



Engineering Study Programme

Rhine-Waal University of Applied Sciences | Faculty Technology & Bionics 2025



ORIENTATION SEMESTER

1

Maths 1

Mechanics

Programming

Electrical
Engineering 1

Fundamentals
of Business &
Management

Mentoring

SPECIALISATION SEMESTERS | ELECTRONICS

2

Social & Personal
Competence

Maths 2

Electrical
Engineering 2

Digital
Electronics

Physics

3

Projekt Management
Information Competence
& Scientific Working

Micro-
controllers

Analog
Electronics

Drives and
Power Electronics

Second
Specialisation

4

Metrology &
Sensors

Design &
Manufacturing
of Electronics

Second
Specialisation

Second
Specialisation

Second
Specialisation

5

Practical
Electronics

Second
Specialisation

Second
Specialisation

Second
Specialisation

Second
Specialisation

The Second Specialisation can be chosen from all other technical or economic fields



FINAL SEMESTERS

6

Elective

Group Project

Internship / Semester abroad >>>

7

>>> Internship / Semester abroad

Thesis

Colloquium

Possible Degrees (Depending on the Second Specialisation):

B.Sc. Engineering

B.Sc. in Mechatronics

B.Sc. in
Electrical Engineering

B.Sc. Business Engineer



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Technical Specialisation
**INFORMATION &
COMMUNICATION
TECHNOLOGY**

ORIENTATION SEMESTER

1

Maths 1

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Programming

Electrical
Engineering 1

Fundamentals
of Business &
Management

Mentoring

SPECIALISATION SEMESTERS | INFORMATION & COMMUNICATION TECHNOLOGY

2

Social & Personal
Competence

Maths 2

Electrical
Engineering 2

Digital
Electronics

Physics

3

Micro-
controllers

Analog
Electronics

Signal
Processing

Second
Specialisation

Second
Specialisation

4

Embedded
Systems

Communication
Technology

Second
Specialisation

Second
Specialisation

Second
Specialisation

5

Projekt Management
Information Competence
& Scientific Working

IT-Security

Second
Specialisation

Second
Specialisation

Second
Specialisation

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Thesis

Colloquium

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ORIENTATION SEMESTER

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Maths 1

Mechanics

Programming

Electrical
Engineering 1

Fundamentals
of Business &
Management

Mentoring

SPECIALISATION SEMESTERS | ROBOTICS

2

Social & Personal
Competence

Maths 2

Second
Specialisation

Second
Specialisation

Second
Specialisation

3

Projekt Management
Information Competence
& Scientific Working

Dynamics

Statistical
Learning

Second
Specialisation

Second
Specialisation

4

Modelling &
Numerical Simulation

Machine Learning

System Theory
& Controls

Second
Specialisation

Second
Specialisation

5

Multibody
Dynamics

Robot Intelligence

Robots
Kinematics

Second
Specialisation

Second
Specialisation

The Second Specialisation can be chosen from all other technical or economic fields



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Elective

Group Project

Internship / Semester abroad >>>

7

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Thesis

Colloquium

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B.Sc. Business Engineer



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Technical Specialisation
**SUSTAINABLE
PRODUCT CREATION**

ORIENTATION SEMESTER

1

Maths 1

Mechanics

Programming

Electrical
Engineering 1

Fundamentals
of Business &
Management

Mentoring

SPECIALISATION SEMESTERS | SUSTAINABLE PRODUCT CREATION

2

Social & Personal
Competence

Maths 2

Manufacturing
Technology &
Factory Equipment

Metallic Materials
& Testing

Second
Specialisation

3

Projekt Management
Information Competence
& Scientific Working

3D Product
Specification

Non Metallic
Materials

Second
Specialisation

Second
Specialisation

4

Material
Technology

Corrosion &
Surface Chemistry

Second
Specialisation

Second
Specialisation

Second
Specialisation

5

Additive
Manufacturing

Product
Development

Second
Specialisation

Second
Specialisation

Second
Specialisation

The Second Specialisation can be chosen from all other technical or economic fields



