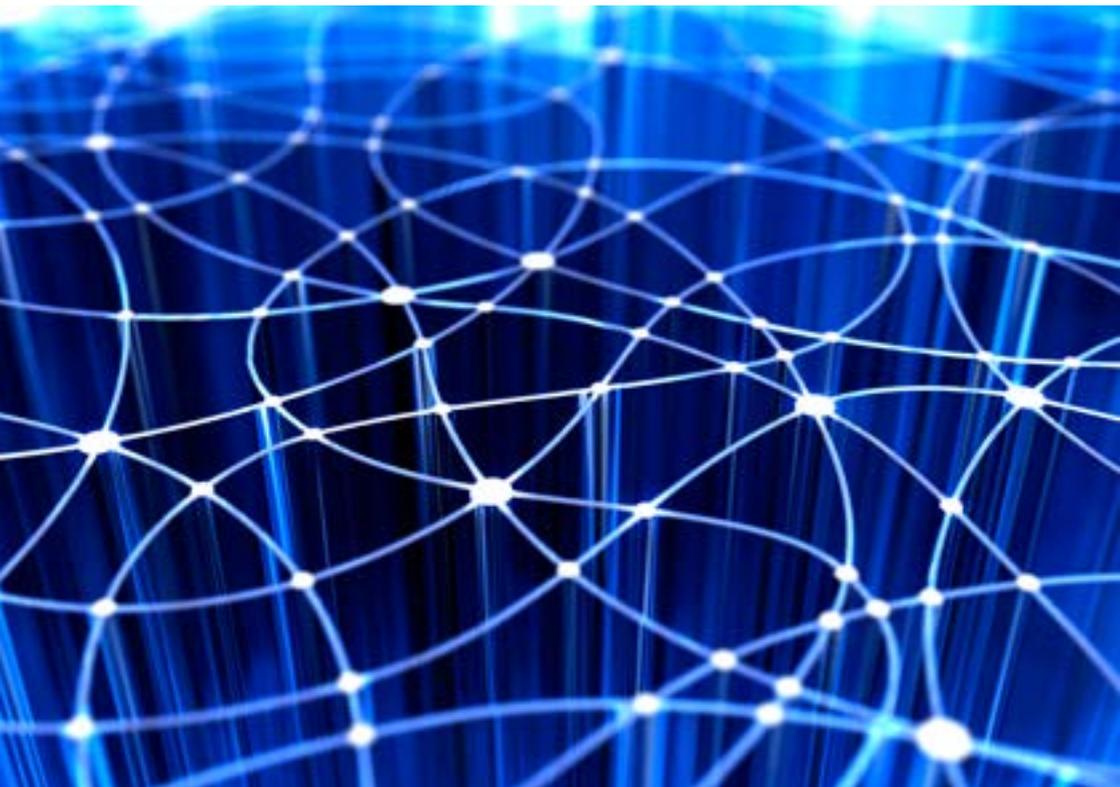


POSTGRADUATE COURSE ON R&D MANAGEMENT

3TH EDITION

2015/16



UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

School of Professional & Executive Development

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INTRODUCTION

Research has become a key factor in the growth and maintenance of competitiveness in all sectors, and is an activity that is growing and will continue to grow over the coming years, both in Europe in general and Catalonia in particular. Investment in research at a European level amounts to an average of 2% of GDP, with significant differences between countries, with figures ranging from less than 0.5% to more than 3.3% in Sweden, Finland and Denmark (the figure in Catalonia is 1.4%). The commitment and the need to increase investment in R + D is clearly reflected in the Europe 2020 strategic plan agreed upon in 2010 by the member countries of the EU, which sets a target for investment in research of 3% of GDP by 2020.

Despite the widespread belief that research is an academic activity, the truth is that over 64% of investment and expenditure on R+D comes from the private sector. The percentage of investment in research by universities amounts to 23% of the total, and the remaining 12% comes from the government.

