INTERNATIONAL MASTER IN

Health Economics and Pharmaeconomics

Study guide

Edition 2024-2025

BARCELONA SCHOOL OF MANAGEMENT

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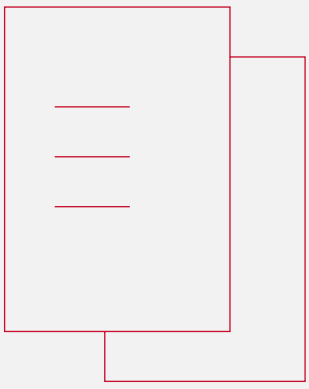
Contenidos



1. Welcome from the directors

Dear participant,

Welcome to the International Master's degree in Health and Economics and Pharmaeconomics. The aim of this program is to provide specialized training in economics and management of both health care services and pharmaceuticals (pharmaeconomics).

In this study guide you will find all the relevant information of your program. We strongly recommend you read this guide thoroughly in order to benefit the most from this learning experience.

From now on, the team of academic directors, professors, and support staff working in the e-learning programs at UPF Barcelona School of Management, are going to be here to help you in the learning process you are about to start.

We encourage you to undertake this challenge with strength and motivation.

Jaume Puig-Junoy, Academic Director
PhD in Economic and Business Sciences from the Autonomous University of Barcelona. Former Director of the Centre for Research in Health and Economics (CRES). He has held posts of responsibility in public health service management in Spain and Catalonia. He has published numerous works of research on health economics and pharmacoeconomics in international scientific journals.

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Natàlia Pascual Argenté, Academic Director
Director of the program. Doctor in Biomedicine (Universitat Pompeu Fabra), Master in Specialized Economic Analysis (Barcelona School of Economics) and Master in Public Administration (Autonomous University of Barcelona – University of Barcelona – Universitat Pompeu Fabra). Associate researcher at the Research Center in Economics and Health, UPF. Core Faculty UPF BSM. She has also held positions in consultancy.

Google Scholar: https://scholar.google.com/citations?user=dTeiKmIAAAAJ&hl=es
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2. Program technical details

Language
English

Program start
14/02/2024

End of program
14/01/2026

Program modality
Master

Modality
Online

Exceptionally, the calendar may vary due to force majeure.

T. 935 421 800

3. Goals

The objectives of the program are divided into 2 sections. The first section shows the specific objectives of the program. The second section refers to the sustainable development objectives.

The program pursues:

- Provide specialized and professional training in health economics, economic evaluation, health services management and pharmacoeconomics.
- Apply the principles and analytical techniques of economic evaluation.
- Interpret the statistical and econometric tools that will help us evaluate the relationships between variables.
- Analyze pharmaceutical policy applying the concepts of effectiveness and efficiency.
- Understand supply and demand in the health sector and what is the impact of technological innovations.

Our commitment to social impact and planetary well-being translates into training content aligned with the Sustainable Development Goals (SDG) foreseen in the 2030 agenda:

In the program at hand, the SDG involved are:

- Health and Wellbeing
- Quality education
- Gender equality
- Responsible production and consumption
- Decent work and economic growth

Sustainable development goals

Health and well-being: it is the SDG most related to the master's degree as a whole, since we offer economics-based training aimed at maximizing the social well-being and health of populations. Our program is aimed at improving efficiency in the use of health services and the management of biopharmaceutical innovation. You will analyze spending on health and medicines, as well as the

different models of access to health care (comparative health systems) and innovation (pricing and reimbursement systems).

Quality education: it is a transversal and historical objective of the program. We are guided by quality standards in higher education, and this is supported by our position in international rankings. You will experience it as a student with follow-up during the program and especially in the final master's thesis: with the help of an expert tutor you will prepare a TFM type scientific article based on international standards.

Gender equality: our program provides the tools to analyze the impact of the health sector and biopharmaceutical innovation with a gender perspective. You will study social inequalities in health based on the WHO conceptual framework. In addition, the format and calendar of our program is designed so that any participant can combine work and family burdens and successfully complete the program.

