

# MS ECE & MBA

## DOUBLE DEGREE PROGRAM

2018-2020



## CONTENTS

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### 1. INSTITUTIONS

P.03  
CMU  
U.PORTO  
PORTO BUSINESS SCHOOL

### 2. THE PROGRAM

P.06-07  
OVERVIEW  
STRUCTURE  
COURSEWORK

### 3. APPLICATION

P.07  
ELIGIBILITY, ADMISSION AND FEES

### 4. ACHIEVEMENTS & PARTNERSHIPS

P.10  
RANKINGS & AWARDS  
ACADEMIC & INSTITUTIONAL PARTNERSHIPS

# 1. INSTITUTIONS

## CARNEGIE MELLON UNIVERSITY

Carnegie Mellon University is a global research university with more than 11,000 students, 86,500 alumni, and 4,000 faculty and staff. ECE is the largest department within the Carnegie Institute of Technology. ECE has over 100 faculty members, including research, adjunct, and courtesy faculty. The department serves about 450 undergraduate and approximately 400 graduate students.

/ Exciting new research is taking place in ECE. Cutting edge research areas include cybersecurity, information processing and storage, and nano-enabled technologies. Many interdisciplinary research centers and laboratories have a home in the ECE Department.

/ The ECE Department collaborates with partners from academia and industry both locally and worldwide. While the majority of the work takes place on the Carnegie Mellon Pittsburgh campus, collaborations extend far beyond. ECE is constantly engaging in global collaborative research and teaching efforts through extension of academic programs and research agreements.



## UNIVERSITY OF PORTO

The University of Porto is over 100 years old and is among the largest and best education and research institutions in Portugal.

/ Over 31,000 students, 2,300 faculty and researchers along with 1,600 administrative staff are part of its 15 schools and 69 scientific research units, spread across 3 university campuses located in the city of Porto. Every year, over 3,500 international students choose this university to complete their education. U.Porto is responsible for over 23% of the Portuguese articles indexed each year in the ISI Web of Science, and its innovation has generated more than 120 national and international patents. The U.Porto is considered the best Portuguese university and is listed in the Times Higher Education Ranking.

/ The Faculty of Engineering is the largest school at U.Porto, with over 7,000 students and more than 400 teaching and research scholars. The ECE Department offers several graduate programs at master and doctoral level, while developing cutting edge research in collaboration with several national and international partners.



## PORTO BUSINESS SCHOOL

Porto Business School is the business school of U.Porto. Its unique governance structure involves top business leaders and 36 large organizations, ensuring also a practical approach to management education.

/ The school is currently listed In the Financial Times Executive Education worldwide ranking and its MBA programs have been internationally accredited by AMBA and EFMD/EPAS.

/ Porto Business School receives around 3000 students annually and offers a wide array of executive education programs. This includes 18 annual postgraduate programs and shorter courses on all areas of Management, as well as applied research services and customized training programs for companies.