Traditionally, in academia, the management and administration of research has been carried out by researchers without any specific administration and management skills. Moreover, research management in companies has been the responsibility of managers and directors without a solid grounding in the framework of research and its specific characteristics.

Scientific excellence alone is not enough to achieve excellence in a research group. With this in mind, it is necessary to professionalize research management and administration. With good management and administration of a research team, efforts can be optimized, the resources available can be organized more efficient, the results of fundraising can be significantly improved, risks in the execution of projects can be minimized and the impact of research outcomes maximized. This postgraduate course provides the necessary tools for efficient and effective management of a research group.

Research management and administration has its own specific characteristics, halfway between academia and the business world. Managing a research project is not like managing a conventional project, either in terms of how financing is attracted or the way the project is carried out, or in the way the achievement of objectives is assessed. Research management is also not an academic exercise. Without an impact on the productive sector and an associated business model, it will be difficult to find financing to carry out a research project.

This postgraduate course also provides participants with the specific tools, skills and abilities to succeed in the increasingly competitive calls to obtain funding, as well as effective project management and the application of the results to the market.

This postgraduate course is specially designed to train managers of research projects and groups in both academia and business. Its main objective is to facilitate the acquisition of the skills necessary for good management and administration of research projects and groups. The most innovative methodologies for project management are explained, enabling adjustment to the uncertainty and risks associated with research. The course also covers legal aspects, intellectual property rights, and financial issues, as well as business models that facilitate the implementation of the results obtained. We analyze the models for organization and functioning of research groups, how to obtain funding (with special emphasis on the H2020 programme), as how to certify research within the UNE 166002 norm.

The teaching team consists of high level professionals with an extensive track record as leaders of research groups and projects in both academia and business, and experts from the public sector. Their vision, based on different perspectives, enables the postgraduate course to achieve its objective of specialization and professionalization of leaders and managers of research that are in such great demand in the sector.

Magi Lluch-Ariet
Academic director

TAKE ON A GENUINE PROFESSIONAL CHALLENGE

- Activate and drive the motor for change in society through research activity
- Lead national and international research projects with a real impact
- Organize scientists and researchers so that they surpass themselves and improve their results every day
- Build an organization dedicated to efficient and sustainable research

WHO IS THE POSTGRADUATE COURSE IN R&D MANAGEMENT SUITABLE FOR?

- Professionals in the business world who wish to complement their abilities and learn the skills needed to manage scientific and research projects.
- Researchers and teachers from academia wishing to complement their scientific skills with thorough and professional management skills in their research activities.
- Professionals and researchers who are considering to submit proposal to attract the necessary funding to carry out a research project and want to maximize their chances of success
- Professionals and researchers who are considering focusing their professional career and specializing in research management and administration of research groups
- Participants in initiatives such as the Marie Skłodowska-Curie in the H2020 programme to foster research, which promotes the development of skills complementing their own technical specialist field

WHAT CAN WE OFFER YOU?

- Highly qualified teaching staff, with extensive experience in business, at universities and in government
- A pioneering programme in Catalonia, with a comprehensive view of the needs of a research professional
- A format and timetable compatible with your professional or academic schedule
- New professional competences in an expanding sector with huge potential

- The opportunity to carry out a real project as part of a research group
- The opportunity to present the latest trends in research management and administration within the framework of the R&D Management Workshop
- Networking with participants and postgraduate course teaching staff
- The opportunity to undertake professional work placements in companies and organizations in the sector

OBJECTIUS

The main competence that participants on this programme will acquire is the ability to lead a research group efficiently and effectively, as well as the optimal coordination of its research projects.

