



COMILLAS

UNIVERSIDAD PONTIFICIA

ICAI

ICADE

CIHS

GUÍA DOCENTE

2024 - 2025

FICHA TÉCNICA DE LA ASIGNATURA

Datos de la asignatura	
Nombre completo	Economy of the electric power industry
Código	MEPI-611
Título	Máster Universitario en Sector Eléctrico / the Electric Power Industry por la Universidad Pontificia Comillas
Impartido en	Master in the Electric Power Industry [Primer Curso] Máster Universitario en Ingeniería Industrial y Máster Universitario en Sector Eléctrico [Segundo Curso]
Créditos	6,0 ECTS
Carácter	Obligatoria
Departamento / Área	Departamento de Organización Industrial
Responsable	Dr. José Pablo Chaves Ávila
Horario	M-J 19:10 a 20:50
Horario de tutorías	Consultar con el profesor

Datos del profesorado	
Profesor	
Nombre	Jose Pablo Chaves Ávila
Departamento / Área	Departamento de Ingeniería Eléctrica
Despacho	D-401 IIT-Calle Santa Cruz de Marcenado 26
Correo electrónico	Jose.Chaves@comillas.edu
Profesor	
Nombre	Jesús Pinelo Jiménez
Departamento / Área	Departamento de Organización Industrial
Correo electrónico	jpino@icai.comillas.edu
Profesor	
Nombre	José Ignacio Martínez del Barrio
Departamento / Área	Departamento de Organización Industrial
Correo electrónico	jimartinez@icai.comillas.edu
Profesor	
Nombre	Eloy Prieto Monterrubio
Departamento / Área	Departamento de Organización Industrial
Correo electrónico	epmonterrubio@icai.comillas.edu
Profesor	
Nombre	José Luis Castro Pérez-Manzucu
Departamento / Área	Departamento de Organización Industrial



Correo electrónico

jlcastro@icai.comillas.edu

DATOS ESPECÍFICOS DE LA ASIGNATURA

Contextualización de la asignatura

Aportación al perfil profesional de la titulación

Los conceptos presentados en esta asignatura serán el fundamento para entender el proceso de toma de decisiones económicas de los agentes en el sector eléctrico.

Prerrequisitos

No hay requisitos para esta asignatura. Se asume que el estudiante no está familiarizado con el análisis microeconómico o de finanzas.

Competencias - Objetivos

Competencias

GENERALES

CG02	Saber aplicar e integrar sus conocimientos, la comprensión de estos, su fundamentación científica y sus capacidades de resolución de problemas en entornos nuevos y definidos de forma imprecisa, incluyendo contextos de carácter multidisciplinar tanto investigadores como profesionales altamente especializados.
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ESPECÍFICAS

CE07	Ser capaz de trasladar los conceptos teóricos de la microeconomía al estudio y análisis de los mercados eléctricos reales.
CE08	Comprender el régimen contable y financiero de una empresa y conocer los mecanismos habituales de liquidaciones en el sector, así como ser capaz de realizar análisis de inversiones en una empresa eléctrica y comprender los principales aspectos de gestión estratégica del sector eléctrico.

Resultados de Aprendizaje

RA1	Comprender los factores que impulsan el comportamiento de la demanda y la oferta
RA2	Entender los incrementos de eficiencia que un entorno de mercado puede lograr,
RA3	Comprender por qué el mercado no siempre cumple su función. En este sentido, el alumno será capaz de identificar los problemas más relevantes que afectan a los mercados de electricidad
RA4	Comprender los conceptos financieros más relevantes, con especial atención en la industria eléctrica.
RA5	Utilizar técnicas y métodos conocidos para analizar la posición financiera de las compañías de electricidad.
RA6	Comprender la estrategia de las compañías eléctricas.



