www.barcelonatech.upc.edu

POSTGRADUATE PROGRAMMES

硕士课程 / 博士课程

2010-2011

UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH

硕士课程
博士课程

UPC BARCELONA TECH
IS HIGHLY INVOLVED
IN THE TRANSFER
OF TECHNOLOGY
AND KNOWLEDGE
TO COMPANIES AND
WIDER SOCIETY.

校长致词

Antoni Giró

加泰罗尼亚理工大学

（UPC Barcelona Tech）

创新、跨学科性和国际性是加泰罗尼亚理工大学（UPC Barcelona Tech）的特色。我们为学生们提供跨学科、全面的教育服务，以便其更好地适应传统和新兴生产部门的需要。

加泰罗尼亚理工大学始终关注基础科研，同时也强调应用研究，并取得了公认的成果。我校以传播知识为己任，始终处于世界科技的前沿，并致力于服务社会。

我们相信，在宣传册里，你能找到适合自己的信息和专业。UPC Barcelona Tech的大门始终向所有人敞开。

多年来，依靠强大的师资力量和成熟的教学模式，我校深受广大留学生的好评。每年约有2500名来自世界各地的留学生在我校求学，此外，还有1500名学生接受继续教育培训。

如果有任何疑问或者意见，请直接联系我们，我们会为你详细解答。

欢迎来巴塞罗那！欢迎加入UPC Barcelona Tech大家庭！

学习在 UPC Barcelona Tech

ACTIVELY INVOLVED IN YOUR LEARNING PROCESS

因为你要求

- 多学科专业、国际化视野以及知名大学
- 国际认可的学历

因为你想要

- 提升个人的专业能力
- 致力于建筑或理工科领域的国际前沿研究
- 拥有跨领域的技巧
- 为个人阅历增加国际化元素，在国外学习工作

因为你是

- 一个胸怀大志、坚持自我和积极向上的人
- 一个不断学习的人

加泰罗尼亚理工大学（UPC Barcelona Tech）

是一所公立高等学府。
我校在建筑和理工科领域的教学研究方面独树一帜:

It is recognized worldwide for its results in:

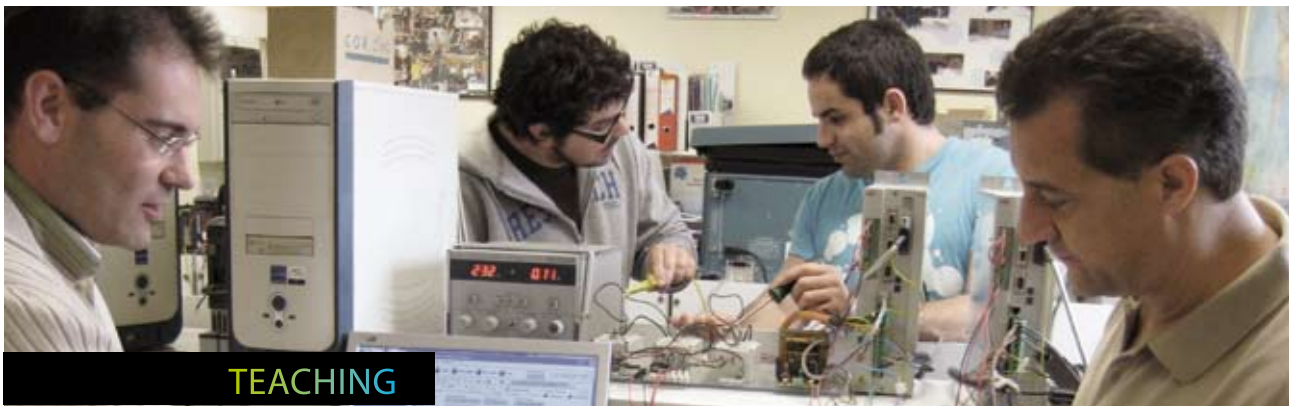
研究理论和应用科研方面取得显著成绩并获得广泛的国际认可。
与企业界和社会的紧密合作使得UPC高新科技的研发工作始终处于国际前列。

UPC BARCELONATECH是所有西班牙理工类大学中

- 科研成果最多的大学
- 西班牙国家科学基金会科研拨款最多的大学
- 科研成果创收最多的大学

UPC-BARCELONATECH是所有西班牙大学中

- 在计算机学和信息技术，机械、航海和航天工程，土木工程与建筑，电子电气工程与自动化控制，电子通讯技术领域科研成果最多的大学
- 欧盟第六框架计划（2002-2006）资助最多的大学



教学严谨、跨领域研究和国际化元素是我们的特色。
依据“欧洲高等教育区”的标准，我们在培养传统型人才的同时，
更为新兴行业输送具有最新理念和知识的精英人才。

UPC-BARCELONATECH是西班牙理工大学中：

- 博士项目比例最高的大学
- 外籍博士生最多的大学

UPC-BARCELONATECH是西班牙大学中:

- 外籍硕士生最多的大学

国际化理念让我校成为一所面向世界的开放型大学。
我们在欧洲和拉美地区享有崇高的声誉，
同时也和世界知名的科研以及教育机构保持着良好的合作关系。

学校的现状

学科领域

（截止2009年10月）

10 个校区

24 个院系

42 个部门

工作人员

2,713 名教师和研究人员（含900名兼职人员）

821 名临时研究员

1,584 名管理和服务人员

25,414 名本科生

2,184 名硕士生

2,912 名博士生（60%为外籍）

研究

77 个研究实体

17 个高级研究中心

7,120 个在研项目

2,403 篇公开论文

136 个获奖记录

213 篇博士论文

课程／项目

61 个本科专业

58 个硕士课程
（10个Erasmus Mundus项目、
20个项目采用全英语授课）

47个博士课程

347 个继续教育项目

3,575 名学生参与国际交流计划

国际化

96 个国际双学位项目

与其他国家的大学签署了275 份合作协议

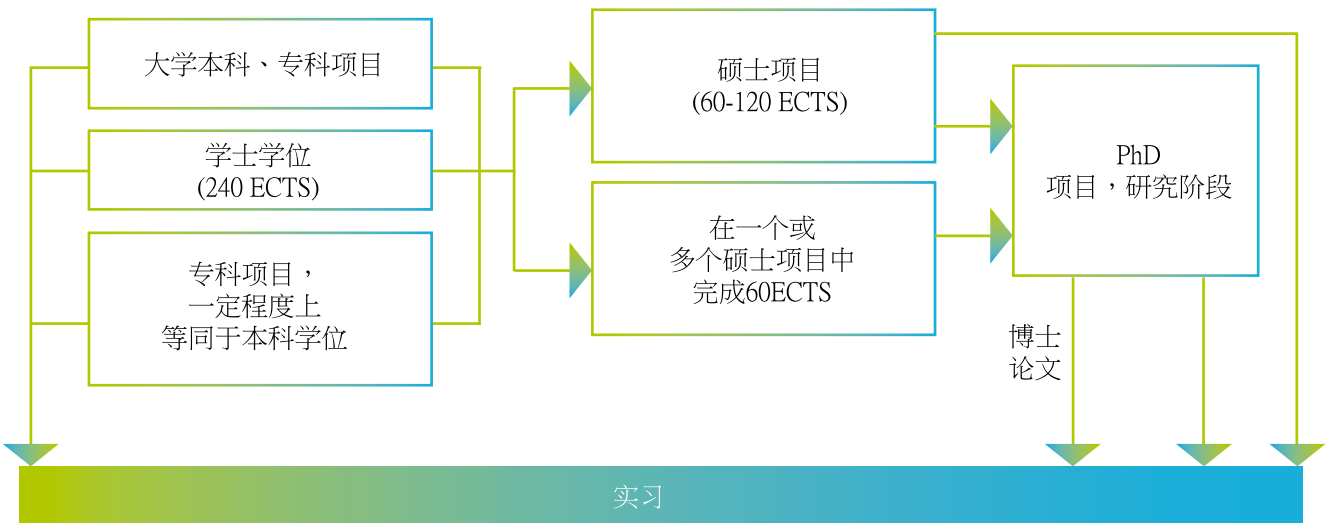
国际科研体系成员:

CESAER, CINDA, CLUSTER, EUA, TIME,
UNITECH

学科领域

建筑
物理
数学
商业管理
可持续发展和自然资源
航天工程
生物系统工程
土木工程
电信工程
信息工程
工业工程
机械工程
电气工程
化学工程

学位框架介绍图




英语授课的
硕士课程

Telephone: +34 93 401 62 00
E-mail: info@upc.edu
http://mastersdegrees.upc.edu

官方硕士是政府承认的正式学位。作为高等教育培训，具有很强的专业性或多学科性。不仅注重科研，同时也注重实践。此外，官方硕士也是申请博士项目所必需的学历基础。我校的官方硕士项目都具备很好的国际认可度。所有官方课程在获得巴塞罗那自治区政府授权之前，加泰罗尼亚大学系统质量研究所（欧洲高等教育区教学质量检核联合会下属机构）都会对学校相关的教学、师资和服务进行严格的评估调查。

