

GENERAL INFORMATION

Course information		
Name	Economy of the Electric Power Industry	
Code	ECO	
Degree	Master in the Electric Power Industry (MEPI)	
Year	2018-19	
Semester	1 st	
ECTS credits	6 ECTS	
Туре	Required	
Department	IIT	
Area	REDES (Redes Inteligentes Sostenibles) RYE (Regulation and Energy	
	Economics)	
Coordinator	José Pablo Chaves Ávila	

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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 and financial fundamentals. The concepts presented in this course will set the foundations for the proper understanding of stakeholders' decision-making process in the electricity industry.

Prerequisites

There are not 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

- 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

- 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

- 3.1 Economic and Financial Return. Value Creation and Financial Leverage.
- 3.2 Economic and Financial Analysis. Ratios.
- 3.3 Generation and distribution costs. Discounted cash flow valuation.
- 3.4 Case studies.

Chapter 4. Electricity Industry Financing

- 4.1 Introduction. Objectives and financial policies.
- 4.2 Cost of Capital. Optimal financial structure
- 4.3 Financial needs and working capital management
- 4.4 Alternatives for financing. Risk analysis and risk management
- 4.5 Analysis and valuation of electricity companies by financial markets

Chapter 5. Strategy in the Electricity Sector

- 5.1 Introduction to strategy in the electric power industry
- 5.2 Business models in the electricity industry
- 5.3 Build, borrow or buy framework
- 5.4 Case presentations



Competences and Learning Outcomes

Competences

Basic Competences

CG2 Being able to apply and integrate the knowledge, the comprehensiveness of them, the scientific founding and their abilities to solve problems in new environments and defined in an imprecise manner, including multidisciplinary contexts as highly qualified researches and professionals.

Specific Competences

- CE6 Understand the markets economic principles, the different approaches of regulation of monopolies and specificities of the electricity sector.
- 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. As well, 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 behavior.
- 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	
Lectures and practical cases. Description of the course contents and open discussion of concepts. The students have also to try to respond to the numerous questions posed by the instructors throughout the lecture and solve practical cases (54 hours).	CG2, CE7, CE6, CE8	
Oral presentations . The students have to discuss with the instructors the most relevant aspects of their work (6 hours).	CG2	
Tutorial activities . Available according to the need of the student. (5 hours)	CG2, CE6, CE7, CE8	
Non-Classroom Methodology: Activities	Competences	
The classroom activity should be complemented by the individual student work performed out of class.		
Personal study. Study of the course contents (90 hours).	CG2, CE6, CE7, CE8	
Term task . The student has to apply the theoretical concepts reviewed in class on real cases (25 hours).	CG2	



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 weights are given by each part in proportion of sessions.

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

In case that 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). The total grade of the course after the retake will again be the weighted average of the five parts, where weights are given by each part in proportion of sessions.

3.1 Grading in the regular assessment period:

Block 1: Microeconomics

Evaluation activities	Evaluation Criteria	Weight
Exams (2) Exams is a combination of short questions, multi-option test and problems.	Concept understanding Application of concepts to the solution of practical problems	90 % (20 % and 70 %)
Participation in the class	- Contribution to the class discussions	10%

Block 2: Financial Statements Analysis

Evaluation activities	Evaluation Criteria	Weight
Exam Exams is a combination of short questions, multi-option test and problems.	 Concept understanding Application of concepts to the solution of practical problems 	75 %
Participation in the class	- Contribution to the class discussions	10%
 Business case Analysis of a real business case. 	- The term task will be evaluated based on the quality of the analysis and the application of the concepts introduced in class.	15%

Block 3: Cost and Return Analysis

Evaluation activities	Evaluation Criteria	Weight
		3



Exam Exams is a combination of short questions and multi-option test.	 Concept understanding Application of concepts to the solution of practical problems 		90 %
Participation in the class	- Contribution to the discussions	e class	10%

Block 4: Electricity Industry Financing

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

Block 5: Strategy in the Electricity Sector

Evaluation activities	Evaluation Criteria	Weight
Participation in the class	- Contribution to the class discussions	40%
<u>Exam</u>	The final case presentation will be evaluated from two points of view:	60%
	- The quality of the analysis itself, the clarity and 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 to respond to the questions received.	