BLOQUES TEMÁTICOS Y CONTENIDOS

Contenidos – Bloques Temáticos

Capítulo 1. Análisis microeconómico del sector eléctrico

1. Oferta y Demanda
2. Contexto Centralizados
3. Mercados competitivos
4. Monopolio
5. Oligopolio

Capítulo 2. Análisis de estados financieros

1. Estados financieros. Estructura del balance general y estado de resultados
2. Análisis del balance general: activos, capital de inversión y pasivos
3. Análisis del estado de resultados: ingresos y gastos
4. Análisis de flujo de caja
5. Casos de estudio

Capítulo 3. Costes y análisis de rentabilidad

1. Rentabilidad Económica y Financiera. Creación de valor y apalancamiento financiero.
2. Análisis Económico y Financiero. Ratios.
3. Costes de Generación and distribución. Flujo de fondos descontados.
4. Casos de estudio.

Capítulo 4. Finanzas del sector eléctrico

1. Introducción. Objetivos y políticas financieras.
2. Coste de capital. Estructura óptima de financiación
3. Necesidades financieras y gestión del activo circulante
4. Alternativas de financiación. Análisis y gestión del riesgo
5. Análisis y valoración de las empresas eléctricas por los mercados financieros

Capítulo 5. Estrategia en el sector eléctrico

1. Introducción a la estrategia en el sector eléctrico
2. Modelos de negocios en el sector eléctrico
3. Estrategia en el sector eléctrico
4. Decisiones sobre construir, pedir prestado y comprar.

METODOLOGÍA DOCENTE

Aspectos metodológicos generales de la asignatura

Metodología en clase: Actividades

Clases magistrales y casos prácticos. Descripción de los contenidos de la asignatura y discusión de los contenidos. Los estudiantes tienen que responder a preguntas propuestas por los profesores durante las clases y aplicar los conocimientos para resolver casos



prácticos (54 horas).

Presentaciones orales. Los estudiantes tienen que discutir con los profesores los aspectos más relevantes de sus trabajos (6 horas).

Metodología fuera de clase: Actividades

La actividad de clase tiene que ser complementada con el trabajo individual desarrollado en clase.

Estudio personal. Estudio de los contenidos de la asignatura (90 horas).

Tarea de aplicación. El estudiante tiene que aplicar los conceptos teóricos estudiados en clase a casos reales (25 horas).

Actividades de tutorial. Disponible de acuerdo con la necesidad del estudiante (5 horas).

Metodología Presencial: Actividades

Clases magistrales y casos prácticos. Descripción de los contenidos de la asignatura y discusión de los contenidos. Los estudiantes tienen que responder a preguntas propuestas por los profesores durante las clases y aplicar los conocimientos para resolver casos prácticos (54 horas).

CG02, CE07, CE08

Presentaciones orales. Los estudiantes tienen que discutir con los profesores los aspectos más relevantes de sus trabajos (6 horas).

Metodología No presencial: Actividades

La actividad de clase tiene que ser complementada con el trabajo individual desarrollado en clase.

Estudio personal. Estudio de los contenidos de la asignatura (90 horas).

Tarea de aplicación. El estudiante tiene que aplicar los conceptos teóricos estudiados en clase a casos reales (25 horas).

CG02, CE06, CE07, CE08

Actividades de tutorial. Disponible de acuerdo con la necesidad del estudiante (5 horas).

RESUMEN HORAS DE TRABAJO DEL ALUMNO

HORAS PRESENCIALES

Clases magistrales y discusiones en clase: Presentación de los principales conceptos y procedimientos por parte del profesor y, en muchas ocasiones, profesionales del sector eléctrico. Incluirán estudios de casos, presentaciones dinámicas, participación de los alumnos en discusiones de contenidos en clase e interacciones grupales.

Presentaciones orales: Trabajo individual o de grupo fuera del aula donde los estudiantes trabajan en ejercicios y casos de estudio que luego presentan en clase.

54.00

6.00

HORAS NO PRESENCIALES

Estudio personal: Estudio personal del contenido del curso. Dentro de esta actividad individual, los alumnos revisarán y analizarán los contenidos proporcionados como material básico con los que podrán prepararse para discutir con otros alumnos, profesores y conferenciantes en el aula.

Tutoría: Actividad realizada por el profesor con los alumnos fuera de clase de forma individual o en grupos previa solicitud por éstos.

