



# Environmental Protection in Engineering Science

University of Paderborn

## 1. Environmental Protection as elective subject

- Integrated: Master Program Mechanical Engineering

## 2. Environmental Engineering

- a stand-alone master's degree program

## 3. Advanced Environmental Training

- Environmental Management / TEMPUS Project UMRU

Josef Noeke, University of Paderborn  
RETHINK-Kick-off-Meeting in Kishinev  
May 2014



# University of Paderborn

- 20.000 students  
10 % foreign students
- 200 professors
- 40 Mio € external funds
  
- 140 partnerships worldwide

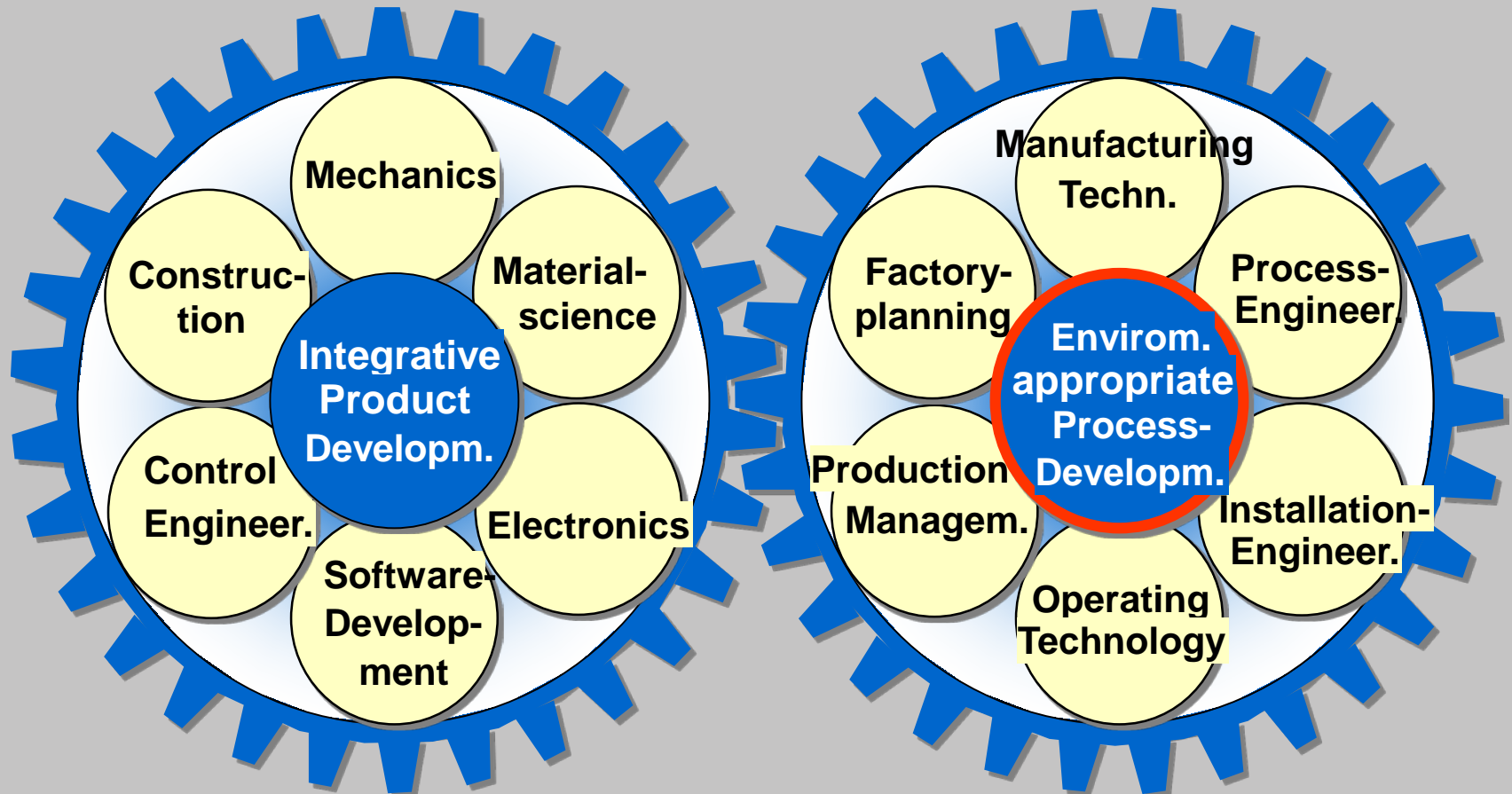


## Faculties

- cultural science
- economic science
- natural science
- mechanical engineering



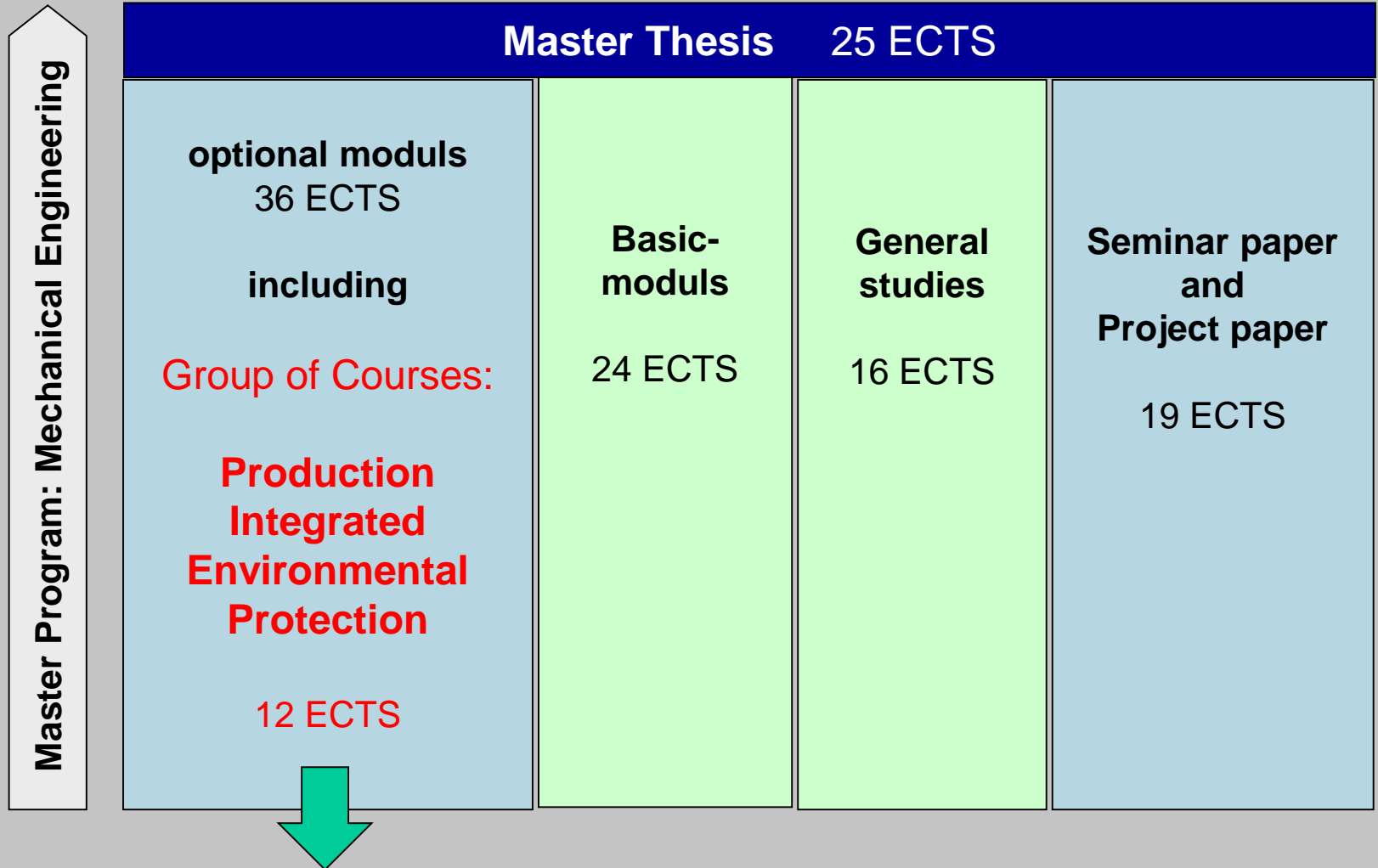
# Core Areas of Mechanical Engineering in Paderborn



**Focus of Mechanical Engineering:  
innovative development of products and processes**

# Structure: Master's Program "Mechanical Engineering"

4 Semester



# Group of Courses: Production Integrated Environmental Protection

## Courses with 4 ECTS each

- **Fundamentals of Production Integrated Environmental Protection**

- ...

- Safety Engineering and -management

- Energy Management

- Efficient Heat Transfer Methods

- Environmental Analysis

- Bio-Process-Engineering

- ...

*The modul includes three courses:*

- *The first course is obligatory.*

- *The other two courses are selectable.*