Responsible production and consumption: our economic analysis of the biopharmaceutical and health market incorporates the concepts of social justice and equity at all times. These concepts are especially studied together with the optimal forms of production and provision of health services and medication management.

Decent work and economic growth: Managing health resources more efficiently can contribute to better economic growth and more decent work. You will learn about the virtuous relationship that exists between investment in health and economic growth.

4. Brush-up courses

You will be given the opportunity to brush up your knowledge about some basic concepts in statistics, economics and health. To this end, the UPF Barcelona School of Management offers you 3 short courses:

Introduction to Economics
2 ECTS
Author:
Josep María Raya Vílchez

Introduction to Statistics
2 ECTS
Author:
Mercè Roca i Puigvert

Introduction to Global Health
2 ECTS
Author:
Andreu Segura

Some (or all) of the brush-up courses might be compulsory for those students who, according to their academic profile and previous professional experience, cannot prove sufficient knowledge in the area. Mandatory brush-up courses will be informed to each participant during the admission process to the program.

The brush-up courses will not be included in your academic records. However, if you are required to do some or all of them at admission, then you must pass them to get the final qualification of the Master.

Participants proving previous knowledge will also have access to the brush-up courses and its resources for consultation purposes. Evaluation tests will only be available to those students with a compulsory enrolment. A test with 10 multiple-choice questions, 4 possible answers and a single correct option will assess your knowledge acquisition. A minimum grade of 5 out of 10 questions will be required to pass each brush-up course. A total of 2 attempts will be available.

5. Program content

Course 1: Economic Evaluation of Pharmaceuticals and Medical Technologies (1): Basic
Author: Jaume Puig-Junoy
Professor: Jaume Puig-Junoy

General aim
The general aim of this Course is to introduce the participant to the basic and fundamental aspects of the main techniques and instruments used in the economic evaluation of pharmaceuticals and medical technologies and apply them to several case studies. This is the first of two Courses that pursue this objective.

Specific objectives

- To justify the need to perform economic evaluations of pharmaceuticals and medical technologies in a context of scarce resources and to convey the basic knowledge of the main methods used (cost-effectiveness analysis, cost-utility analysis and cost-benefit analysis) and the stages or steps to follow in conducting and designing economic evaluation studies of drugs, medical technologies and health programs.
- To develop the ability to use the necessary instruments to carry out a monetary valuation of the resources used (costs) in the application of a medical technology, a drug or a health program.
- To develop the ability to use the necessary instruments to carry out a cost-utility type economic evaluation of a medical technology, a drug or a health program.

To develop the ability to use the necessary instruments to carry out a monetary valuation of all the consequences that may result from the introduction of a new drug or any other kind of medical technology by means of cost-benefit analysis techniques.

Content

Teaching Unit 1. Methods for the Economic Evaluation of Pharmaceuticals, Medical Technologies and Health Programs.

1. The need to count.
2. What steps are taken in an economic evaluation?

Teaching Unit 2. Cost Analysis in Economic Evaluation (1).

1. Estimating the costs of a new treatment.
2. Discounting.
3. The distinction between average cost and marginal cost.

Teaching Unit 3. Cost-Utility Analysis.

1. Estimating the benefits of treatment alternatives.
2. Using and calculating Quality-Adjusted Life Years (QALYs).
3. Designing a cost-utility analysis (CUA).

Teaching Unit 4. Cost-Benefit Analysis (1).

1. 1. Is it useful to value the outcome in monetary terms?
2. First steps towards obtaining a measure of net monetary value.
3. Valuing the outcome in terms of willingness to pay.

Course 2: Quantitative Techniques Applied to Health Service and Pharmacy Management
Authors: Carles Murillo & Jaime Pinilla Domínguez
Professor: Oscar Navarro Campàs

General aim
The aim of this Course is to provide the basic tools for analysing the overall behaviour of variables of interest for pharmaceutical and health management. Participants learn how to interpret the results of a selection of statistical and econometric analysis techniques that can be useful in decision-making in this area.

