



# **Department of Material Sciences and Process Engineering**

**Head: Alfred Teischinger**

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**[www.map.boku.ac.at](http://www.map.boku.ac.at)**



# Scope and Mission



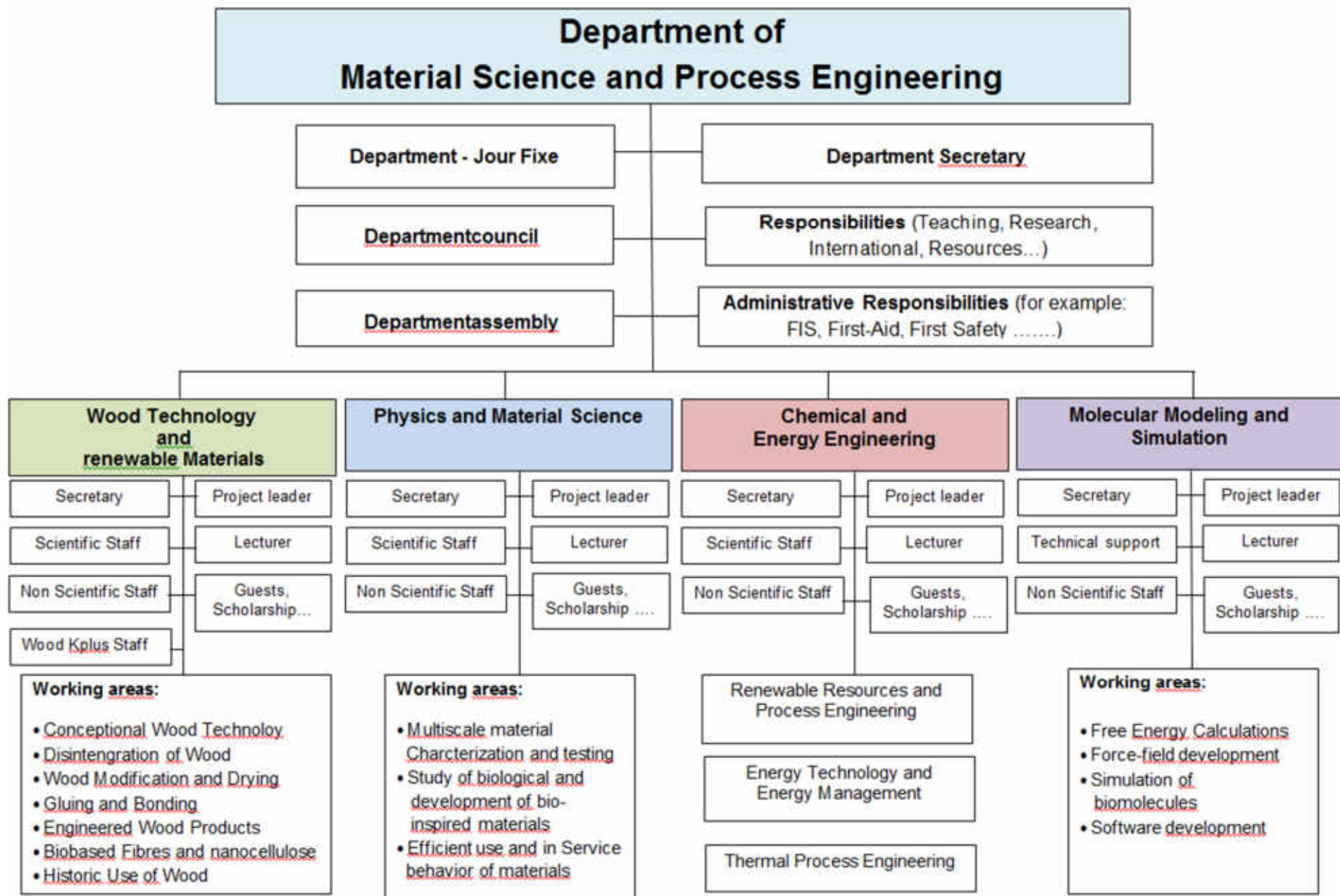
- **Research and teaching in the field of material sciences, process technologies, physics, chemical and energy engineering and biomolecular modelling**
- **Strong focus on bio-based and bio-inspired materials**
- **Following industrial value chains – converting raw materials to products**
- **From „basics“ to „technology“**



# Our target groups



- **Students : Bachelor – Master – PHD**
- **Scientific Community in our field**
- **The public-represented by different institutions  
(served by publications, public talks etc.....)**
- **Industry – colaborative research etc.**