# Didactic approach: "Production Integrated Environmental Protection"

Course: 4 ECTS / 120 h workload:

15 lectures, each 150 minutes

**3 Excursions**, each 3 hours:

- > Recycling plant computer scrap
- > municipal sewage treatment plant
- > depot for hazardous waste

**Case Study /  
Business Game**

Focus on:

1. Waste Management
2. Sewage Management
3. Air Pollution Control
4. Hazardous Materials
5. Energy Management
6. Environmental Management Systems (EMAS / ISO 14001)
  - Environmental Policy
  - Strengths and Weaknesses
  - Environment Programme
  - Environmental Audits
  - Environmental Statement
  - Validation / Certification
  - ...

# Master Program „Environmental Engineering“

**University of Applied Science Ostwestfalen-Lippe; Location Hoexter**  
**major fields of study „water / waste“ or „buildings / energy“**  
*partly in English language*

3. Semester	<b>Master thesis</b> <a href="http://www.hs-owl.de/fb8/fileadmin/download/PDF/UIM/Flyer2012_UIW-MEng.pdf">http://www.hs-owl.de/fb8/fileadmin/download/PDF/UIM/Flyer2012_UIW-MEng.pdf</a>
2. Semester	<ul style="list-style-type: none"><li>○ Projectmanagement</li><li>○ Project Paper</li><li>○ International Planning</li><li>○ Elective courses</li><li>○ .....</li></ul>
1. Semester	<ul style="list-style-type: none"><li>○ Environmental and Planning Law</li><li>○ IT for engineers</li><li>○ Water management / heat-pumps and chillers</li><li>○ Simulation ground water flow</li><li>○ .....</li></ul>

# outlook

Thank you for your attention

