

BLA BLENDED
LEARNING
AWARD

COURSES COMPILATION
— 1ST AND 2ND EDITION

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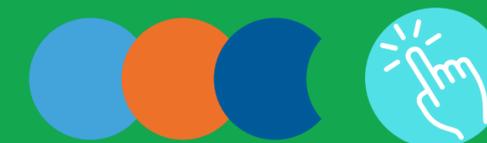
Original Text

English

Key Activity

Strategic Partnership project for Digital
Education Readiness in Higher Education

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this document is interactive

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Introduction

Brief description
and objectives of
the project

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ABOUT BLA

Brief Description

In the beginning of 2020, the COVID-19 pandemic hit the world with great impact, causing a devastating effect in the economy and in society at large. The restrictions that were imposed to limit mobility and ensure physical distancing between people, affected all types of activities including teaching.

In Europe, many Higher Education Institutions (HEI) had to develop fast institutional responses to the COVID-19 crisis, initially tackling logistical issues and ensuring the necessary technological provision to replace face-to-face classes by synchronous distance learning, while it was not possible to resume the traditional teaching modality.

This rapid digital transformation of HEI, driven by a global health emergency, soon became an opportunity to boost a technology-enhanced approach to learning and teaching with the same level of excellence and effectiveness in virtual settings as in the traditional context.

As a result, many HEI began training their faculty for the use of digital technologies to ensure online distance education or blended models that integrate both traditional face-to-face instructional time and computer-mediated activities. At the same time, they invested on the modernization of their own infrastructure, as it became clear that these skills and resources will be essential for leading universities of the 21st-century to succeed and for students to thrive in a competitive and fast-changing world.

Despite the recent implementation of vaccination plans across Europe, there is still a general sense of uncertainty regarding the future. This calls for HEI to respond in advance with a more flexible approach that encompasses alternate solutions based on bottom-up innovation, peer collaboration, and best-practices sharing to ensure the best quality of their educational products, an efficient use of available resources and the strengthening of the international dimension of teaching.

[Continue reading to know more about the Consortium](#)

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Brief Description – Consortium

Hence, NOVA University Lisbon, the Universidad Autónoma de Madrid, and the Università degli Studi di Roma Tor Vergata constituted a consortium that will be financed by the European Commission during the first two years of operations.

This Consortium was committed to reward the best blended-learning courses in each of the three universities, in different areas of knowledge, and the efforts of their faculty to respond to the COVID-19 challenge of distance education, through the creation of an International Blended Learning Award (hereinafter also referred to as "BLA"), which shall be governed by the dispositions contained in this regulation.

The most innovative aspect of this initiative is that all three partner HEI are also committed to jointly offering the awarded courses, thus allowing for a true virtual mobility based on a shared international catalogue of blended learning courses that will be available to students of the HEI of the Consortium and their partners. The dimension of the Consortium and the standards of excellence of the three European universities involved provide the perfect test bed for the implementation of quality innovation models applied to education.

Objectives of the Project



General Goal

Contribute for the quality of European Higher Education in a time of global crisis, by promoting fast inter-institutional learning and collaboration and a culture of innovation in education.

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The Objectives of the Project BLA

- A** to create a true virtual mobility opportunity based on a shared international catalogue of blended learning courses, reinforcing the concept of cross-institutional ECTS awarding.
- B** to create awareness about the importance of delivering innovative and high-quality blended learning and engage faculty of the three partner HEI in the production of blended learning courses of excellence.
- C** to reward the efforts within each partner HEI in responding to the COVID-19 challenge of distance education.
- D** to provide students with a more inclusive approach to international education, focusing more on the curriculum and learning outcomes, and not solely on mobility.
- E** to compile an international catalogue of blended learning courses available to a larger audience of students.
- F** to share and disseminate best practices in the adoption of blended education models at international level.
- G** to develop a community of teachers engaged with blended education who can inspire other faculty members to explore the use of technology in education and/or make a full transition of their courses to a blended format.



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Blended Learning Awards

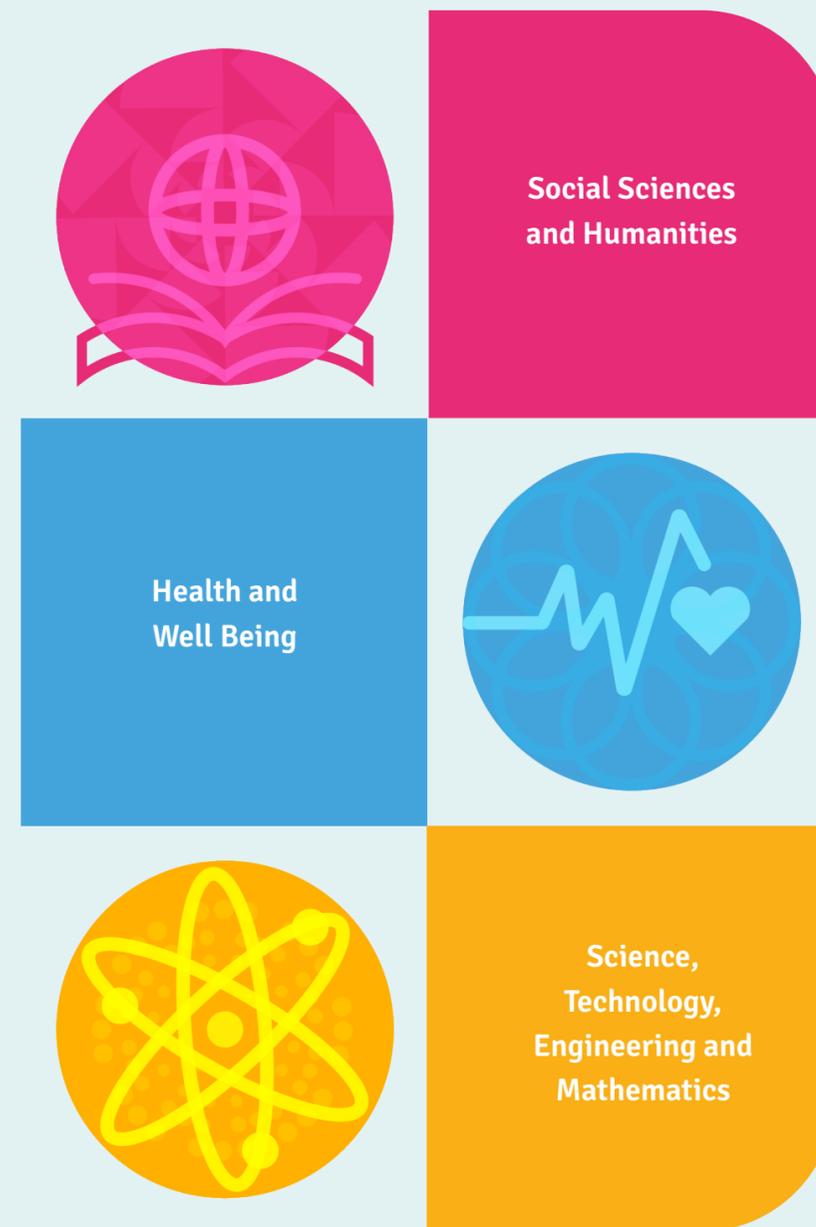
The BLA were conferred to the best blended learning courses offered in the partner institutions of the Consortium.

The focus of BLA was set on components of the blended learning model adopted by faculty members when adapting their courses to the restrictions imposed by COVID-19, namely on the quality content, pedagogical implementation, and curricular flexibility, so that the awarded courses may be shared and offered by the other two partner Universities element, allowing for this innovative aspect of the project.

For the purpose of BLA, the term blended learning refers to the learning model that allows face-to-face instruction and synchronous computer-mediated instruction. As blended learning can vary widely in its delivery of face-to-face and online content, falling onto a large spectrum of modalities, BLA considered formats that include flipped classes, web-enhanced courses and courses that combine different types of blended learning.

The Consortium has organized two editions of the BLA and the competition will be carried out separately in each of the partner HEI.

- At each University, the competition has accepted applications in three comprehensive areas of knowledge: **Health and Well-Being**; **Social Sciences and Humanities**; and **STEM** (Science, Technology, Engineering, and Mathematics).
- Each area of knowledge might receive one award.
- The winner courses of the local prize in each partner HEI and in each area of knowledge will automatically compete for the Grand International Award on Innovation in Blended Learning, to be held in a final event joining the awardees of all three universities.



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**First Edition
of Local Awards
and of Grand
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Blended Learning Week 2022

As part of the Blended Learning Award (BLA) project, the Blended Learning Week 2022 took place on 4th, 5th and 7th April in Madrid, Lisbon and Rome in the three partner universities. This week of events intended to celebrate the recognition of the best blended learning courses in three different areas: Health and Wellness, Social Sciences and STEM (Science, Technology, Engineering and Mathematics).

This project, organized within the scope of the Erasmus+ Partnerships for Digital Readiness International Award for Innovation in Blended Learning in Times of COVID-19, aims at gathering cutting-edge knowledge on innovative blended learning practices in higher education institutions in Portugal, Spain and Italy.

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Universidad Autónoma de Madrid

The first award ceremony took place at the Facultad de Ciencias Económicas y Empresariales of Universidad Autónoma de Madrid and included interventions by professors Romiță Iucu (Bucharest University), Gianluca Mattarocci (Università degli Studi di Roma Tor Vergata) and Yves Billiet-Prades (Ipac) in a first round table "Blended Learning and Joint Programs". Professors Iván Builes (UAM) and Enrique Martín-Santamaría (UAM) also spoke about "Technical resources for sharing Blended programs based on CIVIS experience".



BLA - Blended Learning Award Project

NOVA University Lisbon

In Lisbon, at the NOVA University Lisbon Rectorate Francisco da Cunha Martins won the BLA for STEM with the course *Financial Statement Analysis*, offered in Master's in Finance in NOVA SBE.

Susana Trovão, Chrysi Rapanta, Cristina Oliveira (NOVA FCSH) and Margarida Trindade (ITQB NOVA) were awarded in the Social Sciences and Humanities field for their joint course *Research manager as a profession in the EU ecosyste: concepts, tools and practice* an Undergraduate elective.