- The ability to create the ideal environment for the development of innovative ideas that go beyond the existing state of the art
- Knowledge of and the ability to apply strategies to retain talent within a research group
- The ability to measure the results and impact of research activities
- The ability to implement R+D management models according to the UNE 166002 norm
- The ability to undertake research activities according to the specific legal and financial characteristics of the sector (tax deductions, conversion of liabilities into assets, etc.)
- Mastery of the tools and procedures to coordinate and lead a research project, from the initial stages of generation of the idea, through its execution and finally the justification and presentation of results.
- The ability to plan a research project with an appropriate allocation of human and material resources to achieve the desired goals
- The ability to design a plan for risks and contingencies related to the research activity
- The ability to design a good policy for the communication of research results and to apply commercialisation strategies consistent with the dynamics of the scientific and academic environment
- Knowledge of opportunities for attracting funding and the ability to coordinate the preparation of a consistent European project proposal with the content that the evaluators expect

METHODOLOGY

The programme is carried out so as to cover all the aspects of a comprehensive training. It aims to ensure proper understanding of the knowledge and its practical application through a set of programmed activities, including the organization of the workshop on R&D Management and carrying out a project as part of a research group. The methodology therefore includes:

- Thematic exhibition of the programme by the expert teachers in each subject
- Real case studies solved by participants, individually and in groups
- Personal work
- Final tutored group project
- Continuous and personalised assessment
- Technical visits in state-of-the-art research facilities
- Organization and participation in the Workshop on R&D Management and other seminars

PROGRAMME

The programme is based on combining a theoretical aspect with strong practical orientation that includes visits and case studies, and organization of and participation in a workshop and carrying out a real project. The format of the programme enables the participants to make their postgraduate course compatible with their professional life and their personal schedule. The course includes participation in leading events in the industry, and even the opportunity to undertake professional work placements.

1. Research Project Management

Management and planning of a research project

- Basics of project management (PMI PMBOK)
- The lifecycle of a research project
- Planning a research project (objectives, team and working plan)
- Research project management tools (EMDESK)

Implementation and coordination of research projects

- The Agile methodology
- Teamwork. Strategies for effective cooperation
- Managing risks and deviations
- Innovation management models

Legal and financial aspects

- Legal foundations of research projects and intellectual property rights
- Financial management: Costs and budget
- Taxation in research activities
- Consortium agreements and financial guarantees

The use and application of research results

- The project's business plan and its alignment with the strategic plan
- The Communication Plan
- The plan for use and dissemination of results
- Protection of results: Patents and registered trademarks

2. Research Project Management And Administration

Research and innovation policies and funding instruments

- European research and innovation strategy for smart specialisation (RIS3)

- The Catalan research framework and RIS3CAT
- The European Union framework programme (Horizon2020)
- Agencies and instruments for fundraising

The organization and functioning of a research group

- Ethics and research. The researcher's code of conduct
- Publishing scientific papers and organizing events, workshops and conferences
- Innovative policies in human resources management. Retaining talent
- Taxation in research activities. Taxes and tax deductions

Certifications in research management

- R+D+I Model and management system
- Management of resources and scientific and technological facilities
- The indicators for measuring the results of research, analysis and improvement
- The UNE 166002: 2006 standard certification process

Technology Transfer

- Introduction to knowledge transfer
- Creation of a spin-off
- Research by contract
- Patent licensing

3. Project

- Preparation of a proposal for a research project
- Analysis of the template and instructions for its preparation
- Development Support (Help-Desk)
- Project presentation
- Assessment and analysis of the results

FOR ALL THOSE WISHING TO TAKE A STEP FORWARD IN THEIR PERSONAL AND PROFESSIONAL DEVELOPMENT

Broaden your knowledge with professionals who work at research and technology centres, innovative companies, universities and in government. Develop your skills next to people with shared goals and ensure your future in the world of research.

SOME PROJECTS CARRIED OUT BY STUDENTS

The application of the content produced during the postgraduate course involves producing a project that must include a significant amount of the knowledge acquired.

A standard project involves developing the proposal for an H2020 European project. Its assessment follows the same criteria of excellence in the idea, which must represent an advance in the state of the art, quality in the working plan and innovative management in its execution, and finally the impact, linked to a credible proposal for deployment.