## THE MAGELLAN **MBA**



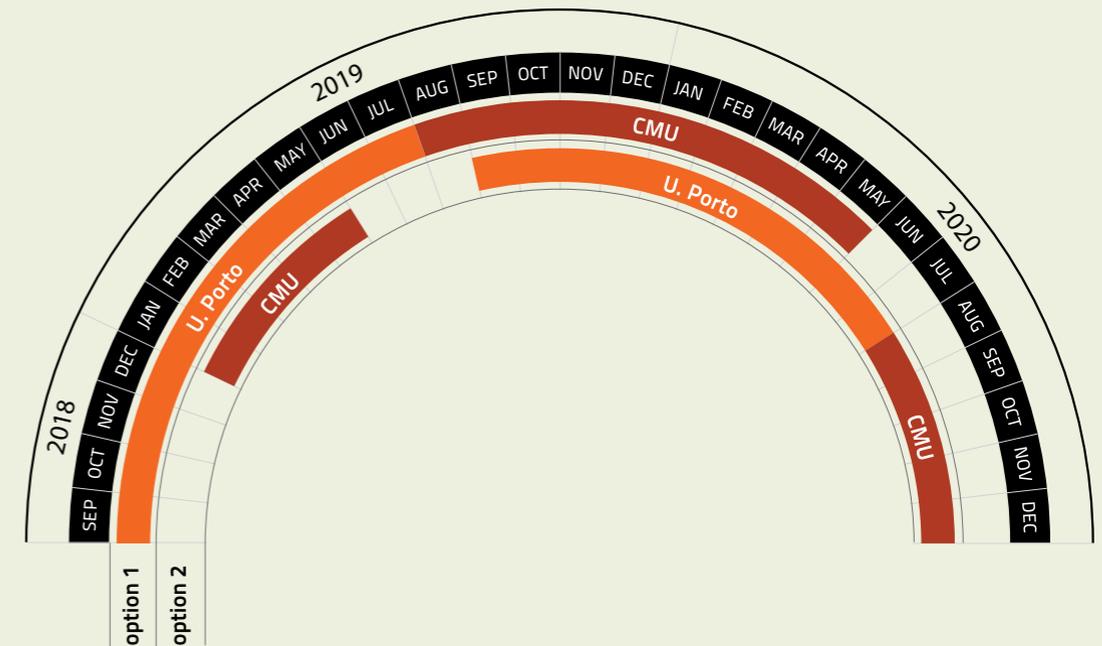
# 2. THE PROGRAM

## OVERVIEW

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ESSENTIALS	VALUE PROPOSITION	TARGET PUBLIC
<p>A two-year double degree international program that includes:</p> <ul style="list-style-type: none"> <li>/ Professional MS in Electrical &amp; Computer Engineering (awarded by CMU)</li> <li>/ MBA Diploma (awarded by Porto Business School)</li> </ul>	<p>/ Delivered by a leading US university (CMU) and a foremost EU academic institution (U.Porto)</p> <p>/ A curriculum focusing on technology and management</p> <p>/ State-of-the-art contents with a global perspective</p>	<p>/ Undergraduates or graduates with an engineering or science background</p> <p>/ Minimum of two years of work experience</p>

## STRUCTURE

- / The program runs for 2 semesters at the CMU campus, and 10 months at the U.Porto campus;
- / There are 2 possible configurations, allowing 2 intakes per year, one in the Fall semester and another one in the Spring semester;
- / The 2018-20 edition will start on September 2018 at Porto Business School's campus, in Matosinhos (Porto).



/ The MS in ECE (96 units) corresponds to a total of 8 ECE courses (12 units each), with 6 courses typically taken at the CMU campus and 2 courses typically taken at FEUP (U.Porto);

/ The full-time MBA program (689 lecture hours, 80 ECTS – European Credit Transfer and Accumulation System) is fully run at the Porto Business School campus and includes an international week delivered at a foreign business school.

# COURSEWORK

## MS ELECTRICAL & COMPUTER ENGINEERING

### CMU

#### CMU (2 SEMESTERS)

AT LEAST 6 COURSES WITH THE FOLLOWING REQUIREMENTS:

RESTRICTED 60 (5 COURSES)	Courses must be at the ECE 600-level or higher ( <a href="http://www.ece.cmu.edu/prospective/graduate/courses.html">http://www.ece.cmu.edu/prospective/graduate/courses.html</a> ) or CS 700-level or higher
	12 units may be graduate project units
	The following ECE/CS courses may NOT be used as part of these 60 units: 18-601, 18-603, 18-605, 18-606, 18-700, 18-703 and 15-894
LESS RESTRICTED 36 (3 COURSES)	Any ECE course at 18-500 or above
	Any course from one of the following colleges or programs (with restrictions noted below)
	XX-600 or above from the following colleges: CIT, SCS, MCS, provided such a course outside of ECE does not cover essentially the same material as an undergraduate course in ECE or CS
	XX-600 or above from the following departments and programs: <ul style="list-style-type: none"> <li>. H&amp;SS: Center for the Neural Basis of Cognition (86-XXX)</li> <li>. Heinz School of Information Systems &amp; Management (95-XXX)</li> </ul>
	At most 12 units numbered XX-499 or below from the above colleges, departments and programs.
	Provided the course is not essentially the same in content as equivalent undergraduate courses in ECE or CS (i.e., courses below 18-500 or 15-600) AND less than 50% of the course grade is based on an individual project AND less than 20% of the course grade is based on attendance.
	Petitions for exceptions to these criteria are seldom accepted.