Specific objectives

— To quantify the relevant indicators of the magnitude of the pharmaceutical and health sector and make comparisons over time and between regions. To measure the association between health and pharmaceutical expenditure and income.

— To establish the elements involved in a linear regression model, which provides an estimation of the relationship between a variable (the behaviour of which we are interested in explaining) that is representative of the effects of a treatment and the factors determining its variations.

— To interpret the results of a predictive equation of variations in pharmaceutical expenditure in primary care health centres and to use these estimations to establish budget allocation mechanisms for an efficient distribution of resources.

— To design a model explaining variations in medical practice as regards drug prescription by physicians depending on personal, professional and work environmental factors.

— To acquire sufficient knowledge to judge and to interpret the results of a model that measures the association between variables.

Content

Teaching Unit 1. Measuring the relationship between health care expenditure and income.

1. Association between drug expenditure and income.
2. Measurement of the degree of association between expenditure and income.
3. Simple regression as an instrument for evaluating the predictive ability of income.
4. Evaluation of the results of the analysis: How to determine the significance of the fit.

Teaching Unit 2. Factors Determining the Efficacy of a Treatment.

1. Proposed method for determining a treatment's efficacy.
2. Factors determining changes in the outcome of a treatment.
3. Determining the weight of each explanatory variable.
4. Do the amount of drugs and personal characteristics determine the treatment's efficacy?

5. Statistical diagnosis of the model used.

Teaching Unit 3. Building pharmaceutical budgets.

1. Building pharmaceutical budgets in primary care.
2. What happens when an explanatory variable is a categorical variable?
3. Pharmaceutical expenditure in primary care teams.

Teaching Unit 4. Logistic Regression.

1. Regression models with a limited dependent variable.
2. Logit model (Logistic Regression).
3. Validation of the regression model.

Course 3: Economics and Policies of Pharmaceutical Financing
Author: Jaume Puig-Junoy
Professor: Jaume Puig-Junoy

General aim

The basic aim of this Course is to enable the participant to analyse the justification for and effectiveness of the main policies for the regulation and funding of pharmaceuticals in a health system.

Specific objectives

— To interpret and analyse the level and trend of spending and prices of drugs funded by an insuring body, and to interpret the distinctive characteristics of the pharmaceutical market and its implications for pharmaceutical financing.

— To get to know and evaluate basic economic instruments for choosing and analysing drug management and funding policies, with emphasis on those that involve the application of co-payment (whereby the patient shares the cost of the drug).

— To analyse the advantages and disadvantages of the various systems of drug price fixing and regulation that are applied in the compared system.

— To analyse the main economic effects of patents, as the principal barrier to competition in the pharmaceutical market, and the economic effects of the main policies aimed at encouraging competition in this market (generic policies and reference pricing).

Content

Teaching Unit 1. Pharmaceutical Expenditure: Interpretation and Distinctive Features of the Market.

1. Interpreting pharmaceutical expenditure.
2. What are the causes of rises in drug prices?
3. The distinctive features of the pharmaceutical market.

Teaching Unit 2. Insurance and the Demand for Pharmaceuticals.

1. Drug management policies.
2. Co-payment in health services.
3. The effects of co-payment on health services and pharmaceuticals.

Teaching Unit 3. Pharmaceutical Price Regulation.

1. Reasons for regulating pharmaceutical prices.
2. Pharmaceutical price regulation systems.
3. The effects of price regulation.

Teaching Unit 4. Patents and Policies Encouraging Competition in the Pharmaceutical Market.

1. The role of patents in the pharmaceutical market.
2. Is competition possible in the pharmaceutical market?
3. Pharmaceutical reference pricing systems.

Course 4: Economic Evaluation of Pharmaceuticals and Medical Technologies (2): Advances
Author: Jaume Puig-Junoy
Professor: Jaume Puig-Junoy

General aim

The general aim of this Course is to familiarise the participant with some recent advances in the use of techniques and instruments for the economic evaluation of pharmaceuticals and medical technologies and apply them to several case studies. This is the second of two teaching Courses that pursue this objective.