FINAL SEMESTERS

6

Elective

Group Project

Internship / Semester abroad



7

Internship / Semester abroad

Thesis

Colloquium

Possible Degrees (Depending on the Second Specialisation):

B.Sc. Engineering

B.Sc. Business Engineer



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Economics Specialisation
**BUSINESS
OPERATIONS**

ORIENTATION SEMESTER

1

Maths 1

Mechanics

Programming

Electrical
Engineering 1

Fundamentals
of Business &
Management

Mentoring

SPECIALISATION SEMESTERS | BUSINESS OPERATIONS

2

Social & Personal
Competence

Maths 2

Manufacturing
Technology & Factory
Equipment

Accounting

Second
Specialisation

3

Projekt Management
Information Competence
& Scientific Working

Statistics &
Probability

Sustainability, Quality
& Business Process
Management

Second
Specialisation

Second
Specialisation

4

Operation Research
& Data Analytics

Production &
Supply Chain
Management

Second
Specialisation

Second
Specialisation

Second
Specialisation

5

Technical Investment
Planning &
Purchasing

General
Management

Second
Specialisation

Second
Specialisation

Second
Specialisation

The Second Specialisation can be chosen from the technical fields of engineering



FINAL SEMESTERS

6

Elective

Group Project

Internship / Semester abroad >>>

7

>>> Internship / Semester abroad

Colloquium

Degree:

B.Sc. Business Engineer



Engineering Study Programme

Rhine-Waal University of Applied Sciences | Faculty Technology & Bionics 2025



Economics Specialisation
**ENTREPRENEUR
AND LEADERSHIP**

ORIENTATION SEMESTER

1

Maths 1

Mechanics

Programming

Electrical
Engineering 1

Fundamentals
of Business &
Management

Mentoring

SPECIALISATION SEMESTERS | ENTREPRENEUR AND LEADERSHIP

2

Social & Personal
Competence

Maths 2

Civil &
Corporate Law

Accounting

Second
Specialisation

3

Projekt Management
Information Competence
& Scientific Working

Statistics &
Probability

B2B Marketing
& Sale

Second
Specialisation

Second
Specialisation

4

Operation Research
& Data Analytics

Technology &
Innovation
Management

Second
Specialisation

Second
Specialisation

Second
Specialisation

5

Business
Performance
Management

General
Management

Second
Specialisation

Second
Specialisation

Second
Specialisation

The Second Specialisation can be chosen from the technical fields of engineering



FINAL SEMESTERS

6

Elective

Group Project

Internship / Semester abroad >>>

7

>>> Internship / Semester abroad

Thesis

Colloquium

Degree:

B.Sc. Business Engineer



Example of a Study Combination

Rhine-Waal University of Applied Sciences | Faculty Technology & Bionics 2025



Technical Specialisation
**INFORMATION &
COMMUNICATION
TECHNOLOGY**

ORIENTATION SEMESTER

Maths 1

Mechanics

Programming

Electrical
Engineering 1

Fundamentals
of Business &
Management

Mentoring

SPECIALISATION SEMESTERS | INFORMATION & COMMUNICATION TECHNOLOGY

Social & Personal
Competence

Maths 2

Electrical
Engineering 2

Digital
Electronics

Physics

Micro-
controllers

Analog
Electronics

Signal
Processing

Dynamics

Statistical
Learning

Embedded
Systems

Communication
Technology

Modelling &
Numerical
Simulation

Machine
Learning

System
Theory
& Controls

Projekt Management
Information Competence
& Scientific Working

IT-Security

Multibody
Dynamics

Robot
Intelligence

Robots
Kinematics

Example with Second Specialisation  **ROBOTICS**

FINAL SEMESTERS

Elective

Group Project

Internship / Semester abroad >>>

>>> Internship / Semester abroad

Thesis

Colloquium

Degree:

B.Sc. in Mechatronics