Lectura de artículos: lecturas de artículos científicos que se asignarán a los alumnos y que se presentarán durante el curso, para lo cual se requerirá lectura individual y / o trabajo grupal y estudio fuera del aula.



90.00

5.00

25.00

CRÉDITOS ECTS: 6,0 (180,00 horas)

EVALUACIÓN Y CRITERIOS DE CALIFICACIÓN

Actividades de evaluación	Criterios de evaluación	Peso
<p>Por bloques los exámenes tienen los siguientes pesos: Microeconomía (90%)- Finanzas (70%)- Análisis de Costes y retornos (90%)- Financiación del sector eléctrico (90%).</p> <p>Los exámenes son la combinación de preguntas cortas, opción múltiple tipo test y problemas prácticos.</p>	<p>Entendimiento de conceptos</p> <p>Aplicación de conceptos para la solución de problemas prácticos</p>	70
<p>En todos los bloques la participación en clase tiene un peso del 10% y para el bloque de Estrategia un 35%.</p>	<p>Contribución a los debates en clase</p>	15
<p>En los bloques de Finanzas y Estrategia la presentación de casos de estudio tiene un peso de 10% y 65% respectivamente.</p>	<p>Para el bloque de Finanzas se evaluará la calidad del análisis según los conceptos introducidos en clase.</p> <p>Para el bloque de Estrategia la presentación final será evaluada desde dos puntos de vista:</p> <ul style="list-style-type: none">• La calidad del análisis en sí mismo, la claridad y el entendimiento del caso de estudio.• La presentación oral del trabajo, la manera que los estudiantes construyen los debates, la habilidad de defender a sus propuestas y a las preguntas planteadas.	15

Calificaciones

En la asignatura hay 5 bloques en la asignatura. Cada uno de estos bloques tiene uno o más profesores y distintos sistemas de evaluación. La nota final la asignatura será el promedio ponderado de las 5 partes. El peso de cada bloque depende del número de clases.

Para aprobar la asignatura en el período ordinario se necesita obtener como mínimo un 3,5 en cada uno de los bloques y un promedio general igual o mayor a 5.

En caso que el estudiante no apruebe la asignatura, la nota final en el período de exámenes será la menor de las 5 notas y el alumno tendrá que hacer el examen de recuperación para todos los bloques con nota menor a 5 (las notas para los bloques con 5 o más se mantendrán). La nota final de la asignatura después del examen de recuperación será el promedio ponderado de los 5 bloques, donde el peso de cada bloque será en proporción al número de sesiones.



Exámenes de recuperación

En caso que el estudiante no apruebe la asignatura en el período de exámenes, deberá hacer un examen de recuperación en todos los bloques con nota inferior a 5. Las fechas de los exámenes de recuperación serán anunciadas en la plataforma digital. El sistema de evaluación para cada bloque será el que se describe a continuación.

Para cada una de las partes se aplicará el siguiente sistema de evaluación:

- Bloque 1 (Microeconomía): examen (100%)
- Bloque 2 (Análisis de estados financieros): examen (100%)
- Bloque 3 (Costes y análisis de rentabilidad): examen (100%)
- Bloque 4 (Finanzas del sector eléctrico): examen (100 %)
- Bloque 5 (Estrategia): presentaciones del caso de estudio (100 %).

Para aprobar la asignatura es necesario una nota mínima de 3,5 (de 10) en cada una de las partes. Como en el período de exámenes, para aprobar la asignatura, es necesario como mínimo 5/10 puntos (las notas correspondientes a los bloques con notas de 5 o más en el período ordinario se mantendrán para el cálculo del promedio). Si no se aprueba la asignatura, la nota final será la mínima de las 5 notas de cada una de las partes.

PLAN DE TRABAJO Y CRONOGRAMA

Actividades	Fecha de realización	Fecha de entrega
Examen de Microeconomía	03/10/2024	
Examen de Finanzas	21/01/2025	
Presentaciones de Estrategia	24- 29/10/2024	

BIBLIOGRAFÍA Y RECURSOS

Bibliografía Básica

Presentaciones dadas por los profesores.