3.2 Retake

Retakes

In case the student does not pass the course in the regular period, she/he will have to retake all blocks with an individual grade below 5 points. The dates of the retake evaluation period will be



announced in the web page. The grading system of each block in the retake are those described below.

Each of the five chapters (parts) will have the following grading system in the corresponding retake:

- 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 %).

In order to pass the course it will be needed a minimum grade of 3,5 (out of 10) in each of the five parts. As in the regular assessment period, in order to pass the course, the average mark must be at least 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). Otherwise, the final grade will be the lowest of the five marks.

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 - Demand and supply (ii) Centralized context (i)
4	Microeconomics - Centralized context (ii)
5	Microeconomics- Test 1
6	Microeconomics - Perfect competitive markets (i)
7	Perfect competitive markets (ii) Monopoly and oligopoly
8	Microeconomics- Final test
9	Financial statements. Structure of balance sheet and income statement.
10	Balance sheet analysis: assets, equity and liabilities
11	Income statement analysis: revenues & expenses
12	Cash flow statement analysis
13	Case study (1)
14	Economic and Financial Return. Value Creation and Financial Leverage
15	Economic and Financial analysis. Ratios
16	Case study (2) and test
17	Case studies
18	Generation and distribution costs. Discounted cash flow valuation.
19	Intro. Objectives and financial policies
20	Cost of Capital. Optimal financial structure
21	Financial needs and working capital management
22	Alternatives for financing. Risk analysis and risk management (1/2)
23	Risk analysis and risk management (2/2). Project financing and non-recourse debt
24	Analysis and valuation of electricity companies by financial markets

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



25	Introduction to strategy in the electric power industry
26	Business models in the electricity industry
27	Build, borrow or buy (I)
28	Build, borrow or buy (II)
29	Strategy in the electric power industry
30	Case presentations

SCHEDULE

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

BIBLIOGRAPHY

Basic bibliography

Presentations provided by the instructors

Complementary bibliography

Microeconomics

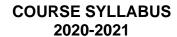
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- 1992, Varian, "Microeconomic Analysis"
- 1990, Tirole, "The Theory of Industrial Organization"

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".
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Strategy

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- 2010, McKinsey, "The five types of successful acquisition", McKinsey on Finance Number 36, Summer 2010



WORK PLAN (i/ii)

