Welcome to FIB Master’s Degree Informative Virtual Session

- Please, mute your micro
- Please, turn off your camera
- Only speaker will share screen to present

- Any question should be via chat but let’s do it at the end of the talk

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Master in Artificial Intelligence (MAI)

Master in Informatics Engineering (MEI)

Master in Informatics Engineering – Industrial Modality

Master in Innovation and Research in Informatics (MIRI)

Màster per al Professorat de Secundària,

Master in Cybersecurity

Erasmus Mundus Master in Big Data Management and Analytics

More Master Information

Info.masters@fib.upc.edu

Daniel Jiménez-González
Vice-dean of Postgraduates Studies
✓ Coordinated by FIB:

- Màster en Enginyeria Informàtica (Spanish/Catalan) → MEI
  - (NEW) Màster en Enginyeria Informàtica Modalitat Empresa
- Master in Innovation and Research in Informatics (English) → MIRI
- Interuniversity Master in Artificial Intelligence (English) → MAI
- Màster de Formació per al Professorat de Secundària (Català/Castellà)

✓ Participate:

- Master’s degree in Cybersecurity (2020/21 - English) < NEW
- Interuniversity Master in Pure and Applied Logics
- Interuniversity Master in Atomistic and Multiscale Computational Modelling in Physics, Chemistry and Biochemistry

✓ ERASMUS MUNDUS:

Master Erasmus Mundus in Big Data Management and Analytics
Summary
Knowledge Areas – MAI/MIRI/MEI

- Advanced Computing, Algorithms
- Computer Networks, Distributed Systems, Security
- Data Science, Big Data Analytics
- Management Business
- Artificial Intelligence
- Supercomputing, Parallelism, Microprocessor Design
- Computer Graphics, Virtual and Augmented Reality
- Computer Networks, Distributed Systems, Security
I could start with the *institutional* part...

... but the important is what you would like to achieve/do/be...
All Achievements Begin as Dreams

... and our students make them real here!
Social and Technological Dreams

Health Goals

Artificial Intelligence Applied

Big Data Analytics

Hardware Design and Acceleration

3D Gaming Rendering in Real Time

Programming Models Parallel Exploitation/Processor Design

TECHNOLOGY TRANSFER
RESEARCH + DEVELOPMENT + INNOVATION
Master Thesis Examples

- **MIRI:**
  - *(CGVR)* Plausible reconstruction and rendering of semi-procedural landscapes. Oscar Argudo
  - *(CNDS)* Critical Analysis and Comparison of Data Protection Techniques for Genomics Data Sets. Daniel Naro
  - *(DS)* Computing and visualizing informative trajectories in temporally annotated data. Martí Zamora Casals
  - *(HPC)* Asynchronous runtime for task-based dataflow programming models. Jaume Bosch Pons


- **MAI:** Applying deep-learning techniques to detect freezing of gait episodes in Parkinson's disease patients. Julià Camps Sereix
MIRI-CGVR: Rendering for 3D Real Time – Games and Health!

- Plausible reconstruction and rendering of semi-procedural landscapes. **Author: Oscar Argudo. Grade: 10(MH)**

  - Detail usually involves scanning again the area of interest with more accurate equipment or taking more samples per area.

  - The acquisition process is expensive because it involves a substantial amount of time, human resources and expensive equipment.

  - 3D real time reconstruction is possible using real information guidance.
MIRI-CNDS: Security/Genomics

- Critical Analysis and Comparison of Data Protection Techniques for Genomics Data Sets. Author: Daniel Naro. Grade: 10 (MH)

- Genomic data is extremely sensitive by nature: it has intrinsic properties for individual identification, ancestry discovery, and disease prediction among others.

- Protection is needed for individual: DNA encrypted, access control, etc.

- File Format with encrypted portions of the DNA, by using different keys
MIRI-DS: Health Guidance!

- Computing and visualizing informative trajectories in temporally annotated data. **Author: Martí Zamora Casals – Grade: 10**

  - A trajectory in the medical world is the sequence of events that occur during the life of a patient.

  - Trajectory of a patient is formed by states, each state is formed by a central event, normally a diagnostic and a set of secondary events.