官方硕士项目一般包含60-120个ECTS学分（欧洲学分转移系统）。每一个ECTS学分相当于20至30学时。一般情况下，每学年，一个全职学生最多可以修满60个ECTS学分。

UPC拥有强大的师资力量。除了专业教师，许多知名的研究人员也参与官方硕士的日常教学工作。UPC-BARCELONATECH有10个硕士项目被列入欧盟Eramus Mundus计划，这也使得我校成为拥有最多Erasmus Mundus计划项目的欧洲大学。

要求

如果你符合以下条件，你就可以登记申请我校的官方硕士学位：

- 西班牙大学的理工科或建筑方面的大学毕业证、学位证；西班牙大学工程技术或建筑技术方面的大专文凭。
- 外国大学的理工科或建筑方面的大学文凭，或通过西班牙政府学历本土化认证后具备同等学力的文凭。
- 如果申请人所在国的学历水平被证明与西班牙学历程度相当，申请人则不需要对原学历文凭进行西班牙政府的学历本土化认证。在这一情况下，如果该学生完成了官方硕士学习，其硕士学位具有完全的法律效力。
- 根据自身的情况，每一个硕士项目都有权对申请人进行必要的评估和测

录取

UPC－BARCELONATECH的硕士生，或参加由UPC－BARCELONATECH主导的跨大学硕士项目的硕士生，在注册时，请登录以下网站：http://mastersdegrees.upc.edu/preregistration

如果您申请的跨大学硕士项目不是由UPC-BARCELONATECH主持的，请您去主持大学注册。

日程表

以下时间表对UPC BARCELONA TECH的所有硕士专业均有效，但具体专业可以进行微调

- 秋季预注册：三月到六月
  公布录取名单：七月（最迟）
  注册：九月
- 春季
  预注册：十月至十二月
  公布录取名单：一月（最迟）
  注册：二月

学费与奖学金

官方硕士项目的学费由加泰罗尼亚政府确定，2009－2010年度，每个ECTS学分合计29.88欧元。

此外，学生有多种途径可以申请奖学金。请咨询以下网站：
http:// www.estudiarencatalunya.net
(section “University Life.”)

* Erasmus Mundus奖学金计划是由欧盟推动的，为宣传欧洲高等教育，通过奖学金的方式，吸引来自全球各地的杰出学生来走欧洲留学。Erasmus Mundus计划资助的硕士项目是高质量的标志。每一个项目都由三所以上的欧洲大学联合教学。详细信息请参看：
http://ec.europa.eu/education/external-relation-programmes/doc72_en.htm

MASTER IN ADVANCED MATHEMATICS AND MATHEMATICAL ENGINEERING

Contact: Antonio Rodriguez Ferran
Telephone: +34 93 401 56 97
E-mail:
antonio.rodriguez-ferran@upc.edu
http://mamme.masters.upc.edu

As reflected in its name, this master has a dual academic and professional orientation. On the academic side, it provides the skills and techniques needed in scientific research in general and, more specifically in mathematical research. On the professional side, the goal is to provide the students with an advanced background to work in interdisciplinary teams, in cooperation with engineers, physicists, biologists, economists, etc. The master benefits both from the leading role of Spanish mathematical research at the European level and the technological environment of a technical university such as UPC Barcelona Tech .

STRUCTURE

This comprises 45 ECTS in courses and a master thesis (15 ECTS). Master courses are offered in five broad fields: Algebra and Geometry; Discrete Mathematics and Algorithms; Modelling in Engineering and Biomedical Sciences; Differential Equations; Scientific Computing. In addition, up to half the course credits (i.e. 22.5 ECTS) may be taken from other master courses. This offers an excellent opportunity of specialisation in a given field according to one's preferences.

CAREER PROSPECTS

Some of the career prospects of master graduates are academic research (by pursuing a PhD in mathematics, sciences or engineering, for instance), mathematical modelling, finance, statistics, applied research (biomedical research centers, computer vision, etc.)

SPECIFIC REQUIREMENTS

This master is addressed to students with good abstract reasoning, interest in problem solving, strong work habits and a liking for mathematics. A scientific background is required, with basic mathematical foundations. For these reasons, a bachelor in mathematics, statistics, physics, engineering, economics or science is recommended. This list is non-exclusive, and all applications will be reviewed on an individual basis.

Credits: 60 ECTS

MASTER IN PHOTONICS

Contact: Ramón Vilaseca
Telephone: +34 93 739 8137
E-mail: ramon.vilaseca@upc.edu
Secretary: Alicia Mercader
Telephone: +34 93 7398915
Email: alicia.mercader@upc.edu
http://photonicsbcn.eu

The goal of the M.Sc. in Photonics is to give students strong foundations in different areas of photonics and to provide them with the tools to become first-level pre-doctoral researchers and/or entrepreneurs in the photonics field. All the research institutions in the area of Barcelona (UPC Barcelona Tech, Universitat Autònoma de Barcelona, Universitat de Barcelona, Institut Ciencies Fotòniques) participate in this M.Sc. providing a broad coverage of photonics (from theoretical to applied aspects). Lectures are given in English at the different Campuses of the involved universities.

STRUCTURE

The work plan presents a combination of compulsory, elective subjects (for a total of 35 ECTS and a M.Sc. Thesis (25 ECTS). Compulsory subjects give a strong foundation on photonics, including experimental lab activities and transversal knowledge (like business or communication skills). A total of 30 different elective subjects are offered to all students. Finally, students must be complete a M.Sc. Thesis work can be performed at any within one of the research groups giving support to the M.Sc.

The student may register for a larger number of courses, provided that the additional courses are taken in a second year and the M.Sc. Thesis is defended after succeeding in all the courses.

Download from the website all the necessary information about the course programme and course contents. Please check the available list of M.Sc. thesis as well.

SPECIFIC REQUIREMENTS

Bachelor's Degree (or equivalent degree) in Physics, Optics, Photonics, or Engineering, with at least three years of duration.

Students with Bachelors in other fields (Biology, Chemistry, etc.) may also be admitted.

CAREER PROSPECTS

For many business people, photonics is to 21st century what electronics was for 20th century. At present, there is a recognized deficiency in manpower both for research-related posts and for industrial jobs for photonics-related technologies. In addition, the creation of small tech-based spin-off companies in the area is requesting more and more specialized professionals.

Students, additionally, will get in touch with all the photonics-related research groups in the area (working in different fields spanning from Quantum Optics to Optical Engineering), where they might eventually follow-on to a PhD degree.

FURTHER INFORMATION

The master includes weeks of activities in the middle of the regular classes where students can get in direct contact with research centers or industries, or develop oriented practical sessions of each subject.

Credits: 60 ECTS (one year). Additional elective credits can be taken (in a second year).

MASTER IN COMPUTATIONAL AND APPLIED PHYSICS

Contact: Joan Sánchez Umbria
Telephone: +34 93 401 77 61 / 68 80
E-mail: masterfcia@fa.upc.edu
http://www-fa.upc.es/masterFCiA

With original ideas on the cross-curricular approach and the methodology, this inter-university Master intends to offer the student advanced and modern education in the field of computational and applied physics. Particular emphasis will be placed on simulation, modelling, supercomputing and advanced experimental techniques.

STRUCTURE

The Master includes entry-level courses for those students who lack the required initial training. Two specializations are offered: Computational and Applied Physics. In the former, Computational aspects of Quantum, Statistical, and Continuum Mechanics are emphasized. The computational tools provided to the students include Molecular dynamics, Montecarlo methods, Finite Difference, Finite Elements, and Spectral methods, all them in the framework of parallelism and supercomputing. The specialization on Applied Physics provides the knowledge on Materials Characterization, Smart Materials, and Dielectric and Ferroelectric Materials.

CAREER PROSPECTS

The Master will provide a solid education on modelling, programming and supercomputing techniques. With the methodologies and skills acquired, students will be able to research and operate intensive computing facilities. In addition, they will be qualified to work in industries requiring processing and analysis of large amounts of data and scientific software development.

FURTHER INFORMATION

The “Applied Physics and Simulation in Sciences” PhD programme, which follows this Master course, has been granted the Quality Award by the Spanish Education Ministry every year since the academic course 2002-2003.

