## Module description: Quantitative Analysis in Business

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| **Module Code** | w.BA.XX.1QAB-IM.XX |
| **ECTS Credits** | 6 |
| **Language of Instruction/Examination** | English |
| **Module Description** | The primary aims of this module are to ensure that students acquire a thorough introduction to the theory and practice of business mathematics and applied statistics as it is used in business decision-making. Students acquire an advanced understanding of the collection and summary of data and the presentation of information in a manner suited to a business environment. Students understand and apply quantitative techniques used in business decision-making. |
| **Organizational Unit** | IRI Ltg. |
| **Module Coordinator** | Jürg Portmann |
| **Deputy Module Coordinator** | Johannes Gerd Becker |
| **Program and Specialization** | • International Management |
| **Legal Framework** | Academic Regulations BSc dated 29.01.2009, for the degree programs in Business Administration, International Management, Business Information Technology, Business Law, Business Law and Applied Law, first adopted on 12.05.2009 |

| **Module Category** | **Module Type**<br>Compulsory | **Program Phase**<br>First Year-Studies |
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| **Prerequisite Knowledge** | |
| **Contribution to Program Learning Objectives (by the concerned Module)** | • Professional Competence<br>• Methodological Competence<br>• Social Competence<br>• Self-Competence |
| **Contribution to Program Learning Objectives** | **Professional Competence**<br>• Knowing and Understanding Content of Theoretical and Practical Relevance<br>• Apply, Analyze, and Synthesize Content of Theoretical and Practical Relevance<br>• Evaluate Content of Theoretical and Practical Relevance<br>**Methodological Competence**<br>• Problem-Solving & Critical Thinking<br>• Scientific Methodology<br>• Work Methods, Techniques, and Procedures<br>• Information Literacy<br>• Creativity & Innovation<br>**Social Competence**<br>• Written Communication<br>• Oral Communication<br>• Teamwork & Conflict Management<br>**Self-Competence**<br>• Self-Management & Self-Reflection<br>• Learning & Change |

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| Module Learning Objectives | Students... <br>• explain why quantitative methods are useful for management <br>• understand the use of models <br>• name the most common quantitative methods used in business <br>• use appropriate methods in the quantitative analysis of business problems <br>• collect, summarize, and present data <br>• solve common quantitative business problems <br>• apply basic inferential statistics in a business context <br>• manage common quantitative business problems and make decisions in situations of uncertainty <br>• base their judgment on appropriate quantitative analysis <br>• apply quantitative reasoning competently <br>• use the relevant vocabulary appropriately <br>• appreciate the increasing importance of quantitative methods and develop a willingness to deepen their understanding of quantitative methods |
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| **Module Content** | • Basic concepts and theories of algebra, differential calculus, and financial mathematics in a business context <br>• Descriptive statistics (frequency distributions as well as measures of location and spread) <br>• Visual modeling of business problems <br>• Basic financial mathematical concepts (present value, future value, annuities, and perpetuities) <br>• Simple regression and curve fitting - forecasting <br>• Basic probability theory and probability distributions <br>• Sampling distributions, confidence intervals, and hypotheses testing <br>• Solving business problems (e.g., a mathematical approach to the management of decisions, quality, inventory, projects, and queues, etc.) |
| **Links to other modules** | This module is linked to the following modules: |
| **Digital Learning Resources** | • Teaching Videos <br>• Practice and Application Exercises (with Key) <br>• Multiple Choice Tests |
| **Methods of Instruction** | • Interactive Instruction<br>• Exercises<br>• Lecture                Social Settings Used:<br>• Pair Work<br>• Individual Work |

**Type of Instruction**

|  | Classroom Instruction | Guided Self-Study | Autonomous Self-Study |
|---|---|---|---|
| Large Class | 56 h | 44 h | |
| Small Class | - | - | |
| Group Instruction | - | - | |
| Practical Work | - | - | |
| Seminar | - | - | |
| **Total** | **56 h** | **44 h** | **80 h** |

**Performance Assessment**

| End-of-module exam | Form | Length (min.) | Weighting |
|---|---|---|---|
| Written exam | open book | 120 | 90 |
| **Permitted Resources** | Spec. calculator acc. to leaflet "Utilities" | With dictionary | |

| Others | Assessment | Length (min.) | Weighting |
|---|---|---|---|
| Online performance assessments | Grade | 30 | 10 |

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| **Classroom Attendance Requirement** | None<br><br>There is no physical attendance requirement. |
| **Compulsory Reading** | • Waters, D. (2011). Quantitative Methods for Business. 5th edition. Financial Times Press. ISBN 9780273739470. |
| **Recommended Reading** | |
| **Comments** | |