# Structure and Development of Staff

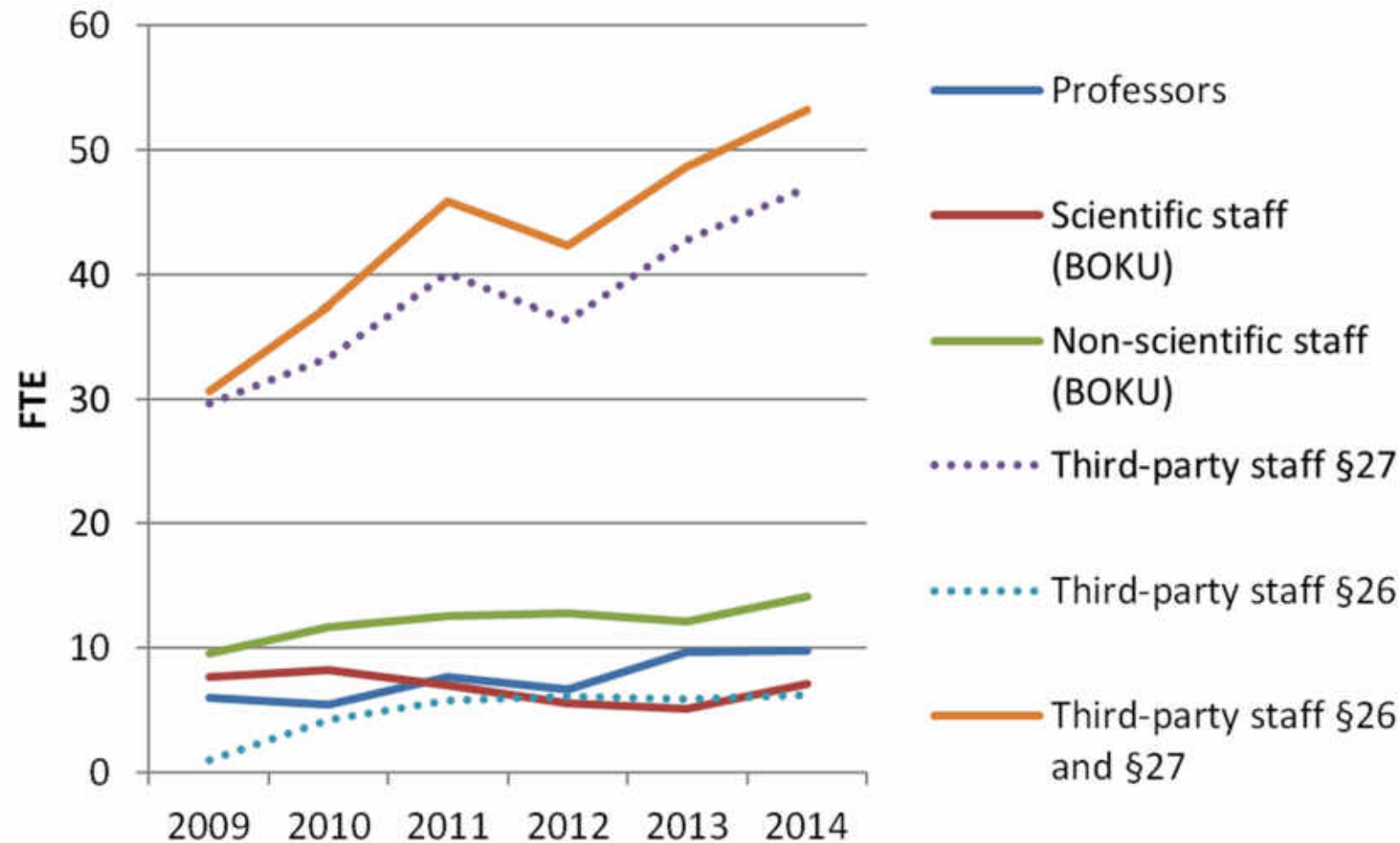
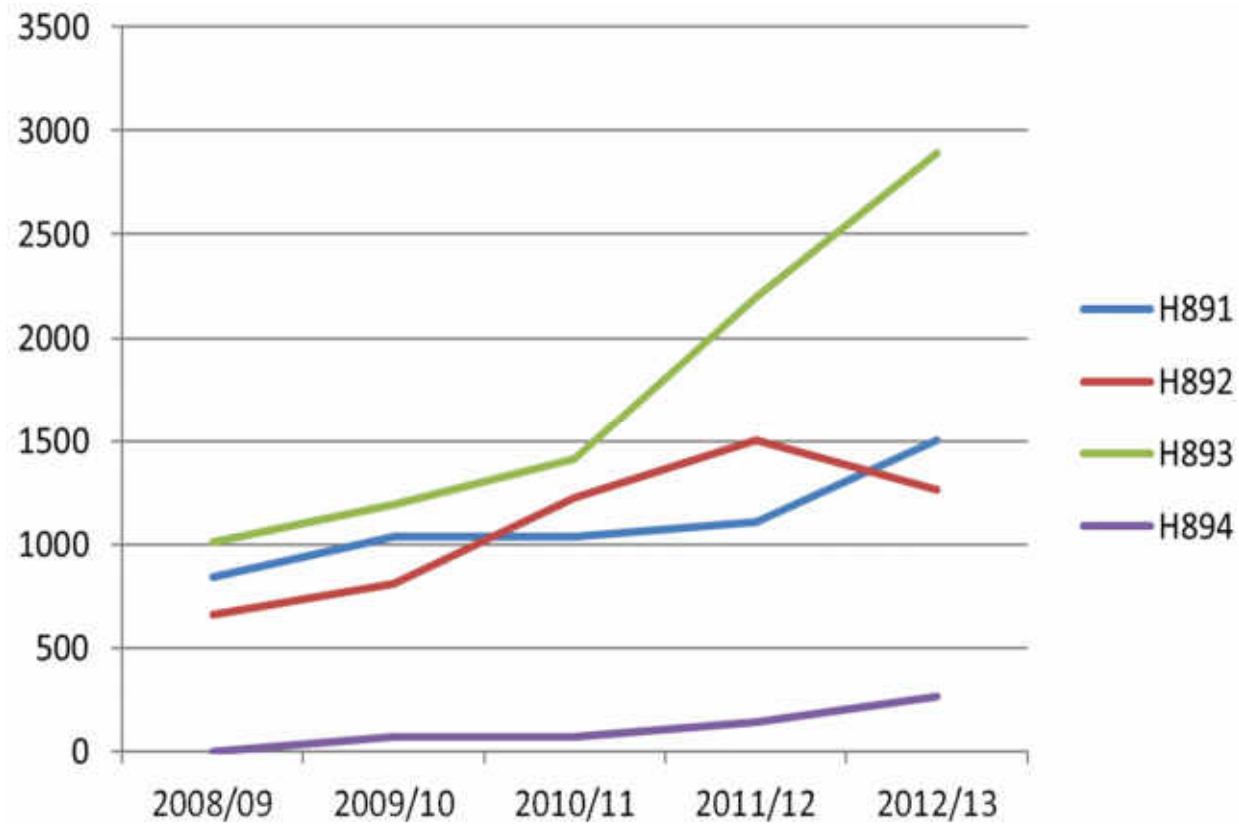