Credits: Three different curricular designs: 60 ECTS / 90 ECTS (1 year and a half) / 120 ECTS (2 years)

MASTER IN PHOTONICS ENGINEERING NANOPHTONICS AND BIOPHOTONICS EUROPHOTONICS

Contact: Ramón Vilaseca.
Telephone: +34 93 7398137
Email: ramon.vilaseca@upc.edu
Secretary: Alicia Mercader.
Telephone: +34 93 7398915;
Email: alicia.mercader@upc.edu
http:// www.europhotonics.org

ERASMUS MUNDUS

The goal of the Europhotonics Erasmus Mundus Master is to give students strong foundations in different areas of photonics, in particular in emerging areas that are becoming increasingly important for present and future technological development. The Master provides the students with the tools to become first-level pre-doctoral researchers and/or entrepreneurs in the photonics field. Universities and research institutions in three European Excellence Campus: Marseille (France), Karlsruhe (Germany) and Barcelona (Spain), including UPC Barcelona Tech, Universitat Autònoma de Barcelona and Universitat de Barcelona and Research Institute of Photonics Science (ICFO) participate in this M.Sc. providing a broad coverage of both theoretical and applied aspects.

STRUCTURE

The work plan of the Europhotonics Erasmus Mundus Master presents a combination of compulsory and elective subjects (for a total of 90 ECTS), followed by a M.Sc. Thesis work (30 ECTS) to be performed the last semester. Compulsory subjects are offered mainly during the first two semesters (in Marseille and Karlsruhe) and give a strong foundation on photonics, including experimental lab activities and transversal knowledge as well as an internship in a German company).

Most elective courses are offered in the third semester (in Barcelona, Karlsruhe and Marseille), and deal with specialized topics in the fields of Photonics Engineering (sensors, optical metrology, lasers, material processing, optomechanical systems, vision, etc.), as well as in the emerging fields of Nanophotonics and Biophotonics. Courses on Quantum Optics aspects, in particular in relation with Nanophotonics, can also be chosen. The student, with the advise of a tutor, may choose the itinerary he/she prefers. The final M.Sc. Thesis work can be performed at any of the research groups giving support to the Europhotonics Master.

SPECIFIC REQUIREMENTS

The student must have got a Bachelor Degree (or equivalent degree) in Physics, Optics, Photonics, or Engineering, with at least three years of duration. Students with Bachelors in other fields (Biology, Chemistry, etc.) may also be admitted.

A number of grants for students coming from European countries or from any other country in the world, are available, which are offered by the European Union. Further information can be obtained from the website

www.europhotonics.org

CAREER PROSPECTS

For many business people, photonics is to 21st century what electronics was for 20th century. At present, there is a recognized deficiency in manpower both for research-related posts and for industrial jobs for photonics-related technologies. In addition, the creation of small tech-based spin-off companies in the area is requesting more and more specialized professionals. Students, additionally, will get in touch with all the photonics-related research groups in the areas of Photonics Engineering, Nanophotonics (including Quantum optics aspects) and Biophotonics, where they might, eventually, follow-on to a PhD degree. To this respect, an Europhotonics Erasmus Mundus Doctorate Programme on the same topics is offered jointly by Marseille, Karlsruhe, Barcelona (ICFO and UPC Barcelona Tech) and Florence, and grants for students, offered also by the European Union, are available to enrol in that Doctorate Programme (see www.europhotonics.org for further details).

FURTHER INFORMATION

The master includes a two-month internship in a German company, at the end of the second semester.

Credits: 120 ECTS (two years). The student must stay the first semester (30 ECTS) in Marseille, the second semester (30 ECTS) in Karlsruhe and for the third (30 ECTS) and fourth (30 ECTS) semesters the student can choose between Barcelona, Karlsruhe and Marseille.

MASTER IN PURE AND APPLIED LOGIC

Contact: Rafel Farré
Telephone: +34 93 413 77 03
E-mail: rafe.farre@upc.edu
http:///www.ub.edu/masterlogic/2010/index-e.html

The Master is a biannual programme and it is aimed to provide a solid background in Logic. The courses cover a wide variety of areas: from Mathematical Logic to applications to other areas such as Computer Science, Artificial Intelligence or Computational Linguistics. Additionally, two foundation courses are also offered to students who require a basic introduction to logic or to mathematics.

STRUCTURE

The whole programme consists of a total of 90 ECTS credits distributed in four semesters. It comprises five fundamental courses on Mathematical Logic, Computability, Model Theory, Set Theory and Non-Classical Logics. These courses are compulsory for all students. The remaining courses are optional, covering wide range of subjects. Each course is worth 6 ECTS credits. Students can choose one of the following two options: the professional master programme or the research master programme:

Professional master programme: all 90 credits can be obtained by successfully completing courses, though there are other options.

Research master programme: students earn 60 credits by successfully completing courses, 24 credits by writing one or two introductory research papers, and a further 6 credits participating in research seminars.

Students choosing the professional option can complete courses in four semesters. Those choosing the research option, should aim to complete courses in the first three semesters, leaving the fourth to undertake and write up their introductory research work.

SPECIFIC REQUIREMENTS

Students wishing to be admitted to the Master must demonstrate that they have a working knowledge of English. The level B1 in the list of third languages' knowledge skills established in the Council of Europe's Common European Framework of Reference for Languages will be enough.

CAREER PROSPECTS

The master promotes the acquisition of skills required for a professional or an academic career: creativity, analysis of complex situations, innovation, learning capabilities, research capabilities, making strategic decisions. It also promotes other general capabilities and values such as communication capabilities, group work, and professional philosophy.

After completing the master the students will be qualified for: Professional jobs requiring a high capacity of analysis of complex situations and taking strategic decisions. Starting an academic career and undertaking research in many of the central areas in the field of logic.

FURTHER INFORMATION

Detailed information concerning admission procedures, syllabus, lecturers, research projects, awards, academic calendar, etc. may be obtained at the web site.

Credits: 90 ECTS

MASTER IN AEROSPACE SCIENCE AND TECHNOLOGY (MAST)

Contact: Ricard González-Cinca
Telephone: +34 93 413 41 53
Email: master.aerospace@upc.edu
http:// mastersdegrees.upc.edu/mast

This Master's Degree provides advanced training in the sciences and technology, currently most widely used in the fields of aeronautics and space. The Master's programme includes the study of theoretical and practical groundwork, techniques, methods and processes of current use in aerospace research.

STRUCTURE

The whole programme consists of a total of 90 ECTS credits distributed in three semesters of 30 credits each. Students may enrol the programme in September (mostly recommended) or February. Fall semester is devoted to mandatory courses and spring semester, to elective courses. Once students have completed 60 credits in courses, they must perform their Master Thesis (30 credits) in a department at the University or in an aerospace company

CAREER PROSPECTS

Graduates from this Master's Degree will be experts qualified to work in: University departments, institutes or research centres in order to produce a Doctoral thesis. R&D&I departments in aerospace field, industry or similar.

SPECIC REQUIREMENTS

Admitted degrees:

- Bachelor degrees in Physics, Chemistry, Mathematics, Biology, Geology.
- Bachelor degrees in Engineering (Aeronautical, Industrial, Telecommunications, Civil).
- Technical Aeronautical degree.

Admission Criteria:

Evaluation will take place according to the following points, as follows:

- Letter about the applicant's motivation to follow this Master and his/her research interests.
- Curriculum vitae.
- Academic record.
- Accreditation of a good knowledge of English.
- Two reference letters.
- Others

The admission of students with foreign degrees will be evaluated by the relevant committee.

FURTHER INFORMATION

This programme is supported by (international partners): Ministerio de Ciencia e Innovación ((MICINN), European Space Agency (ESA) and Centre National d' Etudes Spatiales (CNES).

Credits: 90 ECTS

MASTER IN COASTAL AND MARINE ENGINEERING AND MANAGEMENT (COMEM)

Contact: César Mösso
Telephone: +34 93 401 6471
E-mail: cesar.mosso@upc.edu
Secretary: Genoveva Comas
Telephone: +34 93 401 6468
E-mail: genoveva.comas@upc.edu
http:///www.comem.tudelft.nl

ERASMUS MUNDUS

This Erasmus Mundus M.Sc. programme is organized by a consortium of five highest education institutions: Delft University of Technology (TU Delft); Norwegian University of Science and Technology (NTNU); University of Southampton (Soton); City University (City) and UPC Barcelona Tech. It is designed to train students within a broad curriculum that will allow them to improve Coastal and Marine Engineering and Management. This M.Sc. will provide a broad European education relevant across the world. This includes the essential knowledge in engineering and management, taught within a sustainability framework that stresses ethical and long-term issues and responsibilities. The five partner universities have long-lasting relationships, both on a personal basis (teaching staff involved) and on an institutional basis (in terms of research and education). It also includes an integral educational component based on enhanced ethical development and multiface social capabilities

STRUCTURE

1st and 2nd semester will be spent at Trondheim and Delft, respectively, establishing a common broad foundation. 1st semester starts in middle August with a “Summer school”. 2nd semester starts at the end of January with a “Winter school” in Delft, where core teaching staff from all consortium members will participate. 3rd semester will allow specialization in one of the other three participating Universities, and 4th semester will be devoted to the Master Thesis completion (in any of those Universities where the student has attended). The proposed course scheme has been designed to be Bologna’s compliant.