Specific objectives

— To become familiar with the main controversies and methodological problems that arise when we incorporate indirect or productivity costs into an evaluation, and to acquire criteria for assessing the quality of a cost estimation.

— To design and analyse, from a critical point of view, an economic evaluation study that employs the declared preference techniques most commonly used in cost-benefit evaluation of health services, the contingent valuation technique and joint analysis.

— To acquire criteria for decision-making on data collection, concerning both outcomes and costs, in an economic evaluation, and on the need to apply various modelling and sensitivity analysis techniques to the available data.

— To get to know and to evaluate the main criteria and ways of presenting, using and applying the results of economic evaluation studies of pharmaceuticals and medical technologies.

Content

Teaching Unit 1. Cost Analysis in Economic Evaluation (2).

1. Cost-of-Illness Studies.

2. Methods of valuing paid and unpaid time in health production.
3. The quality of economic evaluation studies in cost calculation.
4. Budget impact analysis.
5. The distinctive features of the pharmaceutical market.

Teaching Unit 2. Cost-Benefit Analysis (2): Methods of Estimating Willingness to Pay

1. Designing a contingent valuation study.
2. Designing a conjoint analysis.

Teaching Unit 3. Models and Uncertainty in Economic Evaluation.

1. Economic evaluation and clinical trials.
2. Modelling techniques.
3. Sources of uncertainty in economic evaluation

Teaching Unit 4. Use and Application of Economic Evaluation in Decision-Making.

1. Decision criteria in cost-effectiveness and cost-utility analysis.
2. Presentation of the study and use of the results in decision-making.
3. Economic evaluation and pharmaceutical policy.

Course 5: Drug Management in Health Systems
Authors: Lluís Segú and Gonzalo de Miguel
Professor: Lluís Segú

General aim

The general aim of this Course is to make the participant aware of the possibilities of applying rational drug use in order to guarantee the best possible use of pharmacological resources from the point of view of both the effectiveness and the efficiency of pharmacological interventions and apply it to a number of case studies.

Specific objectives

- To define the concept of drug management and integrate it into a broader concept of health systems and services management.
- To identify and become familiar with the various agents involved in drug management, their perspectives, functions and responsibilities, and the instruments they employ in this field.
- To explore the role of micromanagement in the pharmaceutical management of health systems and identify the political, strategic and technical elements that can develop in these environments.
- To identify all the structural, organisational and instrumental elements related to drug management in health services.
- To identify and define strategies for integrating drug management into the overall management of health services.
- To be able to develop a drug management plan in a supply environment, identifying its needs, phases, objectives and resources.
- To know the management basics of the introduction of new drugs into the market by the pharmaceutical industry.

Content:

Teaching Unit 1. Can We Manage Pharmaceuticals in Health Systems? The Micromanagement Approach.

1. Pharmaceutical policy: The difference between looking and seeing.
2. Factors influencing the use of drugs: What are we up against in management?
3. How to begin managing drugs: What we need to know and analyse.

Teaching Unit 2. The Development Process of New Drugs: The Perspective of the Pharmaceutical Industry.

1. Development process of a new drug.
2. Interactions with regulatory authorities in the development of new drugs.
3. International drug development. Project management.
4. Assessment of development projects in the pharmaceutical industry: The NPV decision tree method.
5. Pharmacoeconomics in the pharmaceutical industry.

Teaching Unit 3. Elements for Drug Management in Health Systems: The Micromanagement Approach.

1. Micromanagement of drugs: Strategy, tactics and techniques.
2. Acting on the drug: Selecting pharmaceuticals and incorporating new ones.
3. From managing the drug to managing its use: Who for, when, how and why?

Teaching Unit 4. Operationalisation of Drug Management in Microenvironments: Information, Responsibility Sharing, Integration and Evaluation.

1. Sharing responsibility among the professionals: A crucial element based on information, participation and responsibility.
2. Elements of operational support for a drug management plan: Integration, training and evaluation.
3. Development of an operating plan for drug management in the "Healthy South" complex.