## FEUP

### FEUP (UP TO 2 ELECTIVES MAY BE FROM THE LIST BELOW):

1 <sup>st</sup> SEMESTER	2 <sup>nd</sup> SEMESTER
NETWORK AND SYSTEMS ARCHITECTURE AND MANAGEMENT  MACHINE LEARNING  MICROELECTRONIC AND MICROELECTROMECHANICAL TECHNOLOGIES  TEST AND DESIGN FOR TESTABILITY  DISTRIBUTED SYSTEMS AND NETWORKING	IMAGE ANALYSIS AND RECOGNITION  DISTRIBUTED SYSTEMS AND NETWORKING  COMPUTATIONAL LEARNING  VLSI CIRCUITS DESIGN  PROCESSING AND CODING FOR MULTIMEDIA INFORMATION OPTICAL  COMMUNICATIONS EMBEDDED SYSTEMS MOBILE COMMUNICATIONS
EMBEDDED SYSTEMS	

\*Changes in the actual offerings of each semester may occur after the publication of this brochure

# COURSEWORK

## THE MAGELLAN MBA

### PORTO BUSINESS SCHOOL

	FOUNDATION PERIOD Sep	FIRST TERM Oct — Dec	SECOND TERM Jan - Mar	THIRD TERM Apr - Jul
HARD SKILLS	<ul style="list-style-type: none"> <li>• Introduction to General Management</li> <li>• Quantitative Methods for Management</li> <li>• Financial Accounting</li> </ul>	<ul style="list-style-type: none"> <li>• Economics for Managers</li> <li>• Marketing</li> <li>• Finance I</li> <li>• Business Ethics</li> <li>• Human Resources Management</li> </ul>	<ul style="list-style-type: none"> <li>• Strategic Management</li> <li>• Change Management</li> <li>• Finance II</li> <li>• International Financial Statement Analysis</li> <li>• Management Accounting and Control</li> <li>• Logistics and Operations Management</li> <li>• Information Systems for Managers</li> </ul>	<ul style="list-style-type: none"> <li>• International Business</li> <li>• International Corporate Governance</li> <li>• Value Based Management</li> <li>• Marketing Simulation</li> </ul>
SOFT SKILLS*	<ul style="list-style-type: none"> <li>• Communication Techniques</li> </ul>	<ul style="list-style-type: none"> <li>• Organisational Behaviour</li> <li>• Team Management I (Outdoor)</li> <li>• Negotiation Skills</li> </ul>	<ul style="list-style-type: none"> <li>• Personal Development I</li> <li>• Personal Development II</li> </ul>	<ul style="list-style-type: none"> <li>• Team Management II (Sailing with a CEO)</li> <li>• Leadership</li> </ul>
ENTREPRENEURIAL & INNOVATION SKILLS		<ul style="list-style-type: none"> <li>Lean Launchpad - hands-on learning on starting an innovation driven company</li> </ul>	<ul style="list-style-type: none"> <li>COHiTEC Programme - Development of skills and behaviours to operate as competent technology entrepreneurs or as technology-product champions within existing firms</li> </ul>	<ul style="list-style-type: none"> <li>International Week</li> </ul>
CAREER DEVELOPMENT		<ul style="list-style-type: none"> <li>Self-assessment • Personal marketing plan</li> </ul>	<ul style="list-style-type: none"> <li>One-to-one interviews</li> </ul>	<ul style="list-style-type: none"> <li>Communication Tools • Talent Book • Talent Promotion</li> <li>Improving Programme (mock interviews)</li> <li>Mentoring Programme</li> </ul>
BUSINESS KNOWLEDGE & NETWORKING	<ul style="list-style-type: none"> <li>People Forum • Career Evenings • Networking events (alumni, employers/recruiters, school ambassadors, etc.) • Career opportunities • Talent Link • In the Spotlight with • Company Visits • Luncheons with CEOs</li> </ul>			

### ELECTIVE COURSES

A maximum of six elective courses will be chosen from the following areas of specialisation or concentration

#### FINANCE AND ACCOUNTING

- Mergers and Corporate Restructuring
- Financial Risk Management
- Financial Investments and Markets
- Project Finance
- Private Equity and Venture Capital
- Advanced Finance

#### ORGANISATIONAL DEVELOPMENT

- Digital Business Transformation
- Identifying Growth Opportunities
- Innovation and Creativity Management
- Business and Sustainability
- COHiTEC Technology Entrepreneurship and Commercialization programme\*
- Managing Non-Profit Organisations
- Business 360°

#### MARKETING

- Digital Marketing
- Services Marketing
- Pricing
- Relationship Marketing
- Consumer Behaviour
- Behavioural Economics and Decision Making

#### OPERATIONS

- Global Supply Chain Management
- Service Operations Management
- Purchasing Management
- Project Management

Note: This list shows examples of courses offered in recent editions. The list of elective courses may change, depending on student interests, and teaching resources. Magellan students choose their electives by the end of the first term.