Other types of project can also be carried out at the request of the students.

The projects can be simulated and carried out as an academic exercise simply for the postgraduate project, or they may be real projects resulting from the professional activity of students and presented as a project in the postgraduate course.

Examples of projects carried out in previous years:

- **R&D Management office**
Design of services in a newly established research project management office
- **Integration of polypharmacology, next generation sequencing data and biochemical network analysis to guide clinical management of breast cancer**
Research project proposal submitted to an H2020 call (PHC-2014-two-stage)
- **Agile LifeSci Project Management**
An Agile based methodology for the management of research projects in the field of life sciences
- **Cooperation for innovation and the exchange of good practices: Strategic Partnerships for higher education in Europe, supported by Erasmus + programme**
Research project proposal submitted to an Erasmus+ programme call

TECHNICAL VISITS

Visiting leading research centres and finding out about the services they offer enables us to gain first-hand experience of how the infrastructure available to the scientific community at the highest international level really works. The visits organized as part of the postgraduate course include an in situ explanation of the facilities and their research activities. Examples of visits carried out previously include the ALBA synchrotron, the National Centre for Genome Analysis, the Mare Nostrum supercomputer and the Barcelona Science Park.

Qualification:

Postgraduate diploma issued by the Polytechnic University of Catalonia

Duration:

20 ECTS (120 teaching hours)

Date conducted:

5 November 2015 to 28 June 2016

Timetables:

Tuesdays and Thursdays
from 18:30 to 21:30

Registration fee:

3,500 euros

Language of instruction:

English / Spanish

Location:

Tech Talent Center 22@
C/ de Badajoz, 73-77
08005 Barcelona

More information at:

Telephone: (34) 93 114 68 05
Discounts, scholarships and grants:
www.talent.upc.edu

TRAINING OF PROFESSIONALS AND FOR PROFESSIONALS

The teaching team consists of experts in the research world who will ensure that you receive high quality training and the most innovative knowledge in the industry. Their approach is intended to convey not only their knowledge but also their experiences in the management and administration of research in different areas (public, private and academic) and in different sectors (life sciences, engineering, etc.). This is all aimed at increasing your knowledge, but above all at developing your potential.

Academic Management

Lluch-Ariet, Magí

A graduate in Computer Science from the UPC, and the holder of a three-year degree in Advanced Studies in the area of Computer Languages and Systems, and a master's degree in Information Society and Knowledge from the Open University of Catalonia. Head of the Personalized Computational Medicine research unit at the Barcelona Digital foundation and a researcher in the Telematics Engineering department at the UPC. He is an expert research director at Spanish and international level, and the leader of projects funded by the European Commission and Spanish national agencies. Member of the Catalan Artificial Intelligence Association, the "European Association of Research Managers and Administrators" and the Catalan College of Computer Engineering.

Teaching staff

Arroyo Moliner, Liliana

A doctor in Sociology and member of the company Ethicas Research & Consulting. A social researcher focusing on the field of security, privacy, resilience and the social impact of technology. She is currently involved in several European projects related to technology, society and security. She previously worked in the area of New Religious Movements and the sociology of organizations, focusing on the dissemination processes of cultural innovations. She has been a leading member of several organizing committees of scientific conferences and seminars, in Spain and internationally.

Barba Ibáñez, Enric

A doctor in Telecommunications Engineering. Holder of a master's degree in Business Management and Organisation and Six Sigma Black Belt Master's Degree. He has also completed postgraduate studies at ESADE, IESE, IMD, the Technology Institute of Pasadena and the Center for Industrial Cooperation in Tokyo. General manager of the B2B Division at CIRSA. He has been Senior Vice-President of Engineering at TERRA, General Manager at SONY, and General Manager at ROCA YORK Portugal, among other positions. He is the author of several books on innovation and Six Sigma, including "Innovació: 100 consells per inspirar-la i gestionar-la" [Innovation: 100 tips to inspire it and manage it].

