

University of Stuttgart
Germany

Air Quality Control, Solid Waste and Waste Water Process Engineering

**Andreas
Kronenburg**

WASTE office & Committees



Carolina Acuña Caro (IFK)

Head of the WASTE office

Nelson Rincon (IFK)

Grecia Solis (IFK)



Eckhard Laurien (IFK)

Chair of the Prüfungsausschuss
= examinations committee

≠ Prüfungsamt (examinations
office, Pfwr. 5c, 3rd floor)



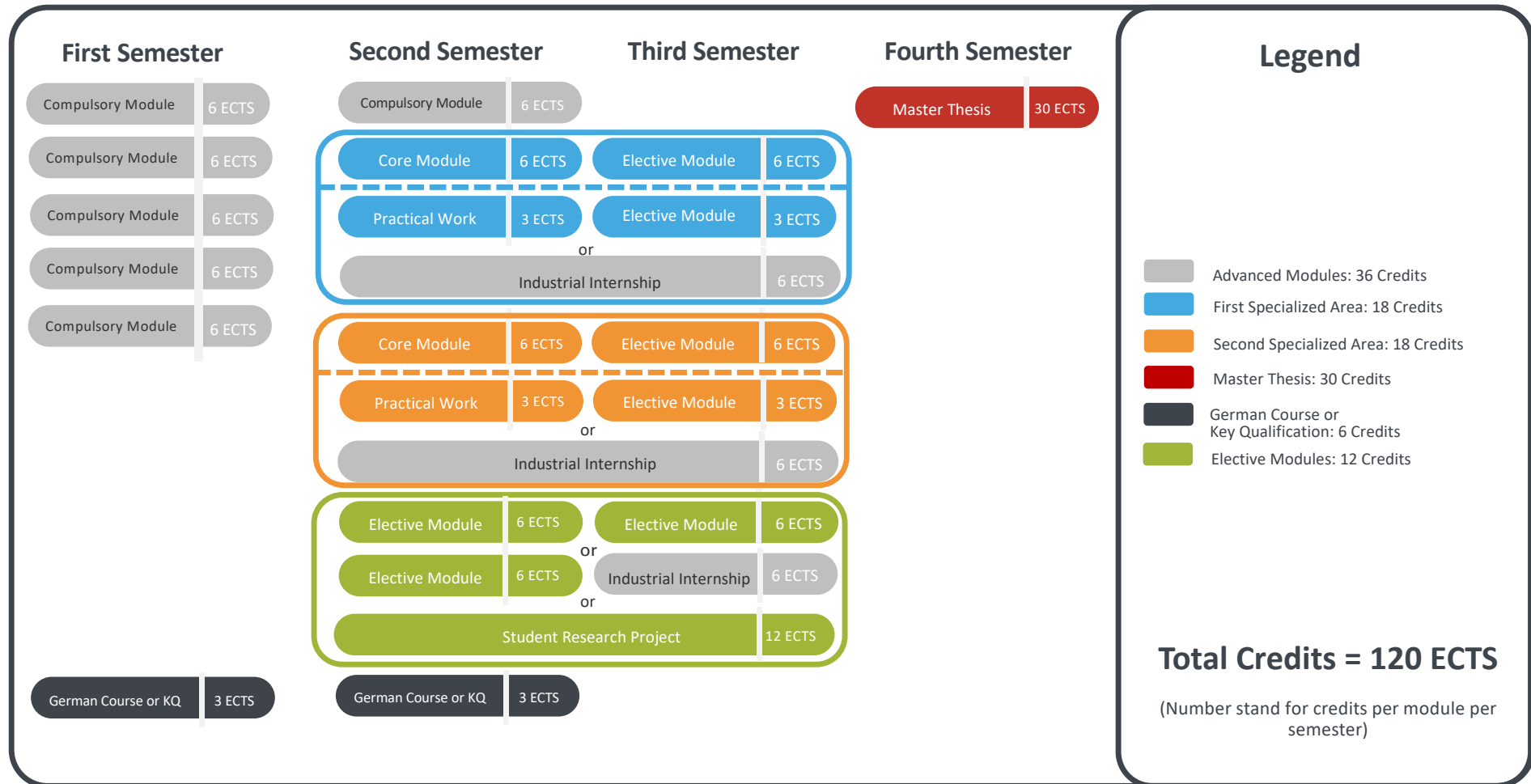
Andreas Kronenburg (ITV)