  - Trajectory graph combines the trajectory of different patients, providing a probability of the next event for a patient with a disease.
MIRI-HPC: How to improve an Application? HW vs Software

- Asynchronous runtime for task-based dataflow programming models. Author: Jaume Bosch Pons. Grade: 10 (MH)

- Task-based parallel programming model follows a natural way to parallelize

- There is a library (runtime) that takes care of all the “hard” work of parallelize the tasks

- Hardware and Parallel Knowledge helps to speedup applications: Bioinformatics, Earth Science (weather simulations), etc.
MIRI-HPC: How to improve an Application? HW vs Software

- Asynchronous runtime for task-based dataflow programming models.
- Task-based parallel programming model follows a natural way to parallelize applications.
- There is a library (runtime) that takes care of all the "hard" work of parallelizing the tasks.
- Hardware and parallel knowledge helps to speed up applications: Bioinformatics, Earth science (weather simulations), etc.

BSC Coordinates Development of RISC-V ‘Lagarto’ Processor

January 8, 2020

Jan. 6, 2019 — Lagarto, which is built with TSMC’s 65-nanometer transistors, is the first open source instruction set architecture (ISA) chip developed in Spain, coordinated by the Barcelona Supercomputing Center (BSC). The chip, which has performed better results than expected, is a key step in the center's strategy to become a benchmark in the open source hardware technologies' field developed in Europe.

Lagarto is an important step in the search of the BSC, led by the center's director, Mateo Valero, to develop European computing technology. This project is based on the premise that the instruction set of the
MIRI-AC: Circuit (Chip) Design using Machine Learning

- Machine Learning Techniques for resource prediction in nanoelectronic circuit design. **Author**: Narcís Ricard. **Grade**: 9

- Company’s needed resources estimation beforehand

- Problems in the organization due to unknown timing process

- Highly accurate machine learning models for IT metrics (runtime, CPU time and memory)
MEI: HPC for Deep Learning!


- High Performance Computing and Parallel Techniques speedup Deep Learning
  - Image classification
  - Object Detection, etc.

- From 106 hours of training to 12 hours...
MAI: Particular Diseases can be target like Parkinson

- Applying deep-learning techniques to detect freezing of gait episodes in Parkinson's disease patients. **Author: Julià Camps Sereix Grade: 10 (MH)**

- Funded by FP7 European Projects and TV3 Marató

- Accurate ambulatory FOG assessment would enable non-pharmacologic support based on cues and would provide relevant information to neurologists on the disease evolution.

- Automatic detection with 90% accuracy (stat-of-the-art)
How can you do it?

• Acquiring the knowledge of OUR master subjects and going further on them...

• Our **professors** are also **researchers**
  
  ➢ Belong to different departments and research groups
  
  ➢ Contact them... at class... or directly to the research group/center

• **Under Industrial Agreements**, acquiring even more knowledge and experience!

• **Under International Mobility**
Strengths of our Masters and Faculty Environment

Disclaimer:
curriculum at Web and Diptics

MAI/MEI/MIRI

2020/2021

More Master Information
Info.masters@fib.upc.edu
Outline

- FIB with your dreams!
- Industrial and Academic Opportunities
- Grant Opportunities
- Social life, DEFIB and Associations
- Contact Points
Outline

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The Universitat Politècnica de Catalunya (UPC-BARCELONATECH) is a public higher education and research institution that is specialized in the fields of architecture, science and engineering.
UPC

30+5 departments+research institutes

21 (15+4) Associated and Affiliated bodies

20 Schools

294M € Budget

~31,220 Students (9% in Masters)

1,967 administrative staff

3,015 faculty and research staff

10 / 7 campus / cities
UPC: what we do

- **High quality teaching**
  - based on innovation, interdisciplinarity and internationality

- **Studies adapted to the European Higher Education Area**
  - **Innovation in teaching**, educational research
  - **Adapting facilities, classrooms and services** to the new teaching-learning methods
  - **Improving students** employability
  - Collaborative programmes with **secondary education and professional** training centres

All this in several and interesting areas!!
UPC: knowledge areas

- Aerospatial Engineering
- Applied Sciences
- Architecture, Urbanism and Building Construction
- Biosystems Engineering
- Business Management and Administration
- Civil Engineering
- Computer Science and Engineering
- Environment, Sustainability and Natural Resources
- Industrial Design and Manufacture
- Information and Communication Technologies
- Artificial Intelligence
UPC: Campus

Barcelona - Campus Nord

ETSECCPB
(Civil Engineering)

ETSETB
(Telecommunications)

FIB
(Informatics)
The Facultat d’Informàtica de Barcelona (FIB) - from 1977

- Public higher education school within the UPC
- Specialized in university teaching leading to qualifications in the field of informatics and other related areas.
FIB: what we do