Course 6: Modelling Techniques in the economic evaluation of pharmaceuticals and healthcare technologies

Authors: José Manuel Rodríguez and Carlos Crespo
Professors: Teaching Units 1 and 2: José Manuel Rodríguez
Teaching Units 3, 4 and 5: Carlos Crespo

General aim

The basic aim of this Course is to provide the participant with the practical skills and abilities needed when looking for solutions to a problem of economic evaluation in healthcare. Thus, the concepts of decision analysis and of modelling techniques for economic evaluation will be reviewed in order to emphasise the practical development of models of decision analysis and Markov models that compare several courses of action, healthcare programs, health intervention procedures or complementary treatments. Throughout the Course, the participant will deal with the typical problems involved in the practical application of economic evaluation models and will develop different techniques for solving them.

Specific objectives

— To apply, interpret, evaluate and develop the main types of modelling techniques for the economic evaluation of medicaments, medical technologies and healthcare programs.

— To identify the use and the potential for the application of these modelling techniques in the area of economic evaluation studies of technologies and healthcare programs.

— To use the normal existing software for the development of these techniques.

Content

Teaching Unit 1. Introduction to modelling techniques in economic evaluation studies for healthcare technologies.

1. Basic concepts.
2. Model types and justification of their use.

3. Advantages and disadvantages of the models.
4. Guidelines for the critical appraisal of economic evaluation models.
5. Basic knowledge of Excel for economic evaluation.

Teaching Unit 2. Elaboration phases of a model.

1. Conceptualization of the medical problem.
2. Conceptualization of the model.
3. Estimation of probabilities, use of resources, costs and uses.
4. Calculation of the expected values.
5. Graphical presentation of the models.
6. Sensitivity analysis.
7. Transferability of results of economic evaluations.

Teaching Unit 3. Introduction to Markov models.

1. Basic concepts.
2. Graphical presentation of a Markov model.
3. Dissemination of the Cohort.

Teaching Unit 4. Advantages of Markov models. Dealing with uncertainty in probabilistic models

1. Uncertainty
2. Probabilistic model.
3. Graphical presentation of results.

Course 7: Health Economics (1): Supply

Authors: Marisol Rodríguez and Jaume Puig-Junoy
Professors: Teaching Units 1 and 2: Marisol Rodríguez
Teaching Units 3 and 4: Natàlia Pascual

General aim

The basic aim of this Course is to guide the participant in the economic analysis of the functioning of the health sector and the economic behaviour of the agents involved in it, with special reference to the application of economic concepts and instruments to the management of health services. This aim is pursued jointly with the Course 7 of this program.

Specific objectives:

— To gain an overview of health economics as an instrument for analysing problems in the area of health and medical services.

— To become familiar with the economic approach to health determinants and have access to instruments for analysing expenditure on health.
— To understand the economic functioning of markets of goods and services, with special emphasis on the characteristics that differentiate these markets from conventional economic markets and justify public intervention.
— To analyse and understand the economic characteristics of the production and costs of health service providers and the expected effects on them of the various alternative physician and hospital payment systems.

Teaching Unit 1. Economics and its Applicability to the Field of Health.

1. Understanding economics in three acts and an epilogue.
2. Economics applied to the area of health care

Teaching Unit 2. The Health Production Function and the Analysis of Health Expenditure.

1. The health production function.
2. Analysis of spending on health services.

Teaching Unit 3. Markets for Health Goods and Services.

1. Economic relationships in the production and use of health services.
2. Failures of the health services market.
3. Failures of the private health insurance market.

Teaching Unit 4. Costs, Payment Systems and Incentives in the Production of Health Services.

1. Production and costs in health services.
2. Efficiency in the production of health services.
3. Physician payment systems.
4. Hospital funding systems.

Course 8: Health Economics (2): Demand

Authors: Marisol Rodríguez, Carles Murillo and Jaume Puig-Junoy
Professors: Teaching Units 1 and 4: Marisol Rodríguez
Teaching Units 2 and 3: Natàlia Pascual

General aim

The basic aim of this Course is to guide the participant in the economic analysis of the functioning of the health sector and the economic behaviour of the agents involved in it, with special reference to the application of economic concepts and instruments to the management of health services. This aim is pursued jointly with the Course 6 of this program.