Chair of the Studienkommission
= Study committee = programm
structure committee

Participate



WASTE Programme



Programm Overview

- **Advanced Modules**
 - Consolidation phase – 6 modules
- **3 specializations – select 2 (18 credits each)**
 - Air quality control
 - Solid waste
 - Waste water engineering
- **Elective Modules (12 credits)**
 - Modules in English and German
 - Student Research Project
 - Industrial Internship
- **German Course and/or Key Qualifications (6 credits)**
- **Master Thesis (30 credits)**



Advanced Modules

Semester 1 – Examination Regulations 2015!			
MODULE	COURSE	CREDITS	Specialized Area
Thermo- and Fluid Dynamics	Thermodynamics of Fluid Mixtures and Adsorption	6	Compulsory Modules
	Computational Fluid Dynamics		
Pollutant Formation and Air Quality Control	Basics of Air Quality Control	6	
	Chemistry and Physics of Combustion		
Chemistry and Biology for Environmental Engineers	Inorganic Chemistry	6	
	Organic Chemistry		
	Technical and Medical Microbiology for Engineers		
	Biology and Ecology of Water, Soil and Air Systems		
Sanitary Engineering	Solid Waste Management	6	
	Waste Water Technology		
Technology Assessment and Presentation Techniques	Technology Assessment and Presentation Techniques	6	

+ Process Engineering (in 2nd semester)

Specialization 1

Air Quality Control

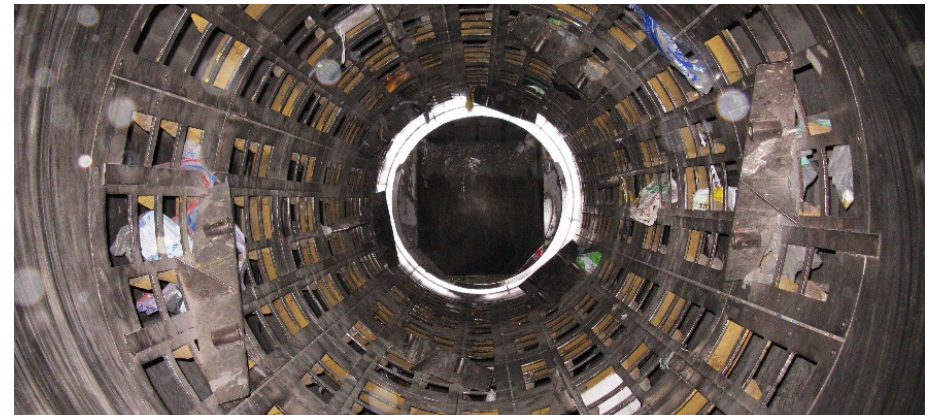
- **Compulsory (Core) Module (6 credits):**
 - Firing Systems and Flue Gas Cleaning (Scheffknecht)
- **Electives (9 credits)**
- **Practical Work (3 credits)**
 - Air Quality Control



Specialization 2

Solid Waste

- **Compulsory (Core) Module (6 credits):**
 - Mechanical, Biological and Thermal Waste Treatment (Fischer/ Gehrman)
- **Electives (9 credits)**
- **Practical Work (3 credits)**
 - Sanitary Engineering Part I: Solid



Specialization 3

Waste Water Process Engineering

- **Compulsory (Core) Module (6 credits):**
 - Urban Drainage and Design of Wastewater Treatment Plants (Schönberger / Dittmer)