Chart 1: Development of MAP staff (Full Time Equivalents) between 2009 and 2014. According to the University Act, third party funding is distinguished between §26 projects (e.g. Austrian Science Funds) and §27 projects (Austrian Research Promotion Funds (FFG) and others)



# Students in MAP exams 2008 -> 2013



	2008/09	2009/10	2010/11	2011/12	2012/13
891	840	1034	1038	1110	1503
892	663	808	1222	1503	1266
893	1012	1193	1415	2201	2889
894	0	68	69	142	267





# Department of Material Sciences and Process Engineering

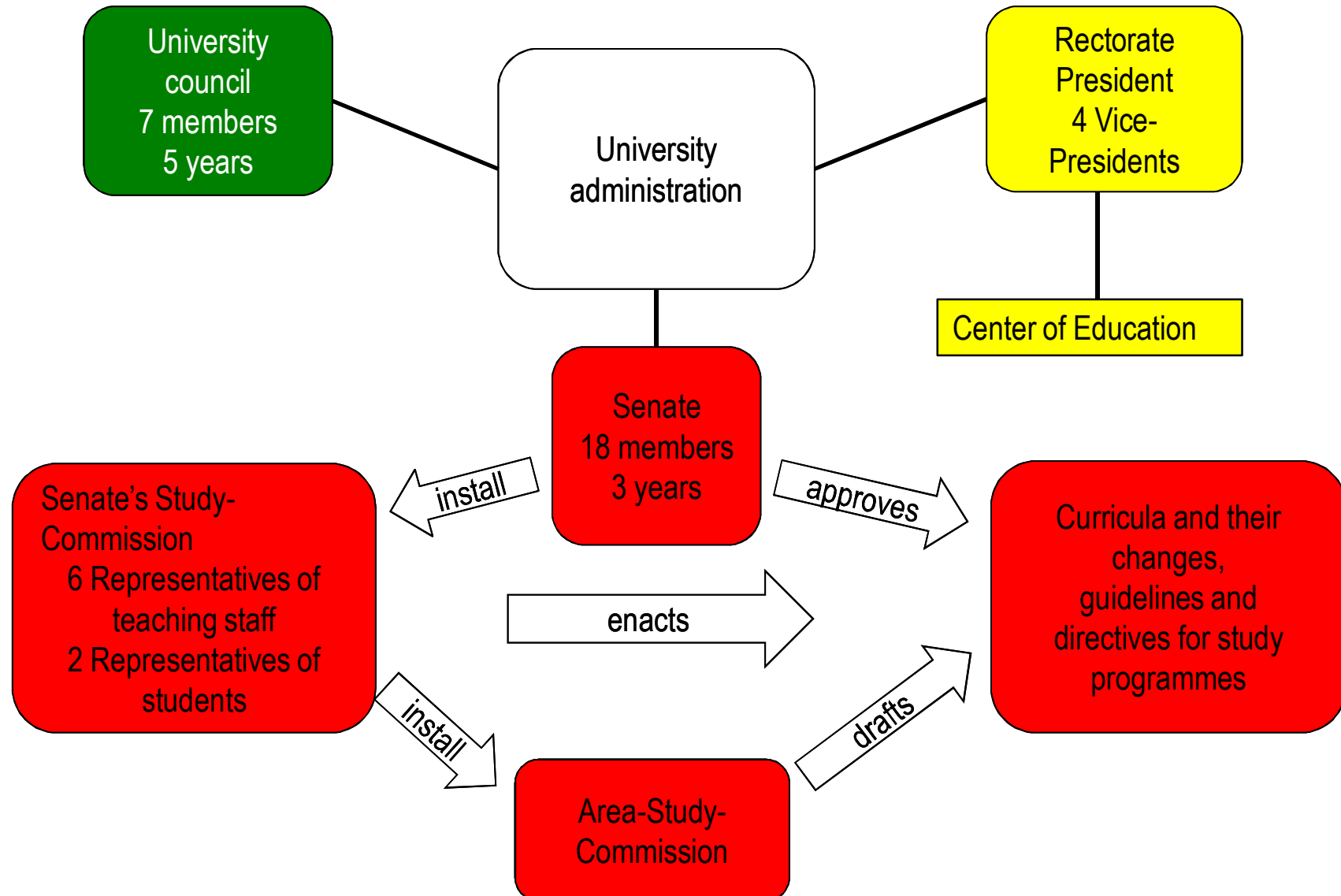