Specific objectives

— To distinguish between the ways in which need and demand are opposed as resource allocation criteria.

— To distinguish between the demand for health and the demand for medical care and health services, understanding the latter as being derived from the former.

— To evaluate the results of the observed variability in health care activity and the importance of analysing its possible sources of variation for the design of economic policies.

— To use instruments of economic analysis to analyse and evaluate the impact of technology on the decision to either produce health services directly or to outsource them.

— To get to know the peculiarities of internal markets of public competition.

— To distinguish between different ways of understanding equity in the distribution of resources and to measure health inequalities.

Content

Teaching Unit 1. The Demand for Health and for Medical Care.

1. Demand and need: two different models to answer the same question.
2. Demand and investment in health: the Grossman model.
3. Empirical estimation of demand: the role of the different explanatory variables.

Teaching Unit 2. Variability in Medical Practice (VMP).

1. What we mean by variability in medical practice?
2. Trying to identify the magnitude of variability.
3. Arguments explaining VMP and policy orientation.

Teaching Unit 3. Technology, Outsourcing and Competition in Health Services.

1. Technology in the production of health services.
2. Outsourcing or direct production?
3. Competition and the organisation of health services.

Teaching Unit 4. The Goal of Equity in Health: Theory and Applications.

1. The concept of equity in health.
2. Empirical evidence of the existence of socioeconomic inequalities in health.
3. The responsibility/contribution of health systems to (in)equity.

Term paper

Academic coordinators: Natàlia Pascual and Jaume Puig-Junoy

NOTE: A document with specific instructions regarding the Term Paper will be published on the online platform of the program around two months before proposal submission.

General aim

To write a document, on a topic chosen by each participant, containing elements of economic analysis on one of the subjects covered in the program.

Specific objectives

— To become acquainted with the procedures for applying the scientific method to identify problems related to the management of health services and pharmaceuticals, and to learn how to go about solving them using the tools developed in the various Courses of the Master's Degree in Health Economics and Pharmacoeconomics.

— To encourage the integration of the concepts, theories and methods of observation and analysis related to the study of the management of health services and pharmaceuticals.

— To promote theoretical and applied research into health economics and pharmacoeconomics.

Content

The Term Paper should not be a theoretical or conceptual excursion. On the contrary, it should contribute evidence, and therefore it is essential that it includes statistical information, whether quantitative or qualitative. The work must be original and not simply a reproduction of results obtained by other authors. The research must be original, that is, the final work must not have been developed previously by any person other than the author of the Term Paper.
The document should have an approximate length of at least 3,000 words and no more than 5,000, including tables, figures and bibliographical references. The document should be organised in such a way that it is simple to identify the background to the topic, the objectives of the work, the material and method of analysis used, the results obtained and the discussion of these results. A 10-minute summary video will be submitted, as well as a live difence of the Term Paper before a Committee designated by the Academic Directors.

Term Paper tutor

The tutor will be assigned on an individual basis, depending on the subject and or the methods chosen for the Term Paper. We count on a highly expert team of more than 40 tutors who are academics and professionals in the field. The academic responsible of the Term Paper will assign each participant a tutor, who will monitor and control the assignment and will provide support to face any doubts the participant might have while working on it.

6. Faculty

Oscar Navarro Campàs, adjunct academic director
PhD student, Applied Economics at Universitat Autònoma de Barcelona. MSc in Applied Research in Economics and Business (Universitat Autònoma de Barcelona).

Nil Criach I García, teaching assistant
PhD student, Applied Economics at Universitat Autònoma de Barcelona. MSc in Applied Research in Economics and Business (Universitat Autònoma de Barcelona).

Judit Guzmán Sánchez, teaching assistant
MSc student in Applied Research in Economics and Business (Universitat Autònoma de Barcelona). Degree in Economics (Universitat Pompeu Fabra).

Lluís Segú Tolsa, professor in Course 5
Partner director and principal consultant at Pharmalex. Degree in Pharmacy, Adjunct Professor, Department of Pharmacy at the University of Barcelona.