- Provide education on **informatics engineering**
- Promote the dissemination of information technologies to contribute to society improvements

- Provide strong background in the sciences that they will have to use along their professional life
  - Prioritizing lasting concepts
  - Promotizing effective working habits and team working
  - Stimulating their students' ability of self-sufficiency

Created in 1977.
At present around 2100 students and 296 faculty members.
International Master’s Programme

- MEI, MAI, and MIRI have been awarded this distinction by the Catalan Government

FIB Degrees

- Always ranked in the top positions
- School of reference

Accredited Internal Quality Assurance System

Approved by the Catalan Quality Agency (AQU), full member of ENQA

Eur-inf (ASSIN) for GEI, MEI, and MIRI
International Rankings

QS World University Rankings 2019
Computer Science
1st Spain, 32-56th Europe, top 101st-150th World.

US News Best Global Universities Rankings-2019
Computer Science
2nd Spain, 10th Europe, 53th World in Computer Science.

ARWU (Shanghai Ranking) 2019 – Computer Science & Engineering
2nd Spain, 22-39th Europe, top 101st-150th World.
You have several research groups and centers

- Mathematics (MA)
- Business Administration (OE)
- Computer Architecture (AC)
- Physics (FIS)
- Services and Information Systems Engineering (ESSI)
- Computer Science (CS)
- Statistics and Operational Research (EIO)
- Systems Engineering, Automatic Control and Industrial Informatics (ESAII)
Related departments - research groups

Mathematics (MA)
- MD: Discrete Mathematics
- DCCG: Computational Geometry and Combinatorial Geometry
  [http://www-ma2.upc.es/~geomc/gcwww.html](http://www-ma2.upc.es/~geomc/gcwww.html)
- TN: Numbers Theory
  [https://recerca.upc.edu/tn/](https://recerca.upc.edu/tn/)
- GRTJ: Game Theory
- GRAA: Applied Analysis
- GREC: Knowledge Engineering (with ESAII)
  [http://www.upc.edu/web/grec/](http://www.upc.edu/web/grec/)
- MMAC: Mathematical Models Applied to Social and Natural Sciences
Related departments - research groups

Business Administration (OE)

- EOLI: Industrial Engineering and Logistics
  https://www.ioc.upc.edu/research/groups/eoli/enginyeria-dorganitzacio-i-logistica-industrial?set_language=en&cl=en
- GREDIC: Innovation and Knowledge Economy
- LEAN MRG: Lean Management
- CERPJE: Research & Development Centre for Enterprises' Improvement and Innovation
Related departments - research groups

Computer Architecture (AC)
http://www.ac.upc.es/en/content/research-groups

- ANA: Advanced Network Architectures
- ARCO: Architectures and Compilers
- CAP: High Performance Computing
- CBA: Broadband Communications Systems
- CNDS: Computer Networks and Distributed Systems
- DAMA: Data Management
- DMAG: Distributed Multimedia Applications
Physics and Nuclear Engineering (FEN)
http://www-fen.upc.es/wfen/research/cjtoresearch.htm
- CS-SIMBIO: Complex Systems - Computer Simulation of Materials and Biological System
- DILAB: Dielectric Material Physics Laboratory
- DONLL: Nonlinear Dynamics, Nonlinear Optics and Lasers
- GAA: Astronomy & Astrophysics
- GCM: Characterization of Materials
- GIEP: Innovative Education in Physics
- GREENER: Studies in Energy and Radiation
- NERG: Nuclear Engineering
- SIMCON: Computer Simulation in Condensed Matter
- GRPFM: Physical Properties of the Materials
Related departments - research groups

Services and Information Systems Engineering (ESSI)

http://www.lsi.upc.edu/research

• GESSI: Software Engineering for Information Systems
• MPI: Modelling and Processing Information
Related departments - research groups

Computer Science (CS)
http://www.cs.upc.edu/research

- ALBCOM: Algorithms, Biocomputing, Complexity and Formal Methods
- GIE: Engineering Computing
- GRPLN: Natural Language Processing
- KEMLG: Knowledge Engineering and Machine Learning (with EIO)
- LARCA: Relational Algorithms, Complexity and Learning
- LOGPROG: Logic and Programming
- MOVING: Modelling, Visualization, Interaction and Virtual Reality
- SOCO: Soft Computing
- STH: Sustainability, Technology and Humanities
Related departments - research groups