Teaching at the Department

Herwig Mayer



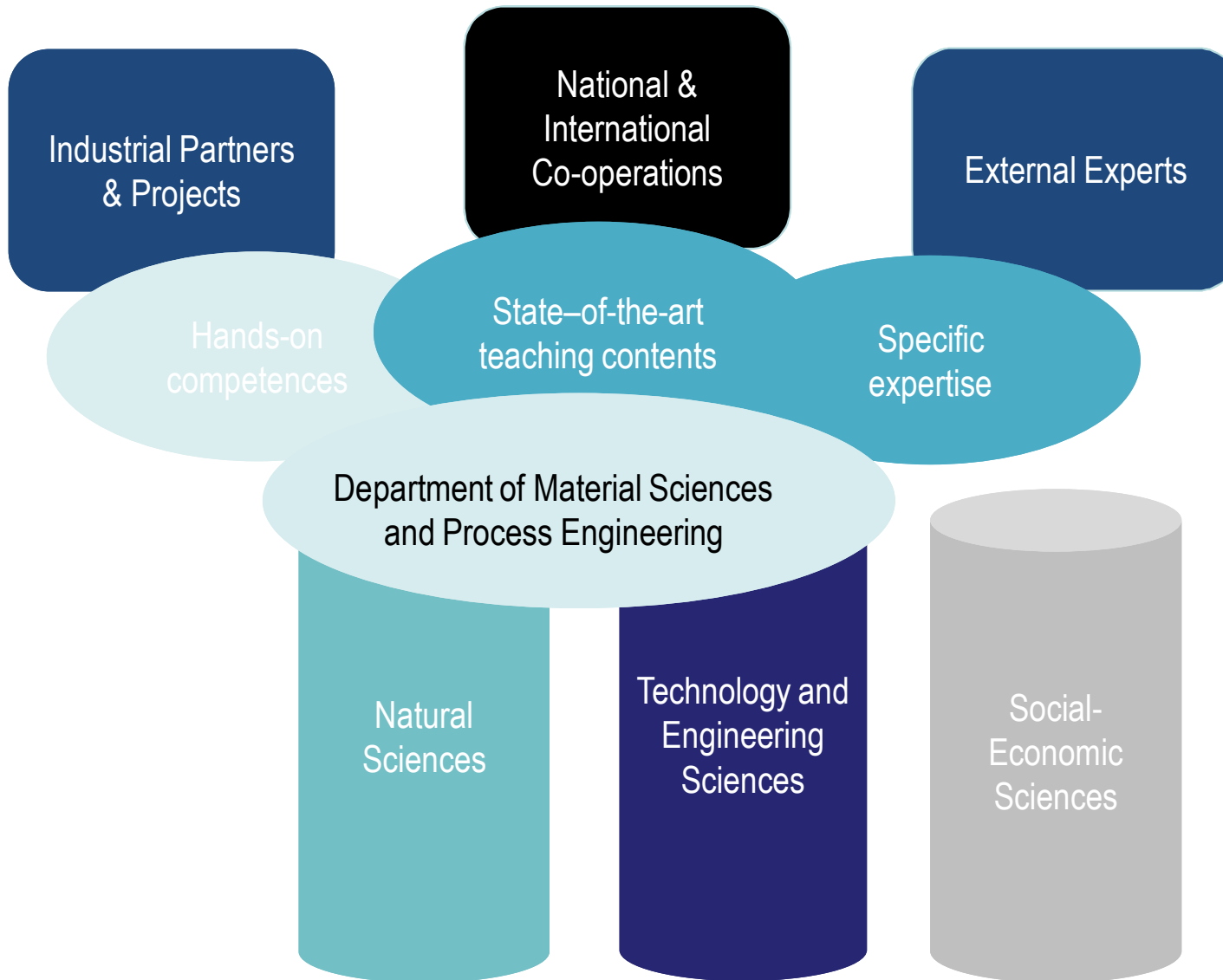


# Organisation of Teaching at BOKU





# Strategy and main focus in teaching and learning



The three pillars of BOKU



# Strategy and main focus in teaching and learning

## **Institute of Wood Science and Technology**

- leading institute for bachelor programme „Wood and Fibre Technology“ and master program „Wood Technology and Management“
- strong involvement in industrial projects (cooperation with *Wood K plus*)

