Année universitaire 2026/2027

Sciences des organisations Madrid - 2e année de Licence

Responsable pédagogique : JUAN **RAPOSO** - https://dauphine.psl.eu/recherche/cvtheque/raposo-juan

Crédits ECTS : 60

LES OBJECTIFS DE LA FORMATION

La 2e année de licence de Sciences des Organisations Madrid s'inscrit dans la poursuite de la 1re année afin de consolider et développer les acquis des étudiantes et des étudiants en économie, gestion, droit, sciences sociales, disciplines quantitatives et enjeux écologiques. L'enseignement est identique à Paris mais délocalisé à Madrid, la particularité tenant aux langues d'enseignement (approximativement 50% en anglais et 50% en espagnol). A Madrid, seul le cursus général est proposé.

Les objectifs de la formation :

- Acquérir les outils quantitatifs (notamment mathématiques, statistiques et informatiques) nécessaires à la poursuite d'études,
- Approfondir la connaissance de l'environnement politique et économique,
- Développer un savoir être, une méthode de travail autonome et renforcer la capacité à prendre en charge son avenir (Programme Softskills),
- Prendre conscience des enjeux contemporains, notamment en matière de transformation numérique (semestre digital au 2e semestre),
- Renforcer la capacité à choisir en connaissance de cause la mention de la 3e année de licence,
- Poursuivre la connaissance de l'entreprise ou d'une organisation par un stage ou un emploi en France ou à l'international.

MODALITÉS D'ENSEIGNEMENT

L'enseignement est principalement dispensé en cours/TD. L'année universitaire est divisée en 2 semestres, chacun comptant 12 semaines, auxquelles s'ajoutent quelques jours de prérentrée. Les cours sont enseignés en anglais (50%) et en espagnol (50%). Les étudiantes et les étudiants suivent 20 Unités d'Enseignement (UE) de tronc commun + 1 option annuelle, réparties sur les deux semestres. Par ailleurs, un dispositif particulier de tutorat par le corps enseignant est mis en œuvre. Les cours se déroulent sur le campus de notre partenaire, l'Universidad Carlos III de Madrid (UC3M). Le niveau des étudiantes et des étudiants et les acquis sont évalués majoritairement par :

- Une note de contrôle continu, dont la nature de l'évaluation est définie préalablement (50% de la note finale, selon les UE) : un ou deux tests, participation des étudiantes et des étudiants lors des TD, remise de travaux,
- Une note d'examen terminal (50% de la note finale)

Début des cours : mi-septembre Fin des cours : mi-mai Examens d'appel : mi-juin
A noter :

- il y a deux jours obligatoires de pré-rentrée en septembre,
- bien que le calendrier pédagogique soit identique à celui de Paris, il peut y avoir de légères différences sur les dates de vacances scolaires et jours fériés (calendriers espagnols),
- **En cas de passage d'examen d'appel, il est impératif de prévoir d'être à Madrid**(il ne sera pas possible de délocaliser l'examen à Paris).

ADMISSIONS

Il n'y a pas d'admission extérieure en deuxième année.

POURSUITE D'ÉTUDES

A l'issue de la 2e année de licence Science des Organisations dédiée aux enseignements fondamentaux à Madrid, trois mentions sont possibles en licence 3 : Gestion, Economie Appliquée ou Sciences Sociales.
La majorité des parcours proposés sous ces mentions sont en formation initiale et 2 parcours de la mention Gestion sont en

alternance.
Au terme de cette 3e année, validée par un Bac+3, l'étudiante et l'étudiant pourra poursuivre ses études en 1re année de Master.

PROGRAMME DE LA FORMATION

- Semestre 3
  - Tronc commun
    - History of the Management of the Firm
    - Management Accounting
    - Macroeconomics - Fluctuations and Policies
    - Microeconomics - Public Economics
    - Social sciences and methods : Political Sciences
    - Contract Law
    - Probability/Statistics
    - Global Contemporary Issues
    - English
    - Soft Skills
  - Options Semestre 3
    - Foreign language
    - Sport
- Semestre 4
  - Tronc commun
    - Management Accounting
    - Macroeconomics : International Macroeconomics
    - Microeconomics - Imperfect Competition
    - Sociology : Norms and Social Bonds
    - Linear algebra
    - Digital Sciences
    - Global Contemporary Issues
    - English
    - Professional Experience
    - Soft Skills and Employability
  - Options Semestre 4
    - Applied economics
    - Management