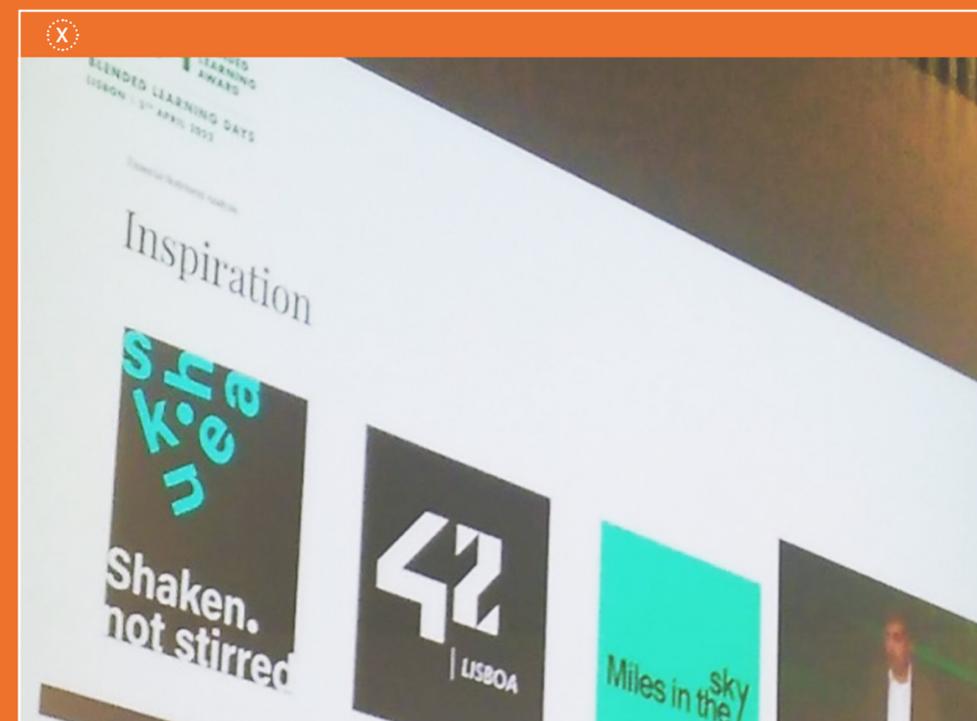
Paulo Pereira, Cláudia Almeida and Rita Teodoro (NMS) received the BLA for the course: *Critical Skills in Research*, part of the International Master in Biomedical Research.

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Università degli Studi di Roma Tor Vergata

Closing the Blended Learning Week at the Università degli Studi di Roma Tor Vergata professors Riitta Pöntynen (University of Turku), Loukia Evripidou (European University of Cyprus), Olga Dębicka (University of Gdańsk) opened the first session on “Teaching in a mixed environment: a review of best practices”.

Then, the second session on “Blended learning innovation and virtual Mobility” included interventions by Professor Stefan Janke (Confia International, France) who presented the “Skills of Digital University staff and virtual Mobility: results for EDUSC” and José Alberto Lencastre (University of Minho). Final remarks were made by Alma Orazi (Università degli Studi di Roma Tor Vergata).



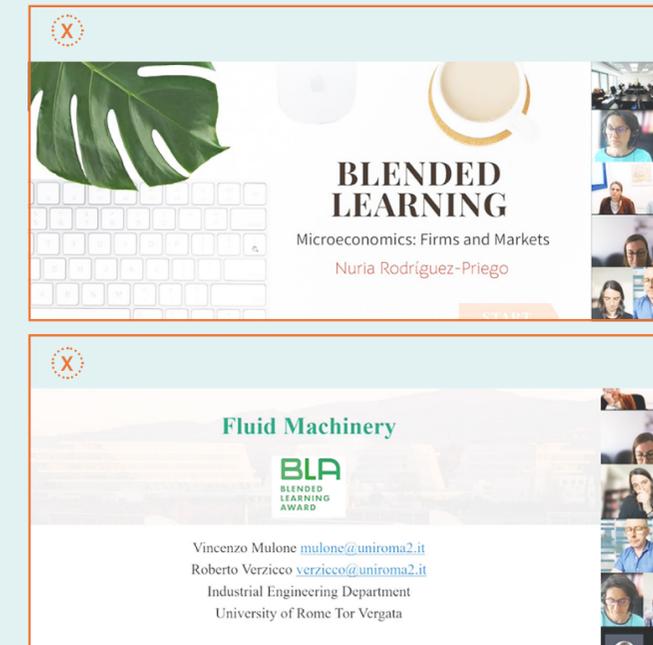
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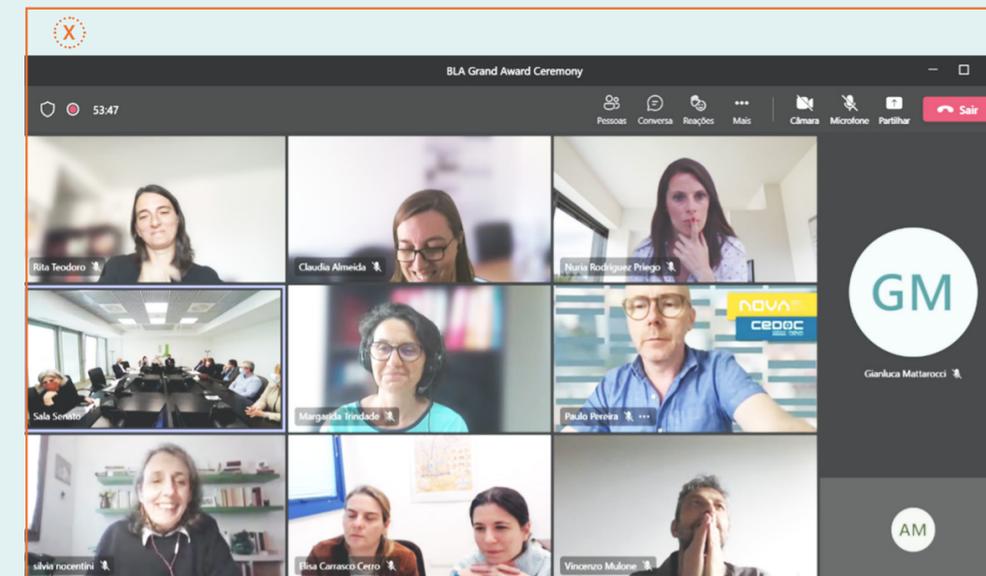
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BLA Grand Award — Final Winner



In second place ex-aequo were the courses “Microeconomics: Firms and Markets” from the Universidad Autónoma de Madrid and “Fluid Machinery” from the Università degli Studi di Roma Tor Vergata.

The Grand Award Ceremony took place on May 6th in Rome, in University of Rome Tor Vergata, where the project “Research Manager as a profession in the EU ecosystem: concepts, tools and practice” by Professor Susana Trovão and co-authors, Chrysi Rapanta, Cristina Oliveira and Margarida Trindade (professors of NOVA FCSH and NOVA ITQB) **won the award of the Blended Learning Award (BLA) grand jury in the final.**



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Second Edition of Local Awards and of Grand Award

Blended Learning Week 2023

The Blended Learning DAY 2023 took place on 21st April, and each of the three partner universities had their own multiplier event happening at the same time in presental and also online, via Zoom.

After these individual events, the three universities joint together online in the Joint Grand Award Event. This event presented the Awarded Courses of the BLA in the three different areas: Health and Wellness, Social Sciences and STEM and, at the end, the big winner of the Grand Award was announced.

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NOVA University Lisbon

The multiplier event at the NOVA University Lisbon Rectorate was focused on a Roundtable discussion on the topic: The Potential of Blended Learning post Covid-19, with the participation of some Portuguese professors, experts in this thematic, such as João Correia de Freitas, Ticiana Trez, Vítor Rocio and Ana Nascimento.



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At Universidad Autónoma de Madrid, the Roundtable discussion was about: Blended Learning as a Tool for University Studies Internationalization, with the participation of the Spanish professors: Nuria Rodríguez, Laura Beck, Félix Muñoz, José Gabriel Rodrigo, José Pazó, Sebastian Micu, Teresa Serrano, Roberto Arguis, Paula Pita and Miguel Cortina.



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Università degli Studi di Roma Tor Vergata

In Rome, at the Università degli Studi di Roma Tor Vergata, the Round-table discussion was focused on the topic: Blended Learning Experiences among different disciplines, and had the participation the the Italian professors Emanuela Calore, Alessio Ceccherelli, Vincenzo Muirole and Marcella Pisani.



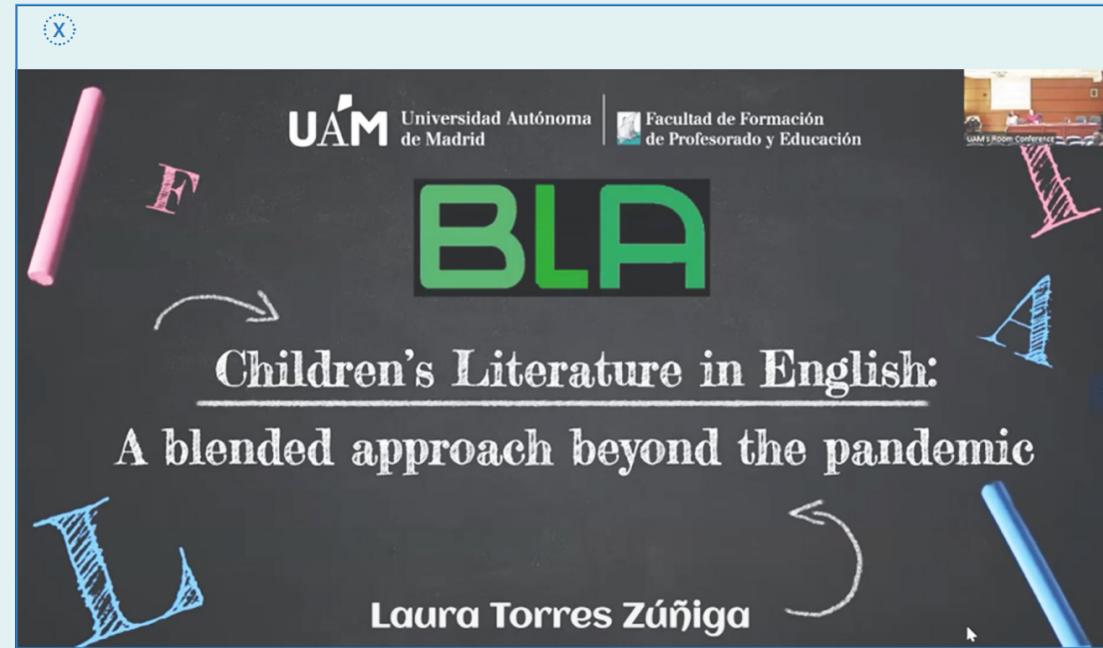
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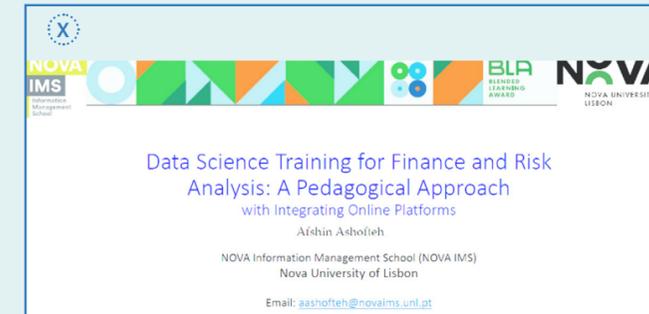
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BLA Grand Award — Final Winner at the Joint Event



The Grand Award Ceremony took place on Blended Learning Day 21st April, where the course "Children's Literature in English" by Professor Laura Torres (professor of Universidad Autónoma de Madrid) **won the award of the 2nd Edition of Blended Learning Award (BLA) grand jury in the final.**



In **second place** was the course "Financial Data Science" by Professor Afshin Ashofteh A from NOVA University Lisbon.



In **third place** was the course "SummerLIB: fundamentals, materials and applications of lithium-ion batteries (LIB)" by Professors Celia Polop and Carmen Morant from Universidad Autónoma Madrid.