Statistics and Operational Research (EIO)
http://www-eio.upc.es/research/index/
- LAIRE: Laboratory of Aeronautical and Industrial Research and Studies
- GRESA: Applied Statistics
- LIAM: Laboratory of Information Analysis and Modelling
- KEMLG: Knowledge Engineering and Machine Learning (with LSI)
- GRASS: Survival Analysis Statistics
- GREMA: Mathematical Statistics and its Applications
- GNOM: Numerical Optimization and Modelling
- PROMALS: Mathematical Programming, Logistics and Simulation
Related departments - research groups

Systems Engineering, Automatic Control and Industrial Informatics (ESAII)

http://webesaii.upc.edu/index.php?option=com_content&task=view&id=41&Itemid=72

- ACES: Advanced Control of Energy Systems
- ACP: Automation and Process Control
- GREC: Knowledge Engineering (with MAII)
- GRINS: Intelligent Robotics and Systems
- NOLIN: Nonlinear Physics and Unbalanced Systems
- SAC: Advanced Control Systems
- SISBIO: Biomedical Signals and Systems
- VIS: Artificial Vision and Intelligent Systems
Outline

• FIB with your dreams!
• **Industrial and Academic Opportunities**
• Grant Opportunities
• Social life, DEFIB and Associations
• Contact Points
During your studies... How?
Internships for students become a training activity under the supervision of the Faculty, the goal of which is to apply and complete the academic formation acquired, encouraging the professional skills that prepare for professional activities which facilitate the employment of them.
Industrial Agreements and Jobs
(cce@fib.upc.edu)

Companies with Industrial Agreement with FIB

- **Extracurricular Practices:**
  - NO Elective credits
- **Curricular Practices + TFM (Modality B or D):**
  - Elective credits (12 minimum) + TFM credits
    - 30 hours → elective credit
    - 25 hours per TFM credit
- **900 hours per year**
  - Total: 900 hours for MAI and MEI (90 ECTS master)
  - Total: 1200 hours for MIRI (120 ECTS master)

Labor Experience (no under agreement):

- Previous or during the master
- 1600 hours per 6 credit:
  - Then, proportional
Student Mobility
(rel.int@fib.upc.edu)

MOVING

Knowing a new university, discovering a new country or improving your language skills are some of the advantages of the mobility programs offered by FIB.

Personal experiences that will allow you to stay in foreign universities and intern at businesses worldwide.

Latin America

Erasmus+

SICUE

Vulcanus

National Institute of Informatics (NII) Tokyo

UNITECH
Double degrees
(rel.int@fib.upc.edu)

FIB contact: rel.int@fib.upc.edu

- **MEI with** Institut Supérieur d’Informatique, de Modélisation et de leurs Applications (ISIMA) and Pontificia Universidad Católica del Perú (PUCP)

- **MIRI with Politecnico de Torino** and Instituto Politécnico Nacional de los Estados Unidos Mexicanos
  - In progress: **Grenoble, Aalto**

- **MAI with** PUCP
Double degrees
(rel.int@fib.upc.edu)

Mobility Calendar

- Application for the National Institute of Informatics (NII) in Tokyo - 2nd call
- Application for the National Institute of Informatics (NII) in Tokyo - 1st call
- Google Summer of Code
- Application for a place at Spanish universities in the SICUE programme
- Place application for foreign universities: Erasmus+, Latin America, India, Russia, Taiwan, China and double degrees in Europe
- iWeek a Paris
- Vulcanus programme
- Application for mobility in the US, within the Balsells programme and double degrees in South America
- Application for a mobility place with the programme UNITECH
- Place application for foreign universities: programa Erasmus+, Latin America, CINDA, India, Russia, Taiwan and China (2nd call)
INFORMATION SESSIONS: Don’t miss them!

Mobility information session 2019/2020

1st semester

Wednesday, 13th November of 2019

In this first session we will inform on the various mobility programs, but we will focus on those whose call is in December-January and on the stays at US universities.

Venue: Auditorium Manuel Martí Recober.

- Morning session: 12:15 am
- Afternoon session: 3:00 pm

2nd semester

Wednesday, 12th February of 2020

In this second session we will inform on the various mobility programs, but we will focus on Erasmus+, SICUE and double degree calls.

Venue: Auditorium Manuel Martí Recober.