DESCRIPTION DE CHAQUE ENSEIGNEMENT

SEMESTRE 3

Tronc commun

History of the Management of the Firm

ECTS : 4

Enseignant responsable : IAN **STEWART**

Langue du cours : Anglais

Volume horaire : 36

Description du contenu de l'enseignement :

This course examines the evolution of the firm from the 19th to the 20th century in the context of: a) Organisation, b) Marketing, c) Production, d) Strategy, e) Accounting

Compétences à acquérir :

Learning Outcomes On completion of this module, students will be able to: 1. Explain the evolution of organisational forms 2. Understand the idea of market 3. Explain the history of industrialisation 4. Explain the evolution of strategy as a process 5. Understand the meaning and history of accounting practices **Courses Objectives** History of the management of the firm is a course that merges aspects history and business. As such, students will learn how firms have changed and developed since the 19th century until present day. This history will focus in five traits of firms: organisation, marketing, strategy, production and accounting. Given the structure of the course, students will learn to apply theoretical concepts to case studies.

Mode de contrôle des connaissances :

Grading Criteria Participation 5% Group Presentation 20% Report 25% Final Exam 50%

Coefficient : 1

Management Accounting

ECTS : 3

Langue du cours : Anglais

Volume horaire : 18

Macroeconomics - Fluctuations and Policies

ECTS : 4

Enseignant responsable : JASON **LERMYTE**

Langue du cours : Anglais

Volume horaire : 36

Description du contenu de l'enseignement :

The course aims at providing the fundamental macroeconomics theories with a specific focus on the description of a general equilibrium and the consequences of economic policies on economic growth and unemployment. The IS-LM/AS-AD model will be developed in both a context of perfect and imperfect competition. Impact of economic policies will then be studied under different time horizons highlighting the degree of rigidity of prices and wages. Shock of demand (mainly fiscal policy, monetary policy and mixed policcy) and shock of supply (productivity, variation of wages) will be simulated through numerical exercises and multipliers computations. A significant portion of this course is dedicated to quantitative modelling and chart analysis as support of key economic concepts.

Compétences à acquérir :

By the end of this module, students will have demonstrated: **Knowledge** 1. An ability to describe in details the interelations between the different types of markets (goods market, monetary markets, securities markets, labour markets)

and to comprehend by which mechanism a general equilibrium could be achieved. 2. An ability to analyse the consequences of economic policies (especially monetary, fiscal and mixed policies) under different time horizons (short, medium, long term). 3. An ability to compare a situation of imperfect competition and a situation of perfect competition on the determination of a general equilibrium and the implication on the efficiencies of economic policies in the two contexts. 4. An ability to understand how productivity gain and change in real wage would impact the general equilibrium, especially in the good and labour market. **Skills** 5. An ability to determine mathematically a general equilibrium given the different functions and economic behaviours of economic agents. 6. An ability to compute and calculate multipliers under different time horizons for different types of policies (fiscal, monetary, mixed policies) 7. An ability to illustrate graphically a general equilibrium and how a supply or demand shock would impact this equilibrium on the different markets considered. 8. An ability to use and adapt economic concepts studied in class on new topics, situation, context. **Values and Attitudes** 9. An ability to take responsibility for their studies in and outside of class and to be proactive and take initiative for further individual development. 10. An ability to work effectively, and appropriately with others in class.

Coefficient : 1

Microeconomics - Public Economics

ECTS : 3

Enseignant responsable : JASON **LERMYTE**

Langue du cours : Anglais

Volume horaire : 18

Description du contenu de l'enseignement :

The course aims at providing an explanation / exploration of the fundamental microeconomics theories, with a specific focus on the role of market inefficiencies and the different solutions emphasised by the theories to resolve them. Following a first chapter of consolidation of what has been taught during the end of the first year of a degree course (pure and perfect competitive framework, the existence of a general equilibrium, its pareto-efficiency leading to the first theorem of welfare economics) this course will mainly focus on market inefficiencies and will cover in detail the theory of externality and the theory of public goods.