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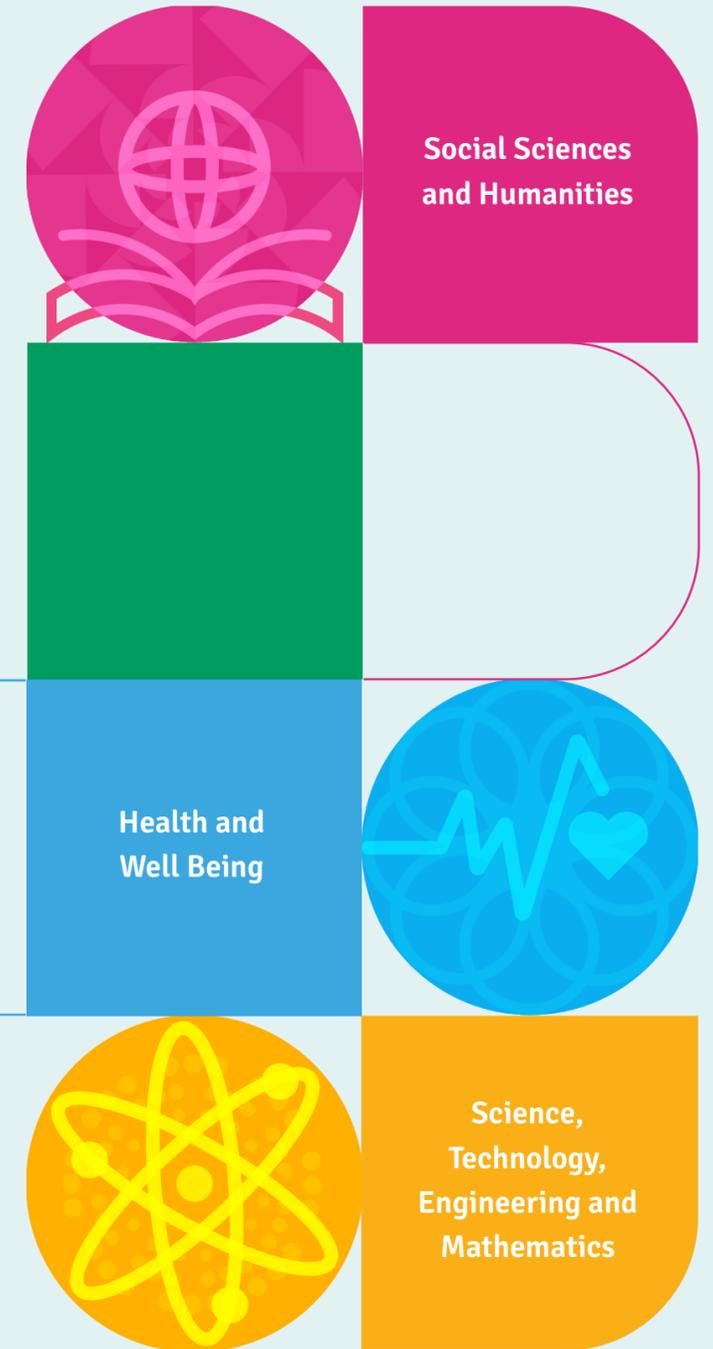
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Fields of Study + Academic Degrees

Description:

- B** Bachelor
- M** Master
- D** Doctorate
- PG** PostGraduate



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B	Advertising	NXVA	
B	Children's Literature in English	UAM	
B	Comparative Business History	TOR VERGATA	
B	Foundations of Comparative Law	UAM	
B	General Management	TOR VERGATA	
B	Language in Communicative Contexts	UAM	
B	Microeconomics: Firms and Markets	UAM	
B	Research Manager as a Profession in the EU Ecosystem: concepts, tools and practice	NXVA	 
B	Theoretical Statistics	UAM	
M	Western Iconography and Cult of Saints	TOR VERGATA	

Description:

-  Grand Awards
-  Local Awards

Health and Well Being

B	Basic Cell Biology	UAM	
M	Critical Skills in Research	NXVA	
D	Applied Health Economics	NXVA	

STEM — Science, Technology, Engineering and Mathematics

B	Cell Biology	UAM	
B	Data Analysis and Probability	NXVA	
B	Fluid Machinery	TOR VERGATA	
B	Introduction to Programming	NXVA	
PG	Financial Data Science	NXVA	
M	Big Data for Economics and Finance	TOR VERGATA	
M	Financial Statement Analysis	NXVA	
M	Statistics III	NXVA	
M+D	SummerLIB: fundamentals, materials and applications of lithium-ion batteries	UAM	

Social Sciences and Humanities

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School + Department

NOVA School of Social
Sciences and Humanities
(NOVA FCSH) —
Communication Studies

Advertising

Nova University Lisbon

Instructors: Prof. Fabrizio Macagno

ECTS: 6

Brief description of the Course

This course intends to provide students with an overview on the persuasive dimension of advertising, exploring the cognitive, linguistic, argumentative, and rhetorical mechanisms underlying commercials and ads. This background will be used for showing how the rhetorical strategies can be developed starting from the analysis of the different targets and dimensions of a product, as pointed out by the clients' briefing. The output of this course consists in providing students with a deeper understanding of the use of persuasion for commercial purposes. Students are trained to identify and master the cognitive and linguistic mechanisms responsible for attention, interest, and memory, which are used for developing or improving advertising material. In this sense, the course of Advertising provides the student with basic capacities that can be further developed in other Curricular Units.

Course Organization

14 weeks

Virtual/ Physical Components



virtual



physical

Online Material Used

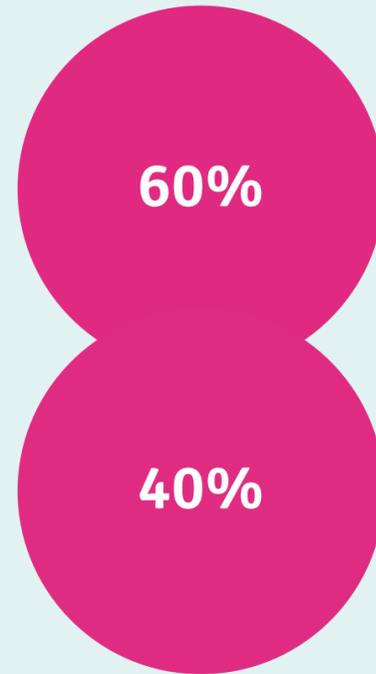
1. Polls and questionnaires (Zoom) for collecting the students' perception of some ads, then explained theoretically;
2. Google Forms are used for collecting students' perceptions and analyses;
3. Instagram [@fabriziomacagnofcsh](https://www.instagram.com/fabriziomacagnofcsh) used for interacting with the students' analyses of ads that they find in their everyday life (expanding the learning environment to their everyday context). Students' analyses are discussed by their colleagues.

The presential dimension concerned the interaction between students and stakeholders. An advertising strategy manager at Tux&Gill (Inês Mateus) was invited to train and tutor students (divided in groups) in a practical activity that involved social stakeholders, namely managers of the Portuguese companies Vulcano, Pfizer, Um Bongo, EGF, GNB Seguros. Based on real briefings provided by these companies, the students developed their own advertising campaigns applying the notions learnt during the course and the strategies acquired during Inês' practical sessions. The students presented their productions before the stakeholders for their evaluation, simulating a real business presentation at NOVA FCSH.



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Evaluation



Test
+ Theoretical Questions
+ Practical Exercises

Group development of an AD + Presented to the stakeholders

Brief 1 12 Maio 14h	Brief 2 12 Maio 15h	Brief 3 17 Maio 14h	Brief 4 17 Maio 15h	Brief 5 19 Maio 14h
Nadi Batalha Marketing Director	Afonso Barata Deputy CEO Sandra Barreto Head of Product Managers	Pedro Lopes Medical Lead Hospital Business Unit Sofia Bucho Hospital Marketing Manager Andreia Machado Communication Manager	Frederico Amores Brand Manager	Ana Loureiro Corporate Communication Director

Voluptis ipsandendis pelia quo omnos magnimi, et estotat iisciendit la conecum hilit, tempos velestes magnist, voloriam sinum dolupti onemolore nobition natis as

Learning Outcomes

- Acquiring knowledge of the different dimensions of persuasive multimodal texts;
- Developing the skill to identify the different aspects of an ad involved in the persuasion process;
- Acquiring the ability to design a strategy for creating a persuasive message concerning a specific product;
- Developing a persuasive multimodal message considering its different cognitive, linguistic, and logical dimensions;
- Assessing and improving the persuasive dimensions of an ad.



More information at

Social Sciences and Humanities

B

Children's Literature in English

Universidad Autónoma de Madrid
 Instructors: Prof. Laura Torres
 ECTS: 6

School + Department

Facultad de Formación de Profesorado y de la Educación — Filologías y su Didáctica

Brief description of the Course

In this course students will become familiar with children's literature in a foreign language and will learn to use it as a pedagogic tool. They will get acquainted with oral tradition and folklore in the English language, and will know and use songs to foster hearing, rhythmic and vocal training. The course has a special focus on picturebooks as instruments to teach languages effectively in multilingual educational contexts. Students will learn to recognize and analyze the visual and literary elements of picturebooks, to use them for storytelling sessions, realizing the value of the adequate use of verbal and non-verbal language, and to select and adapt picturebooks and stories according to their teaching needs. In addition, students are supposed to develop a B2 communicative competence (linguistic, discursive, sociolinguistic and strategic) in progress to C1 according to CEFR.

Course Organization

17 weeks

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Virtual/ Physical Components



virtual



physical

Online Material Used

Students will work individually, in pairs and in groups, both in class and at home, in order to prepare the required tasks and presentations throughout the course. Students and the teacher will use UAM ICT tools to communicate outside the classroom.

Learning Outcomes

At the end of this module, the student will be able to:

- develop a B2 communicative competence (linguistic, discursive, sociolinguistic and strategic) by means of the language activities established by the Common European Framework of Reference for Languages, and of a linguistic (phonetic, phonological, grammatical and pragmatic) and sociocultural knowledge, in progress to C1 according to CEFR.
- develop openness and positive attitudes to linguistic and cultural diversity in the classroom.
- be familiar with children's literature in a foreign language and to use it as a pedagogic tool.

Evaluation

60%
final exam

40%
continuous assessment

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School + Department

School
of Economics –
Economics and
Finance

Comparative Business History

Università degli Studi di Roma Tor Vergata

Instructors: Prof. Daniela Felisini

ECTS: 6

Brief description of the Course

This course deals with world economic and business history of the 20th century up to the beginning of the 21st century. Inspired to the institutional approach consolidated by Douglass North, it compares the varieties of capitalism of different regions, considering path dependent factors. It is organized as a sort of journey around the world, surfing across the two main historical dimensions of time and space.

Main processes are analysed in global perspective (industrial revolutions, economic and financial crisis, regional integration, et al.).

Course Organization

14 weeks

Virtual/ Physical Components



virtual



physical

The course combines various teaching methodologies: lessons; seminars; assigned readings. Lectures will provide the students with the necessary information and reading guidelines of the phenomena under scrutiny, while seminars will see students critically engaging with this knowledge and promoting/participating in class debates. Students are required to attend, on-site or on-line, every class and participate in discussions.

Evaluation

45%

attendance and active participation

45%

written essays on specific casestudies that will be the object of debate during the class

10%

final oral examination



Students who **do not pass** the written essays or reject the marks will be evaluated **55% on the final oral examination**, as students who take the final oral examination in another session, since the results of written essays will be valid only within the same exam session. **Non-attending students** will be assessed **100% on the final oral examination**.