Bibliografía Complementaria

Microeconomía

- 2013, I.Pérez-Arriaga "Regulation of the Power Sector". Chap. 2, "Power System Economics", M.Ventosa, P.Linares, I.Pérez-Arriaga
- 1986, Samuelson and Nordhaus, "Economics"
- 2005, Viscusi, Harrinton & Vernon "Economics of Regulation and Antitrust"
- 1992, Varian, "Microeconomic Analysis"
- 1990, Tirole, "The Theory of Industrial Organization"

Análisis Financiero



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- 1999, G. Bennett Stewart III "The Quest for Value"
- 2010, Mckinsey & Company, "Valuation, Measuring and Managing the Value of Companies".
- 2000, Richard A. Brealey and Stewart C. Myers, "Principles of Corporate Finance".
- Aswath Damodaran , "Applied Corporate Finance: A User's Manual".
- 2003, Anthony Rice, "Account Demystified", Pearsons education

Estrategia

- 2008, David J. Collis and Michael G. Rukstad, "Can You Say What Your Strategy Is?" HBR 2008
- 2004, W. Chan Kim, Renée Mauborgne, "Value Innovation - The Strategic Logic of High Growth", , HBR 2004
- 2007, Robert S. Kaplan and David P. Norton "Using the Balanced Scorecard as a Strategic Management System", July–August 2007
- 2003, Paul M. Healy and Krishna G. PalepuPaper, "The Fall of Enron", Journal of Economics Perspectives, Volume 17, Number 2. (Spring 2003), pp. 3-26; Up to page 10
- 2010, McKinsey, "The five types of successful acquisition", McKinsey on Finance Number 36, Summer 2010

En cumplimiento de la normativa vigente en materia de **protección de datos de carácter personal**, le informamos y recordamos que puede consultar los aspectos relativos a privacidad y protección de datos [que ha aceptado en su matrícula](#) entrando en esta web y pulsando "descargar"

<https://servicios.upcomillas.es/sedelectronica/inicio.aspx?csv=02E4557CAA66F4A81663AD10CED66792>

GENERAL INFORMATION

Course information	
Name	Economy of the Electric Power Industry
Code	ECO
Degree	Master in the Electric Power Industry (MEPI)
Year	2022-23
Semester	1 st
ECTS credits	6 ECTS
Type	Required
Coordinator	José Pablo Chaves Ávila

Instructor	
Name	José Pablo Chaves Ávila
Department	IIT
Area	REDES (Redes Inteligentes Sostenibles) RYE (Regulation and Energy Economics)
Office	D-404 (Santa Cruz de Marcenado, 26)
e-mail	jose.chaves@comilla.edu
Phone	91-542 28 00 ext: 2754
Office hours	Arrange an appointment through email.

Instructor	
Name	Jesús Pinelo Jimenez
Company	Aleatica
Area	Internal Audit
e-mail	jesuspino@hotmial.com
Phone	-
Office hours	Arrange an appointment through email.

Instructor	
Name	Ignacio Martinez del Barrio
Company	AELEC
Area	Financial Analysis
e-mail	ignacio.martinez@aelec.es
Office hours	Arrange an appointment through email.

Instructor	
Name	Eloy Prieto Monterrubio
Company	Formerly in Naturgy
Area	<u>Financial</u>
e-mail	eloyprietom@gmail.com
Office hours	Arrange an appointment through email.

Instructor	
Name	José Luis Castro Pérez-Manzucó
Company	CEPSA
Area	M&A
e-mail	jlcastro@icai.comillas.edu
Office hours	Arrange an appointment through email.

DETAILED INFORMATION

Contextualization of the course
Contribution to the professional profile of the degree
The objective of the course is to become familiar with electric power systems' microeconomic, strategy and financial fundamentals. The concepts presented in this course will set the foundations for properly understanding stakeholders' decision-making processes in the electricity industry.
Prerequisites
There are no prerequisites for this course. The course assumes the student is not familiar neither with microeconomics nor with financial analysis.