SPECIFIC REQUIREMENTS

A university BSc degree in civil engineering, environmental engineering or degree in a subject relevant to the COMEM Programme, with a thorough general knowledge on the fundamentals in engineering or numerate physical sciences (the degree must represent a minimum of 180 ECTS).

A BSc Cumulative Grade Point Average (GPA) of at least 75 % of the maximum scale.

Certificate of English language proficiency (issued within the past two years): TOEFL (Test of English as a Foreign Language) score of at least 90 (internet-based test). Please note that we only accept the TOEFL internet based test, or IELTS (academic version) Overall Band score of at least 6.5, or The University of Cambridge ‘Certificate of Proficiency in English’ or the University of Cambridge ‘Certificate in Advanced English’. Exclusively nationals from the USA, the English speaking part of Canada, U.K., Ireland, Australia and New Zealand are exempt from the English language requirement.

A clear and COMEM relevant essay in English. This essay (1000 - 2000 words) should cover the following aspects: Academic and personal motivation to participate in the COMEM MSc programme; Which skills and abilities does the candidate have for COMEM; Three examples of master thesis topics that are interesting for the candidate; Which are the initial preferences for the semester 3 and semester 4 university of the COMEM programme.

A resume (curriculum vitae) in English.

CAREER PROSPECTS

Students will develop general skills (ethics, philosophy, integrated approach, multidisciplinary work) and will obtain specific knowledge applied to Marine and Coastal Engineering. In addition, they will gain a specialization and will develop those skills in the broad areas of environmental engineering and environmental management. Therefore, they will be able to work in almost any area related to Coastal Management.

Credits: 120 ECTS

MASTER IN HYDROINFORMATICS AND WATER MANAGEMENT (EUROAQUAE)

Contact: Manuel Gómez
Telephone: +34 93 401 64 75
E-mail: manuel.gomez@upc.edu
http://www.euroaquae.org

ERASMUS MUNDUS

University of Nice–Sophia Antipolis (F), Brandenburg Technical University Cottbus (DE), Budapest University of Technology and Economics (HU), UPC Barcelona Tech (ES), University of Newcastle upon Tyne (UK) are the partners of the 4 semester master's programme (2 years).

STRUCTURE

This master is organized in a pedagogic continuum, to provide introduction and common knowledge/ soft skills (first semester in all locations), acquisition and the use of the Hydro-Informatics concepts, methods and tools (second semester in UK), a thematic specialisation: hydroinformatics systems, urban water's management, inland water's management, decision support systems (third semester in all locations except UK) and a research project or professional practice (fourth semester in all locations).

SPECIFIC REQUIREMENTS

Admission criteria: A 2nd class degree from university (Bsc) or its overseas equivalent (min. qualification). Prefered first degree subjects are Engineering (any specialization), Environmental Sciences, Physics, Computer Sciences, Geography, Mathematics, Chemistry, Geology or a similar degree. Advanced level in Mathematics is required. Minimum TOEFL paper score of 575, TOEFL IBT score of 90, or IELTS of 6.5 is required.

CAREER PROSPECTS

Hydro-Informatics, a European concept, emerges as the central element for the progress of modelling activities and management of capacities. The main objective of the Master is to prepare and train future scientists and executive engineers in charge of modelling and managing projects in hydrotechnologies and environment. These professionals have vocation to assist local, regional, national and international collectivities and public services. They can also be involved in private companies. Specifically, the training of those engineers is oriented towards:

- Knowledge in major physical processes related to the water field
- Operational and technical know-how in Hydro-Informatics environments
- Decision Support Systems and real time control management
- Development and coordination of ICT environment
- Contributions to risk's analysis and strategy building
- Advice and support on decision making

FURTHER INFORMATION

Erasmus Mundus II Master Programme launched by the European Union. There are a set of 15 scholarships for Non-european students, and 15 half-scholarship for European students
In order to apply to an Eramus Mundus Scholarship, please apply for Admission to the programme before January 15th. Registration for the first semester can be done until July 31st 2010.

Credits: 120 ECTS

MASTER IN STRUCTURAL ANALYSIS OF MONUMENTS AND HISTORICAL CONSTRUCTIONS (SAHC)

Contact: Pere Roca
Telephone: +34 93 401 73 81
E-mail: pere.roca.fabregat@upc.edu
http://www.msc-sahc.org

ERASMUS MUNDUS

The objective of the M.Sc. is to offer an advanced education programme on Conservation engineering structures, focusing on architectural heritage. This Master combines the diversity of expertise at leading European universities. It offers education oriented to a multidisciplinary understanding of structural conservation through the involvement of experts from complementary fields (engineers, architects, materials scientists and others). The study programme is composed of eight units, with six sequential units, one unit on project-based and one about dissertation. The units are as follows: SA 1: History of Construction and of Conservation; SA 2: Structural Analysis Techniques; SA 3: Seismic Behaviour and Structural Dynamics; SA 4: Inspection and Diagnosis; SA 5: Repairing and Strengthening Techniques; SA 6: Restoration and Conservation of Materials; SA 7: Integrated Project; SA 8: Dissertation Units SA 1 to SA 6 include both theory and application, in a context of a project-led education. The Integrated Project is truly project-based course, oriented to solve a real engineering problem. The Dissertation aims at developing research and/or professional competences in the field of conservation and restoration of architectural heritage structures.

STRUCTURE

The M.Sc. lasts 12 months and its held on a rotating basis among the partners (University of Minho, UPC Barcelona Tech, Czech Technical University in Prague and University of Padova). Coursework is concentrated in two countries each year and dissertation work is divided into all the institutions involved. It is expected that students carry out the entire coursework in one University, and the dissertation in another one. For 2010/11 and even years, the coursework is to be held in Italy (Padova) and Spain (Barcelona). For 2011/12 and odd years, the coursework is to be held in Portugal (Guimaraes) and Czech Republic (Prague). The degree awarded is a Master's degree, provided as a double degree issued by the institutions involved.

SPECIFIC REQUIREMENTS

The admission requirements are: A good quality degree in Civil Engineering or equivalent qualifications. Architects whishing to apply should have a solid background in structures. Typically, students are expected to have a higher education degree with four or five years. Exceptionally, a higher education degree with three years will be accepted.
Students from non-English speaking countries are required to have one of the following certificates: TOEFL certificate paper based (minimum score 525), TOEFL certificate internet based (minimum score 72), IELTS certificate (academic version, minimum score 6.5) or other recognized language proficiency certificate.

CAREER PROSPECTS

Europe is a world's leader in knowledge's generation, methodology and technology, applicable to the conservation and restoration of the architectural heritage. The large investment made on recent years, lead to significant advances in experimental and numerical techniques applied to the conservation of architectural heritage structures. The course will provide education and new prospects to engineers and architects willing to acquire experience and develop their career in the study, conservation and restoration of existing constructions, focusing to architectural heritage and monuments.

Credits: 120 ECTS

MASTER IN COMPUTATIONAL MECHANICS

Contact: Pedro Díez
Telephone: +34 93 401 72 40
E-mail: sciencie@cimne.upc.edu
Secretary: Lelia Zielonka
http://www.cimne.com/cm-master

ERASMUS MUNDUS

The Master in Computational Mechanics is designed for students who wish to develop their knowledge and competency in the areas of Computational Mechanics with applications in solids, fluids and interdisciplinary fields. The goal is to provide them the skills for the modelling, formulation, analysis and implementation of simulation tools for advanced engineering problems. They will also gain skills for understanding these approaches in the broader context of engineering science.

STRUCTURE

The programme lasts two academic years (120 ECTS) and includes the Master Thesis, as well as a training in an industrial or applied research environment.

SPECIFIC REQUIREMENTS

Prospective students should hold a Bachelor degree (at least 180 ECTS or equivalent) in Civil, Mechanical or Aerospace Engineering. Candidates with a background in other engineering specialities or basic sciences (Mathematics or Physics) and a strong motivation for Computational Mechanics would also be welcome.

