

Course guide

230380 - TM - New Telecommunications Markets

Last modified: 11/04/2025

Unit in charge: Barcelona School of Telecommunications Engineering
Teaching unit: 739 - TSC - Department of Signal Theory and Communications.

Degree: MASTER'S DEGREE IN TELECOMMUNICATIONS ENGINEERING (Syllabus 2013). (Optional subject).
MASTER'S DEGREE IN ADVANCED TELECOMMUNICATION TECHNOLOGIES (Syllabus 2019). (Optional subject).

Academic year: 2025 **ECTS Credits:** 3.0 **Languages:** English

LECTURER

Coordinating lecturer: LUIS JOFRE ROCA

Others:

PRIOR SKILLS

Knowledge on Telecommunications Sciences and Technologies

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Transversal:

CT1a. ENTREPRENEURSHIP AND INNOVATION: Being aware of and understanding how companies are organised and the principles that govern their activity, and being able to understand employment regulations and the relationships between planning, industrial and commercial strategies, quality and profit.

CT4. EFFECTIVE USE OF INFORMATION RESOURCES: Managing the acquisition, structuring, analysis and display of data and information in the chosen area of specialisation and critically assessing the results obtained.

CT5. FOREIGN LANGUAGE: Achieving a level of spoken and written proficiency in a foreign language, preferably English, that meets the needs of the profession and the labour market.

TEACHING METHODOLOGY

- Lectures with Class Discussions
- Applied Exercises Based on Class Discussions
- Individual and/or Homework (distance)
- Problem Solving Oriented Mid and Final Term Exercises

LEARNING OBJECTIVES OF THE SUBJECT

To understand and manage the main technological challenges and economic parameters of the relevant Telecommunication (Telecom) markets in the framework of the more general Information and Communication Technologies (ICT). Specific aspects to be developed are:

- Ability to apply the knowledge of the general and differential technological and business characteristics of the Telecom & ICT sectors
- Ability to analyze the critical parameters and challenges of the European and worldwide major Telecom & ICT players
- Ability to understand and manage the strategy and evolution of the Telecom & ICT sector in terms of existing and emerging technologies and markets
- Ability to practically approach and forecast some of the more relevant transversal Telecom & ICT sectors and vertical markets

STUDY LOAD

Type	Hours	Percentage
Hours large group	15,0	20.00
Hours small group	9,0	12.00
Self study	51,0	68.00

Total learning time: 75 h

CONTENTS

Part I. Telecom and Information and Communication Technology Markets

Description:

1. Introduction to the Telecom and ICT sectors.
2. Significant worldwide global Telecom and ICT companies:
3. The European Telecom and ICT sector: value added, employment and R&D

Full-or-part-time: 36h

Theory classes: 12h

Self study : 24h

Part III. Telecom and ICT Industry

Description:

4. Telecom and ICT Business Strategy
5. Enabling Technologies.
6. Competition, Structures and Regulations
7. Networks operation, strategy and economics
8. Customers and marketing

Full-or-part-time: 60h

Theory classes: 20h

Self study : 40h

Part III. Case Study of Selected Existing and Emerging Telecom and ICT Relevant Areas

Description:

9. Transversal topics: Cybersecurity, xG technology, IoT, Big Data, Cloud Computing, Artificial Intelligence, Blockchain, Virtual Reality
10. Vertical Markets: Smart Cities, Connected Vehicles, Financial Services/Banking, Industry 4.0, Healthcare

Full-or-part-time: 29h

Theory classes: 7h

Self study : 22h

GRADING SYSTEM

- Applied In-class Exercises Based on Class Discussions: 20%
- Homework Exercises: 40%
- Problem Solving Oriented Mid and Final Term Exercises: 40%



BIBLIOGRAPHY

Basic:

- Dodd, A.Z. The essential guide to telecommunications. 5th. Upper Saddle River, NJ: Prentice Hall PTR, 2012. ISBN 978-0137058914.
- Valdar, A.; Morfett, I. Understanding telecommunications business [on line]. London: The Institution of Engineering and Technology, 2015 [Consultation: 01/03/2019]. Available on: <https://ebookcentral.proquest.com/lib/upcatalunya-ebooks/detail.action?docID=4085375>. ISBN 9781849197458.
- Varian, H.R. Intermediate microeconomics: a modern approach. 9th ed., int. stud. ed. New York: W.W. Norton & Company, 2014. ISBN 978-0393920772.
- Eurostat. "ICT sector: value added, employment and R&D". Statistics explained [on line]. [Consultation: 20/02/2019]. Available on: https://ec.europa.eu/eurostat/statistics-explained/index.php/ICT_sector_-_value_added,_employment_and_R%26D.