CONTENTS

Contents
Theory
Chapter 1. Microeconomic Analysis of the Electric Power Industry
<ul style="list-style-type: none"> 1.1 Demand and supply 1.2 Centralized context 1.3 Perfect competitive markets 1.4 Monopoly 1.5 Oligopoly
Chapter 2. Financial Statements Analysis
<ul style="list-style-type: none"> 2.1 Financial statements. Structure of balance sheet and income statement 2.2 Balance sheet analysis: assets, equity and liabilities 2.3 Income statement analysis: revenues & expenses 2.4 Cash flow statement analysis 2.5 Case study
Chapter 3. Costs and Return Analysis
<ul style="list-style-type: none"> 3.1 Economic and Financial Return. Value Creation and Financial Leverage. 3.2 Economic and Financial Analysis. Ratios. 3.3 Case studies.Regulation impact on economic and financial analysis (I). 3.4 Case studies.Regulation impact on economic and financial analysis (II).
Chapter 4. Electricity Industry Financing
<ul style="list-style-type: none"> 4.1 Objectives of the Company and Financial Policies. 4.2 Cost of Capital. Optimal financial structure 4.3 Financial needs and working capital management 4.4 Alternatives for financing. Financial Risk analysis and risk management 4.5 Project Financing 4.6 Analysis and valuation of electricity companies by financial markets
Chapter 5. Strategy in the Electricity Sector
<ul style="list-style-type: none"> 5.1 Introduction to strategy in the electric power industry 5.2 Business models in the electricity industry 5.3 Build, borrow or buy a framework 5.4 Case presentations

Competences and Learning Outcomes

Competences

Basic Competences

CB2 Being able to apply and integrate the knowledge, their comprehensiveness, the scientific founding, and their abilities to solve problems in new environments and defined in an imprecise manner, including multidisciplinary contexts as highly qualified researchers and professionals.

Specific Competences

CE7 Being able to transfer theoretical concepts of Microeconomics to the study and analysis of the real markets.

CE8 Understand the accounting and financial regime of a company and know the general mechanisms for settlement of the sector. To be able to realize the investment analysis in an electricity company and understand the main aspects of strategic management of the sector.

Learning outcomes

By the end of the course, students should be able to:

- LO1. Understand the drivers behind demand and supply behaviour.
- LO2. Understand the efficiency gains a market environment can achieve,
- LO3. Understand why the market does not always do its job. In this respect, the student will be able to identify the most relevant market failures affecting electricity markets
- LO4. Understand the most relevant financial concepts, with a particular focus on the electricity industry.
- LO5. Use some well-known techniques and methods aimed to analyze electricity companies' financial position.
- LO6. Understand the electricity company's strategy

TEACHING METHODOLOGY

General methodological aspects of the course	
Classroom Methodology: Activities	Competences
<p>Lectures. Description of the course contents and open discussion of concepts. The students also have to try to respond to the numerous questions posed by the instructors throughout the lecture (54 hours).</p> <p>Oral presentations. The students have to discuss the most relevant aspects of their work (6 hours).</p> <p>Tutorial activities. Available according to the need of the student. (5 hours)</p>	<p>CB2, CE7, CE8</p> <p>CB2</p> <p>CB2, CE7, CE8</p>
Non-Classroom Methodology: Activities	Competences
<p>The classroom activity should be complemented by the individual student work performed out of class.</p> <p>Personal study. Study of the course contents (90 hours).</p> <p>Term task. The student has to apply the theoretical concepts reviewed in class real cases (25 hours).</p>	<p>CB2, CE7, CE8</p> <p>CB2</p>

GRADING

There are five blocks in the course. Each of these blocks has a different instructor and a different grading system (described below). The total grade of the course will be the weighted average of the five parts, where each part gives weights in the weights of sessions.

To pass the course in the regular assessment period, a minimum grade of 3,5 (out of 10) in each of the five parts will be needed, and an average equal to or above 5.

In case the student does not pass the course, the final grade in the regular assessment period will be the lowest of the five marks, and the student will have to retake all the blocks with less than 5 points (the grade corresponding to blocks with 5 or more points will be maintained). After the retake, the total grade of the course will again be the weighted average of the five parts, where each part gives weights concerning the sessions.