	In-class activities Out of Class activities Learning outcomes									
			In-class a	ctivities		Ou	Out of Class activities Individual and			Learning outcomes
			Lecture and				Droblom	in-group	Loorning	
la /	CI	Content			h /	Call and			Learning	Description
11/ W		Introduction to the course - Introduction to Microeconomics	problem solving	Assessment	11/ W	Review and	_	assignments	outcomes LO1	Description Introduction to the course
4		Microeconomic analysis of the electric power industry - Demand and supply (i)			6	self-study			LO1	Introduction to the course Introduction to Economics and to general principles of Microeconomics
		inicroeconomic analysis of the electric power industry - Demand and Supply (i)		-		sen-study			101	Understand supply and demand diagrams
	2	Microeconomics - Demand and supply (ii) Centralized context (i)							LO1	Introduce demand and supply elasticity. Consumer and producer surplus
4	3				6	D	,——		101	
		Microeconomics - Centralized context (ii)				Review and self-study			101	Understand supply and demand diagrams
	- 4	Management Total	0 11 1:			,			LO1	Introduce demand and supply elasticity. Consumer and producer surplus
4		Microeconomics- Test 1	Problem solving	-	6	Review and			LO1	The all-knowing, all-powerful perfect benevolent planner. The concept of net social welfare
	6	Microeconomics - Perfect competitive markets (i)	Problem solving	Exam		self-study	solving		LO2	The all-knowing, all-powerful perfect benevolent planner. The concept of net social welfare
		Perfect competitive markets (ii) Monopoly and oligopoly								Characterization of a perfect competitive market
4	7		Problem solving		6				LO2, LO3	Analysis of supply and demand equilibrium in the electricity markets
		Microeconomics- Final test				Review and				Imperfect competition and monopolies. Oligopolistic models and market agent's behavior in
	8	The control of the co		Exam		self-study	solving		LO3	oligopolistic markets. Market power indexes. Final Text.
										Introductory session to the Financial Statements: information contained, different types,
		Financial statements. Structure of balance sheet and income statement.								basic principles used to prepared them, objectives and main users. Preliminary analysis of the
4	9				6				LO4	structure and basic concepts of the Balance Sheet and the Income Statement.
		Balance sheet analysis: assets, equity and liabilities				Review and	ł			
	10	Datance sheet analysis, assets, equity and habilities				self-study			LO4	Different types of balance Sheet. Practical approach, analysing Iberdrola's Financial Statement
		Income atotement analysis, rayonyas 9 ayranga								Analysis of the Income Statement, Study of the different margins shown in an Income
4	11	Income statement analysis: revenues & expenses			_				LO4	Statement: contribution margin, EBIDTDA, EBIT, EBT and Net Result.
4		0			ь	Review and	1			Basic concepts and methods to prepare a Cash Flow Statement, Review of the different kinds
	12	Cash flow statement analysis				self-study			LO4	of Cash Flows. Free Cash Flows and Net Cash Flow. Analysis of Iberdrola's Cash Flow.
										·
		Case study (1)					Problem			Comprehensive exercise to elaborate and interpret a set of Financial Statements: Balance
4	13	Case stady (1)	Problem solving	Case study	6	Review and		Case study	LO4, LO5	Sheet, Income Statement and Cash Flow. To be prepared and presented in groups in class.
	1/1	Economic and Financial Return. Value Creation and Financial Leverage	Problem solving		1	self-study	Joiving	1	LO4, LO5	Exam
	14	200 normo ana i manoiar restam. Valdo Orealion ana i manoiar Leverage	1 TODICIII SOIVIIIg	case and exai	1	3C11-3tudy	1		104, 103	
		Economic and Financial analysis. Ratios		1					1	The Electricity Business: Departing from UNESA's income account a description of the main cost
4	15				6				LO4, LO5	items of the electricity business is made for both operating and capital costs
-					ľ	Review and	4			Ratios: the use of financial ratios by the financial analysis is explained. The notions of financial
	16	Case study (2) and test				self-study	1		LO4, LO5	leverage and value creation are introduced
	10		ļ	1	I	sen-study		L	104, 103	ieverage and value creation are introduced



WORK PLAN (ii/ii)

In-class activiti				41141		Out of Class activities				
			In-class ac	tivities		Out	of Class a			Learning outcomes
Wee	kh/w		ecture and problem solving	Assessment	h/w	Self-study	Problem solving		Learning outcomes	Description
		17 Case studies							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.
9	4	Generation and distribution costs. Discounted cash flow valuation.		Exam	6	Review and self-study			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.
10	4	Intro. Objectives and financial policies			6				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).
		Cost of Capital. Optimal financial structure				Review and self-study			LO4, LO5	The cost of the financial resources used by the company (WACC). Optimal financial structure. Rating Agencies and the rating process.
		21 Financial needs and working capital management							LO4, LO5	Financial Planning Process (short and long term). Working Capital Management. Banking instrument for the short term financial management.
11	4	Alternatives for financing. Risk analysis and risk management (1/2)			6	Review and self-study			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.
12	4	Risk analysis and risk management (2/2). Project financing and non-recourse debt 23			6				LO4, LO5	The concept of Project Finance. Pros and cons vs. Corporate Financing. Requirements of an investment to structure a Project Finance. The economic model and the risk identification and mitigation process.
12	+	Analysis and valuation of electricity companies by financial markets		Exam		Review and self-study			LO4, LO5	Analysis and valuation of electricity companies by financial markets: Quantitative and Qualitative analysis. Different methods used to valuate a company/project. Valuation using dynamic models (cash flow discount).
		25 Introduction to strategy in the electric power industry							LO4, LO5	Key concepts of Business Unit Strategy. Readings & Discussion: What is strategy?
13	4	Business models in the electricity industry			6	Review and self-study			LO6	Strategy and Financial Statements Review of financial statement analysis- relationship with strategy.
		27 Build, borrow or buy (I)						Case study	LO6	Business Plans. Readings & Discussion: How to write a great business plans.
14	4	28 Build, borrow or buy (II)			6	Review and self-study		,	LO6	Mergers & Acquisitions. Readings & Discussion: Making Acquisitions, Valuation Methods.
15	4	29 Strategy in the electric power industry				Review and			LO6	
15	4	30 Case presentations		Exam	0	self-study			LO6	



