MSc Biosystems Engineering

Engineering a green future with agrotechnology
MSc Biosystems Engineering

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Our challenge
What do we need?

- Food
- Feed
- Flowers
- Fuel
- Fibres
- Fish
- ....
Fun & unexpected things
Engineering in the future

© Jam Visual Thinking
Position Biosystems Engineering

Government

Resources

Primary production

Society

Consumers
Engineering: **System thinking**

**Study**
- Research
- Study

**Understand**
- Research
- Understand
- Model

**Optimize**
- Optimize
- Control
- Manage system
- State variables & Output
- Experiment

**Innovate**
- Innovate
- Design
- Needs & requirements
- Functions
- New structures & systems

- Existing system & structures
  - ↓ Functions
- Relations between entities & environment
- Manage system state variables & Output
  - ↓ Experiment
  - New structures & systems
Study programme

- **Duration:** 2 years
  - One year courses
  - One year thesis & internship

- **Tailor made programme**
  - Thesis oriented
  - Based on your competences and ambitions
Study programme

Total 120 ECTS

- Compulsory courses: 36 ECTS
- Thesis preparation courses: 18 ECTS
- Career preparation courses: 18 ECTS
- Free choice courses: 12 ECTS
- Thesis: 24 ECTS
- Internship: 12 ECTS

See the study handbook for more details
Compulsory courses

- Three courses
  - **Biosystems Design**
  - **Modelling of Biobased Production Systems**
  - **Quantitative Analysis of Innovative Biosystems**

- These three courses give an overview of Biosystems Engineering
Career preparation courses

- **Research Master Cluster**
  - Preparation PhD
  - Write your research proposal

- **Academic Consultancy Training**
  - Real life questions from companies
  - Students from different WUR programmes
Seven thesis tracks

- Biobased Chemistry and Technology
- Environmental Technology
- Farm Technology
- Geo-Information & Remote Sensing
- Information Technology
- Mathematical & Statistical Methods
- Operations Research & Logistics
MBE thesis tracks

- Biobased Chemistry and Technology
- Environmental Technology
MBE thesis tracks

- Farm Technology
MBE thesis tracks

- Geo-Information & Remote Sensing
- Information Technology
MBE thesis tracks

- **Mathematical & Statistical Methods**

- **Operations Research & Logistics**
MSc Track Entrepreneurship

- Develop your entrepreneurial skills!
6 months of thesis research and report writing
Usually fits into on-going research
Other research subjects can be discussed
For examples see www.wur.eu/mb
Academic Internship

- 4 months outside the university
- Put knowledge and skills into practice
- Professional setting
- In The Netherlands or elsewhere
Future career Biosystems Engineer

- At graduation 80-90% of students have a job
- Diverse career prospects:
  - Product engineer
  - Systems engineer
  - Research and education
  - Entrepreneur
  - Consultant
Biosystems Engineering

What we do/are

- Technology
- Multidisciplinary approach
- Design & Innovation
- Living environment

What we don’t/aren’t

- Only technology
- Only biology
- Livestock farming
- Plant sciences

→ Systems approach!

WAGENINGEN UNIVERSITY & RESEARCH
Admission

- Possible start: September and February
  - Start September is recommended
- Online application
  - How to apply for a master's programme?
  - Application and admission - Biosystems Engineering

Add **ALL** requested documents
  - Exception BSc certificate (later)
- Admission Committee decides: yes, no, after a pre-master
Application and admission - Biosystems Engineering

- Relevant BSc Degree
- At least 60 credits in BSc of subjects such as engineering, mathematics, physics, modelling, programming, design
- GPA of 70%
- Average mark of at least 7.0
- Fluency in English
- Possibility for Dutch hbo students: minor during hbo and/or linkage (pre-master) programme
English

- All master courses are given in English

- All applicants must provide recent evidence of their spoken and written command of English

- [English language proficiency MSc – WUR](#)
Thank you for your attention

Any questions? Contact us via email: MBE.msc@wur.nl

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your study advisors