- **Elective Modules (9 credits)**

- **Practical Work (3 credits)**
 - Sanitary Engineering Part II: Water



Details on Courses

Example: Air Quality Control

- waste.uni-stuttgart.de/Downloads/
-> module list

Spezialisierungsmodul(e) (specialized modules)										
2a	Spezialisierungsfach 1 (specialized area 1) AIR QUALITY CONTROL:								18	
Kernmodul(e) mit 6 LP (core module(s))										
Firing Systems and Flue Gas Cleaning (Scheffknecht, Baumbach, Seifert)	WP			X				PL	6	
Ergänzungsmodule mit 6 LP (elective module(s))										
Measurement of Air Pollutants (Vogt, Reiser)	W		X					LBP	6	
Primary Environmental Technologies and Emissions Reduction in Industrial Processes (Vogt, Baumbach, Kohler)	W		X					LBP	6	
Introduction to Numerical Simulation of Combustion Processes (Kronenburg, Stein)	W		X					LBP	6	
Modeling and Simulation of Technical Combustion Systems (Schnell, Risio, Stein)	W			X				PL	6	
Modeling and Simulation of Turbulent Reaction Flows (Kronenburg, Stein)	W			X				LBP	6	
Ergänzungsmodule mit 3 LP (elective module(s))										
Air Quality Management (Friedrich)	W		X					BSL	3	
Biological Waste Air Purification (Engesser, Dobslaw)	W			X				BSL	3	
Modeling of Two Phase Flows (Laurien)	W			X				BSL	3	
Chemistry of the Atmosphere (Stubenrauch, Vogt)	W			X				BSL	3	
Engine Combustion and Emissions (D. Schmidt)	W			X				BSL	3	
Deutschsprachige Ergänzungsmodule / elective modules										
Meteorologie (Vogt)	W			X				BSL	3	
Kraftwerksabfälle (Stütze)	W							BSL	3	
Kraftwerksanlagen I (Schnell)	W							BSL	3	
Luftreinhaltung an Arbeitsplätzen (M. Schmidt)	W		X					BSL	3	
Raumklima (Mehra, Hermes)	W		X					BSL	3	
Praktikum mit 3 LP (practical work)										
Practical Work in Air Quality Control (Vogt)	WP		X	X				USL	3	

Details on Courses

Example: Air Quality Control

Spezialisierungsmodul(e) (specialized modules)									
2a	Spezialisierungsfach 1 (specialized area 1)								18
	AIR QUALITY CONTROL:								
Kernmodul(e) mit 6 LP (core module(s))									
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	W					BSL		3	
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	W					BSL		3	
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	W		X			BSL		3	
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	W		X			BSL		3	
Praktikum mit 3 LP (practical work)									
Practical Work in Air Quality Control (Vogt)									
	WP		X	X		USL		3	

Examinations

- **STUDIENLEISTUNGEN (SL)**

- **USL** = *unbenotete Studienleistung* → form of examination with no grade (only pass or fail)
- **USL-V** = *Zulassungsvoraussetzung für Prüfungsleistung* → pre-requisite for an examination
- **BSL** = *benotete Studienleistung* → different forms of examination (e.g. exam, case studies, portfolio)

- **PRÜFUNGSLEISTUNGEN (PL)**

- **PL** = *Prüfungsleistung* → classical module examination (written or orally)
- **LBP** = *lehrveranstaltungsbegleitende Prüfung* → examination in the form of e.g. a seminar paper

