BUSINESS ANALYTICS curriculum
2 Years Master’s Degree in STATISTICS, ECONOMICS AND BUSINESS

Martin Forster, Academic Advisor for Business Analytics, Department of Statistical Sciences
Two Year Second Cycle Degree Programme in Business Analytics

• Is a curriculum of the Laurea Magistrale in Statistics, Economics and Business
• Has been operating for three years
• Today’s presentation:
  • Why a Master’s Degree in Business Analytics?
    - Overview
    - Career opportunities
  • Course structure – learning activities
  • Admission to the programme
Why Business Analytics?

• The digital transformation of our society is changing the way businesses work

• The Business Analyst supports business decisions through data analysis:
  - identifying critical areas and opportunities for improvement
  - proposing plans to improve the company’s performance

• Examples: statistical consultancy, online and retail sales, Customer Relationship Management, production and distribution, software applications

• The role of the Business Analyst is relatively new:
  - the types of data the company can use are new
  - many of the statistical methods that the company can use are also new
Career Opportunities

Business Analysts are in high demand in the job market, working within areas such as:
- industrial and service companies / public and private sectors
- consulting firms
- research centres
- software companies

For whom is the two year Master’s Degree in Business Analytics designed?

Students who are already qualified at first-degree level in the appropriate subjects and who have:
- a keen interest in working with data
- an inclination for statistical and computational disciplines
# Course Structure: Learning Activities in the 1st Year

## First Year

### 1. Mandatory courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CFU</th>
</tr>
</thead>
<tbody>
<tr>
<td>96793</td>
<td>INFORMATION SYSTEMS AND DATABASE MANAGEMENT</td>
<td>6</td>
</tr>
<tr>
<td>96800</td>
<td>STATISTICAL SOFTWARE FOR BUSINESS (LABORATORY)</td>
<td>6</td>
</tr>
<tr>
<td>96798</td>
<td>BUSINESS SURVEYS DESIGN AND PLANNING</td>
<td>6</td>
</tr>
<tr>
<td>96801</td>
<td>LANGUAGE LABORATORY: COMMUNICATION OF STATISTICS AND DATA BUSINESS ANALYTICS</td>
<td>6</td>
</tr>
<tr>
<td>96795</td>
<td>OPTIMIZATION METHODS FOR BUSINESS ANALYTICS</td>
<td>6</td>
</tr>
<tr>
<td>96794</td>
<td>STATISTICAL INFERENCE AND MODELLING</td>
<td>10</td>
</tr>
<tr>
<td>96796</td>
<td>BUSINESS STATISTICS: METHOD AND APPLICATIONS</td>
<td>10</td>
</tr>
<tr>
<td>96799</td>
<td>FORECASTING AND PREDICTIVE ANALYTICS</td>
<td>10</td>
</tr>
</tbody>
</table>

### 2. Electives (Internship advance) (max limit 12 CFU)

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>96811</td>
<td>INTERNSHIP</td>
<td>12</td>
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</table>
## Course Structure: Learning Activities in the 2nd Year

### Second Year

#### 1. Mandatory courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>CFU</th>
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</thead>
<tbody>
<tr>
<td>96803</td>
<td>WEB AND SOCIAL MINING</td>
<td>6</td>
</tr>
<tr>
<td>96805</td>
<td>MICRO-MARKETING AND CRM</td>
<td>6</td>
</tr>
<tr>
<td>96804</td>
<td>BIG DATA AND ANALYTICS</td>
<td>10</td>
</tr>
<tr>
<td>96802</td>
<td>DATA MINING FOR BUSINESS AND MARKET RESEARCH</td>
<td>10</td>
</tr>
</tbody>
</table>

#### 2. 12 CFU to be chosen among: (max limit 36 CFU)

A) ELECTIVE COURSES SUGGESTED BY THE PROGRAMME (MAX LIMIT 36 CFU)

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>96811</td>
<td>INTERNSHIP</td>
<td>12</td>
</tr>
<tr>
<td>96806</td>
<td>DISCRETE CHOICE MODELS</td>
<td>6</td>
</tr>
<tr>
<td>79299</td>
<td>Design of Experiments</td>
<td>6</td>
</tr>
<tr>
<td>B0413</td>
<td>DEEP LEARNING APPLICATIONS IN BUSINESS ANALYTICS</td>
<td>6</td>
</tr>
</tbody>
</table>
**Admission to the Programme**

**Admission process and selection**

- **Three intakes:** the first two are open to everyone; the last is open to EU and EU-assimilated candidates only (because it occurs late in the admissions year)

**Academic admission requirements**

- **University-level knowledge** in the following subjects is **required and deemed essential:**
  - **Mathematics** (fundamentals of mathematical analysis, matrix algebra)
  - **Probability theory** (axioms and fundamental theorems of probability theory)
  - **Statistics** (fundamentals of descriptive statistics, fundamentals of statistical inference, linear model, data matrices and derivative matrices, basic concepts of sampling techniques, multivariate statistics)
  - **Economics** (fundamentals of microeconomics) OR **Business economics and management** (fundamentals of business management, fundamentals of marketing)

- For full details: please read in section 1.1 of the [2023—24 Admissions Notice](https://corsi.unibo.it/2cycle/BusinessAnalytics/how-to-enrol), available here: https://corsi.unibo.it/2cycle/BusinessAnalytics/how-to-enrol
Admission to the Programme

How do we evaluate applications?

• A candidate’s educational and personal preparedness is assessed by an Admissions Board
• The Board evaluates a candidate’s CV and documentation concerning university studies, as follows:
  • **Academic career**: previous studies completed, including the final grade, and grades obtained in individual courses
  • **Coherence** of the academic career with the educational objectives of the master's degree program
• In cases where it is deemed necessary, the Board may, at its discretion, ask candidates to attend an interview

English language admission requirements

• Possession of appropriate English language skills to (at least) level B2
Job placement rate and further information

Job placement rate
• The course has not been active for long enough to provide reliable graduation statistics, but we expect to have a high job placement rate, in line with the other two courses that are part of CLAMSEI

Further information
• For further information, please refer to the Business Analytics web page: https://corsi.unibo.it/magistrale/BusinessAnalytics
• For queries, please contact the Business Analytics Programme tutor: didatticasociale.clamsei-ba@unibo.it
Or the Business Analytics Programme Coordinator: didatticasociale.clamsei@unibo.it

Thank you for your attention