CAREER PROSPECTS

A recent report commissioned by the US National Academy of Sciences (Oden T.J., Research Directions in Computational Mechanics, National Research Council Report, USA, 2000) predicts that the next decade will experience an explosive growth in the demand for accurate and reliable numerical simulation and optimization of engineering systems. Computational Mechanics will become even more multidisciplinary than in the past and many technological tools will be, for instance, integrated to explore biological systems and sub- micron devices. This will have a major impact in our everyday lives. The proposed course is looking forward to addressing real educational needs in Europe and worldwide.

Credits: 120 ECTS

MASTER IN ENVIRONOMICAL PATHWAYS FOR SUSTAINABLE ENERGY SYSTEMS

Contact: Josep Bordonau
Telephone: +34 93 401 66 50
E-mail: josep.bordonau@upc.edu
http://www.kth.se/select

ERASMUS MUNDUS

The SELECT Masters programme starts from the concept basic renewable energy sources (sun, wind, geothermal and Moon driven tides) to establish the environomical pathways towards a future sustainable energy system. SELECT curriculum rests on a strong foundation in thermal sciences, emphasizing the thermodynamic tools of energy and thermoeconomic analysis. The SELECT Master programme offers a unique education, at a high academic level. It is an integrated programme from five European top universities in the energy area, and prepares the students for a direct industrial engagement.

STRUCTURE

SELECT gives a two semester advanced introduction to the overall environomical pathways concept at one university (KTH), followed by a specialization at the other participating universities (Politecnico di Torino, Helsinki University of Technology, Technische Universiteit Eindhoven, and UPC Barcelona Tech) in the third semester. In the fourth (final) semester the students can perform the MSc thesis in an industrial setting in common supervision with researchers from any of the participating universities. The programme offers extended industrial contacts as part of internships and seminars/workshops. The curriculum is highly integrated, first of all regarding to student and teacher mobility for certain common lectures, but also related to the extended use of remote teaching by the specialist teachers at all five universities, in conjunction with “face-to-face” and “virtual” interactive workshops and project courses. The programme offers a unique, modern and highly interactive learning material which enhances the student learning process.

SPECIFIC REQUIREMENTS

A completed Bachelor’s degree in Physics, Chemistry or Engineering (e.g., Mechanical Engineering, Chemical Engineering, Environmental Engineering or Electrical Engineering) corresponding to 120 ECTS, or equivalent academic qualifications from an internationally recognized university.

CAREER PROSPECTS

The SELECT programme offers the students a worldwide unique education, at a high academic level, from researchers/teachers at five top universities in the area. SELECT aims at a direct industrial engagement for participating students.

Credits: 90 ECTS for courses (67 on mandatory and 23 on optional courses) + 30 ECTS for the Master Thesis

MASTER IN ARTIFICIAL INTELLIGENCE

Contact: Miquel Sànchez-Marrè
Telephone: +34 93 4137836
Email: mai@lsi.upc.edu
http://postgrau.isi.upc.edu/mia

The Master in Artificial Intelligence (AI) is created as a synergy among the PhD programme on AI at UPC - Barcelona Tech, the Computer Science Engineering (CS Eng.) degree at UPC Barcelona Tech and the School of Eng. at Universitat Rovira i Virgili (URV), and the Faculty of Mathematics at Universitat de Barcelona (UB). The Master guarantees general knowledge in CS, which is equivalent to those of a CS Eng. degree. Moreover, it guarantees knowledge focused on 6 orientations in AI technologies or in a wider scope.

CAREER PROSPECTS

<table>
<tr><td>S1 (30)</td><td colspan="3" rowspan="2">Shared Courses with CS degree from Barcelona School of Informatics (UPC - BARCELONATECH)</td><td colspan="3" rowspan="2">Shared Courses with CS degree from Engineering School (URV)</td></tr>
<tr><td>S2 (30)</td></tr>
<tr><td rowspan="3">S3 (30)</td><td colspan="6">Master Seminars at UPC BarcelonaTech, URV, UB (mandatory)</td></tr>
<tr><td colspan="6">Methodology of Computer Science Research (optional)</td></tr>
<tr><td>Knowledge Engineering, Machine Learning and Multiagent Systems</td><td>Natural Language Processing</td><td>Reasoning and problem Solving</td><td>Soft Computing</td><td>Vision, Robotics and Distributed Systems</td><td>Machine Learning and Self-Organising Systems</td></tr>
<tr><td>S4 (30)</td><td colspan="6">Master's Thesis</td></tr>
</table>

SPECIFIC REQUIREMENTS

Students with Engineering's degree (5 years), or with Bachelor's degree (4 years) on CS or a very similar degree, could directly access to S3, coursing a minimum of 60 ECTS, depending on the previous subjects coursed and on legal regulations. In this case, the student must apply for the recognition of the remaining ECTS to complete the 120 ECTS. Students with a Technical Eng. degree (3 years) on CS or a very similar degree, who are enrolled in a CS Eng. degree (5 years) at URV or UPC Barcelona Tech, can undertake a double academic itinerary obtaining both the Degree on CS Eng. and the Master in AI. Students who are coming from other Engineer degrees, or other Sciences willing to improve their knowledge in AI, must demonstrate a sufficient level of CS knowledge to be enrolled in the first semester of the Master.

CAREER PROSPECTS

The Master is addressed to students interested in acquiring advanced knowledge in AI to undertake tasks with responsibility in industry, administration or in the academic worlds, either national or international. The programme covers many research areas related to design, analysis and application of AI. Students that undertake this master will be able to: i) Confront problems of high technical difficulties that require a certain degree of innovation and/or research; ii) Make decisions of strategic importance within their professional domain; iii) Continue PhD studies within the Technological domain of Information and Communication in the UPC Barcelona Tech, URV or the UB or even abroad.

FURTHER INFORMATION

Since the academic course of 2002-2003 the Artificial Intelligence PhD Programme, which follows this Master programme, has been granted the Quality Award by the Spanish Education Ministry in 2008/2009.

Credits: 120 ECTS

MASTER IN COMPUTER ARCHITECTURE NETWORKS AND SYSTEMS

Contact: Jaime Delgado
Telephone: +34 93 401 70 01
E-mail: mastercans@ac.upc.edu
http://www.ac.upc.edu/cans

The Master in Computer Architecture, Networks and Systems (CANS) is organised by the Computer Architecture Department. The aim of the Master's Degree is to train researchers who will work overseas integrating themselves in any research and development centre – public or private, national or international – in the fields of computer architecture, high-performance computers, operating systems, computer networks and distributed systems. All the subjects, except the Master Thesis, are optional. Therefore, students, in agreement with their advisors, may specialise in the topics they prefer.

STRUCTURE

It is a 120 ECTS credits programme to be completed in 2 years (4 semesters). Normally, the last semester should be devoted to the Master Thesis. Subjects are mainly divided into Basic and Advanced. Basic, ones are subjects belonging to the current Informatics Engineering degree studies. Advanced topics are provided by the Computer Architecture Department specifically for this master.

Depending on their background, students might be able to have some subjects recognised, so they should only register for Advanced subjects. In this case, they could need to follow just 60 ECTS credits. In other cases, also some basic subjects may be necessary.

CAREER PROSPECTS

Graduates of this Master's Degree will be experts in different aspects of research in the fields of computer architecture, operating systems and networks. They will be qualified to work in:

- Any business from the sector, particularly companies with R&D centers and/or companies that want to incorporate emerging technologies.
- Public and private research centres.
- University departments and centres with doctorate programmes developing PhD Thesis.

FURTHER INFORMATION

Apart from the regular subjects, prestigious visiting Professors teach short courses every year.

Credits: 120 ECTS

MASTER IN DATA MINING AND KNOWLEDGE MANAGEMENT

Contact: Tomàs Aluja
Telephone: +34 4016961
Email: taluja@em-dmkm.eu
http://www.em-dmkm.eu

ERASMUS MUNDUS

The DMKM (Data Mining and Knowledge Management) is a European master set up by a Consortium composed of six universities: UPC Barcelona Tech, University Paris 6, University Lyon 2, Polytech'Nantes, University "Politehnica" of Bucharest and University of Eastern Piedmont. It is supported by the European Commission through the Erasmus Mundus programme.The DMKM Master is a high quality programme intended to train specialized researchers, professionals and managers able to extract hidden knowledge from information recorded in databases and the web.

STRUCTURE

Students will follow their study track in two different universities of the Consortium. In the first year the student will remain the whole academic year at a French university, whereas in the second year the student will change to one of the remaining universities.
At the end of the studies, the student will receive the two national Master's diplomas from the universities in which he/she had studied, fully accredited and recognized by national instances, plus the Diploma Supplement with all information regarding the pursued specialties of every student.