- Morning session: 12:15 am
- Afternoon session: 3:00 pm

For mobility stays during the academic year 2020/2021
Relations with:

• More than **180 bilateral agreements in 43 countries (mainly Europe)**

• **North America**
  - Northeastern University, Boston
  - University of Texas at Dallas
  - University of Purdue
  - College of Computing, Georgia Tech, Atlanta
  - École de Technologie Supérieure, Montreal

• **Asia (UPC agreements)**
  - China
  - India
  - Japan
  - Malaysia
  - Thailand

**New curricula focus on internationalization**
How can I work and study?
Masters

masters.fib.upc.edu

Once you are in: www.fib.upc.edu
✓ Coordinated by FIB:

Màster en Enginyeria Informàtica (Spanish/Catalan)
   Timetables: Mostly Afternoon

Màster en Enginyeria Informàtica - Modalitat Empresa
   Timetables: Afternoon – 3 days maximum (4-5 hours/day)

Master in Innovation and Research in Informatics (English)
   Timetables: Mostly Morning

Interuniversity Master in Artificial Intelligence (English)
   Timetables: All day – Three universities
During and after your studies...
FIB: Employment Opportunities

- **MEI**
  - Information systems, development, production and operations, project managers
  - Database and Systems Architects
  - Heads of the department and IT

- **MAI**
  - Deep Learning Analysis, for instance for Face recognition
  - Industry Responsibilities
  - Public Sector and Private Sectors like Banks, Big Data Processing Companies (Google, Amazon, etc)

- **MIRI**
  - Main Software/Firmware/Hardware Companies abroad and national: Nvidia, Intel, ARM, HP, INDO
  - Main Research Centers abroad and National: Medicine Research centers, Hospitals, HPC Research Centers, Security Centers, BSC-CNS, CERN
  - Universities abroad and national: Georgia Tech, Trinity College Dublin, etc.

AND MORE!!!
• FIB with your dreams!
• Industrial and Academic Opportunities
• Grant Opportunities
• Social life, DEFIB and Associations
• Contact Points
Grants and Financial Aid

General information

There are multiple ways to fund your studies at the Universitat Politècnica de Catalunya - BarcelonaTech (UPC). Grants, scholarships, mobility grants and loans are offered by the University and other bodies.

Complete information about grants and financial aid at the UPC.

Below you will find information on specific scholarships and grants that you can apply for at the FIB. It is necessary to have applied for admission in the corresponding Master to qualify for any of them.

Grants

"Nacho Navarro" grants (2020/2021)

FIB Visions - FIB grants (MEI, MIRI and MAI)

everis - 2019/2020

Fundació Catalunya-La Pedrera (MAI)

Fundació Catalunya-La Pedrera (MIRI)

Scholarships

ARCO Scholarships for MIRI Students

inLab FIB

SANS scholarship for MIRI and MEI - 2019/2020

UPC Research Group DCCG
Outline

- FIB with your dreams!
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- Grant Opportunities
- **Social life, DEFIB and Associations**
- Contact Points
Hacking into a cure for rare diseases: The BitsxlaMarató hackathon

The main goal was to find innovative solutions to rare disease challenges, promoting the use of new technologies. The challenge was organized by the Research Institute of the Hospital (IDIBELL), the Barcelona School of Informatics (UB), and the Biomedical Research Institute of Barcelona (IDIBELL). Members of the life sciences community, including researchers and clinicians, participated. The hackathon was a great opportunity for students and professionals to work together, developing innovative solutions to rare diseases.
Associations and DEFIB

FIB’s Students Delegation (DEFIB)

Goals

The aim of the association is to advise, represent and help the students of FIB as much as we can.

Activities

Some of the activities we do every quarter or year are organizing the class graduation photograph, manage the course delegations, talk about specialties subjects, belonging to the governing bodies of FIB, collaborate with other associations, etc., and obviously, resolve issues and incidents of students.

Requirements to be membership

Being a student of FIB

http://defib.upc.edu/

Contact Information

defib@fib.upc.edu

93 413 75 96

Building Omega, office 102

President

Jazmin Ester Geil
Outline

- FIB with your dreams!
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Coordinators and Tutor Contacts

- **MIRI Coordinator:** Daniel Jiménez (vd.postgrau@fib.upc.edu)
  - **Specialization Coordinator:**
    - **AC:** Jordi Petit
    - **CGVR:** Núria Pelechano
    - **CNDS:** Jose M. Barceló
    - **DS:** Oscar Romero
    - **HPC:** Josep Llosa
- **MEI Coordinator:** Daniel Jiménez
  - Tutor: Daniel Jiménez
- **MAI Coordinator:** Ulises Cortés
  - **University coordinator:** David Riaño (URV), Maite López (UB), Daniel Jiménez (UPC)
  - Tutor assigned to each student
Administrative and Academic Master Contacts