José Manuel Rodríguez Barrios, professor in Course 6
Health Economics Lead Spain at Novartis Pharmaceuticals. PhD in Epidemiology by Rey Juan Carlos University.

Carlos Crespo Palomo, professor in Course 6
Co-Owner & CEO at Axentiva Solutions. PhD in Statistics by the University of Barcelona. Professor at the Department of Statistics at the University of Barcelona.

Research Gate:
https://www.researchgate.net/profile/Carlos_Crespo

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https://orcid.org/0000-0001-6066-0818

Marisol Rodríguez Martínez, professor in Courses 7 and 8
Emeritus Professor of Applied Economics, Department of Economic Policy and World Economic Structure, University of Barcelona.

Google Scholar:
https://scholar.google.com/citations?hl=ca&user=PATVHSkAAAAJ

7. ECTS credits and practical activity type

The Master's Degree in Health Economics and Pharmacoeconomics consists of a total of 60 credits (ECTS). The distribution of ECTS credits in each Course of the program can be checked in the table below. In addition, it also details the typy (individual/group) of Practical Activity

Course	ECTS credits	Type of Practical Activity
1	6	Individual
2	6	Individual
3	6	Group
4	6	Individual
5	6	Individual
6	8	Group
7	6	Individual
8	6	Individual
9 (Term Paper)	10	Individual
Total	60	-

8. Study method

The program will be taught in an online format. This involves a specific teaching methodology, with intensive use of the virtual classroom (eCampus) and appropriate evaluation mechanisms. Through eCampus you will access each of the Classrooms of the Courses. All courses tipically have 4 TEACHING UNITS, with the exception, with the exception of Course 6, which has 5 Teaching Units, and the Term Paper in which the participant is expected to write a research paper.

Each Course comprises

1. TEACHING UNITS – (4 except for Course 6, which has 5), including:
   a. A precise description of the OBJECTIVES and the skills the participant will be expected to acquire in the teaching unit.
   b. An INTRODUCTORY TEST which the participant will be required to take before proceeding to the teaching unit.
   c. The CONTENT of the teaching unit, which participants will be able to access either online or by downloading a printable document.
   d. The ACTIVITIES corresponding to the content of the teaching unit, which consist of self-assessed multiple-choice questions with automatic feedback for each possible answer. Answers are only available in the online version.
   e. A VIDEOTUTORIAL solving an activity with practical orientation from each Teaching Unit. Together with the video, the Excel template used is available so that the activity can be solved.
   f. A THEORY VIDEO developing a relevant concept or presenting an overview of the Unit.
   g. COMPLEMENTARY MATERIALS. Each unit has a folder with non-compulsory materials to complement and extend the topics introduced in the unit. A READING GUIDE is also available to list and summarize the content of each material.

2. An END-OF-UNIT EXERCISE for each teaching unit. It will be consist of 10 multiple-choice questions with 4 possible answers, with only one correct option. Participants may check the instructions given in the eCampus before proceeding to the end-of-unit exercise that will have a maximum time of 60 minutres (1 hour). It is recommended to perform the final exercise during the week of the Teaching Unit.

   The Academic Directors reserve the right to conduct an oral exam or supervise the completion of the end-of-unit exercise if necessary.

3. PRACTICAL ACTIVITY – There will be one final activity to be done at the end of each Course. The type of activity as well as its learning goals will be different for each Course. Check the calendar to see the opening and closing dates for accessing the practical activity, that does not have a retake period. This activity is compulsory.

4. LIVE SESSION – There will be one live session per Course, lasting 1 hour, developed by a member of the academic team, who will address key concepts or exercises related to the materials. The date and time will be confirmed by the eCampus classroom of each Course. In the End-of-Unit Exercise of Unit 4 (Unit 5 in the case of Course 6) questions about the contents of the live session can be included.

5. DISCUSSION FORUM – To ask questions, doubts and comments and to debate about the contents and topics, each Course will have a discussion forum. Questions will be answered publicly, allowing to other students to solve the same doubts. Participants are also encouraged to suggest topics of their own interest that are related to the contents covered in the Course.