PROGRAM

The Master credits are 120 ECTS. It runs on 4 semesters. The first one is devoted to basic training, whereas the two following ones are dedicated to acquire two specialities among six available ones:

- E-Science
- Data Mining and Complex System Modeling and Application in Social Sciences
- Knowledge and Decision
- Statistical Modeling and Data Mining
- Semantic Web
- Relational Data Mining

The fourth semester is devoted to an internship to perform the Master' thesis.

SPECIFIC REQUIREMENTS

The Master in DMKM is aimed at students from all over the world. Candidates must have a Bachelor degree (or equivalent) in the fields of Informatics, Mathematics or Statistics, as well as a good level of English (TOEFL 550 or equivalent). Candidates will be selected based on their academic profile, their motivations and their personal project.

CAREER PROSPECTS

Graduates from this Masters have opportunities to work in all areas where data is important for acquiring new knowledge and decision making. This includes companies in high-tech industry, business intelligence services, banking & finance, public institutions particularly in the fields of Health, Transport and Governance, and academic environments and research, where further developments in Genomic and Medicine research, among others, are still challenging.

Credits: 120 ECTS

MASTER IN COMPUTING

Contact: Maria J. Serna
Telephone: +34 93 413 7850
E-mail: mcomputing@lsi.upc.edu
http://postgrau.lsi.upc.edu/mcomp

This Master programme aims at providing a solid background in Computing for qualified professionals that must take high responsibility positions or start research activities in theoretical or practical aspects of Computing.

STRUCTURE

The whole programme consists of a total of 120 ECTS credits distributed in four semesters of around 30 ECTS each.

The first semester is devoted to basic subjects, the second semester is formed by specialized subjects, and the third one to research oriented subjects. Finally, the 4th semester is devoted to the Master Thesis. Thesis complemented with some transversal courses.

PROGRAM

Students can select between achieving a generic education on several subjects or focus on one of the following specializations

- Algorithmics and Programming
- Information Systems
- Visualization, Virtual Reality and Graphic Interaction

A personalized itinerary is designed for each student following the Master programme, to achieve the Master academic goals. Those goals are organized in three groups:

- To acquire the background equivalent to a Computer Science or Engineering Degree based on a solid knowledge of computer programming.
- To gain state-of-the-art knowledge in one or more specializations. This additional knowledge will not only cover their current trends in professional practice, but will also depends on the most recent theoretical and practical achievements that create the basis for the creation of new knowledge with mid- and long-term impact.
- To be acquainted with multidisciplinary skills which are relevant in the professional or academic practice.

SPECIFIC REQUIREMENTS

- Students with a first -and second-cycle qualification (5 years) or an undergraduate qualification (4 years) in fields closely related to computer science may be admitted directly to the third semester (S3). They will have to take a minimum of 60 ECTS credits and will need to obtain recognition for the remaining credits for the degree programme up to the total of 120 ECTS credits needed to complete the curriculum.
- Graduates in mathematics, statistics and engineering who wish to increase their knowledge of certain ICT fields will have to prove that they have sufficient knowledge of computer science to be able to take the subjects of the first semester of the Master's Degree.

CAREER PROSPECTS

The students completing the master will be competent for:

- carrying out professional activities that take strategic decision making and that require a high capacity of analysis and resolution of complex problems.
- creating and transferring research-based knowledge in the professional world.
- starting an academic career in research, by accessing a PhD programme.

FURTHER INFORMATION

The Master in Computing is linked to the PhD in Computing programme.

Credits: 120 ECTS

MASTER IN DISTRIBUTED COMPUTING (EMDC)

Contact: Leandro Navarro
Telephone: +34 93 401 68 07
Email: masteremdc@ac.upc.edu
http://www.ac.upc.edu/emdc

The Erasmus Mundus European Master in Distributed Computing was approved by the EU-commission in July 2009. It is a cooperation between Royal Institute of Technology (KTH) in Sweden, Instituto Superior Tecnológico (IST) in Portugal and UPC Barcelona Tech. It is a two-year Master's programme including built-in mobility for the students.
The EMDC aims at giving the best possible foundation for a career in research and development of scalable and reliable distributed systems. After the programme, students should not only understand and be able to use large distributed systems but they should be capable of designing and constructing such systems.

STRUCTURE

The programme comprises three semesters of course work and one semester for thesis work, 120 ECTS in total. For the first year of studies, students enter at IST or UPC Barcelona Tech, where courses cover the core aspects of distributed computing with tailored specializations. The specific profiles offered at IST and UPC Barcelona Tech address two different sets of concerns in design, development, evaluation, and evolution of distributed computing systems: overall system reliability at IST (fault-tolerance, interoperability, autonomic systems), performance and scalability at UPC Barcelona Tech (performance measurement, tuning, large-scale systems). The third semester is completed at KTH and contains advanced courses that integrate the contents of previous semesters. This motivates students to develop large-scale projects integrating both common and complementary skills acquired earlier, and developing research methodology and scientific writing, essential to pursue further studies and research.

The programme concludes with a master's thesis supervised by one of the three institutions.

SPECIFIC REQUIREMENTS

Previous studies :
A completed Bachelor's degree corresponding to 180 ECTS, or equivalent academic qualifications from an internationally recognized university. The degree of the bachelor should be Computer Science or equivalent. An excellent knowledge in operating systems, networking, programming languages, computer architectures and theory of computing is required. Language requirements: English proficiency.

CAREER PROSPECTS

The EMDC programme gives its students the best possible foundation for a career in research and development of scalable and reliable distributed systems. Upon completion of the programme, students will not only understand and be able to use large distributed systems, but they will also be capable of designing and constructing such systems. In addition, the programme's built-in mobility enhances the cultural awareness and adaptability of all its participants. These are highly sought-after attributes in the global job market of today.

Credits: 120 ECTS

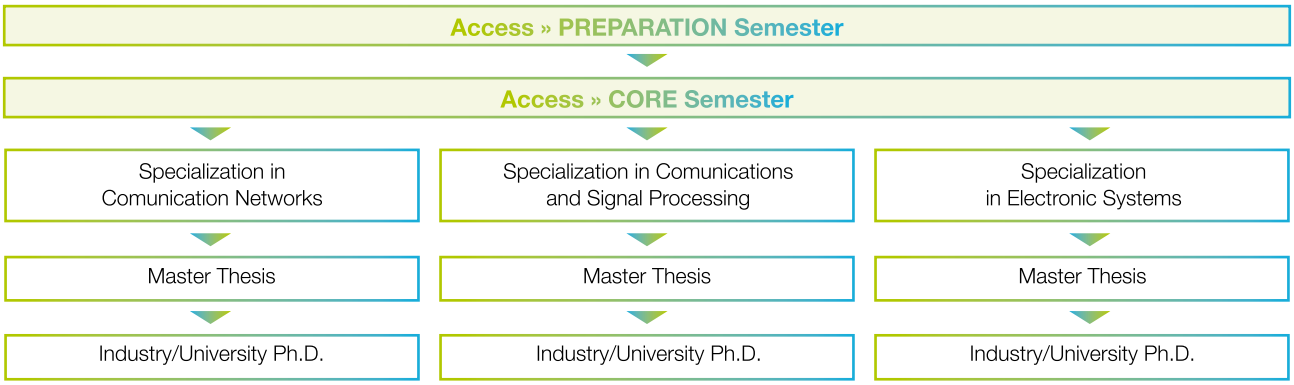
MASTER IN INFORMATION AND COMMUNICATION TECHNOLOGIES (MINT)

Contact: Josep Solé-Pareta
Telephone: + 34 93 401 1978
E-mail: mint@etsetb.upc.edu
Secretary: Montserrat Targarona
https://mastersuniversitaris.upc.edu/mint

The MINT master's programme consists on three semesters: the Bridge and Core Semesters, and the Specialty Semester. The Specialty Semester offers three options to choose: Communications and Signal Processing; Communication Networks; and Electronic Systems. The students enrolled in this Master are requested to take all the courses of the Core Semester, and at least 4 courses of the chosen specialty. The remaining 2 courses of the Specialty Semester are elective and students can choose among several subjects listed in the Master's web site.