## **Institute of Physics and Materials Science**

- all fundamental physics courses at BOKU (7 of the 8 bachelors)
- materials science courses in biomaterial science, bionics and experimental characterization techniques, technical materials

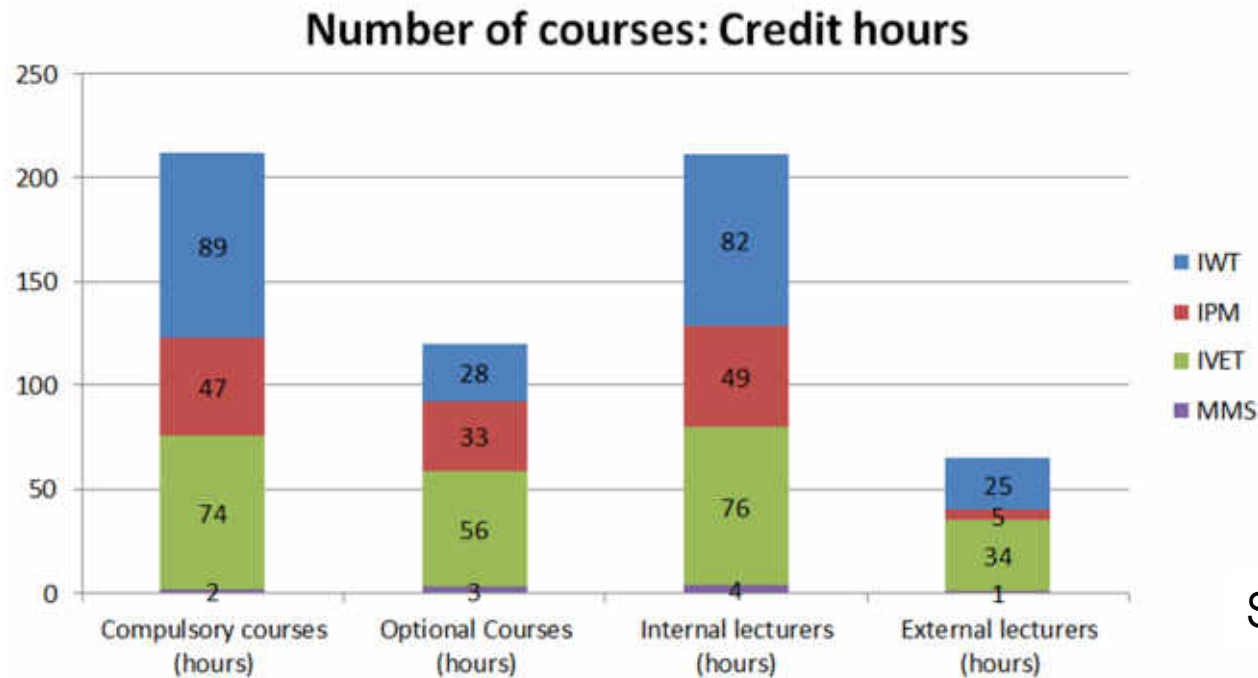
## **Institute for Chemical and Energy Engineering**

- mechanical -, process – and environmental engineering in bachelor “Food Science and Biotechnology” and “Environment and Bio-Resources Management”
- practical courses in small groups and specialized courses for master closely related to research

## **Institute of Molecular Modeling and Simulation**

- Teaching statistical thermodynamics, modelling and simulation of biomolecules
- strongly contributes to doctoral programme „Biotechnology of Proteins“ (*BioTop*)

