: equilibrium in a two goods market, equilibrium of the national income, Leontief's input-output model.

Chapter 4: Linear Programming

Introduction. Objective function and constraints. Mathematical model. Feasible region. Graphical and analytical solution.

Chapter 5: Graphs and networks

Introduction. Aims. Definition and properties: graphs and networks, network size, degree of a node and network density. Accessibility, network distances, cycle paths and walkways. Centrality and power. Degree centrality. Closeness centrality. Degree centrality. Betweeness centrality. Eigenvector and eigenvalues. Eigenvector centrality. Dynamic networks. Economic networks.

Educational Activities

The course will include different face-to-face activities as well as online and personal study activities.

Face-to-face activities:

1. Presentation of the subject, theoretical/practical classes and/or problem-solving classes: 22 hours. Students that are exempt from being present at Pamplona campus (**only with the approval of Dirección de Estudios**) will attend the classes by video conference (Zoom).
2. Exams (midterm and final) and other tests: 8 hours. Exams and tests will be face-to-face unless noted otherwise.

Total hours from face-to-face activities: 30 hours

Non face-to-face activities:

1. Reading of the recommended bibliography: 15 hours. Students are expected to complete the explanations by reading the recommended bibliography for the course.
2. Work out of exercises: 45 hours. For each chapter, students are expected to work out the exercises from the corresponding problem set to strengthen the knowledge on the topic. T he professor will be available to answer questions from the students, as detailed in the section of *Office Hours*.
3. Personal study: 60 hours. The number of hours of personal study may vary in accordance to the student's background on mathematics.

Total hours from non face-to-face activities: 120 hours

Students are expected to attend to **all** face-to-face classes and devote the due time for personal study activities to master the program of the subject and be prepared for all the tests and exams programmed throughout the semester.

Assessment

* The value of academic integrity is an important part of the education of our students. The sanctions that could affect the assessment of this subject are included in the University Regulation regarding Academic Discipline and the Summary of the Honesty Policy .

Due most of students are repeating this subject, the assessment of the previuos academic year (2019-20) is going to be applied.

The final mark of this course will be the average weight of the following:

Ordinary evaluation (May):

- **Tests(2):** 20%
- **Midterm exam:** 20%
- **Final exam:** 60% (It is necessary to obtain in this final exam at least 4 out of 10 points in order to take into account the rest of the grades and pass). Date: 6th May
- **Attendance and participation:** 5% (additional grade)
- **Surprise exercises:** 5% (additional grade)

Extra-ordinary evaluation (June):

- **Tests(2):** 5%
- **Attendance and participation:** 2.5%
- **Surprise exercises:** 2.5%
- **Midterm exam:** 20%
- **Final exam:** 70% (It is necessary to obtain in this final exam at least 4 out of 10 points in order to take into account the rest of the grades and pass). Date: to be announced

Bibliography and Resources

Basic bibliography:

- *Algebra for Economics and Business Administration students. Theory book.* Ignacio Rodríguez and Jorge Biera.
- *Matemáticas para la Economía. Álgebra Lineal y Cálculo Diferencial*. Gloria Jarne, Isabel Pérez-Grasa, Esperanza Minguillón. Ed. McGraw Hill. Localízalo en

la Biblioteca

- *Matemáticas para la Economía. Libro de Ejercicios. Álgebra Lineal y Cálculo Diferencial*. Gloria Jarne, Isabel Pérez-Grasa, Esperanza Minguillón. Ed. McGraw Hill. Localízalo en la Biblioteca
- *Matemáticas en los estudios de Economía y Gestión de Empresas: ¿por qué?, ¿para qué?, ¿cuáles?, ¿son posibles?* J. Antomil, M. Arenas, A. Bilbao, P. Gladish, M Rodríguez Uría. Universidad de Oviedo. Localízalo en la Biblioteca

Additional bibliography:

- *Social and Economic Networks*. Matthew O. Jackson. Princeton University Press. Localízalo en la Biblioteca
- *Graph Theory Applications*. L.R. Foulds. Ed. Springer-Verlag. Localízalo en la Biblioteca
- *Networks, Crowds, and Markets. Reasoning about a Highly Connected World*. D. Easley, J. Kleinberg. Ed. Cambridge University Press.
- *Network Advantage. How to Unlock Value from Your Alliances and Partnerships*. H. Greve, T. Rowley, A. Shipilov. Ed: John Wiley & Sons, Ltd. Localízalo en la Biblioteca
- *Matemáticas para la Economía. Programación Matemática y Sistemas Dinámicos*. Isabel Pérez-Grasa, Esperanza Minguillón, Gloria Jarne. Ed. McGrawHill. Localízalo en la Biblioteca

Biblioteca | Catálogo | Biblioguías

Office Hours

María Castillo Latorre (mclatorre@unav.es):

- office 2280 (2nd floor, corridor), Amigos Building - option not available during the pandemic
- by e-mail
- on Thursdays, after the class, I will also solve doubts

Universidad de Navarra

Asignatura: **Calculus II A (F. ECONÓMICAS)**
Guía Docente
Curso académico: 2020-21

Introduction

http://www.unav.edu/asignatura/calculus2Aeconom/

Calculus II A (F. ECONÓMICAS)

- **Course description:** The aim of this course is to provide the basic tools of optimization and functions of many varaibles in general and along a time period, which are necessary to succeed in the following courses that are taking part in the degrees of Economics and Management and Business Administration.
- **Type**: Basic
- **ECTS**: 6 (approximately 150 hours of work)
- **Year**: 1st
- **Semester:** 2nd
- **Idioma**: English
- **Degrees:** *ADEb, ADEb + Derecho, ECOb, ECOb + Derecho, ECOb + Programa Gobernanza*
- **Module:** *IV. Métodos Cuantitativos para la Empresa - 1. Matemáticas*
- **Professor:** *María A. Castillo Latorre (mclatorre@unav.es)*- classes held in Spanish
- **Course schedule and room:**

  Tuesdays, 16:00 - 18:00 (room 13, Amigos Building)

Competencies

Basic Competencies (ADE/ECO)

BC5. Students should have developed the learning skills necessary to undertake higher programs of study with greater independence.