Compétences à acquérir :

By the end of this module, students will have demonstrated: **Knowledge** 1. An ability to understand how a partial equilibrium could be achieved in a decentralised economy and how public intervention could affect (or not) this equilibrium and impact surpluses of economic agents. 2. An ability to analyse the mechanism by which a general equilibrium could be achieved (in an economy with or without production) and to assess its pareto optimality. 3. An ability to understand the first and second fundamental theorem of welfare and their limits. 4. An ability to describe how game theory (and more specifically the Nash equilibrium) could be used to reconsider the theorems of welfare. 5. An ability to define the concept of externality, to understand how it generates some inefficiency in a decentralised economy and to explore the different sollutions to resolve this market inefficiency (internalisation, public intervention (Pigou), redefinition of property rights (Coase theorem)). 6. An ability to define the concept of public goods, to understand the condition of optimality for the production of this type of goods (i.e Bowen Lindahl Samuelson condition), to understand how its production generates some inefficiency in a decentralised economy and to explore the different sollutions-procedures to resolve this market inefficiency (public intervention through majority decision (Bowen vote), individualised taxation etc.). **Skills** 7. An ability to determine mathematically and graphically (1) a partial equilibrium (2) surpluses (or change in surpluses) of each economic agents and (3) deadweight-losses and how they evolve due to state intervention in a context of pure and perfect competition. 8. An ability (1) to compute mathematically, (2) represent graphically a general equilibrium (with or without production), and to demonstrate whether this equilibrium is pareto optimal or not. The students is also expected to be able to interpret how this equilibrium could be impacted if some parameters were to change in a context of pure and perfect competition. 9. An ability to determine a Nash equilibrium in a game with imperfect and complete information (prisonners dilemma type of game), and the type of policies/institutions that could be implemented to converge Nash and Pareto equilibria. 10. An ability to determine mathematically and graphically (1) a partial equilibrium (2) the surpluses (or change in surpluses) for each economic agents and (3) a deadweight-loss in presence of externality (positive or negative). 11. An ability to compute mathematically and to describe graphically how (1) public intervention (2) internalisation or merger (3) a right to pollute market may impact (a) a partial equilibrium (b) the surpluses (or change in surpluses) for each economic agents and (c) the deadweight-loss for the economy as a whole in presence of externality (positive and/or negative). 12. An ability to determine mathematically and graphically (1) the condition of pareto optimality (Bowen Lindahl Samuelson conditions) (2) the surpluses (or change in surpluses) for each economic agents and (3) the deadweight-loss generated in a decentralised economy for the production of public goods. 13. An ability to compute mathematically the quantity/price of public goods under different financing assumptions such as (1) a procedure of voluntary subscription (2) a situation of non-

state intervention (decentralised economy equilibrium) (3) a mechanism of individualised taxation (4) a taxation implemented through majority vote (Bowen vote). 14. To use and adapt economic concepts studied in class on new topics, situation, context. **Values and Attitudes** 15. An ability to take responsibility for their studies in and outside of class and to be proactive and take initiative for further individual development. 16. An ability to work effectively, and appropriately with others in class.

Social sciences and methods : Political Sciences

ECTS : 2

Enseignant responsable : ANICEE **VAN ENGELAND**

Langue du cours : Anglais

Volume horaire : 18

Description du contenu de l'enseignement :

I. Revisiting Classical Theory "The devils Playground" (Durkheim) I. Revisiting Classical Theory, Marx Weber and Dubois II. World Migration II. Migration Theory III. Organisational ecology IV. Research Design V. Robert Merton: Social Structure and Anomie VI Durkheim Egoistic Suicide VII Hedstrom & Swedberg on Social Mechanisms VIII Granovetter on Embeddedness IX Schelling on segregation X Raymond Boudon, Beyond Rational Choice Theory

Compétences à acquérir :

The course is designed to probe deaper into the sociological study of society. Sociology focuses on the systematic understanding of social interaction, social organization, social institutions, and social change. Major themes in sociological thinking include the interplay between the individual and society, how society is both stable and changing, the causes and consequences of social inequality, and the social construction of human life. Understanding sociology helps discover and explain social patterns and see how such patterns change over time and in different settings. By making vivid the social basis of everyday life, sociology also develops critical thinking by revealing the social structures and processes that shape diverse forms of human life. Particular emphasis in this second course in sociology is on decision making processes and how interaction and interaction patterns shape our preferences when making decisions.