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DETAILED INFORMATION

Contextualization of the course

Contribution to the professional profile of the degree

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- 3.3 Generation and distribution costs. Discounted cash flow valuation.
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Chapter 4. Electricity Industry Financing

- 4.1 Introduction. Objectives and financial policies.
- 4.2 Cost of Capital. Optimal financial structure
- 4.3 Financial needs and working capital management
- 4.4 Alternatives for financing. Risk analysis and risk management
- 4.5 Analysis and valuation of electricity companies by financial markets

Chapter 5. Strategy in the Electricity Sector

- 5.1 Introduction to strategy in the electric power industry
- 5.2 Business models in the electricity industry
- 5.3 Build, borrow or buy framework
- 5.4 Case presentations



Competences and Learning Outcomes

Competences

Basic Competences

CB2 Being able to apply and integrate the knowledge, the comprehensiveness of them, the scientific founding and their abilities to solve problems in new environments and defined in an imprecise manner, including multidisciplinary contexts as highly qualified researches 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. As well, 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 behavior.
- 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
Lectures. Description of the course contents and open discussion of concepts. The students have also to try to respond to the numerous questions posed by the instructors throughout the lecture (54 hours).	CB2, CE7, CE8
Oral presentations . The students have to discuss with the instructors the most relevant aspects of their work (6 hours).	CB2
Tutorial activities . Available according to the need of the student. (5 hours)	CB2, CE7, CE8
Non-Classroom Methodology: Activities	Competences
The classroom activity should be complemented by the individual student work performed out of class.	
Personal study. Study of the course contents (90 hours).	CB2, CE7, CE8
Term task . The student has to apply the theoretical concepts reviewed in class on real cases (25 hours).	CB2



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 weights are given by each part in proportion of sessions.

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

In case that 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). The total grade of the course after the retake will again be the weighted average of the five parts, where weights are given by each part in proportion of sessions.

3.1 Grading in the regular assessment period:

Block 1: Microeconomics

Evaluation activities	Evaluation Criteria	Weight
Exams (2) Exams is a combination of short questions, multi-option test and problems.	Concept understanding Application of concepts to the solution of practical problems	90 % (20 % and 70 %)
Participation in the class	- Contribution to the class discussions	10%

Block 2: Financial Statements Analysis

Evaluation activities	Evaluation Criteria	Weight
Exam Exams is a combination of short questions, multi-option test and problems.	 Concept understanding Application of concepts to the solution of practical problems 	75 %
Participation in the class	- Contribution to the class discussions	10%
 Business case Analysis of a real business case. 	- The term task will be evaluated based on the quality of the analysis and the application of the concepts introduced in class.	15%

Block 3: Cost and Return Analysis

valuation activities	Evaluation Criteria	Weight
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 Exams is a combination of short questions and multi-option test. Concept understanding Application of concepts to the solution of practical problems 		90 %			
Participation in the class	- Contribution discussions	to	the	class	10%

Block 4: Electricity Industry Financing

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

Block 5: Strategy in the Electricity Sector

Evaluation activities	Evaluation Criteria	Weight
Participation in the class	- Contribution to the class discussions	40%
<u>Exam</u>	The final case presentation will be evaluated from two points of view:	60%
	- The quality of the analysis itself, the clarity and 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 to respond to the questions received.	

3.2 Retake

Retakes

In case the student does not pass the course in the regular period, she/he will have to retake all blocks with an individual grade below 5 points. The dates of the retake evaluation period will be



announced in the web page. The grading system of each block in the retake are those described below.

Each of the five chapters (parts) will have the following grading system in the corresponding retake:

- 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 %).

In order to pass the course it will be needed a minimum grade of 3,5 (out of 10) in each of the five parts. As in the regular assessment period, in order to pass the course, the average mark must be at least 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). Otherwise, the final grade will be the lowest of the five marks.