STRUCTURE

The whole programme consists of a total of 120 ECTS credits distributed in four semesters of 30 credits each. Depending on the background of the students, the Master MINT has two access modes: the full programme mode and the direct mode. The full one is aimed at those students who require a preparation course, so they have to start from the Bridge course. The direct mode allows students to start by the Core semester directly. Students entering via the direct mode, can complete the Master in three semesters instead of four (90 ECTS). Both the Specialty Semester and the Master Thesis must be completed in any of the access modes. The following diagram illustrates such structure:



SPECIFIC REQUIREMENTS

MINT master students are required to:
• Be graduated from an accredited institution with bachelor's degree requirements (minimum) to be considered for admission. Since the academic level in the International MSc programme is highly advanced.
• Have a through basic knowledge in Electrical or Telecommunications Engineering fields or a closely related field. Previous applicant's diplomas should be of substantial quality.
• Have Proficiency in English.

CAREER PROSPECTS

The MINT master's programme is addressed to students who wish to become high-qualified professionals in the development and application of Information and Communication Technologies (ICT). Students will acquire in-depth scientific knowledge, the required skills to become specialists in different ICT areas as well as the ability to identify business opportunities in this field. Special attention is given to prepare the students to succeed in a competitive professional world. Graduates also finish the programme with the required background to follow PhD studies.

FURTHER INFORMATION

The master MINT programme is offered by the Electrical Engineering School of the UPC Barcelona Tech (Telecom BCN). Telecom BCN supports the Master with 32 modern teaching laboratories and 24 large and fully equipped research laboratories. Furthermore, the liaisons of Telecom BCN with ICT industries ensure that students will gain the needed hands-on training. For more details visit the Telecom BCN web site at http://www.etsetb.upc.edu/en

Credits: 120 ECTS

MASTER IN INFORMATION TECHNOLOGY (MTI)

Contact: Gemma Sesé
Telephone: +34 93 401 69 61
E-mail: info.mti@fib.upc.edu
http://www.fib.upc.edu/en/masters/mti.html

The MTI is an academically oriented master's degree which provides graduates with a professional specialization. It has been designed on the basis of the Barcelona School of Informatics (FIB) academic and administrative structure, with the collaboration of all the departments that have teaching responsibilities at FIB. The MTI aims to provide students with a general training in informatics and also with additional in-depth knowledge in some areas of Computer science. Students will specialize in one of the following areas: High Performance Computer Architectures, Software Engineering and Information Systems, Fundamentals of Computation, Information Management and Use, Interfaces and System Integration, Advanced Programming Techniques, Telematic Networks and Operating Systems or Supercomputing. MTI students are highly encouraged to carry out their Final Master Project within a programme of professional internships.

STRUCTURE

MTI will have a yearly periodicity. Assistance to the courses is mandatory and the total student's workload is 120 ECTS, which should be accomplished in four full-time semesters, or in six part-time semesters. Syllabus of full-time studies:

1rst semester	Computer Architecture Comp (7.2 ECTS)	Software Engineering I (6.0 ECTS)	Artifical Intelligence (7.2 ECTS)	Programming Project (4.8 ECTS)	Operating Systems Project (6.0 ECTS)
2nd semester	Compilers (7.2 ECTS)	Software Engineering (7.2 ECTS)	Computer Networks (7.2 ECTS)	Software Engineering and Databases Project (6.0 ECTS)	Information Skills in Information Technologies (1.2 ECTS)
3rd semester	5 Elective courses of the chosen area of specialization (30 ECTS)				
4th semester	Master project on the chosen area of specialization (30 ECTS)				

SPECIFIC REQUIREMENTS

MTI is specially addressed to technical engineers in computer science or a similar branch of knowledge. Applicants must provide a certificate of their proficiency in English (TOEFL 550 or equivalent is required).

CAREER PROSPECTS

MTI graduates will be experts in information technology and will be able to exercise their professional activities in this field in companies and public and private bodies, on a national and international level.

MTI graduates will firstly be able to face the problems of any information technology field and solve them by applying the methods and techniques of science and engineering.

Secondly, they will have the capabilities to specify, design, build, implement, verify, evaluate and maintain complex information systems that meet users' needs.

Thirdly they will manage information and communication technologies in any setting.

Finally, they will be skilful enough to take on high-responsibility tasks within organisations.

FURTHER INFORMATION

Every year, every company grants two scholarships of 7500€ for students who are moving to Barcelona in order to carry out the MTI. Scholarships will be granted exclusively on the academic performance basis of the applicants.

Credits: 120 ECTS

MASTER IN RESEARCH ON INFORMATION AND COMMUNICATION TECHNOLOGIES (MERIT)

Contact: Alejandro Rodríguez Gómez
Telephone: +34 93 401 10 69
E-mail: cap.estudis@tsc.upc.edu
http://www.meritmaster.org

ERASMUS MUNDUS

MERIT (European Master of Research on Information and Communication Technologies), coordinated by UPC Barcelona Tech, involves four top-level European institutions (UPC Barcelona Tech, Politecnico di Torino, Université Catholique de Louvain and Universität Karlsruhe) with strong ongoing research ties. It is supported by the European Commission through the Erasmus Mundus programme.

STRUCTURE

MERIT is offered either as an International programme or as a National programme. Students following the international programme must complete the course in two different institutions (1 year in each university). This way they will gain a broad view of IT thanks to the mobility requirements. Students following the national programme must complete the two years of the programme only in one partner University.

MERIT graduates are expected to develop specific engineering skills such as bibliographical research, technical writing, scientific communication, innovation management and research project organization. This knowledge is gained with specific courses, but also through the final master thesis and the specific mentoring provided by the student advisor. Core and transversal courses give the students a general background in communication and information technologies by providing the skills to develop a professional career in a changing and life-learning environment. Concentration courses allow students to acquire mastership into particular areas of knowledge.

PROGRAM

MERIT (European Master of Research on Information and Communication Technologies) is a research oriented Master programme focused on information technologies (IT) and applications with a special stress on communications:

1. Signal Processing and Communication
1. Communication and information theory
2. Speech and audio processing
3. Image and video processing

2. Communication Systems
1. Network Management
2. Mobile Communications
3. Optical Communications and Networks

3. Microwave & Photonics
1. Remote sensing & Imaging
2. Microwave and RF: Circuits and Systems
3. Antennas
4. Photonic and optical systems and applications

SPECIFIC REQUIREMENTS

The Master Courses and the Master Thesis take place in English language; a good level in spoken and written English is mandatory.

CAREER PROSPECTS

MERIT is intended to be a natural entrance gate to research. MERIT graduates are expected to access PhD programmes or R&D positions in industry or government. A large part of the credits earned in MERIT can be used to partially fulfil the requirements to obtain the PhD degrees at the four partner universities involved in MERIT. MERIT graduates are also valued professionals for the R+D industry departments. The specialization areas are devoted to provide skilled young professionals to the following areas: communication industry, automotive industry, aerospace industry and academic and research institutions.

Credits: 120 ECTS

MASTER IN TELECOMMUNICATION ENGINEERING MANAGEMENT

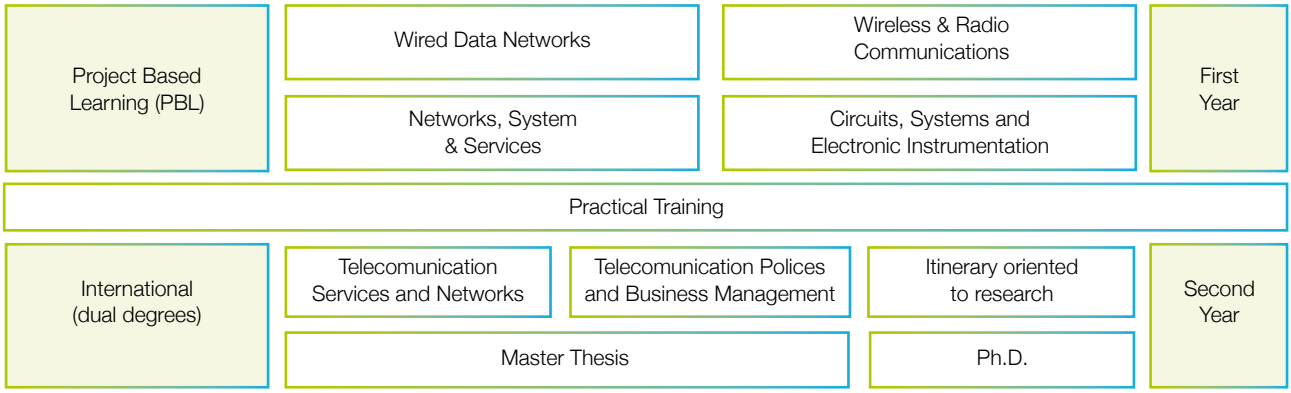
Contact: Silvia Ruiz/ Elena López
Telephone: +34 93 401 70 30
E-mail: EPSC.master.MASTEAM@upc.edu
http://epsc.upc.edu/en

MASTEAM is an international master programme that trains professionals aiming at complex multidisciplinary projects creating new technologies, new applications for existing technologies and telecommunication consulting services. It has two concentration itineraries: Telecommunication Networks and Services; and Telecommunication Policies and Business Management. The programme offers, as well, a research itinerary towards a European PhD degree.