Contract Law

ECTS : 3

Langue du cours : Français

Volume horaire : 18

Compétences à acquérir :

To achieve, from the comprehension and critical analysis, a basic level of knowledge with regard to the concepts of contract, its elements, the consequences of the breaches of the contracts and the bases of the contractual responsibility. - To acquire the capacity to valuate social facts in conformity with the legal rules and case law. - To practice and improve the technique of writing a legal opinion from a law of obligations perspective. - To practice and improve the analysis of court decisions on the law of obligations and on the law of non-contractual liability. - To incorporate in one's arguments case law, legal doctrine and other specialized texts. - To achieve basic knowledge about some of the main types of contract.

Probability/Statistics

ECTS : 4

Enseignant responsable : SOPHIE **GUERIN**

Langue du cours : Anglais

Volume horaire : 36

Description du contenu de l'enseignement :

Following up on the first year module, this unit is designed to remind the students of probability concepts and common distributions, as well as introduce theory and techniques of inferential statistics.

This course aims to provide students with a range of basic estimation and statistical tools that they might need to apply in

further fields of their academical studies (finance, economics, marketing, etc.). It also aims to empower them with a knowledge based critical look on the numbers they will encounter in their studies or readings, both in their academic and everyday life. Finally, for those interested, it provides a strong foundation to further quantitative courses, for example in the financial field.

Compétences à acquérir :

By the end of this module, students will have demonstrated: **Knowledge** 1. Advanced knowledge of the mathematical definitions of the underlying concepts (sample space, probability measure, discrete/continuous distribution, joint/marginal distributions, random variable, PDF, CDF, Moments) 2. Advanced knowledge of the in-scope common distributions. (Uniform, Bernoulli, Binomial, Poisson, Exponential, Normal) 3. Knowledge of the sampling theory and its main theorems. 4. Knowledge of the various estimation methods 5. Familiarity with hypothesis testing **Skills** 6. Ability to derive moments of a random variable given its distribution. 7. Ability to identify the right distribution suited to real-life situations. 8. Ability to derive PDF and/or CDF from one another. 9. Accurate reading of statistics tables 10. Ability to apply the pointwise estimation methods, using the appropriate theorems 11. Ability to compare estimators. 12. Ability to derive a confidence interval for an unknown parameter. **Values and Attitudes** 13. Rigor in reasoning 14. Ability to articulate more sophisticated demonstrations

Pré-requis obligatoires

First year module Probability and Statistics (UE07).

Mode de contrôle des connaissances :

The summative assessment is made of 2 mid-terms and a final exam:

- Test 1 (week 6 - 1.5h): Probabilities and sampling theory
- Test 2 (week 11 - 1.5h): Inferential statistics and Estimation

The Final exam (2h) will take place during exam week and will cover the whole course.

Coefficient : 1

Bibliographie, lectures recommandées :

Core Sources

Handout designed by Laëtitia Comminges. Past papers and lectures slides will be available.

Supplementary and Secondary Sources

Probability and Statistics (4th edition) – Schaum's Outlines

Naked Statistics – Charles Wheelan

Statistics for Business and Economics, Anderson, Sweeney, Williams (11 ed).

Global Contemporary Issues

ECTS : 3

Enseignant responsable : ANICEE **VAN ENGELAND**

Langue du cours : Français

Volume horaire : 18

English

ECTS : 2

Enseignants : JUAN IGNACIO **DURAN**, SEBASTIAN **SALT**

Langue du cours : Anglais

Volume horaire : 24

Description du contenu de l'enseignement :

Research and presentation of different areas of global issues, focusing on economics, society and general cultural concerns. Writing assignments will include an academic essay, a summary and a story, while the soft skills to be developed will include presentations, role-plays and debates.

Compétences à acquérir :

Students will develop a wide range of skills that include researching, processing and analysing complex information in a short space of time. In addition, they will examine various means of delivering this information as efficiently as possible in a variety of academic and professional contexts. By the end of the course, they will become familiar with a broad range of key issues in the areas related to international economics ,technology and society.

Soft Skills

Langue du cours : Anglais

Volume horaire : 6

Description du contenu de l'enseignement :

Soft Skills and Employability aims at supporting student's reflections about their studies and professional projects in connection with their personal life while growing as individuals, learning how to interact with others and collaborate. Its main general objective during the 3 years of the bachelor's degree is to help each student start the process of finding his/her place in the working society and envisioning him/herself working happily and contributing to the world.