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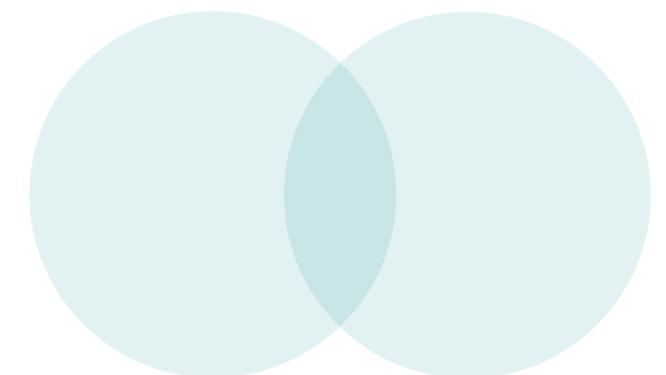
Schedule of Topics

topic 1	Industrial revolutions in global perspective
topic 2	Discovering the varieties of capitalism
topic 3	The 20th century's dominant nation: USA
topic 4	Does it exist a European model? Lessons from history
topic 5	From Russia to Russia, going through USSR: backwardness, soviet economy and deregulated market
topic 6	Japan, the challenger
topic 7	Capitalism triumphs in Asia: the Four Asian Dragons and the case of South Korea
topic 8	The giant's reawakening: China
topic 9	India in the long run
topic 10	Brasil: a meteoric success?
topic 11	Old but new protagonists: the State
topic 12	Old but new protagonists: Banks and financial markets
topic 13	Few words about Italy: Industrial districts and globalization
topic 14	Globalization, a historical problem



Learning Outcomes

Specific case-studies will be the object of in-depth focuses, brought into with the active participation of the students. At the end of the course students are expected to acquire knowledge and critical understanding of the main issues of contemporary economic and business history.



More information at

Social Sciences and Humanities

B

FCL — Foundations of Comparative Law

Universidad Autónoma de Madrid

Instructors: Prof. Laura Beck

ECTS: 6

School + Department

Facultad de Derecho —
Derecho Privado, Social
y Económico – Área de
Historia del Derecho

Brief description of the Course

The transversal character of FCL makes it attractive to a variety of backgrounds. Typically c. 80% of the students are international. This attractiveness is due to the methodological approach and to the unconventional selection of topics, as opposed to a standard FCL course taught by (and for) jurists. It challenges the traditional understanding of comparative law as a juxtaposition of static, self-referential legal systems, and adopts a critical view, presenting a legal cultural and pluralist perspective while discussing the classical positivistic and Eurocentric one.

The first part relies on the Problem-Based Learning approach and revisits the main topics, such as the micro and macro comparison, the functionalist theories, the notion of “legal families” and the standard “taxonomies” of common, civil law and the so-called “mixed legal systems”. The foundational dichotomy between common law and civil law is discussed through a case study regarding the European civil code, illustrating its impact on policy making. Other case studies were those involving the 2018 Accountable Capitalism Act, proposed by Senator Elizabeth Warren, and the materials related to the World Bank’s Doing Business Report

of 2020. In the second week, the “legal taxonomies” of comparative law motivated a discussion of Western representations of non-European legal cultures and their development in the comparative legal scholarship. The second part of the course concentrates on more recent methodologies and critical approaches to comparative law, such as the so-called “numerical approach” in comparative law and the conceptual analysis of legal transfers, legal transplants, and legal translations, legal pluralism.

Course Organization

10
weeks

Virtual/ Physical Components



virtual



physical

The course combined face-to-face, online and hybrid format of classes. During the 2020-2021 academic year, the Faculty of Law implemented the hybrid modality of learning as mandatory for all its courses. In every law course, students were divided into two groups that had to alternate their presence on campus every two weeks. Every class session combined the simultaneous presence of 50% of students who were attending face-to-face and the other 50% who was attending online, using Microsoft Teams. The

composition of the subgroups was determined by the academic authorities. Some sessions were held entirely online, having as guests professors from Tübingen and Aix-Marseille.

In addition to these hybrid and online sessions, the course offered also a guided tour in the city center, visiting historical sites related to the exercise of political power and law. This 100% face-to-face activity complemented the mobility experience of the students.



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Evaluation

final paper project + **continuous evaluation**

Final Paper Project and the “continuous evaluation” (which encompassed the results of the short quizzes, students’ oral participation in class and in the written exercises delivered by the groups).

Learning Outcomes

By the end of the course, students will be able to **1)** adopt a critical, non-binary perspective on the several topics analyzed during the course (law and religion, women’s rights, rule of law etc.); **2)** examine concrete questions in a comparative perspective; **3)** challenge students’ previous assumptions and prejudices through concrete questions; **4)** introduce main concepts related to different legal traditions; **5)** discuss with detail, relying on the academic papers and the empirical sources (extracts of legislative and judicial decisions), the various case study under discussion (Kyrgyzstan, Pakistan, Israel, Morocco etc., among others).



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Social Sciences and Humanities

B

General Management

Università degli Studi di Roma Tor Vergata
 Instructors: Prof. Gianpaolo Abatecola
 ECTS: 9

School + Department

School
 of Economics —
 Economics and
 Finance

Brief description of the Course

The course aims to provide undergraduate students with an exhaustive explanation of the classical principles of general management. In particular, the course takes an internationally acknowledged view on the discipline, in that it is based on the systemic approach to management. In fact, as for its main textbook, the course uses a McGraw-Hill Custom Publishing, with selected chapters from one classical, leading textbook in the field: H. Koontz, H. Weihrich, and M. V. Cannon [2020], *Essentials of Management - An International, Innovation and Leadership Perspective*, 11th ed., McGraw-Hill Education. This is why, in principle, the course structure appears easily transferable.

Course Organization

9 weeks

The course is
 scheduled for the
 Spring semester

Virtual/ Physical
 Components



virtual



physical

Evaluation

Mostly written
 and is based on 3
 open-ended questions
 on the class materials

< exam >

Students can also integrate the
 written evaluation with 1 oral
 question (+2/-2 points).

Furthermore, students can also have the possibility to improve their final evaluation through class commitment and interaction in the various learning experiences and challenges launched and practiced during the course. In particular, up to 2 additional extra-points can be added through performing the McGraw-Hill Practice Operations simulation software at the end of the course.

Learning Outcomes

Knowledge and understanding:

- The course aims to provide undergraduate students with an exhaustive explanation of the classical principles of general management. In particular, the course takes an internationally acknowledged view on the discipline, in that it is based on the systemic approach to management.

Applying knowledge and understanding:

At the end of the course, students:

- will have gained both theoretical and practical competences about the main principles regarding general management to date;
- will have gained appropriate competences on what decisions can ensure the sustainability of firms, in terms of both survival and growth processes over the long term.

More information at

1 Introduction

2 First Edition of Local Awards and of Grand Award

3 Second Edition of Local Awards and of Grand Award

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Social Sciences and Humanities

B

Language in Communicative Contexts II

Universidad Autónoma de Madrid

Instructors: Profs. Susana Murcia and María Muelas

ECTS: 6

School + Department

Facultad de Filosofía y Letras — Filología Inglesa

Brief description of the Course

This course is compulsory for students within the English-as-first-language itinerary of the 4-year degree in Modern Languages, Culture and Communication (LCC2). This course with an allotment of 6 ECTS focuses on Pragmatics and Discourse Analysis and is taken in the 2nd term of year 3, immediately after "Language in Communicative Contexts 1" (which deals with Semantics and an introduction to Pragmatics). In the academic year 2020/21, a total number of 37 students were registered in LCC2. As in the other courses in this degree which are specifically designed for the English itinerary, instruction and assessment are totally carried out in English. Course details are provided in the "teaching guide" (guía docente) available at the web page of the Degree.

15 weeks

Course Organization

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Virtual/ Physical Components



virtual



physical

Evaluation

50%
coursework

50%
final exam

Coursework will include: course assignments and/or exercises, including a project, participation in class and an oral presentation. The number and nature of the assignments, together with the percentages for the evaluation of these components will be determined by the lecturer/s of the group at the beginning of the semester and will be communicated to the students in the course website.

It is a requirement for this subject that in order to receive a positive evaluation, the grade of the exam must be at least 50/100. It is a requirement to receive a grade in this subject to hand in the required assignments and/or exercises by the established dates, and to do the oral presentation.

It is a requirement that in order to receive a positive evaluation in this subject, that the average mark of the coursework assignments must be at least 50/100.

Course Contents

part 1 — Pragmatics

1. From Pragmatics to the Analysis of Discourse: Speech acts and Speech events;
2. Politeness Theory
3. Introduction to Conversational Structure
4. Interlanguage Pragmatics

part 2 — Discourse Analysis

5. Context of Situation: Register
6. Context of Culture: Genre
7. The organization of Discourse Structure: Theme and Thematic Progression
8. Coherence and cohesion

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Learning Outcomes

At the end of the course the students will be familiar with the main sub-areas making up the fields of pragmatics and discourse analysis and with the present state of research in each area; they will be able to apply these theories to the analysis of spoken and written English discourse.

Throughout the course, and as a result of the learning activities for LCC2, it is expected that students develop a series of competences or skills. LCC2 covers two main fields which are inherent to the study of how language works in com-

munication: Pragmatics and Discourse Analysis. We can, therefore, say that the course is divided into two parts or modules: Each module is taught each by one of the two instructors:

1. Pragmatics (Prag.) studies different types of communicative situations from a context-dependent perspective.
2. Discourse Analysis (DA) explores how context influences language and how language is organised.

Interaction & culture

What a wonderful mop of curls!

I know she means well, but I just wish she would stop. One should not touch peoples heads.

Differences

English: Would you please be so kind as to point me in the direction of the premises where I will find some relief?

Globish: Toilet, please.

> Think about similar situations you may have experienced when facing other cultures. We'll comment on them in class



More information at

Social Sciences and Humanities

B

Microeconomics: Firms and Markets

Universidad Autónoma de Madrid

Instructors: : Prof. Nuria Rodríguez Priego

ECTS: 6

School + Department

Facultad
de Ciencias Económicas
y Empresariales — Teoría
Económica e Historia
Económica

Brief description of the Course

The content of the course covers basic microeconomic topics both in economics and finance studies, as well as in business management and administration. Consequently, it is useful for students from diverse degrees (criteria 2.3.): Degree in Economics, Degree in Economics and Finances, Degree in Business Administration and Management, and other related degrees. The course has a firm-centered approach and comprises the study of the markets from the supply side, the different types of markets (Perfect Competition and Imperfect Competition), the input markets, and general equilibrium and efficiency.

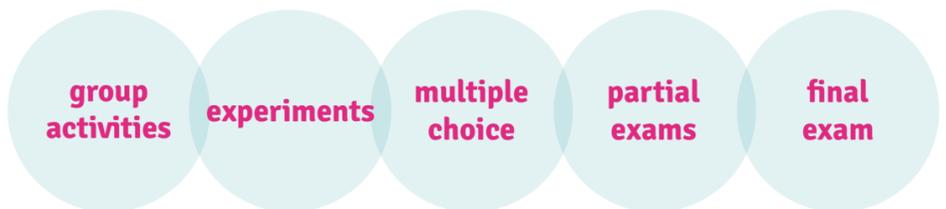
Course Organization

15
weeks

Virtual/ Physical Components

- ✓ **virtual** flipped lectures, quizzes, videos, breakout (escape room)
- ✓ **physical** group activities, individual activities, economic experiments, in-person lessons

Evaluation



Requisites:

A basic mathematical understanding (derivatives, optimization) is useful for this course, but not necessary.