General Competencies (ADE/ECO)

GC3. Mastering the digital, mathematical and technical tools necessary for academic and professional activity in economics and business.

Specific Competencies (ADE)

SC10. Incorporating mathematical reasoning and quantitative tools in a business's decision-making processes.

Specific Competencies (ECO)

SC10. Using mathematical reasoning and quantitative tools to analyze the economic context.

Program

1- Functions of many variables. Functions of two variables. Partial derivatives with two variables. Geometric representation. Functions of more variables. Economic examples and applications.

2- Tools for comparative statics. A simple chain rule. Chain rules for many varaibles. Implicit differentiation along a level curve. More general cases. Linear approximations. Differentials. Economic examples and applications.

3- Multiple optimization. Two variables: necesary conditions. Two variables:sufficient conditions. Local extrem points. Linear models with quadratic objectives. The extrem value theorem. Three or more variables. Comparative statics and the envelope theorem. Economic examples and applications.

4- Constrained optimization. The Lagrange multiplier method. Interpreting the Lagrange multiplier. Several solution candidates. Why the Lagrange method works? Sufficient conditions. Additional varaibles and constraints. Comparative statics. Non-linear programming: a simple case. Multivariate inequality constraints. Nonnegativity constraints. Economic examples and applications.

5- Difference equations. First order difference equations. Stationary points. Stability. Linear difference equations with variable coefficients. Second order difference equations. Second order equations with constant coefficients. Economic applications.

6- Differential equations. First order differential equations. Qualitative theory of differential equations. Solving differential equations by separating variables. First order linear differential equations. Qualitative theory and stability. Second order differential equations. Second order differential equations with constant coefficients. Economic applications.

Educational Activities

The course will include different face-to-face activities as well as personal study activities.

Face-to-face activities:

1. Presentation of the subject, theoretical/practical classes and/or problem-solving classes: 24

hours. Students that are exempt from being present at Pamplona campus (**only with the approval of Dirección de Estudios**) will attend the classes by video conference (Zoom).

2. Exams (midterm and final) and other tests: 8 hours. Exams and tests will be face-to-face unless noted otherwise.

Total hours from face-to-face activities: 32 hours

Non face-to-face activities:

1. Reading of the recommended bibliography: 16 hours. Students are expected to complete the explanations by reading the recommended bibliography for the course.
2. Work out of exercises: 42 hours. For each chapter, students are expected to work out the exercises from the corresponding problem set to strengthen the knowledge on the topic. The professor will be available to answer questions from the students, as detailed in the section of *Office Hours*.
3. Personal study: 60 hours. The number of hours of personal study may vary in accordance to the student's background on mathematics.

Total hours from non face-to-face activities: 118 hours

Students are expected to attend to **all** face-to-face classes and devote the due time for personal study activities to master the program of the subject and be prepared for all the tests and exams programmed throughout the semester.

Assessment

* The value of academic integrity is an important part of the education of our students. The sanctions that could affect the assessment of this subject are included in the University Regulation regarding Academic Discipline and the Summary of the Honesty Policy .

Due most of students are repeating this subject, the assessment of the previuos academic year (2019-20) is going to be applied.

The final mark of this course will be the average weight of the following:

Ordinary evaluation (May):

- **Tests(2):** 20%

- **Midterm exam:** 20%
- **Final exam:** 60% (It is necessary to obtain in this final exam at least 4 out of 10 points in order to take into account the rest of the grades and pass). Date: 4th May

Extra-ordinary evaluation (June):

- **Tests(2):** 20%
- **Midterm exam:** 20%
- **Final exam:** 60% (It is necessary to obtain in this final exam at least 4 out of 10 points in order to take into account the rest of the grades and pass). Date: to be announced

Bibliography and Resources

Basic bibliography:

- Sydsaeter, K., Hammond, P., Strom, A. (2016). *Essential Mathematics for Economic Analysis*. 5th edition. Pearson. Localízalo en la Biblioteca
- Sydsaeter, K., Hammond, P. y Cravajal, A. (2012). *Matemáticas para el análisis económico.* 2ª edición. Pearson. Localízalo en la Biblioteca (versión electrónica) Localízalo en la Biblioteca (versión impresa)

Additional bibliography:

- Chiang, A. y Wainwright, K. (2006). *Métodos fundamentales de economía matemática* . 4ª edición. McGraw Hill. Localízalo en la Biblioteca
- Larson, R. y Edwards, B.H. (2011). *Cálculo*. 9ª edición. McGraw Hill. Localízalo en la Biblioteca

Biblioteca | Catálogo | Biblioguías

Office Hours

María Castillo Latorre (mclatorre@unav.es):

- office 2280 (2nd floor, corridor), Amigos Building - option not available during the pandemic
- by e-mail
- on Tuesdays, after the class, I will also solve doubts