Building on the foundational skills developed in the first year, this second-year Soft Skills and Employability module encourages students to deepen their self-awareness and refine their professional presentation. Emphasis is placed on identifying and articulating personal qualities and strengths, crafting a compelling professional pitch, and exploring opportunities to engage with the wider professional community.

Optional activities such as mentoring schemes, alumni meetings, and introductions to graduate programs provide students with valuable insights into real career paths and professional networks.

Through a combination of reflective practice, peer interaction, and engagement with professionals, students will further develop the confidence and clarity needed to shape their employability journey.

Compétences à acquérir :

This is done through the development of the following three transversal competences:

- Adapting to new situations by becoming aware, experimenting with new tools or practices and using the group.
- Building one's pathway by formalising one's skills, identifying one's achievements and the areas that remain to be developed, and expressing one's values.
- Interacting and collaborating in a university context by seeing the workshop group as the beginnings of a working group, developing attentive listening to others, and by sharing tasks and roles within a group.

Options Semestre 3

Foreign language

ECTS : 2

Langue du cours : Français

Volume horaire : 24

Sport

ECTS : 2

Langue du cours : Français

Volume horaire : 24

SEMESTRE 4

Tronc commun

Management Accounting

ECTS : 3

Enseignant responsable : SAMUEL **HINDS** (https://dauphine.psl.eu/recherche/cvtheque/dr-samuel-hinds)

Langue du cours : Anglais

Volume horaire : 18

Macroeconomics : International Macroeconomics

ECTS : 4

Enseignant responsable : JASON **LERMYTE**

Langue du cours : Anglais

Volume horaire : 36

Description du contenu de l'enseignement :

The course aims at presenting the fixed-prices open-macroeconomics model, also called the Mundell-Fleming model. The first part of the course considers a generic version of the model with two polar exchange rate arrangements (perfect flexibility and hard peg) and variable degree of capital controls. The model is then used to assess the effects of economic policies in a small open economy, with a focus on the perfect capital mobility case. The second part of the course presents a two-country extension in order to explicate the role of international spillovers and to consider different exchange rate arrangements: floating, asymmetric fixed exchange rate regime vs. monetary union.

Compétences à acquérir :

By the end of this module, students will have demonstrated: **Knowledge** 1. An ability to describe in detail (1) the different factors that determine the balance of payment, (2) how those factors also impact the different markets (goods market, monetary markets, securities markets, labour markets, Fx markets) (3) the mechanism by which a general equilibrium is achieved in a context of a small open economy, with floating and fixed exchange rate regime according to the Mundell-Fleming model. 2. An ability to analyse in detail (1) the consequences of economic policies (especially monetary, fiscal, mixed policies and in a case of a fixed exchange rate regime, devaluation) (2) and the role of international variables in a context of a small open economy, with floating and fixed exchange rate regime. 3. An ability to describe in detail (1) the different factors that determine the balance of payment, (2) how those factors also impact the different markets (goods market, monetary markets, securities markets, labour markets, Fx markets) (3) the mechanism by which a general equilibrium is achieved in a context of two countries in a floating and fixed exchange rate regime. 4. An ability to analyse in detail (1) the consequences of economic policies (especially monetary, fiscal, mixed policies and in a case of a fixed exchange rate regime, devaluation) in a context of two countries in a floating and fixed exchange rate regime. 5. An ability to analyse in detail the consequences of economic policies (especially monetary, fiscal, mixed policies) when countries decide to form a monetary union. 6. An ability to describe the different steps of the construction of the european monenatry system and to understand the main economic theories that underlies this construction. **Skills** 7. An ability to determine mathematically/graphically a general equilibrium given the different functions representing the economic behaviours/budget constraints of economic agents. 8. An ability to compute and to analyse the different multipliers for different types of policies/shocks (fiscal, monetary, mixed policies). 9. An ability to use and adapt economic concepts studied in class on new topics, situations, contexts. 10. An ability to follow the evolution of the financial markets throughout the semester and to be able to link these markets movements to macroeconomics concepts. **Values and Attitudes** 11. An ability to take responsibility for their studies in and outside of class and to be proactive and take initiative for further individual development. 12. An ability to work effectively, and appropriately with others in class.