Learning Outcomes

This course is part of the Basic Training module of the Degree, whose learning outcomes are:

1. Acquire basic knowledge, at a theoretical level;
2. Apply in the professional context the basic knowledge acquired: use of quantitative and qualitative tools: collection, organization and description of data, use of computer programs for data analysis and forecasting, formulation and resolution of mathematical problems;
3. Clear exposition of the problems, making critical judgments on issues of economic relevance.

More information at

1 Introduction

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3 Second Edition of Local Awards and of Grand Award

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Social Sciences and Humanities

B

Research Manager as a Profession in the EU ecosystem: concepts, tools and practice

NOVA University Lisbon

Instructors: Susana Trovão (coordinator), Cristina Oliveira (responsible lecturer), Margarida Trindade, Chrysi Rapanta, Diana Campelo and Carolina Varela (invited lecturers)

ECTS: 3

School + Department

NOVA School of Social Sciences and Humanities (NOVA FCSH)

Brief description of the Course

The "Research Manager as a profession in the EU ecosystem" course targets undergraduate students, from all disciplinary areas and undergraduate courses, and aims at developing transversal competencies useful for professions in Research Management but also for several other professional settings. With this course, the students get a first insight into research, more specifically into the European Research and Innovation ecosystem and its players, and to the main areas of action in Research Management. Students develop tools and practical skills in this field, with potential application in future professional pathways within Research and Innovation management. Recognizing transversal competencies as a fundamental aspect of education and training, the course enhances interdisciplinary, interdepartmental, and international training offered at NOVA. It is fully taught in English.

Course Organization

Research Manager as a Profession in the EU ecosystem: concepts, tools and practice I

14 weeks

14 weeks

Research Manager as a Profession in the EU ecosystem: concepts, tools and practice II

Virtual/ Physical Components



virtual



physical

Evaluation

30%

an individual assessment according to the level of student participation in the classroom, corresponding to 30% of the final assessment

an individual assessment equivalent to the score obtained cumulatively in the individual exercises or in groups proposed in the classroom or homework, worth 70% of the final evaluation

70%



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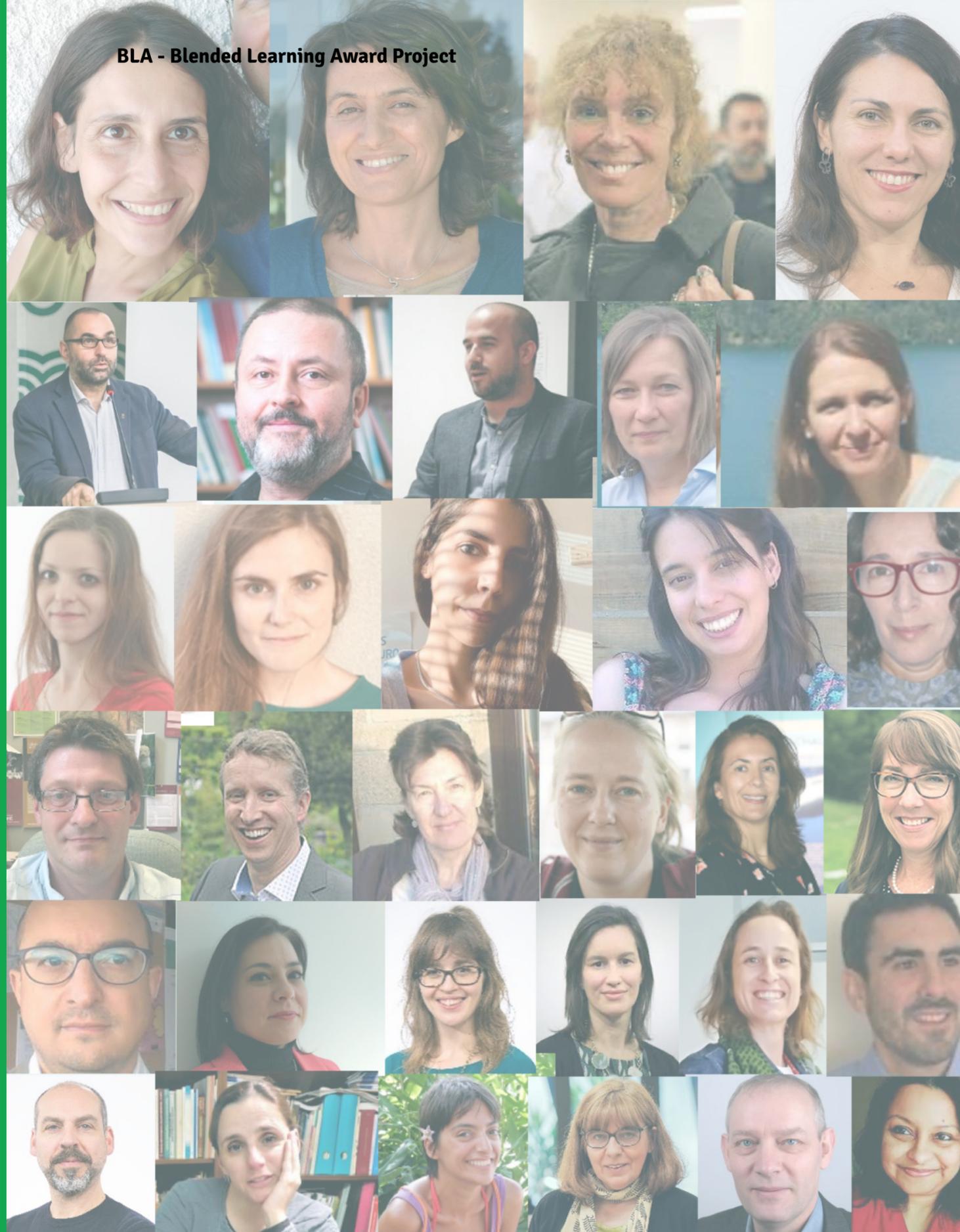
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Learning Outcomes

To understand what research is, how it is funded and governed, as well as to the role of research within society and the economy. To get to know the professions linked to research, including the researcher profession and the professions that support, promote, and facilitate the research activity. Due to its problem-based approach, students will learn how to master tools to get a quick start in the Research Management profession, as well as to envision the European dimension of this profession.

Other comments

This course was taught in the frame of the foRMAtion project: <https://www.formation-rma.eu/>.

The students' final work are available here: <https://www.formation-rma.eu/results/student-output/>.

For pictures of the classes, see <https://www.formation-rma.eu/students-testimonials/>

More information at

Social Sciences and Humanities

B

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School + Department

Facultad
de Ciencias Económicas
y Empresariales —
Economía Aplicada,
UDI de Estadística

Theoretical Statistics

Universidad Autónoma de Madrid

Instructors: Prof. Maria Gil

ECTS: 9

Brief description of the Course

The course aims at providing the students with the set of statistical techniques which will facilitate the decision-making process in an atmosphere of uncertainty and to deepen into the role played by statistical inference in the analysis of the economic and business reality.

The contents are structured through eight main points, each with specific objectives:

1. Introduction to probability

- Understanding what a random phenomenon is and their presence in everyday life and in social sciences.
- Learning how to use probability as a measure of uncertainty and how to apply rules for assigning probabilities (Axioms and Theorems of probability theory).

2. Random variables

- Understanding the usefulness of the concept of random variable in order to transform the results of a random phenomenon into figures which facilitate the handling and analysis of uncertainty.

3. Probability models: discrete and continuous random variables

- Deducing the usefulness of the probability distribution models in order to analyse discrete economic and social phenomena.

4. Introduction to statistical inference

- Understanding the need to work with samples in order to know the characteristics of a population with a high number of elements.

5. Estimation methods: Properties of point estimators

- Understanding the difference between population parameters and estimators.

6. Confidence interval estimation

- Understanding the need for every estimation to be accompanied by an average of the sampling error.
- Knowing, learning how to apply and interpreting the process leading to the calculation of confidence intervals for any population parameter.

7. Parametric hypothesis testing

- Knowing what a statistical hypothesis is and the different types of hypotheses.
- Knowing the different types of errors which may be made in every decision-making process. Knowing how to define them formally.
- Introduction to non-parametrical hypothesis testing.
- Understanding the difference between parametric and non-parametric tests.

Course Organization

14 weeks

- 1 Introduction
- 2 First Edition of Local Awards and of Grand Award
- 3 Second Edition of Local Awards and of Grand Award
- 4 Index of Courses

Virtual/ Physical Components

-  virtual
-  physical

Evaluation

40%

Continuous evaluation, which will be promoted. The lecturer will propose different complementary activities (including tests during the course and Excel activities), as he/she may deem appropriate in order to promote continuous learning. These activities will be detailed during the course and will account for 40% of the final grade.

60%

There will be a **final exam**, which will assess the theoretical and practical assimilation by the student of the contents of the course, and which will account for 60% of the final grade. In order to obtain a final numerical grade, the student must take at least one of the tests during the course. Otherwise, his/her final grade will be "no evaluado" ("Not assessed").

Learning Outcomes

To provide the students with the set of statistical techniques which will facilitate the decision-making process in an atmosphere of uncertainty and to deepen into the role played by statistical inference in the analysis of the economic and business reality.

If the student does not take the final exam, his/her final grade will be the grade obtained in the continuous assessment (on a 10-point grading system) and with a weight of 40% of the final grade.

More information at

Social Sciences and Humanities

M

1 Introduction

2 First Edition of Local Awards and of Grand Award

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School + Department

School
of Humanities —
Art History

Western Iconography and Cult of Saints

Università degli Studi di Roma Tor Vergata
Instructors: : Prof. Silvia Nocentini
ECTS: 6

Brief description of the Course

The course provides a general overview on latin Christian literature which concerns the saints (hagiography) from the late antiquity to 15th century, focusing on the interplays between narrative and figurative sources (iconography), and the relevant cultural and devotional milieu. Special attention will be due to the different types of saints and their images, exploring how written and oral topoi reflect on the figurative art.

It is aimed at providing an adequate introduction to medieval Latin text sources for art history students who need to properly understand sacred art. Through the reading of hagiographical texts, the students had access to the (sometimes) direct source for many representations of sacred subjects in art and in churches.

Course Organization

9
weeksthe course is
scheduled for the
winter semester

Virtual/ Physical Components



virtual



physical

All the lectures had been taken online, and some on-site visits to the works of art in Rome and Florence were proposed at the end of the semester, when summer allowed for more relaxed face-to-face meetings. The online lectures were supported by PowerPoint presentations and extra readings in pdf to download from the files section of the relevant Teams channel. Students were provided with external links to specific databases. Instructions for the use of databases were given during the classes by showing some examples of texts and images searches.

Evaluation

100%

Oral examination will verify the acquisition of a sound knowledge of the course programme, adequate competence in the use the specific vocabulary and a coherent argumentative ability.

Learning Outcomes

This course aims to provide the cultural keys to properly read the medieval and modern representations of the saints.