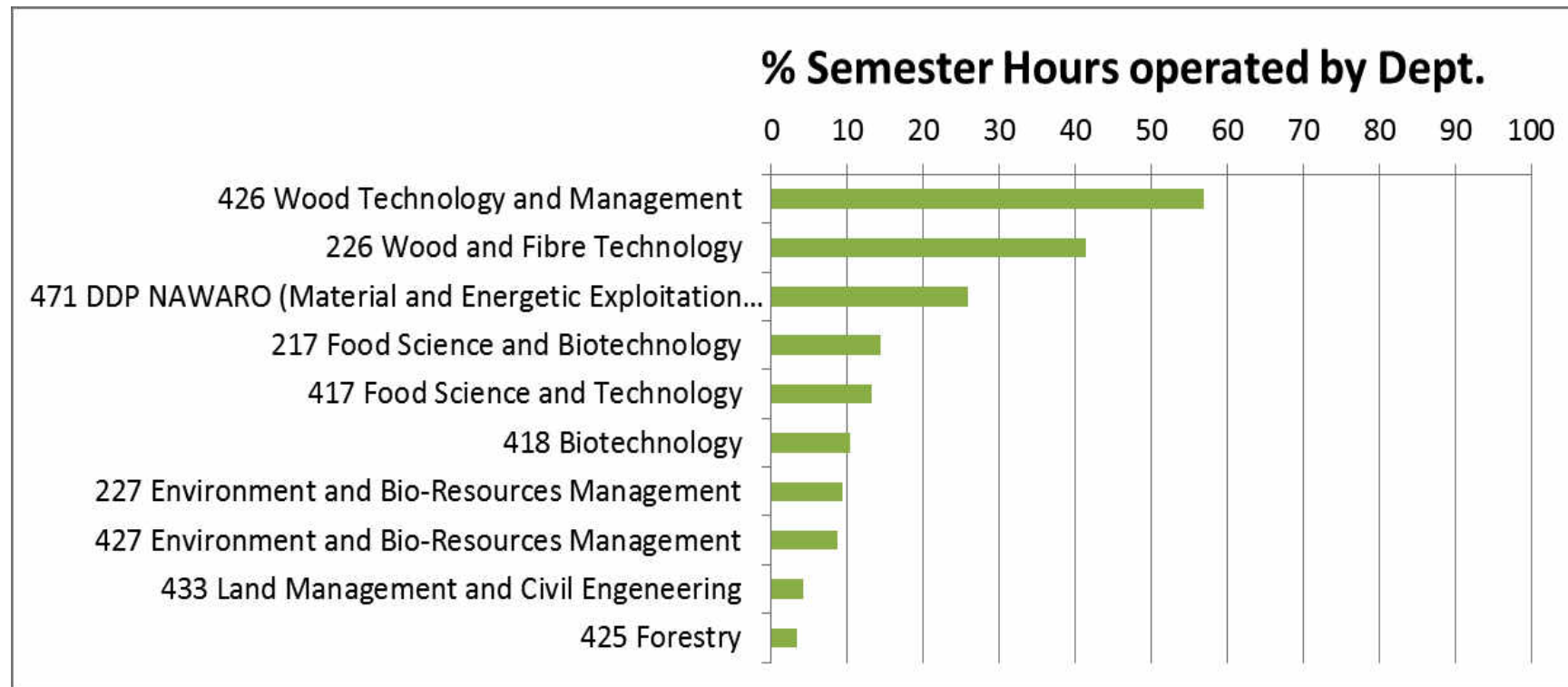
**MAP offers around 212 compulsory and 120 optional lecture hours per week, mean 2008/09 - 2012/13**



Student assistants



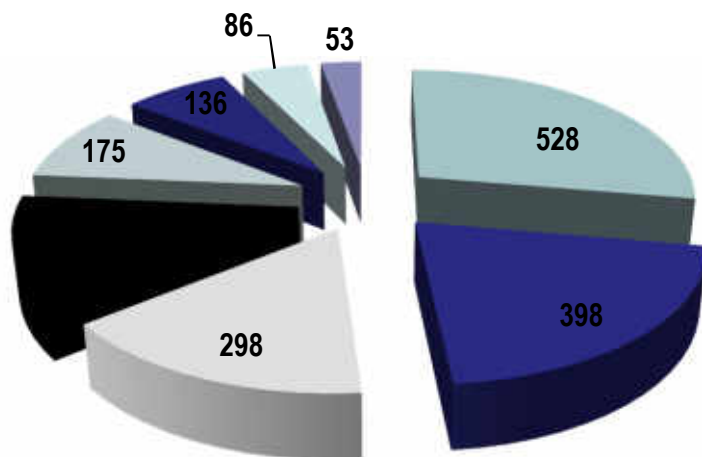
## Contributions of MAP to study programmes at BOKU



# Contributions of MAP to study programmes at BOKU

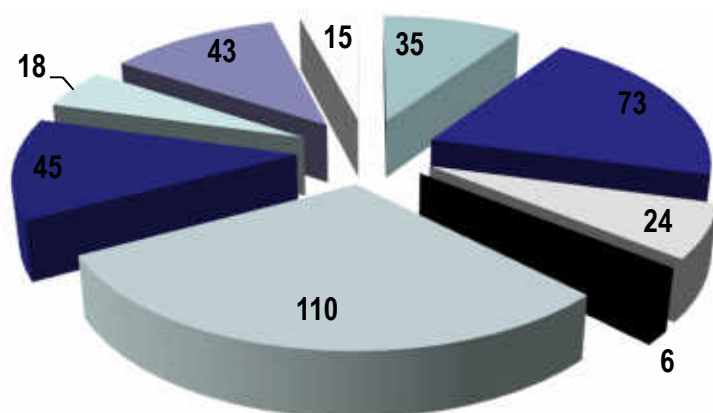
Students enrolment 1<sup>st</sup> semester in WS 2013/14

## Bachelor students



- Environment and Bio-Resources Management (H227)
- Food Science and Biotechnology (H217)
- Agricultural Sciences (H255)
- Landscape Architecture and Landscape Planning (H219)
- Environmental Engineering (H231)
- Forestry (H225)
- Viniculture, Oenology and Wine Marketing (H298)
- Wood and Fibre Technology (H226) \*\*

## Master students



- Food Science and Technology (H417)
- Biotechnology (H418)
- Forest Sciences (H425)
- Wood Technology and Management (H426) \*\*
- Environment and Bio-Resources Management (H427)
- Environmental Engineering (H431)
- Land Management and Civil Engineering (H433)

# Cooperation in teaching

## Outgoing

### Teaching at other universities

TU Wien: 9 programmes

Kunstuniversität Linz

Donau Universität Krems

University of Applied Sciences

Salzburg/Kuchl

Mendel University Brno

### Master theses and dissertation supervision

TU Wien, FH Wels, FH Salzburg

### Co-operations with institutions

Molecular modeling courses Univ. Copenhagen

## Incoming

### Expertise from industry

Adhesives, manufacturing systems, surfaces and coatings, furniture construction and design