Coefficient : 1

Microeconomics - Imperfect Competition

ECTS : 3

Enseignant responsable : JASON **LERMYTE**

Langue du cours : Anglais

Volume horaire : 18

Description du contenu de l'enseignement :

The course aims at providing an explanation / exploration of the fundamental microeconomics theories related to a situation of imperfect competition and more specifically the case of monopoly, duopoly and goods differentiation.

Compétences à acquérir :

By the end of this module, students will have demonstrated: **Knowledge** 1. An ability to analyse how a partial equilibrium in a monopoly situation is determined, to understand the source of inefficiency generated. 2. An ability to analyse a partial equilibrium in a monopoly situation when the monopoly firm implement a price discrimination strategy (first and third degree) with one or two parts tariffs. 3. An ability to understand the concept of natural monopoly and to interpret the equilibrium obtained in this situation. 4. An ability to describe the different duopoly models (Cournot-Nash, Stackelberg, Bertrand), their assumptions, differences and implications. 5. An ability to describe the different non-homogeneous goods duopoly model (Launhardt Hotteling, Hotteling-Chamberlin (linear city model)), their assumptions, differences and implications. 6. An ability to analyse the model of monopolistic competition and to compare it with situations of monopoly and pure and perfect competition. **Skills** 7. In a context of a simple monopoly, to determine mathematically and graphically (1) a partial equilibrium (2) surpluses (or change in surpluses) for each economic agents (3) deadweight-losses (4) how they evolve when different parameters are changing (elasticity etc.) and (5) the type of economic policy to implement to reduce the inefficiencies. 8. In a context of a natural monopoly, to determine mathematically and graphically (1) a partial equilibrium (2) surpluses (or change in surpluses) for each economic agents (3) deadweight-losses (4) how they evolve when different parameters are changing (elasticity etc.) and (5) the type of economic policy to implement to reduce the inefficiencies. 9. In a context of a duopoly, to determine mathematically and graphically (1) a partial equilibrium (2) surpluses (or change in surpluses) for each economic agents (3) deadweight-losses (4) how they evolve when different parameters are changing (elasticity etc.) through different type of model such as Cournot-Nash, Stackelberg or Bertrand model. 10. In a context of a duopoly, to determine mathematically and graphically the different strategies of domination of one firm on another firm (price limit, partial monopoly, eviction strategy). 11. In a context of a duopoly and when goods are not homogeneous, to determine mathematically and graphically (1) a partial equilibrium (2) surpluses (or change in surpluses) for each economic agents (3) deadweight-losses (4) how they evolve when different parameters are changing (elasticity etc.) through different type of model such as Launhardt Hotteling or Hotteling-Chamberlin (linear city model). 13. In a context of monopolistic competition, to determine mathematically and graphically long term and short term equilibrium, and how it differs from a simple monopoly situation or a pure and perfect competitive framework. 14. To use and adapt economic concepts studied in class on new topics, situation, context. **Values and Attitudes** 15. An ability to take responsibility for their studies in and outside of class and to be proactive and take initiative for further individual development. 16. An ability to work effectively, and appropriately with others in class.

Sociology : Norms and Social Bonds

ECTS : 3

Enseignant responsable : SEBASTIAN **LAVEZOLO PEREZ**

Langue du cours : Espagnol

Volume horaire : 18

Linear algebra

ECTS : 3

Langue du cours : Français

Volume horaire : 18

Description du contenu de l'enseignement :

1. R^n set 2. Matrices 3. System of inear equations 4. Square matrices 5. Determinants 6. Basis 7. Range 8. Diagonalization

Compétences à acquérir :

Introduction to linear Algebra and matrices.

Coefficient : 1

Digital Sciences

ECTS : 4

Langue du cours : Anglais

Volume horaire : 36

Description du contenu de l'enseignement :

· Introduce computational logic and programming syntax

· Explore various ways of writing a program solution for a given problem statement

· Develop the essential technological background for students' work life.