More information at



Health and Well Being

B

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School + Department

Facultad de Medicina -
Biochemistry —
Anatomy, Histology
and Neuroscience

Basic Cell Biology

Universidad Autónoma de Madrid
Instructors: Profs. Mar Perez Martinez
and Juan J. Arredondo Lamas
ECTS: 6

Brief description of the Course

The program “Basic Cell Biology” intends students to acquire a solid base in fundamental cell biology which should serve as a solid foundation for their further studies in life sciences, clinical biology and biotechnology in general and medicine in particular favoring their development as future scientists. In this context, the program’s main objective is to allow students from CIVIS alliance to interact and work together to acquire this knowledge while promoting cultural exchange.

The program’s ultimate aim is to serve as seed to transfer this model to the other first years topics in medicine and life sciences faculties within the CIVIS alliance. This would assure a true mobility and integration for all students within CIVIS.

Course Organization

9 weeks

Specific Objectives

- 1 Creating stable human resources in life sciences by providing experience, skills and competences through effective learning;
- 2 Establishment of a sustainable, multidisciplinary professional network of teaching scientists with common interests in the field of life science and medicine;
- 3 Establishment of personal contacts between members of the project as a basis for joint dissemination and exploitation of teaching and learning results and applications for other collaborative projects;
- 4 Favoring student integration and future development within scientific community and the CIVIS alliance through the improvement of their skills using English.



Virtual/ Physical Components



virtual



physical

Virtual mobility module combines face-to-face teaching with online asynchronous sessions, which allows an optimal usage of teaching approaches such as flipped learning, research-based teaching and teamwork. In the course's physical mobility module, students spend an entire week in the lab which makes possible to set the practical part of the course as project based. Students get in touch with experiment design and interpretation, going far beyond the purely procedural practical courses usually follow during the first years.

Evaluation

70%
assessment
is intended
to be mostly
formative

30%
final exam

Learning Outcomes

Students will acquire knowledge on the Cell Biology subject by establishing an interactive framework. The main learning objective is to reach a comprehensive understanding of the structure and function of the cell and its organelles and to familiarise with different basic techniques currently used in Cell Biology. At the end of this course, all the students should be able to:

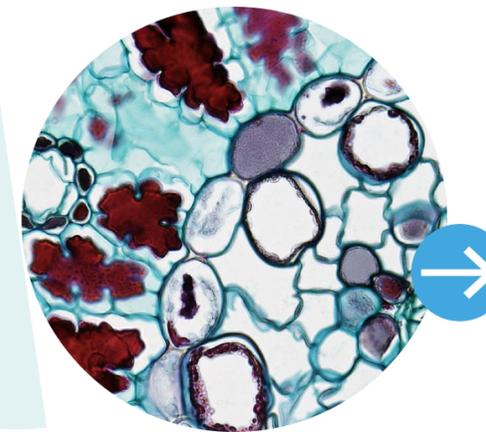
- Know and understand cell morphology, ultrastructure and function, cell cycle and proliferation;
- Understand some of the technologies currently used in research in cellular biology;

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More information at

Health and Well Being

M

1 Introduction

2 First Edition of Local Awards and of Grand Award

3 Second Edition of Local Awards and of Grand Award

4 Index of Courses

School + Department

NOVA
Medical School
— Biomedical
Investigation

Critical Skills in Research

NOVA University Lisbon

Instructors: Profs. Paulo Pereira, Rita O.

Teodoro and Claudia Guimas Almeida

ECTS: 5

Brief description of the Course

The main goal of this course is to help students developing required skills for a successful career in science and particularly in Biomedical Research. The course comprises training activities including seminars, tutorials in small groups, grant writing and presentations. The first sessions include communication skills involving individual and collective assessment of role-models and examples of web-based science presentations (TED talks, Famelabs, etc). This is followed by an autoscopy (each student is recorded in a 2 min pitch on a scientific topic), and group discussions moderated by an expert in science communication. Other topics of the course include: Methods and means to plan, present and discuss experimental results in the form of a scientific paper; Generating ideas and scientifically valid hypothesis, and their translation into well-structured grant application for funding; Main concepts, principles and regulations in bioethics and scientific

integrity; practical application of these principles in a research grant; Case studies and success stories in science and innovation; industry and regulation of intellectual property; The peer review process, publishing, grant assessment and recruitment of researchers; Scientific literacy and knowledge mobilization in life and health sciences. Importantly, this course does promote a key aspect of inclusive teaching and learning – the capacity to listen and integrate ideas or opinions from different people with diverse backgrounds. The group exercise of designing a project, presenting it, and peer reviewing the colleague's grants, is the perfect stage to develop important skills for inclusion and diversity.

Course Organization

full time
3 weeksafter-work
7-8 weeks

Virtual/ Physical Components



virtual



physical

This course has a flexible programme that combines lectures/seminars followed by tutoring activities that guide the development of student-generated ideas and projects. With online resources being available everywhere, and with groups having the possibility of meeting online, the design of this course is an excellent case study for blended learning. With different moments and types of student-teacher and student-student interactions, *Critical Skills in Research* can easily be adapted to new technologies.

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Evaluation

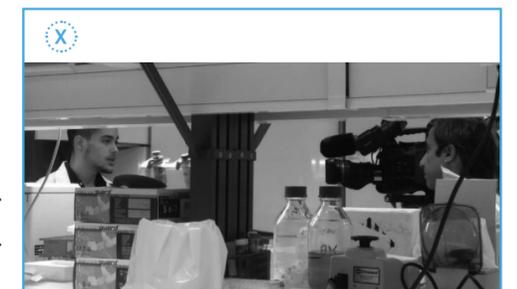
50% the assessment will involve two components: a written grant proposal, detailing the experimental approach to be used and its presentation and discussion

and a peer review report, detailing the experimental shortcomings and its presentation and discussion

50%

Learning Outcomes

The goal is not so much to acquire new knowledge but rather to develop new structures of thinking, train new skills, learn to discuss and negotiate different perspectives and points of view to address complex problems involving different stakeholders. These are some of the skills and thinking that are required to be, not only a good scientist, but one that is actively engaged and committed to society at large. These challenges call for a new generation of confident, yet humble, scientists that can navigate the complexities and challenges of research in biomedicine and health.



Critical Skills in Research - Programme Structure -	
Careers inspired by science	Round table
Welcome and meeting other postgraduate students	Online/Live
Talking Science	Seminars
From an idea to a Grant	Workshop
Hypothesis driven research	Individual study
Landmarks and current challenges in biomedical research	Group work

More information at

Health and Well Being

D

Applied Health Economics

NOVA University Lisbon

Instructors: Prof. Julian Perelman

ECTS: 4

School + Department

NOVA
National School
of Public Health
— Social Sciences
in Health

Brief description of the Course

This teaching unit aims at familiarizing students with the application of economic tools to the understanding of the most relevant policy issues in this field.

Special attention will be devoted to the analysis and interpretation of empirical studies in health economics and to the application of simple econometrics techniques to health economics problems.

This year, the course will focus more specifically two topics:

- equity in health, health care and financing;
- health expenditures and health systems.

Virtual/ Physical Components



virtual



physical

34 hours

Course Organization



Learning Outcomes

By following this teaching unit, students will be able to:

- Understand the essential economic concepts and methods relevant to the study of the health care sector;
- Examine and critically assess empirical studies in the areas of demand for health and health care, payment of health care providers, health expenditures and health financing, and equity in health, health care and financing;
- Critically analyze the new trends in scientific research in health economics.

Evaluation

40%
participation
(seminars)

40%
assignment

More information at

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3 Second Edition of Local Awards and of Grand Award

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STEM

B

Cell Biology

Universidad Autónoma de Madrid

Instructors: Profs. Elisa Carrasco and
Rocío Gómez Lencero

ECTS: 6

School + Department

Facultad
de Ciencias
—Biología

Brief description of the Course

This course is part of the UAM-Boston University International Program for Sciences, and is designed to achieve the following objectives:

- Acquire basic knowledge of eukaryote cell components: molecules, genomes and organelles.
- Understand the main processes operating in cells: genome expression, protein synthesis, intracellular trafficking, membrane transport, cell movement, cell communication, cell adhesion, cell proliferation and differentiation.
- Acquire basic knowledge about how cell biology research can be applied to biomedicine.

Develop data analysis competences and critical thinking.

Acquire basic skills for communication of scientific contents.

To this end, the whole course is designed and presented to the students highlighting the fundamental importance of an integrative approach. To facilitate the integrative learning, teaching strategies are combined in order to get the students en-

gaged and to reach all kinds of learners (visual, auditory, reading and writing) by using a variety of resources and methodologies. In this regard, Lectures and Tutorials are combined with active learning approaches: students-led Seminars, Kahoots, Case Based Learning and Flipped Classroom activities.

Because of the pandemic, a strategy was designed and pre-prepared to allow CBL activity to be offered virtually through Teams. This program allowed the creation of work groups in which students can work as a team to develop schemes for the resolution of the case. When this activity is face-to-face developed, it offers the advantage of the immediacy in which the students make drawings and diagrams and present them on paper. Fortunately, the Teams application also offers the possibility of using a "virtual whiteboard" in which groups of students could also develop their diagrams if the activity had to be organized remotely.

Course Organization

14
weeks

Virtual/ Physical Components



virtual



physical

All the activities of the course described above can be run presential, virtually or in a hybrid format. All the activities offered in this course use technologies as well as personal strategies to make the most of the learning experience. It includes Flipped Lectures, Seminars and Case-Based Learning activities.

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25%

25%

30%

Evaluation

Three exams (25% -25%- 30%) that include a variety of diagrams to be filled, tests questions, rationalization questions, open questions and what we call "Think as a Biologist" questions, where students have to apply their knowledge to real life situations in the biomedical research perspective. It also includes questions related to C-BL and Flipped Classroom activities.

participation and group presentation

20%

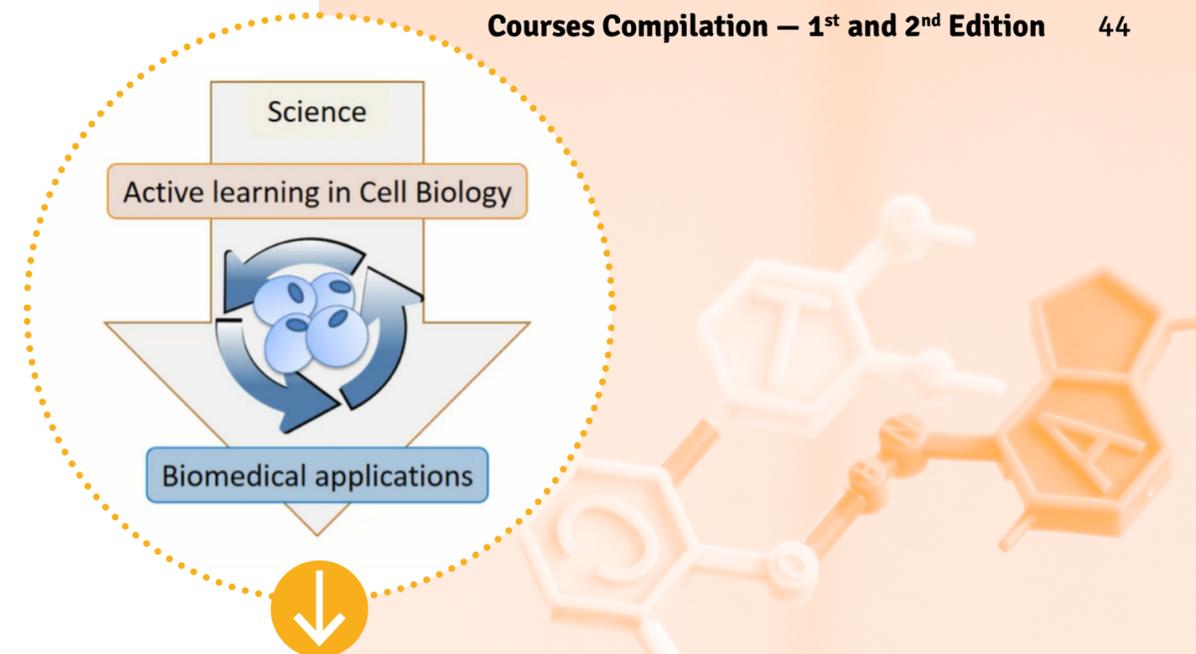
Learning Outcomes

Knowledge about the topic, critical reading, understanding, summarizing, explaining and presenting existing scientific knowledge related to Biomedicine.