- General:
  - e-mail: info.masters@fib.upc.edu
  - Instances and other modifications: e-secretaria
  - Tutor and academic questions: vd.postgrau@fib.upc.edu
- Master Specific:
  - MIRI: coordinator specialization and vice-dean
  - MAI: tutor and vice-dean, and coordinator of one of the universities
  - MEI: tutor and vice-dean
- Double degrees and mobility: rel.int@fib.upc.edu
- Industrial Agreements: cce@fib.upc.edu
Other possible contacts

- In person
  - Administrative/Academic contact point at B6 1\textsuperscript{st} Floor for Master information and Industrial Agreements
  - Academic contact point for Masters (B6 2\textsuperscript{nd} Floor) and Mobility Masters at B6 Secretary (Entrance) and B6 2\textsuperscript{nd} Floor
- An aim… Feedback Meeting with Subject Student Delegates
  - We would try to do it… at the beginning and at the end of the semester
Quick, Practical and Summary Information for MAI/MEI/MIRI 2020/2021

More Master Information
Info.masters@fib.upc.edu
Summary

Information: General

- Web masters:
  masters.fib.upc.edu
Masters in **Computer Science and Engineering**

The FIB’s master’s degrees are official university studies within the framework of the European Higher Education Area (EHEA). Your degree is recognized across the globe and meets EU requirements.

**CHOOSE THE PROGRAM THAT BEST SUITS YOUR INTERESTS**

- **Master in Informatics Engineering** - Industrial Modality
- **MIRI - Computer Graphics and Virtual Reality**
- **MIRI - High Performance Computing**
- **MIRI - Advanced Computing**
- **MIRI - Data Science**
- **Master in Artificial Intelligence**
- **Master in Informatics Engineering**
- **MIRI - Computer Networks and Distributed Systems**
Summary
Information: Admission

• MEI/MAI/MIRI -

Admission and Promotions 2020/21:
27th Feb - 13th March – Notification 20th March
16th March – 5th June – Notification 12th June
[20th to 30th June if empty slots] – Notification July

Promotional Presentations – MEI/MAI/MIRI
MAI/MEI/MIRI 19th Feb, 6th May
Special MEI/MEI Mod Industrial: 20th May

• Admission Criteria
  • Publish at each enrollment website
Curricula and other

MAI/MEI/MIRI

2020/2021

More Master Information

Info.masters@fib.upc.edu
MIRI: Master in Innovation and Research in Informatics

- **English (B2)**
- **5 Specializations (2 chosen at admission time – w/ priority)**
- **Acreditations**: EQUAINE, AQU
- **120 ECTS : 2 years**.
  30 TFM, 30 Common Compulsary Subjects
  48 Specialization ECTS
  12 General Electives

**Industrial Agreements – Curricular Practicals, Laboral Experience**

- **Grants, admissions (criteria selection) masters.fib.upc.edu**
  Conditional Admissions in some cases with complementary formation – Possible entry on February
- **There may be complementary courses**
MIRI - Structure

Q1

Compulsory (24)

Specialization (6)

Q2

Seminars (6)

Specialization (24)

Q3

Elective (12)

Specialization (18)

Q4

Master Thesis (30)
Summary
Information: MAI

MAI: Interuniversitary Master in Artificial Intelligence

- English (B2)
- 7 intensifications (not chosen at admission time)
  Data Science and Computational Intelligence; Multi-Agent Systems;
  Human-Computer Interaction; Hot Topics in AI and Professional
  Practice; Knowledge Engineering and Machine learning; Modeling,
  Reasoning and Problem Solving; Vision, Perception and Robotics.
  Assistive Technologies

- Acreditations: International Master AQU

- 90 ECTS : 1.5 years.
  30 Compulsory ECTS
  42 Electives among the intensifications
  18 TFM

  Industrial Agreements – Curricular Practicals, Labor
  Experience

- Grants, admissions (criteria selection) masters.fib.upc.edu
  NO entry on February

- No complementary courses
**Summary Information: MEI**

**MEI: Máster en Ingeniería en Informática**

- **Español/Català** (B2.1 de Español o Català, si no es lengua materna)
- **Únilco título con equivalencia a Ingeniería en Informática**
  - Permite optar a algunos puestos de trabajo de la administración pública y otras entidades
  - Ofrece una GRAN oportunidad a personas no Informáticas a formarse como Informáticas
- **Acreditaciones:** EQUAINE, AQU
- **90 ECTS : 1.5 años – Orientación Profesional**
  - 30 TFM,
  - 45 Obligatorios (36 de TI, 9 de Dirección)
  - 15 Optativos