3.1 Grading in the regular assessment period:

Block 1: Microeconomics

Evaluation activities	Evaluation Criteria	Weight
<u>Exams</u> Exams are a combination of short questions, multi-option tests and problems.	- Concept understanding - Application of concepts to the solution of practical problems	90 %
<u>Participation in the class</u>	- Contribution to the class discussions	10%

Block 2: Financial Statements Analysis

Evaluation activities	Evaluation Criteria	Weight
<u>Exam</u> Exams are a combination of short questions, multi-option tests and problems.	- Concept understanding - Application of concepts to the solution of practical problems	80%
<u>Participation in the class</u>	- Contribution to the class discussions	10%
<u>Business case</u> <ul style="list-style-type: none"> Analysis of a real business case. 	- The team task will be evaluated based on the quality of the analysis and the application of the concepts introduced in class.	10%

Block 3: Cost and Return Analysis

Evaluation activities	Evaluation Criteria	Weight
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<u>Exam</u> Exams are a combination of short questions and multi-option tests.	- Concept understanding - Application of concepts to the solution of practical problems	90 %
<u>Participation in the class</u>	- Contribution to the class discussions	10%

Block 4: Electricity Industry Financing

Evaluation activities	Evaluation Criteria	Weight
<u>Exam</u> Exams are a combination of short questions, multi-option tests and problems.	- Concept understanding - Application of concepts to the solution of practical problems	90 %
<u>Participation in the class</u>	- Contribution to the class discussions	10%

Block 5: Strategy in the Electricity Sector

Evaluation activities	Evaluation Criteria	Weight
<u>Participation in the class</u>	- Contribution to the class discussions	35%
<u>Business case</u>	The final case presentation will be evaluated from two points of view: - The quality of the analysis itself, the clarity and the comprehensiveness of the assessment. - The oral presentation of the work, the way the students build up their discussions and their ability to back their proposals and respond to the questions received.	65%

Overall course grading

Evaluation activities	Evaluation Criteria	Weight
<u>Exams</u> Exams are a combination of short questions, multi-option tests and problems.	- Concept understanding - Application of concepts to the solution of practical problems	70%

<u>Participation in the class</u>	- Contribution to the class discussions	15%
<u>Business case</u> Analysis of a real business case.	- The team task will be evaluated based on the quality of the analysis and the application of the concepts introduced in class.	15%

3.2 Retake

Retakes
<p>In case the student does not pass the course in the regular period, she/he will have to retake all blocks. The dates of the retake evaluation period will be agreed with the course coordinator. The grading system of each block in the retake is described below.</p> <p>Each of the five chapters (parts) will have the following grading system in the corresponding retake:</p> <ul style="list-style-type: none"> • Block 1 (Microeconomics): exam (100%) • Block 2 (Financial Statements Analysis): exam (100%) • Block 3 (Cost and Return Analysis): exam (100%) • Block 4 (Electricity Industry Financing): exam (100 %) • Block 5 (Strategy): case presentation (100 %). <p>A minimum grade of 5 out of 10 points (the grade corresponding to the blocks with 5 or more points in the regular period will be maintained to compute the average).</p>

WORK PLAN AND SCHEDULE¹

Class	Content
1	Introduction to the course - Introduction to Microeconomics
2	Microeconomic analysis of the electric power industry - Demand and supply (i)
3	Microeconomics analysis of the electric power industry - Demand and Supply (ii)
4	Microeconomics - Centralized context (i)
5	Microeconomics - Centralized context (ii)
6	Microeconomics - Perfect competitive markets
7	Monopoly
8	Test
9	Economic and Financial Return. Value Creation and Financial Leverage
10	Economic and Financial analysis. Ratios

¹ A detailed work plan of the subject can be found in the course summary sheet (see the last pages).