STRUCTURE

MASTEAM applies Project Based Learning methodology. It comprises 120 ECTS distributed in 4 semesters (first year for core subjects, second for specialization and a M.Sc. Thesis). A maximum of 60 ECTS can be granted depending on each student's previous curriculum.

- Optional Internship (near 80% of students apply for it) choosing among 180 companies and research institutes.
- One semester or up to one year in another University, with the possibility to obtain a Dual Degree (near 30% of students apply for it).
- Two laptops per team.



SPECIFIC REQUIREMENTS

Holders of university degrees and diplomas (at least a bachelor diploma) related with telecommunication, electrical and electronic systems.

CAREER PROSPECTS

To design, develop and manage telecommunication projects; to create or innovate on products, systems and processes in accordance to regulatory and environmental guidelines; and to carry out advanced research in international R&D divisions.

FURTHER INFORMATION

For further information please check the MASTEAM's website (syllabus, research teams and projects, awards, scholarships, academic calendar, ECTS credits, etc.).

Credits: 120 ECTS

博士课程

电话: +34 93 401 61 14
邮件: info.doctorat@upc.edu

我们的博士项目都是官方性质，主要从事高级研究工作。其目的在于制作和发表高质量的博士论文以顺利获得博士学位。我校的博士项目中，有30个被列入西班牙教育与科技部“2008/2012重点学科”。UPC Barcelona Tech也是该计划中博士生比例最高的西班牙大学。
博士课程包含学习和科研两阶段内容。

申请

如果符合以下条件，你可以申请我校博士项目的学习：

- 拥有硕士学历，或者欧洲高等教育区颁发的同等学历
- 拥有非欧盟高等高等教育区的其他教育系统颁发的学位证书。无需进行本土化认证，但其前提条件是申请人所在国的学历水平被证明与西班牙学历程度相当，且申请人已经拥有硕士文凭，或者同等学历，并符合博士项目申请条件。
- 申请人已从UPC Barcelona Tech硕士课程项目中获得最少60个ECTS学分。

录取过程

请通过电子邮件的方式将你的申请通知项目导师或项目负责人。

具体的联系人信息请仔细查阅相关网站。

关于对申请者的评估，包括以下几个方面：

- 已有学历
- 个人简历，包括已有科研经历，如有成果，也请标明
- 曾获得的奖学金及/或相关资助
- 其他内容
- 为什么选择此博士专业

学费和奖学金

博士项目的学费由加泰罗尼亚政府确定。UPC Barcelona Tech为学生提供多种类型奖学金。具体情况请联系: info.doctorat@upc.edu

* “重点学科”
是由西班牙教育部确定的，有着严格的评审和检查制度。

PHD PROGRAMMES

建筑技术，建筑和城市规划

博士项目	联系人
建筑设计	consuelo.jurado@upc.edu
建筑技术，建筑和城市规划	estructures.etsab@upc.edu
• 建筑，能源和环境	marta.corbera@upc.edu
建筑理论与历史	m.antonia.garcia@upc.edu
• 城市和系统化管理和评估	carme.salvat@upc.edu
• 城市规划	marta.sogas@upc.edu
建筑和设计中的视觉沟通	maria.ruiz@upc.edu

土木工程

博士项目	联系人
★ 土木工程	eugenia.bretones@upc.edu
★ 建设工程	montserrat.santos@upc.edu
★ 地震工程和结构动力学	postgrau.etcg@upc.edu
★ 环境工程	santiago.gasso@upc.edu
★ 岩土工程	postgrau.etcg@upc.edu
★ 海洋科学	genoveva.comas@upc.edu
航海科学与工程	mmargalef@cen.upc.edu
★ 的结构分析	rosa.maria.olea@upc.edu
交通工程和基础设施	monica.fernandez@upc.edu

工业工程

博士项目	联系人
★自动控制机器人和计算机视觉	noemi.zapata@upc.edu
商业行政和管理	nuria.gongora@upc.edu
★化学加工工程	adm.eq@upc.edu
电气工程	nuria.martinez@upc.edu
★材料科学与工程	olga.lopez-pous@upc.edu
机械工程，流体力学和航空	imma.pie@upc.edu
★ 自然资源和环境	llucia@emrn.upc.edu
★ 聚合物和生物高聚物	adm.eq@upc.edu
可持续性	catunesco@catunesco.upc.edu
项目和系统工程	maria.jose.moreno@upc.edu
★ 纺织和造纸工程	mcalvet@etp.upc.edu
★ 热工程	esanchez@mmt.upc.edu
★ 生物医学工程	marta.claros@upc.edu
★ 核工程	cristina.farre@upc.edu

(★) Quality Award granted programme

科学

博士项目	联系人
航天科技	daniel.crespo@upc.edu
★ 农业食品工程和生物科技	montserrat.marine@upc.edu
★ 计算和应用物理学	ana.calle@upc.edu
★ 应用数学	carme.capdevila@upc.edu
★ 光学工程	altisen@oo.upc.edu
★ 统计和业务研究	carme.macias@upc.edu

信息通信工程

博士项目	联系人
★ 人工智能	merce@lsi.upc.edu
★ 计算机结构	trinidad.carneros@upc.edu
★ 计算	merce@lsi.upc.edu
★ 电子工程	aurora@eel.upc.edu
★ 信号理论和通信	beni@tsc.upc.edu
★ 信息通信工程	gestio.academica@entel.upc.edu
环境互动和认知工程（ICE）	mjesus.compains@upc.edu

注：(★) 表示“重点学科”

巴塞罗那的生活

坐落于地中海沿岸，巴塞罗那丰富的历史和建筑文化遗产、文化张力、大都市魅力和优越的地理位置，都赋予了这座城市独特的魅力，是学习和生活的理想场所。

UPC Barcelona Tech的各大院系和校区主要分布在巴塞罗那市内，也有一些坐落于巴塞罗那的近郊小镇。所有的校区都临近便利的公共交通系统。

更多信息，请访问以下网站：
http://www.bcn.es/barcelonavistaper/en/index_en.html

学在UPC Barcelona Tech

实用信息

USEFUL INFORMATION

https://www.upc.edu/sri/students/international-students

住宿：

此外，巴塞罗那地区的大学大多和Barcelona Housing Service for Students (BHSS)合作，为学生提供合租、单身宿舍预定和大学宿舍信息等相关服务。

建议您在抵达巴塞罗那前，通过邮件或传真的方式提前预定在巴塞罗那的临时住所。

请与Barcelona Housing Service for Students联系，并明确各类住宿的价格。您确定选择后，Barcelona Housing Service for Students将会将相关地址提前通知您，便于您直接入住。

Barcelona Housing Service for Students Website:
www.bcn-housing-students.com

语言课程

UPC Barcelona Tech开设有西班牙语和加泰罗尼亚语言课程。
具体情况，请参照 **www.upc.edu/sri/students**. 中的students mobility office栏目。
其中也有其他类型的相关信息，请注意查看。

签证：

非欧盟国家的学生如果其在UPC学习逗留的时间超过三个月，需向所在国家的西班牙大使馆或领事处申请学生签证。学生在西班牙逗留期间，其家人可以陪读，但须获得相关签证。

注意事项：如果你在西班牙的学习逗留时间在六个月以内，须向西班牙大使馆或领事处申请“学习时间共180天”的学生签证。一旦你拿到这种签证，在西班牙期间，你将不能办理学生卡，也不能办理延期申请。
相关事宜请参照**http://www.upc.edu/eng** 中的“外国留学生”栏目。

医疗保险

如果你来自欧盟国家，也有社会保险，那么你应该去所在国办理相关医疗卡的变更手续。
如果你来自非欧盟国家，你应去咨询了解你所在国家的社会保障部门和西班牙社会保障部门间是否签署了相关的医疗协定。如果确有相关协议，请在所在国的相关部门办理相关手续，以便你在西班牙期间同样享受免费的医疗保障。
如果你不属于以上任何一种情况，那么你必须购买一份西班牙逗留期间的医疗保险。

硕士项目

Tel. +34 93 401 62 00
info@upc.edu

博士项目

Tel. +34 93 401 61 14
info.doctora@upc.edu

国际事务处

Tel. +34 93 413 75 05
area.relacions.internacionals@upc.edu

http://www.barcelonatech.upc.edu

UNIVERSITAT POLITÈCNICA
DE CATALUNYA
BARCELONATECH