More information at



This course has been implemented at UAM since 2011-12 for local students and students from Boston University. It was temporarily cancelled in 2020-2021 due to the restrictions for Boston students to come to UAM. In 2021-2022, although important restrictions are still affecting our daily activities, the course was offered with great success. Students were very contented, and teachers also benefited from this course, as classes are very motivational. The course has been adapted to different situations over the years, so strategies have been designed to offer the students the possibility to attend class in person or virtually in particular when the sanitary restrictions forced it.



STEM

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School + Department

NOVA School
of Business and
Economics12
weeks

Data Analysis and Probability

NOVA University Lisbon

Instructors: Profs. Patrícia Ramos
and Maria João Braga

ECTS: 7.5

Brief description of the Course

In February 2021 the blended learning method was applied to the course of Data Analysis and Probability (DAP) for the first time. This course is offered to first year undergraduate students, and it aims to build the foundations of applied statistical procedures. It also introduces the first concepts on probability and probability distributions, fundamental for statistical inference, another course our students take after this one. In DAP, students start by learning how to distinguish different types of variables and how to analyse each type. The data analysis, both graphical and numerical, is made with the support of Microsoft Excel. The great majority of students does not have any prior knowledge of this tool, so DAP has also the objective of introducing students to this software, widely used in other courses they will take afterwards. The second part of DAP's contents is probability. Here, students revisit the basic concepts learned in high school, and are introduced to the main probability distributions.

Course Organization

Virtual/ Physical Components



virtual



physical

Before the introduction of the blended learning method, this course was taught in the "traditional" way. Students had four classes per week: two lectures, and two practical classes where they solved some proposed exercises. One of these practical classes would take place in a computer room, or students would bring their laptops, and all the exercises were solved with the use of Excel.

After implementing the blended learning method, the number of classes was reduced to two classes per week. In complement to this, two main tools were added: contents videos and Excel tutorial.



Evaluation

final
examclass
participationmidterm
examsin class
tests

The Final Exam is mandatory and must cover the entire span of the course. Its weight in the final grade can be between 30 to 70%. The remainder of the evaluation can consist of class participation, midterm exams, in class tests, etc. Overall, written in class assessment (final exam, midterm) must have a weight of at least 50%.

Learning Outcomes

Learning how to distinguish different types of variables and how to analyse each type. Revisit the basic concepts about probabilities and its distributions.

More information at

STEM

B

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School + Department

School
of Engineering
—Industrial
Engineering

Fluid Machinery

Università degli Studi di Roma Tor Vergata

Instructors: Profs. Vincenzo Mulone and

Roberto Verzicco

ECTS: 6

Brief description of the Course

The Fluid Machinery course aims at providing the students with the fundamentals of fluid mechanics with a special focus on the application of basic concepts to turbomachines and fluid systems. More in detail, it deals with the fluid dynamics equations applied to energy-consuming and energy-producing machines, characterized by both axial and radial flows. It also deals with the understanding of systems connected to fluid machines.

The fluid machinery course is a unique example in the general panorama of industrial engineering Bachelor programs, as usually mechanical engineers undergo separate courses of fluid mechanics and energy conversion. In this case the two contents are mixed in a single course, with several evident advantages:

- The students can immediately understand the impact of basic studies on the applications, as the course is designed and implemented with mixed basic-applied philosophy;
- The course may be offered to different curricula other than mechanical engineering, as it deals with physics and energy, which are transversal topics, with a slim 6 ECTS load;
- The course may be attractive for exchange students (extra-european and Erasmus) in order to get a single course with diverse competencies taught.

Course Organization

winter
semester9
weeks

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- 3 Second Edition of Local Awards and of Grand Award
- 4 Index of Courses

Virtual/ Physical Components

- ✓ virtual
- ✓ physical

Classes are taught by two instructors, Dr. Mulone and Dr. Verzicco, in the classroom, on MS teams, with wide-angle web-cams and high quality microphones. They are streamed on-line in synchronous mode, while given Face to Face (F2F) in classroom, and recorded in MS-teams. Also, the recordings of the last AYs are made available in the dedicated MS-teams channel, helping students to pre-study specific topics before the class, to attend with much greater efficiency.



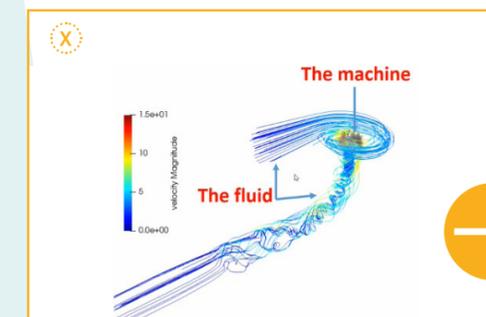
! Expected Erasmus students accepted: On top of a typically mixed attendance of international and Italian students registered at the University of Rome Tor Vergata, the Fluid Machinery course has been typically attended over the past years by different kinds of exchange students, both Erasmus (from Portugal, Spain, Germany, Denmark) and extra-european (Argentina, United States-West Virginia University) from rather diverse curricula (mechanical engineering, aerospace engineering, energy engineering, design, etc). This course is also officially offered in the catalog of the Mechanical and Aerospace Engineering -MAE- program at the following link, as one of the ones to be taken in the main study abroad program of the MAE at the West Virginia University.

Evaluation

Assessment of students' knowledge based on **mid-terms outcome** and a **final oral test**. Grading system of the mid-terms or written test is based on Academic American grading system, positive outcome being A to D. A positive outcome of mid-terms or written test is strictly required to undergo an **oral test** that is considered the final test. The final grade is given based on the Academic Italian grading system, with a scale of 30 where 18 is the minimum sufficient mark. The outcome is based on an average between the two marks.

Learning Outcomes

At the end of the course the students can develop design-oriented calculations of turbomachines and fluid systems in terms of flow, specific work, power and efficiency, having thus developed the capability of solving problems of practical interest from an engineering perspective. Students also learn the basics of fluid machines control practice into complex systems, with respect to flow, work exchanged, power produced or absorbed and efficiency. The students also learn the peculiarities of technologies for the production of power from renewable sources (e.g. wind and hydraulic turbines) in comparison with fossil fueled conventional technologies (e.g. gas and steam turbines).



More information at

STEM

B

Introduction to Programming

NOVA University Lisbon

Instructors: Prof. Eduardo Hidalgo García

ECTS: 7.5

School + Department

NOVA School
of Business and
Economics

Brief description of the Course

The aim of the course is to develop required skills to analyze real life problems decomposing them into their smaller parts, allowing for an integrated solution.

The course introduces Python & IDE (Integrated Development Environment). Students are required to have followed the Spyder installation Tutorial before first class. The first week is used to explain the relevance of Python.

Additionally, during the class the professor performs live coding to showcase how to use some of the most commonly used Python built-in functions. The script to follow is available in the public web page of the course <https://programminginception.com/intro>. During that class the professor also makes sure that all the students have the resources needed for the rest of the course. In week number two students are expected to have reviewed the weekly videos along with the scripts develop for explaining: logical & mathematical operators, what is a variable, and what is a function & how to use them. In-class professor performs live coding to guide the students on how to solve the exercises available at the variables section. During that class students are guided on how to think the exercises from a general perspective.

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Course Organization

12 weeks

And, with the help of the professor they modify them to solve for the general case by constructing a function out of them. For week three students are expected to have reviewed the materials on: working directory and conditional statements. In class students will be guided to complete the exercises available at the functions section. During this week the first assignment is realized, students are given one week to solve it. All the assignments of the course are accompanied by a grader file. The grader file is meant to evaluate the output of the students, so they can monitor how well are they performing. However, this is only a preliminary grade, when we grade the assignment, we used a different set of inputs and outputs.

Virtual/ Physical Components



virtual



physical

The content of the course is structured in two parts: Videos for introducing programming concepts & Practical classes. The videos are available at the course Moodle's web page and the course has its own public url for the practical exercises.

Evaluation

30% final exam

12 assignments
70%

top 10 out of 12 will be used to calculate your grade

project ungraded

Completion of the project is required for completion of the course

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BLA - Blended Learning Award Project

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120     object.style.display = "none";
121   }
122   object.style.display = (object.style.display == "block" ? "none" : "block");
123 }
124
125 function updateDisplayStatusForID(object) {
126   div = document.getElementById(id);
127   table = document.getElementById(tableId);
128   div.style.height = "100px";
129   div.style.overflow = "auto";
130 } else {
131   div.style.height = "100px";
132   div.style.overflow = "none";
133 }
134 }
135
136 function updateDisplayStatusForID(object) {
137   existing_style = object.getAttribute('style');
138   if (object.style.display == "none") {
139     object.setAttribute('style', existing_style.replace(/display: none;/g, 'display: block;'));
140   } else {
141     object.setAttribute('style', existing_style.replace(/display: block;/g, 'display: none;'));
142   }
143 }
144
145 function toggleEffect(link) {
146   var char_result = link.innerHTML.toLowerCase().replace(/ /g, '');
147   link.innerHTML = link.innerHTML.replace(/ /g, ' ');
148 }
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Learning Outcomes

In this course, students will learn the basics of programming, and industry-standard practices for software development. By the end of the course, students should understand the vocabulary, processes, and tools of modern software development. Students will learn how to use Python, one of the most popular programming languages used by business analysts and data science professionals. Alongside programming, we will explore a variety of technology topics, like big data, cryptocurrency, and the application of data science to real-world contexts in business and social policy.



More information at

STEM

B

Financial Data Science

NOVA University Lisbon

Instructors: Prof. Afshin Ashofteh

ECTS: 4.5

School + Department

NOVA Information Management School

Brief description of the Course

The Financial Data Science course allows students to respond to the complex challenges of finance with new approaches introduced by data science.

It should offer a necessary knowledge of Statistical and machine learning modelling, a rigorous understanding of the modelling issues in finance, and provides the tools needed to appropriately identify, measure, and manage bias, variance, and error of different kinds of models, mainly:

- Financial data science, modelling concepts, and R/Python programming for finance.
- Regression (Simple linear regression model, Least squares criterion, Model evaluation, Multiple linear regression, Transformations, Model building, Regression pitfalls, Linear Probability Model (LPM), Logistic regression, Binary probit model) and their application in finance and risk management (Case study: Credit scoring by regression analysis).

