## Mathematics 2

<table>
<thead>
<tr>
<th>Number</th>
<th>Workload</th>
<th>Credits</th>
<th>Semester</th>
<th>When offered</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBW 2.1</td>
<td>150 hrs</td>
<td>5 ECTS</td>
<td>2nd</td>
<td>Winter/summer semesters</td>
<td>1 semester</td>
</tr>
</tbody>
</table>

### 1 Coursework (hrs/week)
- a) Seminars: 3
- b) Exercises: 1

### 2 Contact hours
- 4 hrs/week = 72 hrs

### 3 Self-study
- 78 hrs

### 4 Language
- German/English

### 2 Learning outcomes
Students will be able to articulate the different ways of using classic mathematical disciplines in business and financial situations and for problem-solving. They will be able to differentiate the tools of business mathematics and use the production theory of managerial economics. Students will also be able to apply the methodologies learned to the many tasks involved in business planning, budgeting and decision-making.

### 3 Course content
- Functions of many variables
- Differential calculus of multivariable functions and multivariable optimization
- Production functions: theory and applications
- Homogeneous functions and elasticity
- Principles of integral calculus
- Matrix and vector algebra
- Systems of linear equations
- Linear optimization

### 4 Teaching methods
Interactive seminar-like instruction, exercises, and case studies

### 5 Course prerequisites
- Formal: None
- Recommended: Module IBW 1.1 (Mathematics 1)

### 6 Type of examination
Written

### 7 Requirements for the award of credit hours
Passing grade on module examination

### 8 Course share of final grade: 5 / 175 (= 2.86%)