Belda Reig, Ignasi

A doctor in artificial intelligence (UPC) and computer engineering (URL). As a researcher, he has experience at the Institute for Research in Biomedicine in Barcelona, the University of Illinois at Urbana-Champaign, and the pharmaceutical multinational AstraZeneca. He is the founder of four biotechnology companies in Catalonia and the United States. He is the Director of Intelligent Pharma, the first of them, which has received a dozen awards for being one of the most innovative start-ups in the country.

Borràs Picas, Sara

Holder of a master's degree in Political Sciences and the Head of the European Projects Office at the Polytechnic University of Catalonia since 2004. She has managed and led European projects within the 5th Framework Programme, and has been responsible for Spanish and Catalan Eurociencia and Connect-EU national projects. She has also acted as an advisor to ANEP (Ministry of Education) and the co-editor of the guide "Management of total costs in the 7th Framework Programme" published by the TTO Universities network and the Government of Catalonia's "Guide to calculating indirect costs in the 7th Framework Programme".

Burriel Fuster, Brisa

A graduate in law from the UB and the holder of a master's degree in Legal Sciences (UPF). She currently works as a lawyer for the UPC's legal services, where she is responsible for the legal aspects related to the execution of research projects. She has extensive experience in the implementation of the legal framework applicable to research, and is an expert on consortium agreements, licenses, intellectual property and R+D contracts.

Martí i Costa, Jordi

A specialist in business collaboration, strategy and innovation. The founder of Altrium, he worked as Coordinator of Strategic Planning at Menta-Auna, Director of Expansion and Innovation at Stenco, Director of Planning at the COEINF and as Product Manager at the Planeta Group, as well as on business start-up projects for Barcelona City Council. He has a degree in Business Sciences and an MBA from ESADE and a Master's degree in Internet Management (ICT). He is a consultant in strategy validated by ACC10 and in innovation validated by Improve-EU.

Pegueroles Vallés, Josep

Doctor in Telecommunications Engineering (UPC). He currently teaches at the ETSEIB, where he is a tenured lecturer at the Department of Telematics Engineering. He researches as a member of the Information Security Group: security protocols in communication networks, especially for medical applications, with an emphasis on the aspects protecting the privacy of users' data. Lead researcher of various competitive research projects at Spanish and international level.

Purroy Vazquez, Jesús

Doctor in Biology (UB) and Management Development Program (IESE). After seven years as a researcher in industrial research and university environments, he joined the Barcelona Science Park, where he has held several management positions. He is Technical Director of Scientific and Technological Services, head of technology platforms at the Park, and responsible for science outreach projects. During this time he has promoted the business of platforms as providers of contract research, opening up new national and international lines of business.

Rovira Pato, Lluís

Doctor in Biology by the University of Barcelona. Director of CERCA, Institution devoted to support and facilitate the research activity of the R&D Institutes promoted by the Catalan government. His current research activity is in Bibliometry. He started working on research management and evaluation at the Generalitat of Catalonia, where he has been Evaluation Director and Deputy Director in AGAUR (Catalan Agency for University and Research Grants), and Deputy Director General of Research.

Sanz Ausàs, Mariona

A graduate in Economics and Business (UAB) and the holder of a master's degree in European Integration (Free University of Brussels). Director of the Business Innovation Unit at the Catalan agency for business competitiveness (ACC10). She has been manager of International R+D at ACC10, the head of European programmes at CIDEM and the head of the projects office at IN3 - UOC.

Torras Garcia, Carles

A holder of a degree in Industrial Technical Engineering (EUITIB), an MBA from La Salle, a Master's degree in Quality Management (ICT/UPC) and Organizational Development and Process Consulting (Itamar Rogovsky). He has been Director of Quality in several industrial companies and has been linked to innovation since 2002. First as a collaborator with ACCIO, and then as a consultant. He is currently a consultant partner at vintepro - a company specializing in advice on innovation.

Collaborating Institutions:



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