11	Case studies
12	Generation and distribution costs. Discounted cash flow valuation.
13	Financial statements. Structure of balance sheet and income statement.
14	Balance sheet analysis: assets, equity and liabilities
15	Income statement analysis: revenues & expenses
16	Cash flow statement analysis
17	Case studies
18	Intro. Objectives and financial policies
19	Financial needs and working capital management
20	Cost of capital. Optimal financial structure
21	Alternatives for financing. Risk management (1/2)
22	Risk Management (2/2). Project Finance and non-recourse debt
23	Industry Valuation. Analysis of electricity industry by Financial Markets
24	Exam Finance
25	Introduction to strategy in the electric power industry
26	Value innovation. Business plan
27	Strategy in the electric power industry (1)
28	Strategy in the electric power industry (2)
29	Strategy in the electric power industry (3)
30	Case presentations

SCHEDULE

SUMMARY OF WORKING HOURS OF THE STUDENT			
CLASSROOM HOURS			
Lectures	Oral presentations		
54	6		
NON-CLASSROOM HOURS			
Personal study	Personal work in case studies	Tutoring	
95	25	5	
ECTS CRÉDITS:			6 (180 hours)

BIBLIOGRAPHY

Basic bibliography
<ul style="list-style-type: none"> Presentations provided by the instructors
Complementary bibliography
<p>Microeconomics</p> <ul style="list-style-type: none"> 2013, I.Pérez-Arriaga "Regulation of the Power Sector". Chap. 2, "Power System Economics", M.Ventosa, P.Linares, I.Pérez-Arriaga 1986, Samuelson and Nordhaus, "Economics" 2005, Viscusi, Harrinton & Vernon "Economics of Regulation and Antitrust" 1992, Varian, "Microeconomic Analysis"

- 1990, Tirole, “The Theory of Industrial Organization”

Financial Analysis

- 1999, G. Bennett Stewart III “The Quest for Value”
- 2010, Mckinsey & Company, “Valuation, Measuring and Managing the Value of Companies”.
- 2000, Richard A. Brealey and Stewart C. Myers, “Principles of Corporate Finance”.
- Aswath Damodaran, “Applied Corporate Finance: A User’s Manual”.
- 2003, Anthony Rice, “Account Demystified”, Pearsons education

Strategy

- 2008, David J. Collis and Michael G. Rukstad, “Can You Say What Your Strategy Is?” HBR 2008
- 2004, W. Chan Kim, Renée Mauborgne, “Value Innovation - The Strategic Logic of High Growth”, HBR 2004
- 2007, Robert S. Kaplan and David P. Norton “Using the Balanced Scorecard as a Strategic Management System”, July–August 2007
- 2003, Paul M. Healy and Krishna G. Palepu Paper, “The Fall of Enron”, Journal of Economics Perspectives, Volume 17, Number 2. (Spring 2003), pp. 3-26; Up to page 10
- 2010, McKinsey, “The five types of successful acquisition”, McKinsey on Finance Number 36, Summer 2010

WORK PLAN (i/ii)

Week	h/w	Class	Content	In-class activities		h/w	Out of Class activities			Learning outcomes	
				Lecture and problem solving	Assessment		Self-study	Problem solving	Individual and in-group assignments	Learning outcomes	Description
1	4		1 Introduction to the course - Introduction to Microeconomics			6	Review and self-study			LO1	Introduction to the course
			2 Demand and supply (i)							LO1	Introduction to Economics and to general principles of Microeconomics
2	4		3 Demand and supply (ii)			6	Review and self-study			LO1	Understand supply and demand diagrams Introduce demand and supply elasticity. Consumer and producer surplus
			4 Economics in the centralized context (i)							LO1	Understand supply and demand diagrams Introduce demand and supply elasticity. Consumer and producer surplus
3	4		5 Economics in the centralized context (ii)	Problem solving		6	Review and self-study	Problem solving		LO1	The all-knowing, all-powerful perfect benevolent planner. The concept of net social welfare
			6 Perfect competitive markets	Problem solving	Exam					LO2	The all-knowing, all-powerful perfect benevolent planner. The concept of net social welfare
4	4		7 Monopoly	Problem solving		6	Review and self-study	Problem solving		LO2, LO3	Characterization of a perfect competitive market Analysis of supply and demand equilibrium in the electricity markets
			8 Test		Exam					LO3	Imperfect competition and monopolies. Oligopolistic models and market agent's behavior in oligopolistic markets. Market power indexes. Final Text.
5	4		9 Strategy in the electric power industry			6	Review and self-study	Case study		LO6	Strategies in the Electric Power Industry
			10 Case presentations		Presentations					LO6	
6	4		11 Economic and Financial Return. Value Creation and Financial Leverage			6	Review and self-study			LO4	Introductory session to the Financial Statements: information contained, different types, basic principles used to prepared them, objectives and main users. Preliminary analysis of the structure and basic concepts of the Balance Sheet and the Income Statement.
			12 Economic and Financial analysis. Ratios						LO4	Different types of balance Sheet. Practical approach, analysing Iberdrola's Financial Statement	
7	4		13 Case studies			6	Review and self-study			LO4	Analysis of the Income Statement, Study of the different margins shown in an Income Statement: contribution margin, EBITDA, EBIT, EBT and Net Result.
			14 Generation and distribution costs. Discounted cash flow valuation.						LO4	Basic concepts and methods to prepare a Cash Flow Statement, Review of the different kinds of Cash Flows. Free Cash Flows and Net Cash Flow. Analysis of Iberdrola's Cash Flow.	
8	4		15 Financial statements. Structure of balance sheet and income statement.	Problem solving		6	Review and self-study	Case study		LO4, LO5	Comprehensive exercise to elaborate and interpret a set of Financial Statements: Balance Sheet, Income Statement and Cash Flow. To be prepared and presented in groups in class.
			16 Balance sheet analysis: assets, equity and liabilities	Problem solving						LO4, LO5	Exam

