This master corresponds to the adaptation of the current regulations of the MASTER’S DEGREE in STATISTICS AND OPERATIONS RESEARCH (MIEIO UPC-UB), offered since the academic year 2006-2007, and has over 90 graduate students.

* Note to students of the previous plan (MIEIO UPC-UB): All activities carried out to date in the UPC-UB MIEIO and explained on the home page of the master (https://meioupcub.masters.upc.edu/), equally continue during 2013-2014.

MESIO UPC-UB is aimed at:

- **Graduates of the Degree in Statistics**, both to guide their future work with companies or institutions that need professionals in statistics and operations research and those with interests in a scientific / academic preparation for a PhD program\(^1\).

- **Graduates of other disciplines** (mainly Economics and Social Sciences, Engineering, Mathematics, Computer Sciences, Biology and Health Sciences) providing skills and basic knowledge of the discipline that enable them to use the tools and quantitative techniques in statistics and operations research in their profession, each within its scope.

\(^1\)Graduates in Statistics must complete 30 credits of training complements.

The MESIO UPC-UB distinguishes two pathways from the start of the studies:

- The **Pathway 1** is basically designed for students that come from the Statistics and Mathematics Grades.
- The **Pathway 2** is contemplated for the other students.

The MESIO UPC-UB is a master of 90 credits* (ECTS) distributed in the following way:

- 10 compulsory credits
- 10 compulsory credits  pathway 1 or 10 compulsory credits  pathway 2
- 40 optional credits
- 30 master’s thesis credits

* 1 credit corresponds to 25 hours of student involvement (approximately).
* All courses are 5 credits (125 hours dedication), with a duration of one semester (3 hours per week of teaching).
The optional part of the Master is divided into 4 blocks from which it must be chosen the optional subjects:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Common training</td>
<td>2 subjects</td>
</tr>
<tr>
<td>Fundamentals in Statistics</td>
<td>6 subjects</td>
</tr>
<tr>
<td>Fundamentals in Operation Research</td>
<td>4 subjects</td>
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<tr>
<td><strong>Specialties:</strong></td>
<td></td>
</tr>
<tr>
<td>• BUSINESS AND SOCIAL STATISTICS</td>
<td>8 subjects</td>
</tr>
<tr>
<td>• BIOSTATISTICS AND BIOINFORMATICS</td>
<td>7 subjects</td>
</tr>
<tr>
<td>• OPERATIONS RESEARCH</td>
<td>2 subjects</td>
</tr>
</tbody>
</table>

The attached table shows all the subjects that will be taught during 2013-2014 and the corresponding semester of instruction.
# TABLE OF MESIO UPC-UB SUBJECTS FOR the ACADEMIC YEAR 2013-2014

## COMPULSORY CREDITS

### COMMON COMPULSORY TRAINING
- Software for Statistics and Optimization, Q1
- Management of Statistical Information, Q2

### COMPULSORY TRAINING

#### Pathway 1
- Probability and Stochastic Processes, Q1
- Advanced Statistical Inference, Q1

#### Pathway 2
- Foundations of Statistical Inference, Q1
- Multivariate Data Analysis, Q1

## MASTER THESIS
- Master Thesis, Q3

## OPTIONAL CREDITS

### COMMON TRAINING
- Mathematics, Q1
- Simulation, Q1

### FUNDAMENTALS OF STATISTICS
- Lifetime Data Analysis, Q1
- Time Series, Q2
- Bayesian Analysis, Q2
- Longitudinal Data Analysis, Q2
- Discrete Data Analysis, Q2
- Computational Intensive Methods, Q2

### FUNDAMENTALS OF OPERATIONS RESEARCH
- Integer and Combinatorial Optimization, Q1
- Continuous optimization, Q1
- Stochastic optimization, Q2
- Large scale optimization, Q2

### BUSINESS AND SOCIAL STATISTICS
- Actuarial Statistics, Q2
- Risk Quantification, Q1
- Quantitative Marketing Techniques, Q1
- Statistics for Business Management, Q1
- Simulation for Business Decision Making, Q2
- Social Indicators, Q2
- Econometric Analysis, Q1
- Financial Statistics, Q2

### BIOSTATISTICS AND BIOINFORMATICS
- Clinical Trials, Q1
- Advanced Experimental Design in Clinical Research, Q2
- Advanced Topics in Survival Analysis, Q2
- Foundations of Bioinformatics, Q1
- Omics Data analysis, Q2
- Epidemiology, Q2
- Spatial Epidemiology, Q1

### APPLICATIONS OF OPERATIONS RESEARCH
- Discrete Network Models, Q1
- Statistical Data Protection, Q2