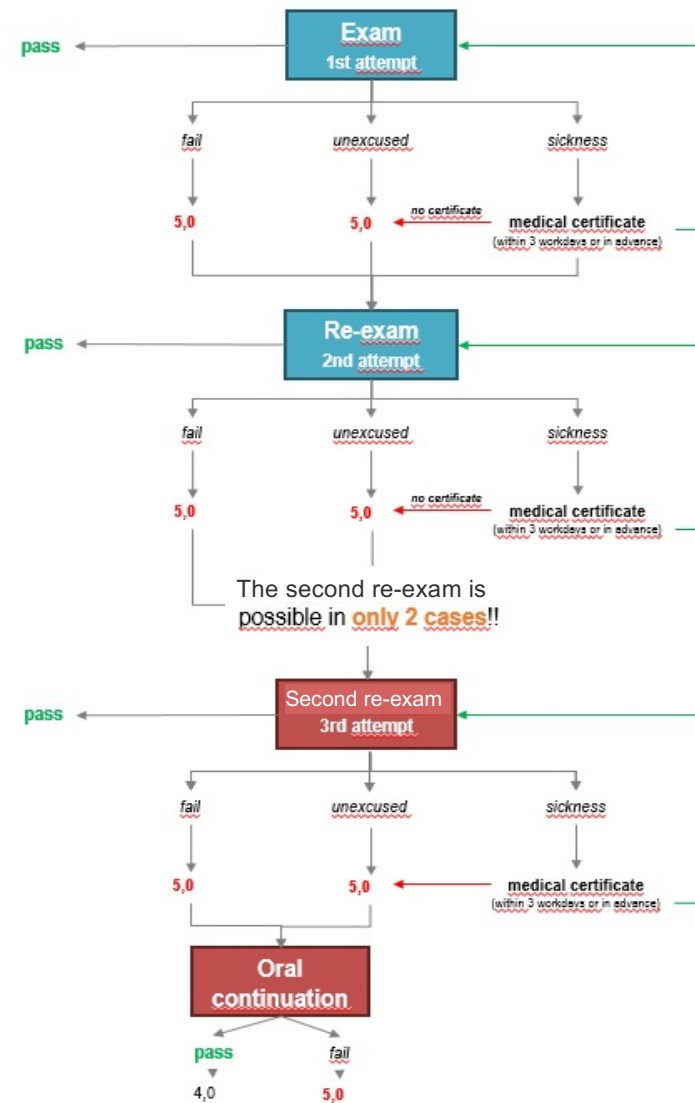


Examinations

- German grading system:

- Very good (1.0 and 1.3)
- Good (1.7, 2.0 and 2.3)
- Satisfactory (2.7, 3.0 and 3.3)
- Pass (4.0)
- Fail (5.0)

MSc WASTE – Examination Regulations 2015



5,0
„nicht ausreichend“



Examinations

- How to register for an exam?

Where?

Online: c@mpus

<https://campus.uni-stuttgart.de>

When?

17. Nov. 2021 – 9. Dec. 2021

What?

All exams – also compulsory exams

What did he just say? – other information sessions by WASTE office / IZ, tbc

Examinations

Basic rules

- Each semester around 30 credits (+/- 10%)
 - You have to register
 - In total: 120 credits in 4 semesters (to be completed in max. 8 semesters!)
- Industrial Internship: usually longer than 6 weeks
 - → please inform yourselves about a sabbatical semester (FAQs)
- Master thesis
 - Duration: 6 months
 - extension by 3 months possible, approval by examinations officer (EO)
- Exceptions: Illness, pregnancy, child birth, single parent of child under 8, cttee member for more than 1 yr (consult exam rules)