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 - Demand and supply (ii) Centralized context (i)
4	Microeconomics - Centralized context (ii)
5	Microeconomics- Test 1
6	Microeconomics - Perfect competitive markets (i)
7	Perfect competitive markets (ii) Monopoly and oligopoly
8	Microeconomics- Final test
9	Financial statements. Structure of balance sheet and income statement.
10	Balance sheet analysis: assets, equity and liabilities
11	Income statement analysis: revenues & expenses
12	Cash flow statement analysis
13	Case study (1)
14	Economic and Financial Return. Value Creation and Financial Leverage
15	Economic and Financial analysis. Ratios
16	Case study (2) and test
17	Case studies
18	Generation and distribution costs. Discounted cash flow valuation.
19	Intro. Objectives and financial policies
20	Cost of Capital. Optimal financial structure
21	Financial needs and working capital management
22	Alternatives for financing. Risk analysis and risk management (1/2)
23	Risk analysis and risk management (2/2). Project financing and non-recourse debt
24	Analysis and valuation of electricity companies by financial markets

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



25	Introduction to strategy in the electric power industry
26	Business models in the electricity industry
27	Build, borrow or buy (I)
28	Build, borrow or buy (II)
29	Strategy in the electric power industry
30	Case presentations

SCHEDULE

SUMMARY OF WORKING HOURS OF THE STUDENT					
	CLASSRO	OM 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

Presentations provided by the instructors

Complementary bibliography

Microeconomics

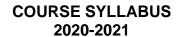
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Strategy

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WORK PLAN (i/ii)

ŗ			In-class activities		_	Out	t of Class activities		Lograing outcomes	
			ill-Class di	iii-ciass activities		Ou	Individual and		Learning outcomes	
			Lecture and				Problem	in-group	Learning	
h/w	Class	Content	problem solving	Assessment	h/w	Self-study		assignments	outcomes	Description
		Introduction to the course - Introduction to Microeconomics	problem solving	7.550551110110		Review and		doorgamento	LO1	Introduction to the course
4	_	Microeconomic analysis of the electric power industry - Demand and supply (i)			6	self-study			LO1	Introduction to Economics and to general principles of Microeconomics
		, , , , , , , , , , , , , , , , , , , ,				, , , , , , , , , , , , , , , , , , ,				Understand supply and demand diagrams
	3	Microeconomics - Demand and supply (ii) Centralized context (i)			_				LO1	Introduce demand and supply elasticity. Consumer and producer surplus
		Microeconomics - Centralized context (ii)			6	Review and	ı			Understand supply and demand diagrams
	4					self-study			LO1	Introduce demand and supply elasticity. Consumer and producer surplus
4	5	Microeconomics- Test 1	Problem solving			Review and	Problem		LO1	The all-knowing, all-powerful perfect benevolent planner. The concept of net social welfare
	6	Microeconomics - Perfect competitive markets (i)	Problem solving	Exam	6	self-study	solving		LO2	The all-knowing, all-powerful perfect benevolent planner. The concept of net social welfare
		Doutoot compositive markets (ii) Managaby and alignaby								Characterization of a perfect competitive market
4	7	Perfect competitive markets (ii) Monopoly and oligopoly	Problem solving		6				LO2, LO3	Analysis of supply and demand equilibrium in the electricity markets
*		Microeconomics- Final test			ľ	Review and	Problem			Imperfect competition and monopolies. Oligopolistic models and market agent's behavior in
	8	INICIOECONOMICS- FINALLESI		Exam		self-study	solving		LO3	oligopolistic markets. Market power indexes. Final Text.
		Financial statements. Structure of balance sheet and income statement.						 		Introductory session to the Financial Statements: information contained, different types,
										basic principles used to prepared them, objectives and main users. Preliminary analysis of the
4	9				6				LO4	structure and basic concepts of the Balance Sheet and the Income Statement.
		Balance sheet analysis: assets, equity and liabilities				Review and	I			
	10	Dalance Sheet analysis. assets, equity and nabilities				self-study			LO4	Different types of balance Sheet. Practical approach, analysing Iberdrola's Financial Statement
		Income statement analysis: revenues & expenses								Analysis of the Income Statement, Study of the different margins shown in an Income
4	11	ancome statement analysis. Tevenues a expenses			6				LO4	Statement: contribution margin, EBIDTDA, EBIT, EBT and Net Result.
-		Cash flow statement analysis				Review and	ı			Basic concepts and methods to prepare a Cash Flow Statement, Review of the different kinds
	12	Oddin now statement analysis				self-study	/		LO4	of Cash Flows. Free Cash Flows and Net Cash Flow. Analysis of Iberdrola's Cash Flow.
4		Case study (1)			6	Ų	Problem	Case study		Comprehensive exercise to elaborate and interpret a set of Financial Statements: Balance
-	13		Problem solving	Case study	U	Review and	solving	case study	LO4, LO5	Sheet, Income Statement and Cash Flow. To be prepared and presented in groups in class.
	14	Economic and Financial Return. Value Creation and Financial Leverage	Problem solving	Case and exar		self-study			LO4, LO5	Exam
	15									The Electricity Business: Departing from UNESA's income account a description of the main cost
		Economic and Financial analysis. Ratios							LO4, LO5	items of the electricity business is made for both operating and capital costs
4	13			 	6				104, 103	recens of the electricity business is made for both operating and capital costs
	16	Case study (2) and test				Review and	1			Ratios: the use of financial ratios by the financial analysis is explained. The notions of financial
		, (, ,				self-study			LO4, LO5	leverage and value creation are introduced
				-						