### Contracted lecturers

Measurement&Control (TU Graz)

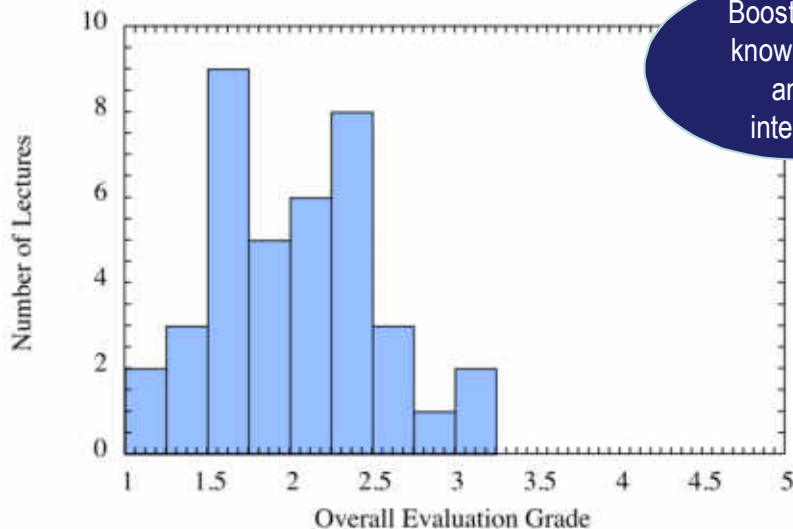
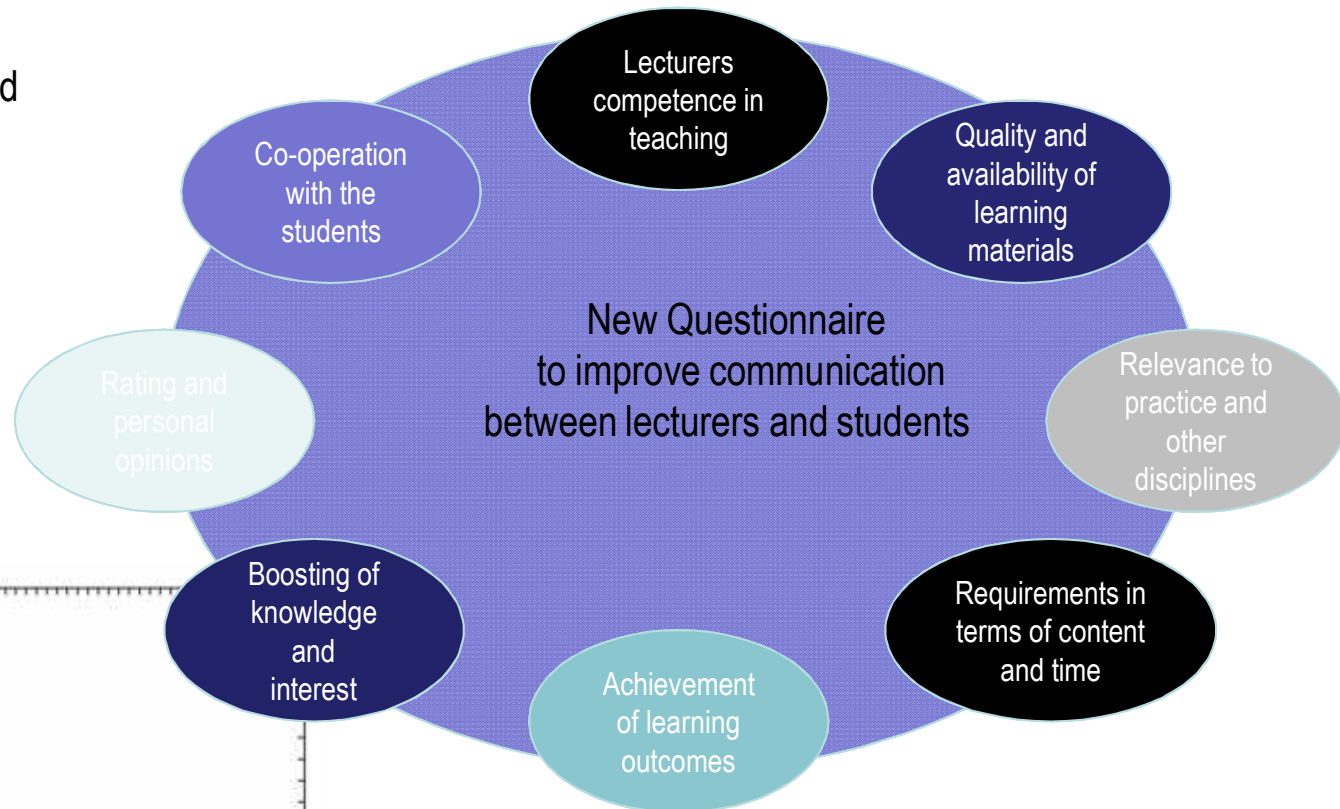
### Outsourced lectures

Timber in construction at TU Vienna

# Quality assurance and quality development in teaching and learning



In the study year 2013/14  
**106 courses in total** were held  
by MAP, whereof **39 lectures**  
**have been evaluated by 5**  
**or more students**  
delivering a meaningful  
overview of the quality  
of the respective course.