Tips for effective learning

Following the calendar of the program is essential to maximize the learning outcomes of the materials, resources and guidance by the professors. It is encouraged to study and attempt the tests during the designated period in the calendar.

9. Assessment criteria

In order to be awarded the official Master's Degree in Health Economics and Pharmacoeconomics, it is required to pass all the Courses in the program. All Courses will be assessed and marked according to the quality criteria of the UPF Barcelona School of Management programs, which guarantee their academic value and their recognition.

In order to be awarded the official Master's Degree in Health Economics and Pharmacoeconomics, it is required to pass all the Courses in the program. The final grade in each Course is calculated as 75% of the average grade in the end of unit exercises and 25% of the grade in the practical activity.

It is important to clarify that Brush Up Courses (if compulsory) are required to obtain the Master's Degree but do not compute in the final grade.

ASSESSMENT COMPONENTS (FOR COURSES 1 TO 8)

1. END-OF-UNIT EXERCISES – 75% of the final grade of each Course.

   Each Course has 4 End of Unit Excercises (except Course 6, with 5 end of unit exercises). The end-of-unit exercise is considered as passed if the participant obtains a minimum of 5 correct answers out of the total of 10 questions.

   For each Course, the final grade will only be considered as passed ONLY IF at least 3 end of unit exercices are passed, out of the 4 of each Course (i.e. minimum grade of 5 out of 10 for each of them), and the Practical Activity has been delivered. In case of Course 6, the requirement is to pass at least 4 end of unit exercises out of the 5 Teaching Units

   The grade of this part will be the average of the grades in each Teaching Unit. If the minimum of Teaching Units passed is not reached, even if the final grade is higher than 5, the Course will be considered as failed.

   You will have a second attempt to take the End-of-Unit Exercise, aimed at either passing the teaching unit or improving the qualification obtained (the system will save the highest grade obtained). The opening date to access this second attempt is specified in the calendar. In the retake End-of-Unit Exercises the same assessment criteria will apply.

2. PRACTICAL ACTIVITY – 25% of the final grade of each Course

   The practical activity content and format may vary from course to course. It will not be possible to retake the practical activities in a later period than the established in the calendar. Therefore, if you do not submit the practical activity in its ordinary period, you will not pass the Course. Practical activities of Courses 3 and 6 will be in groups.

   IMPORTANT: Practical activities are mandatory and have no retake period. You cannot pass the Course if no practical activity is submitted in the period indicated for it.

Example: Simulation of grades in a Course

Student	TU 1	TU 2	TU 3	TU 4	Practical Activity	Weighted grade	Final grade
W	9	7	5	3	NP	4,5	Fail. The Practical Activity is not submitted.
X	9	9	8	6	8	8	Passed.
Y	9	9	4	4	6	6,4	Fail. At least an additional unit needs to be passed.

*NP: Not presented.

Term paper assessment

To obtain the Master's Degree, a Term Paper must also be completed (Course 9).The Term Paper will be assessed according to the criteria included in the specific study guide that you will access before having to prepare your topic proposal.

Grading scale of the program

The grading scale of the program goes from 0 to 10, considering 5 as the minimum grade to pass. The corresponding categories for the 0-10 points scale are the following:

Fail	0 - 4.9
Pass	5.0 - 6.9
Good	7.0 - 8.9
Excellent	9.0 - 10

Identity check

Following UPF Barcelona School of Management criteria, on a random basis, the Academic Direction may ask students to undergo an 'identity check' aimed at verifying the identity of the participant in the program's courses. The refusal of the selected participant to join the meeting may lead to the cancellation of enrolment in the program.

IMPORTANT: In order to protect the intellectual property of the authors of the different works and facilitate the evaluation of the teachers, Turnitin will be used as a plagiarism prevention tool. Therefore, you must read carefully and accept the delivery conditions of this plugin in all programmed activities.

10. Calendar

The course calendar is in the virtual classroom.

11. Contact

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