Examinations

Your most popular pitfalls

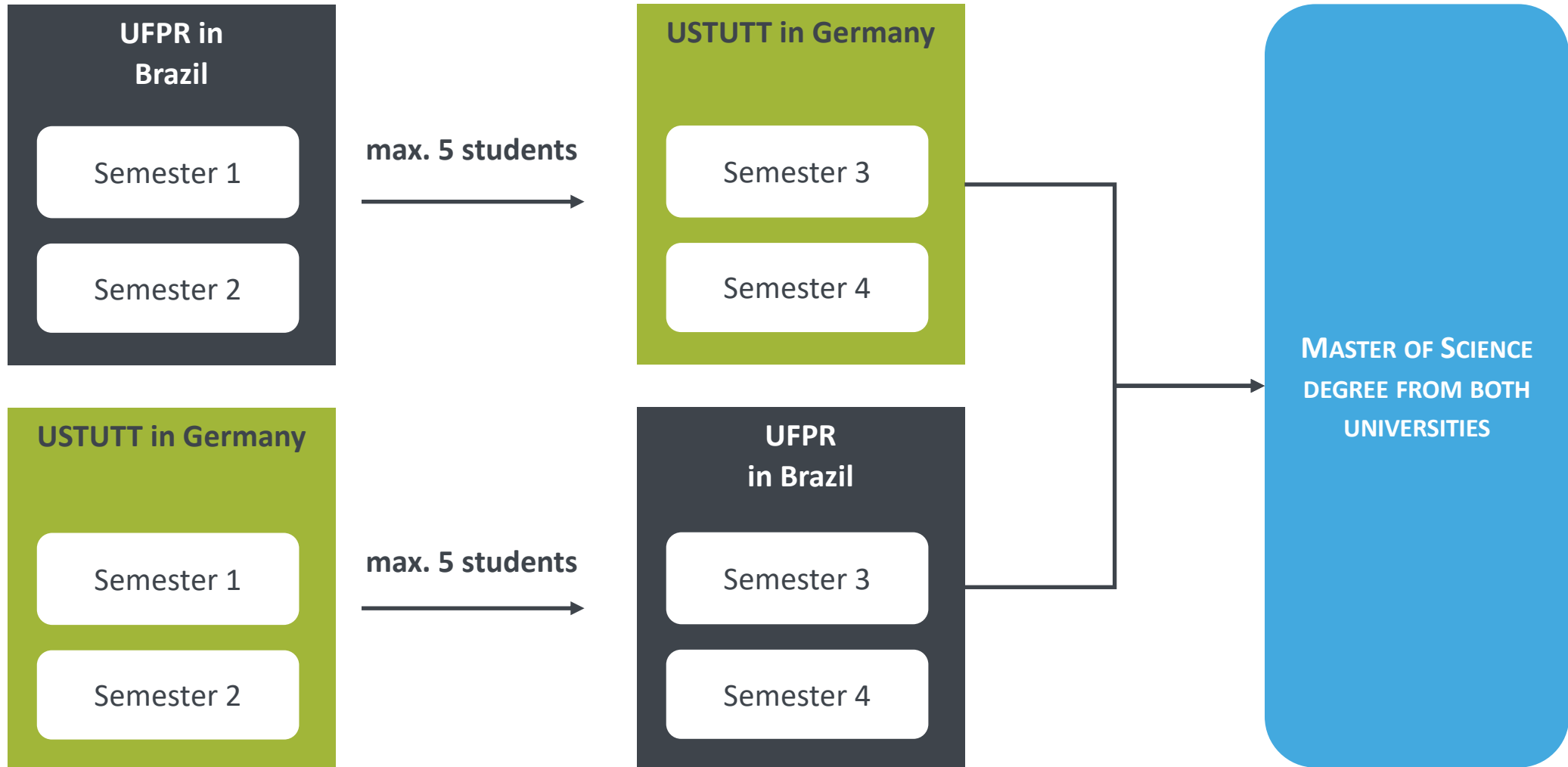
- Exam registration
 - You forgot to register during registration period
 - You must (!) re-take a failed exam asap (within 1 year)
 - You must (!) register for a re-exam and take it
- Withdrawal
 - Online up to 8 days prior to the exam
 - Up to 1 day prior to the exam only due to unforeseen circumstances (illness, accident ...) and (!) by approval by EO
 - On the day no withdrawal possible
 - Not possible for re-exams!

Examinations

Improve your GPA

- “Freischussregelung” (objective: you can give it a shot and try to study fast even if you are unprepared – dare and reduce your risk)
 - Condition: more than 47credits after 2 semesters, then you may (within the first 4 semesters)
 - Retake 1 exam
 - Delete 1 failed exam from your records
 - Lodge application with Prüfungsamt
- General rule:
 - once you have taken an exam – it stands and will be part of your degree.
 - There are 2 exceptions:
 - Freischussregelung
 - Zusatzmodul (additional module) – you must (!) inform the Prüfungsamt of your intentions prior to taking this exam. If not, it will count towards your GPA.

Double Degree UFPR – Uni Stuttgart



WASTE Club e.V.

Objectives of the WASTE Club are to:

- ✓ support the Master program as well as events and excursions
- ✓ keep in touch with graduates / alumni
- ✓ build a network between students, graduates, professors, lecturers, employees, organisations and promoters of the WASTE program
- ✓ give information and make public relation
- ✓ promote science, research and innovation



You

- Where are you from? ✓
- How did you hear from us?
 - Internet
 - Friends
 - Fairs
 - Which fairs?
 - Other
- Why did you choose our programme?



Understand our Philosophy

- We like rules
- We do not like to bend them (neither does the EO)
- We try to help

But it is your responsibility

- The first term may not be what you expect
- Terms 2 to 4 are much better
- You have the choice
- Do not necessarily stick to a topic, select courses that you like

Your life is full of surprises

Prediction is difficult – especially for the future (Niels Bohr)

We (and any future employer) expect you to have the capability to work independently on a topic close to your specialization using scientific methods



... and now

ENJOY