WORK PLAN (ii/ii)

Ţ			In-class activities		1	Out	of Class activities		Learning outcomes	
			III class ac	civices		Out	OI CIUSS U	Individual and		Ecuring outcomes
			Lecture and				Problem		Learning	
Wee	h/w	Class Content	problem solving	Assessment	h/w	Self-study			outcomes	Description
										Case studies: the previously explained concepts and analytical tools are applied to the
		17 Case studies							LO4, LO5	consolidated financial statements of a relevant electricity group of companies.
9	4	Generation and distribution costs. Discounted cash flow valuation.			6					
					ľ					The time value of money is introduced to explain the discounted cash flow methodology.
					/	Review and				Application to the case of a generation plant and to a distribution network. The link between
		18		Exam		self-study			LO4, LO5	this methodology and the analysis usually performed by financial analysis is explained.
		Intro. Objectives and financial policies								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,
10	4				6				LO4, LO5	financial communication).
		Cost of Capital. Optimal financial structure				Review and				The cost of the financial resources used by the company (WACC). Optimal financial structure.
		20 ' '				self-study			LO4, LO5	Rating Agencies and the rating process.
		Financial needs and working capital management							104 105	Financial Planning Process (short and long term). Working Capital Management. Banking instrument for the short term financial management.
11	4				ے				LO4, LO5	The relationship bank-company. Alternatives for funding the company (long term), including
11	4	Alternatives for financing. Risk analysis and risk management (1/2)			٥	Review and				equity, banking products and capital markets. Financial Derivatives. The risk management
		22	isk analysis and risk management (1/2)			self-study			LO4, LO5	process.
		Risk analysis and risk management (2/2). Project financing and non-recourse debt				Jen Judy			204, 203	The concept of Project Finance. Pros and cons vs. Corporate Financing. Requirements of an
										investment to structure a Project Finance. The economic model and the risk identification and
									LO4, LO5	mitigation process.
12	4	Analysis and valuation of electricity companies by financial markets			6				,	Analysis and valuation of electricity companies by financial markets: Quantitative and
						Review and				Qualitative analysis. Different methods used to valuate a company/project. Valuation using
				Exam		self-study			LO4, LO5	dynamic models (cash flow discount).
		25 Introduction to strategy in the electric power industry							LO4, LO5	Key concepts of Business Unit Strategy. Readings & Discussion: What is strategy?
13	4	Business models in the electricity industry			6	Review and				Strategy and Financial Statements
		26 Business models in the electricity industry				self-study			LO6	Review of financial statement analysis- relationship with strategy.
		27 Build, borrow or buy (I)			6	,		Case study	LO6	Business Plans. Readings & Discussion: How to write a great business plans.
14	4	Build barrow or buy (II)				Review and				Mergers & Acquisitions.
		Build, borrow or buy (II)				self-study			LO6	Readings & Discussion: Making Acquisitions, Valuation Methods.
15	4	29 Strategy in the electric power industry			6	Review and			LO6	
15	7	30 Case presentations		Exam	ŭ	self-study			LO6	