Compétences à acquérir :

By the end of this module, students will have demonstrated the ability to:

Knowledge

1. Broad knowledge of programming principles

2. Knowledge of current technology applications with the programming concepts

Skills

1. Evaluate a problem statement for building the structural blocks of a program

2. Examine the problem statement to interpret the input and output requirements of the program.

3. Design conditional statements using Boolean expressions.

4. Construct repetitive instructions.

5. Apply modularity in algorithmic: Python function and module

6. Handle sequential data structures in Python: character strings, list.

7. Read and write to files.

Values and Attitudes

1. Present flawless program solutions

2. Work proactively on various programming challenges

3. Add efficiency in the approach of problem solving.

Mode de contrôle des connaissances :

Homework 20% + Test 30% + Final exam 50%

Coefficient : 1

Global Contemporary Issues

ECTS : 3

Enseignant responsable : ANICEE **VAN ENGELAND**

Langue du cours : Anglais

Volume horaire : 18

Description du contenu de l'enseignement :

The course aims at addressing the major social and cultural issues of the contemporary world from both a synthetic approach in integrating the different Social Sciences and Humanities disciplines (Philosophy, Anthropology, Sociology, Political Sciences, etc.) and a genesis of current issues. In this sense, the teaching approach is an intellectual method allowing the entering of a set of data (structures and dynamics) which underlays modern society. Students will understand the transition from modernity to postmodernity and the challenges brought by the different globalization dimensions.

Compétences à acquérir :

This course provides tools to students to debate and understand issues of our globalized world, approaching them from both classical and contemporary debates around a variety of topics (freedom, human rights, racism, nationalism, science, religion, etc.) At the end of the course, the student will have improved: 1.- Critical reasoning skills. 2.- Communication skills, both oral and written. 3.- Teamwork skills. 4.- The capacity for initiative and organization. 5.- The ability to solve or seek solutions to problems, both in analysis and in synthesis. Also, upon completion of the course, students will be able to: 1.- Understand and analyze modern society. 2.- Strengthen its commitment to the defense of ethical standards. 3.- Identify, analyze and predict issues of global relevance. 4.- Improve their knowledge of classical debates of philosophy and sociology.

English

ECTS : 2

Enseignants : JUAN IGNACIO **DURAN**, SEBASTIAN **SALT**

Langue du cours : Espagnol

Volume horaire : 24

Description du contenu de l'enseignement :

Research and presentation of different areas of global issues, focusing on economics, society and general cultural concerns. Writing assignments will include an academic essay, a summary and a story, while the soft skills to be developed will include presentations, role-plays and debates.

Compétences à acquérir :

Students will develop a wide range of skills that include researching, processing and analysing complex information in a short space of time. In addition, they will examine various means of delivering this information as efficiently as possible in a variety of academic and professional contexts. By the end of the course, they will become familiar with a broad range of key issues in the areas related to international economics ,technology and society.

Coefficient : 1.5

Professional Experience

Langue du cours : Français

Description du contenu de l'enseignement :

To validate year 2, students need to demonstrate professional experience of a minimum of 5 continuous weeks before the Final Examination Board of year 2.

Soft Skills and Employability

ECTS : 1

Enseignant responsable : CLOTILDE **DE CACQUERAY**

Langue du cours : Anglais

Volume horaire : 6

Description du contenu de l'enseignement :

Soft Skills and Employability aims at supporting student’s reflections about their studies and professional projects in connection with their personal life while growing as individuals, learning how to interact with others and collaborate. Its main general objective during the 3 years of the bachelor’s degree is to help each student start the process of finding his/her place in the working society and envisioning him/herself working happily and contributing to the world.

Building on the foundational skills developed in the first year, this second-year Soft Skills and Employability module encourages students to deepen their self-awareness and refine their professional presentation. Emphasis is placed on identifying and articulating personal qualities and strengths, crafting a compelling professional pitch, and exploring opportunities to engage with the wider professional community.

Optional activities such as mentoring schemes, alumni meetings, and introductions to graduate programs provide students with valuable insights into real career paths and professional networks.

Through a combination of reflective practice, peer interaction, and engagement with professionals, students will further develop the confidence and clarity needed to shape their employability journey.

Compétences à acquérir :

This is done through the development of the following three transversal competences:

- Adapting to new situations by becoming aware, experimenting with new tools or practices and using the group.
- Building one's pathway by formalising one's skills, identifying one's achievements and the areas that remain to be developed, and expressing one's values.
- Interacting and collaborating in a university context by seeing the workshop group as the beginnings of a working

group, developing attentive listening to others, and by sharing tasks and roles within a group.

Mode de contrôle des connaissances :

Module validation if the student has participated in 5 hours of workshops.

Options Semestre 4

Applied economics

ECTS : 4

Langue du cours : Français

Volume horaire : 36

Management

ECTS : 4

Langue du cours : Français

Volume horaire : 36

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