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Course Organization

10 sessions

- Time series (Time-series patterns, Trend estimation, Seasonality estimation, smoothing methods, Stationarity, Autoregressive models, Moving average models, ARMA models, Seasonal models) and an application in life insurance contracts (Case study: *Forecasting Life Tables and Pricing Contracts with Poisson-Lee-Carter Model*).
- Machine learning (supervised and unsupervised learning) and their application in finance and risk management (Case study: *Credit Scoring with R (Small Data) and PySpark (Big Data)*).

Virtual/ Physical Components



virtual



physical

Evaluation - based on activities and deliveries

answering the questions in the course discussion group, and the course Kaggle competition

5%

20%

+

the case study about analysing a real case and providing a report

presenting a chapter of the reference book in a video format

20%

5%

+

commenting on support materials and three book presentations of colleagues

group project about Credit Scoring Modelling and Programming in R or Python

40%

10%

problem sets deliveries

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Learning Outcomes

At the end of the semester, students should be able to:

- Describe financial data science and express themselves in professional discussions.
- Understand the importance and functioning of Regression, Time series, and Machine learning in finance.
- Identify and distinguish the main modelling requirements and outcomes interpretation.
- Coding in R/Python for a financial problem and building a report.

More information at

STEM

M

Big Data for Economics and Finance

Università degli Studi di Roma Tor Vergata
Instructors: Prof. Alessio Farcomeni
ECTS: 6

School + Department

School
of Economics
– Economics and
Finance

Brief description of the Course

The course covers the state of the art for big data analysis with economic and finance applications. It is the only course available in Italy that covers statistical and machine learning, methods for high dimensional data, and modern applications (including a detailed overview of text mining), at the undergraduate level. Textbooks are state of the art, and two of them are available for free being open access (authors have bought the copyright from editors). There is plenty of additional material, including R scripts and datasets that are handed out at each lecture.

Course Organization

6
weeks

the course is
scheduled for the
Fall semester

Virtual/ Physical Components



virtual



physical

The course attendance can be online or in person, all classes will be recorded, and that interactive sessions and flipped classroom events will take place.

Evaluation

100%
exam

The exam will be written, with a mix of open and closed form questions. Questions will cover the entire course material. Some questions will report either R code or R output, and will pertain the interpretation of the same. Students not booked in advance will not be allowed to take the exam. Students will have to demonstrate to be able to choose the most appropriate statistical methodology, to know its limitations and strenghts, and to be able to implement each technique and interpret the results.

Learning Outcomes

The course will discuss big data analysis for empirical exercises in economics, finance, and business.



More information at

STEM

M

Financial Statement Analysis

NOVA University Lisbon

Instructors: Prof. Francisco Martins

ECTS: 3.5

School + Department

NOVA School
of Business and
Economics

Brief description of the Course

The Financial Statement Analysis course has the following objectives for students:

- Getting familiar with companies' financial statements, including understanding the main statements, how they are connected and the meaning of their main captions;
- Using the information on the financial statements for decision-making, both from a managerial point of view and from an investment point of view, with focus given to understanding value creation based on information from the financial statements;
- Producing a valuation about the company using the information based on the financial statements (and other relevant sources) while applying fundamental analysis techniques.

Course Organization

6
weeks

1 Introduction

2 First Edition of Local Awards and of Grand Award

3 Second Edition of Local Awards and of Grand Award

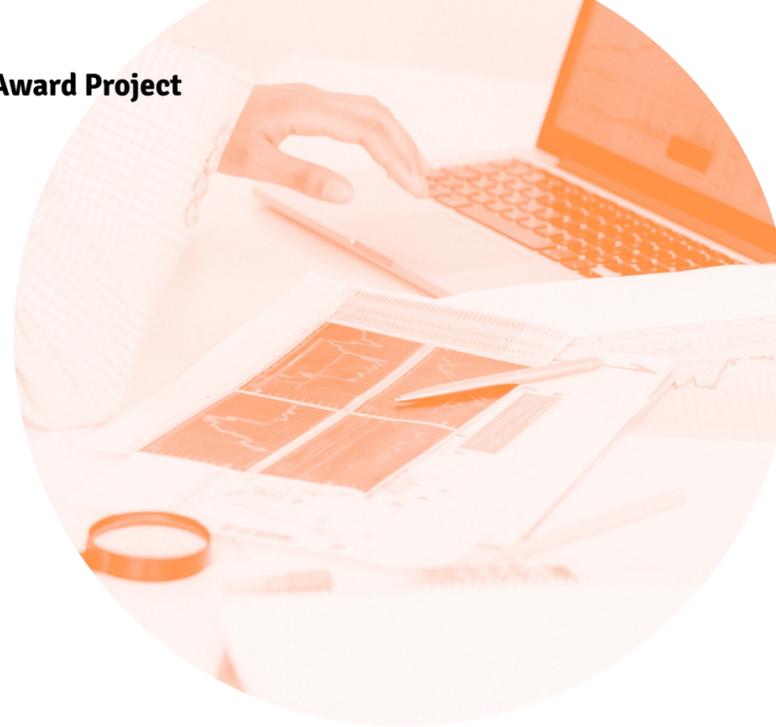
4 Index of Courses

The course has a practical content and will deal with a variety of topics pertaining to the analysis of financial statements and companies as a whole. These include:

- an overview of the financial statements themselves and how to read them;
- value creation metrics (return on invested capital and growth) as well as impacts of understanding value creation;
- discounted cash flow methodology with focus on reformulating the financial statements to better understand the company;
- ratio analysis, both with the purpose of analyzing the current situation of the company with regards to decision making and to produce forecasts for a company's valuation.

While there are many courses on accounting and on finance, there are not many courses that bridge the two and that are taught from the perspective of the user (manager, financial analyst, consultant, banker, etc.) that needs to be able to read and understand the financial statements. Many managers and financial professionals can greatly improve their performance if they can base their decisions on information, and the financial statements are perhaps the most vital (even if not sufficient) source of information for that, if we know how to read it. That is where the course comes in.





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Evaluation



Virtual/ Physical Components

- ✓ virtual
- ✓ physical

The course is taught in a blended format with each week involving a series of activities: audiovisual materials, quizzes, company analysis all asynchronously on-line; company presentation and discussion, in session. A Forum is open 24/7 in order to pose questions that can be answered by their peers or by the instructor.

Learning Outcomes

This course has the purpose to prepare students for most applications of Finance and Management from the user's point of view in business environment. By the end of the course, students should be familiar with the basic Accounting concepts and understand Financial Statements information and are also expected to be familiar with fundamental financial concepts and to be able to use them in basic management and financial decisions.

Financial Statement Analysis

Typical FSA Week

Task	Where	When	Who
Videos	Home	Asynchronous	Individual
Short Quizzes	Home	Asynchronous	Individual
Challenge Preparation	Home	Asynchronous	Groups
Challenge Presentation	On Site	Synchronous	Groups
Challenge Discussion	On Site	Synchronous	Groups

Legend: Theory (Yellow), Practice (Light Blue)



More information at

STEM

M

Statistics III

NOVA University Lisbon
 Instructors: Prof. Ana Amaro
 ECTS: 3.5

School + Department

NOVA School
 of Business and
 Economics

Brief description of the Course

This course offers a practical introduction to data analysis such that, as future researchers, the students can independently develop their own sample to population statistical analysis and/or interpret indicators generated from a statistical software package. Not only they will be able to decide upon a single random variable characteristics as to investigate relationships between variables (quantitative or categorical), with the goal of creating a model to predict a future value for some dependent variable or just to understand the type of relationship (if any) between variables.

Main topics will include (the assumption is that these topics should be already familiar to the students, analysed before e.g. during their undergraduate level studies): inference statistics and distributions, contingency analysis, analysis of variance, simple and multiple linear regression. Excel, Gretl (freeware) and/or SPSS will be used to conduct the statistical analysis. Research papers will also be used as sources of indicators to be interpreted.

n/a
 weeks

Course Organization

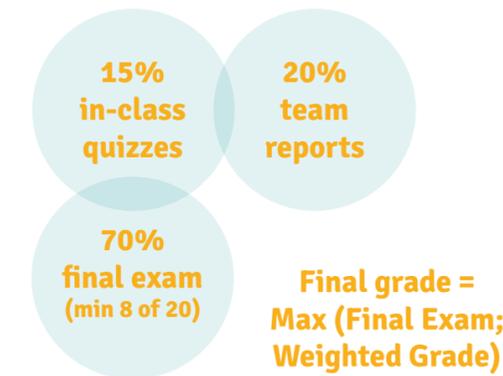
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Virtual/ Physical Components

-  virtual
-  physical

For the asynchronous sessions Moodle is the meeting integrative platform with additional resources being used like Teams or Zoom to meet at scheduled day/time for clarification if needed, general internet application to provide additional information. The face to face sessions are run in Campus with streaming always provided for students that are not able to meet in Campus.

Evaluation



The final exam contains a form (previously available on Moodle) and tables with statistical distributions. The only allowed and required material is a pen and a calculator. Any additional sources of information in addition to those previously mentioned are not allowed.

Learning Outcomes



More information at

1 Introduction

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STEM

M+D

Master's & Doctorate: SummerLIB: fundamentals, materials and applications of lithium-ion batteries (LIB)

Universidad Autónoma de Madrid
Instructors: Prof. Celia Polop
and Carmen Morant
ECTS: 4

School + Department

Facultad
de Ciencias - Física
Aplicada — Department
of Física de la Materia
Condensada

Brief description of the Course

SummerLIB is an international summer school developed by three CIVIS universities and one African university: Universidad Autónoma de Madrid (UAM), Sapienza Università di Roma (SUR), Aix-Marseille Université (AMU) and University of the Witwatersrand (UoW).

Energy storage is an enabling technology that can save consumers money, integrate different energy generation sources, and help reduce environmental impacts. There is a huge demand for improved energy storage media related to areas like the automotive industry or the use of green energy sources. The requirements of the fight against climate change and global warming have boosted the research in this area in recent years. Lithium-Ion Batteries (LIB) play a fundamental role in renewable energy storage technology,

since they are already widely used in current consumer electronics and their demand for powering the Internet of Things (IoT) and in electric and hybrid vehicles is growing rapidly. However, the development and improvement of LIBs require the training of specialized scientists and the investment of huge research efforts.

The aim of this course is to delve into the key aspects of the physical-chemical fundamentals and applications of LIBs and participate in the advanced training of the next generation of European scientists, providing the necessary background to contribute to the development of decarbonised socio-economic systems to stabilize the climate.

Course Organization



Virtual/ Physical Components



virtual



physical

SummerLIB is developed in a blended format. This course has innovative characteristics as it is the first time that a summer school with these special features is organized by the Science Faculty of the UAM: first week online and second week developing an experimental project in a non-home university.

1 Introduction

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Evaluation

course
attendance

active
participation

presentation
of a final
report

week
2

development of the
experimental work in
the host group

Learning Outcomes

The students will learn about the fundamentals and state-of-the-art of LIBs in the online lectures of the first week. Furthermore, they will have the opportunity to receive advanced research training in a laboratory from a partner CIVIS university. The experience and knowledge gained through this research-oriented education activity will expand their research abilities. The students will be ready to apply the learnt experimental protocols and methods in their own laboratories, expanding the research collaboration between the participating CIVIS universities.



More information at



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Erasmus+ Programme
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