WORK PLAN (ii/ii)

Week	h/w	Class	Content	Lecture and problem solving	Assessment	h/w	Self-study	Problem solving	Individual and in-group assignments	Learning outcomes	Description
9	4	17	Income statement analysis: revenues & expenses			6	Review and self-study			LO4, LO5	The Electricity Business: Departing from UNESA's income account a description of the main cost items of the electricity business is made for both operating and capital costs
		18	Cash flow statement analysis							LO4, LO5	Ratios: the use of financial ratios by the financial analysis is explained. The notions of financial leverage and value creation are introduced
10	4	19	Case study		Case studies	6	Review and self-study			LO4, LO5	Case studies: the previously explained concepts and analytical tools are applied to the consolidated financial statements of a relevant electricity group of companies.
		20	Intro. Objectives and financial policies							LO4, LO5	The time value of money is introduced to explain the discounted cash flow methodology. Application to the case of a generation plant and to a distribution network. The link between this methodology and the analysis usually performed by financial analysis is explained.
11	4	21	Financial needs and working capital management			6	Review and self-study			LO4, LO5	The objective of the firm, the positioning of the financial function within the company and the strategic decisions of financial management (investment, financial infrastructure, dividend, financial communication).
		22	Cost of capital. Optimal financial structure							LO4, LO5	The cost of the financial resources used by the company (WACC). Optimal financial structure. Rating Agencies and the rating process.
12	4	23	Alternatives for financing. Risk management (1/2)			6	Review and self-study			LO4, LO5	Financial Planning Process (short and long term). Working Capital Management. Banking instrument for the short term financial management.
		24	Risk Management (2/2). Project Finance and non-recourse debt							LO4, LO5	The relationship bank-company. Alternatives for funding the company (long term), including equity, banking products and capital markets. Financial Derivatives. The risk management process.
13	4	25	Industry Valuation. Analysis of electricity industry by Financial Markets			6	Review and			LO4, LO5	Analysis and valuation of electricity companies by financial markets: Quantitative and Qualitative analysis.
		26	Exam Finance							LO4, LO5	Exam
14	4	27	Introduction to strategy in the electric power industry			6	Review and			LO4, LO5	Key concepts of Business Unit Strategy. Readings & Discussion: What is strategy?
		28	Business models in the electricity industry						Case study	LO6	Strategy and Financial Statements Review of financial statement analysis- relationship with strategy.
15	4	29	Build, borrow or buy			6	Review and self-study			LO6	Business Plans. Readings & Discussion: How to write a great business plans.
		30	Finance Exam		Exam					LO6	Mergers & Acquisitions. Readings & Discussion: Making Acquisitions, Valuation Methods.