**Convenios, Experiencia Laboral Reconocida, prácticas**

- **Mobility:** Second year 30 ECTS – TFM
- **Double Degree:** ISIMA, PUCP
- **Beques, admisión** (criterio de admisión): masters.fib.upc.edu
  Admisión condicionada en algunos casos con **complementos de formación**
MEI - Structure

Q1
Business & Management (6)
Information Technology (24)

Q2
Business & Management (6)
Information Technology (24)

Q3
Master Thesis (ideally internship) (30)
¿POR QUÉ EL MÁSTER EN INGENIERÍA INFORMÀTICA?
¡Este Máster equivale al título de Ingeniero/a en Informática!
MÁSTER MODALIDAD “EMPRESA”

https://masters.fib.upc.edu/masters/master-informatics-engineering-industrial-modality
Máster en Ingeniería Informática – Modalidad Empresa

- Formación teórica y práctica en diversas áreas de la informática
- Énfasis en la idea de Project Management y liderazgo de equipos
- Especialmente destinado a Graduado/as en Informática, pero abierto a otro/as graduado/as o Ingeniero/as

- Duración: 2 años (via lenta)
- Idioma: Catalán/Español
- Presencial: FIB, Campus Nord
- Horario: Lunes-Viernes de 14h-20h – 3 días
- 90 créditos ECTS
MEI: Industrial Modality

1.5 years

Q1 Q2 Q3

Formation: FIB and Industrial Work: Industrial

Formation: Industrial Work: Industrial

half year

Final Master Thesis
### Asignaturas por semestre...

<table>
<thead>
<tr>
<th>Via Ordinària</th>
<th>Modalitat Empresa</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Q1</strong></td>
<td></td>
</tr>
<tr>
<td>ACAP, CSI, SEU, SGI, PEGTI</td>
<td>SGI, CSI, PEGTI+SECS</td>
</tr>
<tr>
<td>+1.5 (1 assignaturta Direcció)</td>
<td></td>
</tr>
<tr>
<td><strong>Q2</strong></td>
<td>VPEI+FPEI, DGSI, ISDCM, + 7.5 (3 assignatures optatives)</td>
</tr>
<tr>
<td><strong>Q3</strong></td>
<td>TFM</td>
</tr>
<tr>
<td><strong>Q4</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

**Modalidad Empresa**
- Horario compacto: 3 tardes por semana en la FIB máximo

https://masters.fib.upc.edu/masters/master-informatics-engineering-industrial-modality
Double degrees
(rel.int@fib.upc.edu)

ISIMA
- 60 ECTS, second year.
- **Announcement February.** Academic year at **Host University starts on Setember**
- Conditions to start double degree: **60 ECTS passed. B2.1 English Level Minimum**
- TFM is done there (modality C)

PUCP
- 60 ECTS, second year.
- **Announcement February.** Academic year at **Host University starts on August**
- Conditions start double degree: **60 ECTS passed. There may be subjects in English**
Additional Information: Presentations...

- **MSEC**
  - Preinscripció Portal d'accés a la universitat (meitat Setembre normalment)
  - Promoció MSEC: Juliol i Setembre, normalment

- **Erasmus Mundus in Big Data Management and Analytics**
  - Admission already closed for funded students
  - Self-funded students (EU Countries) can apply up to June 30th 2020
MSEC: Màster de formació de professors de Secundària

- És necessari **English (B1)** – S’imparteix en Castellà/Català
- **Presencial i semipresencial:**
  - Batxillerat (Presencial),
  - Formació Professional (Presencial, Semipresencial)
- **Acreditations:** AQU
- **60 ETCS : 1 year**
  - Via lenta: 29 ECTS first year and 31 ECTS second year
  - Practicum – pràctiques en instituts

- **Web site:**
  https://www.fib.upc.edu/ca/estudis/masters/master-en-formacio-del-professorat-deducacio-secundaria-obligatoria-i-batxillerat-formacio-professional-i-ensenyament
## Summary Information: MSEC

https://aplicacions.ensenyament.gencat.cat/pls/apex/f?p=2011014:19:::NO:::

Ensenyaments que podeu impartir. Accés a la consulta per titulació.

### Informació

Per conèixer els ensenyaments que podeu impartir heu d'incloure en el regadre de la dreta totes les titulacions (inclosos els màsters i altres titulacions de llengües) que teniu i premir “Consulta” per visualitzar el cos i els ensenyaments.