### COHiTEC PROGRAMME

COHiTEC Programme was created in 2004 by COTEC Portugal – Associação Empresarial para a Inovação, with the objective of promoting the knowledge generation in Portuguese R&D institutions and the transfer of this to the market. The programme has the support of Fundação Luso-Americana para o Desenvolvimento and is held in partnership with North Carolina State University and Brown University. The programme has two goals:

- assessing the commercial viability of the products or services that can be obtained from the technologies proposed by participant researchers;
- inducing entrepreneurial and technology commercialization skills in the participants.

(\*) Soft Skills - Personal Development (pd) series of 4 courses constitutes an integral part of The Magellan MBA programme. Communication techniques starts the pd series, with a main goal – is designed to give participants the skills and confidence to deliver logical, persuasive and entertaining presentations. Team Management's aim is to provide a platform for successful team building and Team effectiveness. Personal Development I intends to promote self-reflection and debate about issues such as happiness, career management, personal branding and feedback & development plans; Personal Development II aims to develop leadership and interpersonal skills of the participants. To sum up the Personal Development skills acquired and honed during the programme, the series ends with Team Management II.

# 4. APPLICATION

## ELIGIBILITY

### ELIGIBLE CANDIDATES MUST:

- / Hold a Bachelors degree ( or equivalent) from an accredited university in Electrical /Computer Engineering or related fields
- / Be fluent in English (IELTS, TOEFL,...)
- / Possess at least 3 years of work experience \*
- / Provide a GMAT/GRE test score

## ADMISSION

/ Applicants will be jointly selected by CMU and Porto Business School, following review of submitted documentation and an interview (via Skype) by The Magellan MBA Admissions Committee

/ For the 2018-20 academic year applications can be submitted, until the 30<sup>th</sup> of June 2018, through [www.ece.cmu.edu/programs-admissions/ms-mba/](http://www.ece.cmu.edu/programs-admissions/ms-mba/)

## FEES

/ The annual tuition fee is 42,000 USD paid in installments at the beginning of each term

\* exceptions may apply in case the applicant shows an exceptionally strong academic and/or entrepreneurial background.

# 5. ACHIEVEMENTS & PARTNERSHIPS

## ACCREDITATION & MEMBERSHIPS (Porto Business School)

- / Accredited by AMBA (Association of MBAs)
- / Accredited by EPAS (EFMD Programme Accreditation System)
- / Member of AACSB (The Association to Advance Collegiate Schools of Business)
- / Member of UNICON (The University Consortium For Executive Education)
- / Member of the Project Management Institute
- / Member of PRME (Principles for Responsible Management Education)

## AWARDS

- / 1st Place in John Molson International MBA Case Competition 2011 (Montreal, Canada)
- / 1st Place at the "Idea to product" competition at the Cockrell School of Engineering, University of Texas at Austin, 2010
- / MBA Student of the Year (AMBA, 2014)
- / 2nd Place in the MBA Entrepreneurial Venture Award (AMBA, 2014)

## RANKINGS

- / FT European Business Schools Ranking 2017 - #59
- / #37 América Economía Best Global Business Schools Ranking 2014
- The Magellan MBA
- / CNN Expansión (Top 100 Business Schools Worldwide)
- / Eduniversal
- ECE at CMU
- / US News&World Report 2012 Computer Engineering  
Electrical Engineering
- / Times Higher Education World University Ranking

- / Shanghai Jiaotong University Engineering/Technology/C.S.

## RANKINGS & AWARDS

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## ACADEMIC & INSTITUTIONAL PARTNERSHIPS

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For more details about  
the MS/MBA Double Degree Program please contact:

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ACCREDITATIONS



MEMBERSHIPS



RANKINGS