Overall rating of the course (831 evaluations):

Mean grade of the evaluation of 39 courses: **2.0±0.5**





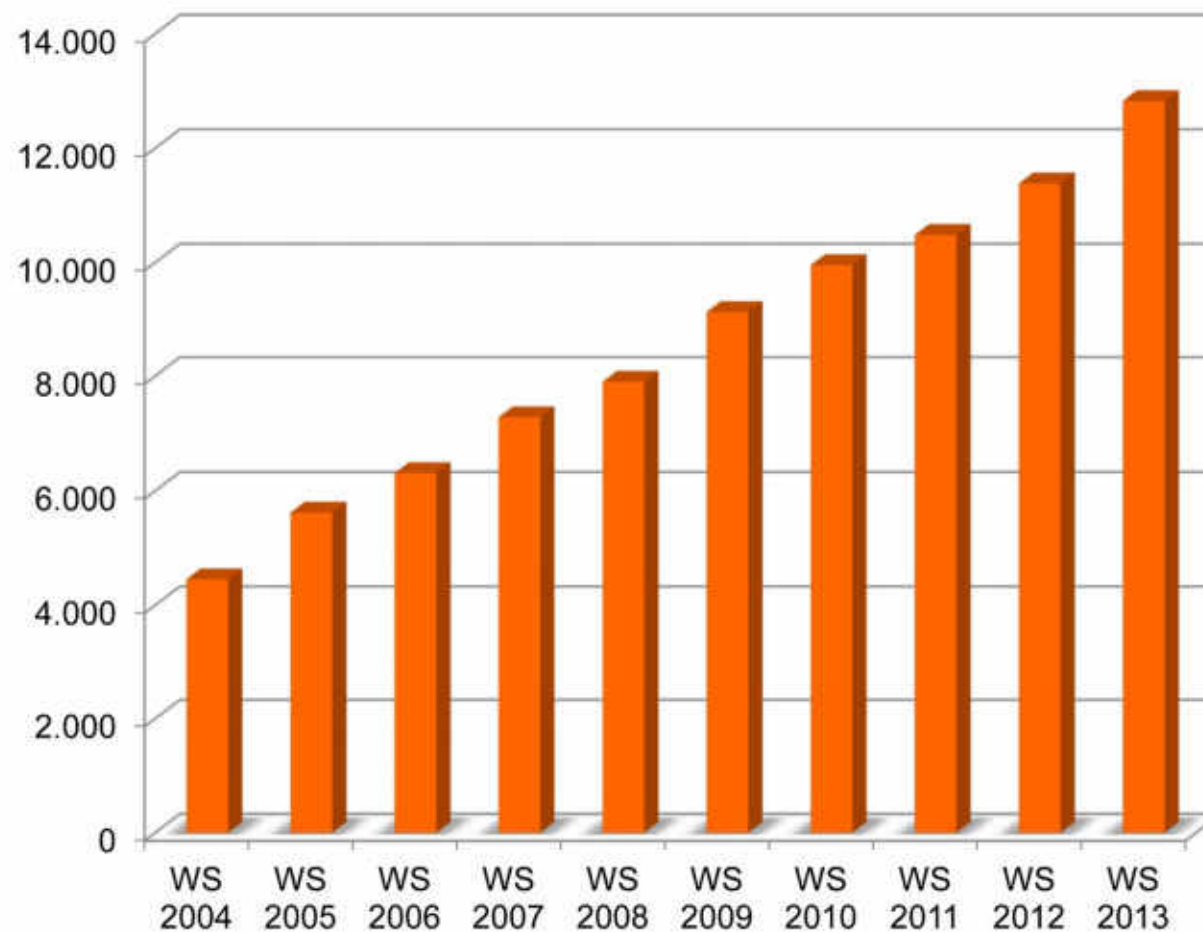
## Evaluation of current activities

- 2004 Bologna program is implemented at BOKU
- The number of **compulsory courses** of MAP has **increased** from 110 semester hours per week in 2004 to 212 semester hours per week in 2013
- Teaching activities for the years 2013 to 2015 are described in the **objective agreement** between the department and the rectorate.

**Current teaching activity** at the department MAP is:

- Mean value for Full Professors: **12.8 h**
- Mean value for Associate Professors: **12.4 h**
- Mean value for Assistant Professors: **7.7 h**

## Number of Students at BOKU



Barbara Hinterstoisser, Klausur Lehre, 18.- 19. Oktober 2013

# Summary

- The department MAP stands for Chemical and Energy Engineering, Molecular Modeling and Simulation, Physics and Materials Science, as well as Wood Technology and Renewable Materials
- The department is an essential contributor to teaching at BOKU
- Important contributions to bachelor programmes
- High number of student contacts (lectures, practical courses, exams)
- Fast growing teaching demand requires additional teaching staff

# Contact / Questions



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