- Algunes dels ensenyaments requeririen estar en disposició del màster de formació del professorat o equivalent. Aquesta informació la trobaré a la taula de resultats.
- Algunes dels ensenyaments requereixen havent superat una prova de capacitat (P.C.). Aquesta informació la trobaré a la taula de resultats.

Veure llista de titulacions que proporcionen el màster de formació del professorat o equivalent.

Veure prova de capacitat per especialitat.

#### Cercador

Cerca la titulació (per la descripció): Informática

<table>
<thead>
<tr>
<th>Ensenyament</th>
<th>Màster</th>
<th>P.C.</th>
</tr>
</thead>
<tbody>
<tr>
<td>580 Professors d'ensenyament secundari</td>
<td>507 Informática</td>
<td>Sí</td>
</tr>
<tr>
<td>591 Professors tècnics d'I.P.</td>
<td>TEC Tecnologia</td>
<td>Sí</td>
</tr>
<tr>
<td>595 Professors d'escoles d'arts plàstiques i disseny</td>
<td>627 Sistemes i aplicacions informàtiques</td>
<td>Sí</td>
</tr>
<tr>
<td>722 Milifiers informàtics</td>
<td>No</td>
<td>Sí</td>
</tr>
</tbody>
</table>

Ensenyaments que teniu possibilitat d'impartir amb altres titulacions. Visualitzar combinacions.
Summary

Information: Cybersecurity

- ETSETB (enrollment)/FIB
- 60 ECTS (1 year)
- Compulsory subjects: 30 ECTS
- Elective subjects: 18 ECTS
- Master Thesis: 12 ECTS
- English

TFM:
- Enterprise Internship
- UPC Research group
- Mobility: The duration of the master is usually enlarged to 3 semesters
Summary

Information: Erasmus Mundus BDMA

- 5 Universities
  (Université Libre de Bruxelles/Vrije Universiteit Brussel - coordinate)

- 120 ECTS
- Compulsory subjects: 60 ECTS
- Elective specialization: 30 ECTS
- Master Thesis: 30 ECTS
- English

- TFM: In any main or associated partner
- Most of students granted
  - Very competitive
- Price: Determined by the University Consortium – Close for funded students

Diagram:

1st semester
- Business Intelligence Fundamentals
  ULB (BE)

2nd semester
- Big Data Fundamentals
  UPC (ES)

Summer school
- European BI and BD Summer School (eBISS)
  Organised by one partner institution

3rd semester
Specialisation
- Large-Scale Data Analytics
  TUB (DE)
- Business Process Analytics
  TU/e (NL)
- Decision Support and Analytics
  CS (FR)

4th semester
- Master's Thesis
  In any main or associated partner

Final event
- Master's Theses Defences and Graduation Ceremony
  Organised by one partner institution
What is the price per ECTS?

1 ECTS → **41.17** Euros* for MEI
Grado EI – **39.53** Euros/ECTS

MIRI and MAI: **51.46** Euros/ECTS

* Prices 2019/20 European Union –
NON-EU: 61.75 MEI, Other Másters NON-EU: 77.19
Some frequent questions...

• If I’m finishing my undergraduate studies this year, can I apply to a master?
  – Of course!!! You can be admitted. You only need to finish on time to enroll on September. Indeed, if you present your TFG on October you can also apply to a master...

• Can I work and study at the same time?
  Yes! Of course!! there are several opportunities to do curricular practices in companies that can help you to obtain ECTS meanwhile you are doing your studies...
Some frequent questions about COVID19...

- **What about next academic course with covid19?**
  - Our objective are 100% contact classes. If not possible 100% due to medical recommendations… we would do our best to have contact classes with all students in a interleaved way...
  - We expect you to be here on September!

- **For new incoming students… what about enrolment?**
  - If it is not possible to do presential enrolment due to medical recommendations, UPC has informed us that it will be possible to do online enrolment
Master in Artificial Intelligence (MAI)

Master in Informatics Engineering (MEI)

Master in Informatics Engineering – Industrial Modality

Master in Innovation and Research in Informatics (MIRI)

Màster per al Professorat de Secundària,

Master in Cybersecurity

Erasmus Mundus Master in Big Data Management and Analytics

More Master Information

Info.masters@fib.upc.edu

(fib.vd.postgrau@upc.edu)
Daniel Jiménez-González
Vice-dean of Postgraduates Studies