ASIIN

(**A**kkreditierungsagentur für **S**tudiengänge der **I**ngenieurwissenschaften, der **I**nformatik, der **N**aturwissenschaften und der Mathematik)

Dr. Pepen Arifin

Satuan Penjaminan Mutu – ITB

Workshop Akreditasi Internasional ASIIN – UNS

Solo, 22-23 April 2016

Outline

- Background
- What is ASIIN?
- Procedure of Accreditation
- ASIIN’s approach to assessment
- General criteria
- Subject specific criteria

Quality Assurance in Higher Education

- Internal Quality Assurance
- External Quality Assurance
  - Accreditation
  - Assessment
  - Audit

Accreditation

- Type of accredited body:
  - Institution
  - Program (degree)
- Type of accreditation agency:
  - Professional
  - National accreditation board
- Discipline:
  - Engineering, Technology, Applied Science
  - Business, management, accounting

Why Accreditation is needed?

- Maintenance of internationally benchmarked standards
- Promotion and dissemination of best practice
- Stimulation of innovation and diversity in education
- Students mobility

Benefits of Program Accreditation

- **Publicly assures the competence of graduates** and provides a guarantee of standing that is independent of the education provider.
- A critical component of **certification to governments**, industry and licensing bodies.
- Provide a statement to governments and universities of the **essential requirements and resources necessary** for providing a program education.
- Provides a basis for **international comparability and reciprocal recognition,** facilitating the mobility of engineering graduates

Education Accord

- Washington Accord
  (4 years professional engineer program)
- Sydney Accord
  (3 years Engineering Technologist programs)
- Bangkok Accord → AUN-QA

ABET-ASIIN-AUN-QA-BAN PT

ABET	ASIIN	AUN-QA	BAN-PT
Accreditation	Accreditation	Assessment	Accreditation
International	International	Regional	National
Outcome	Outcome	Outcome	IPO
SSR - visit	SAR - visit	SAR - visit	Borang - visit
Professional	Professional	Semi-Gov	Government
Program	Program	Program & Institutional	Program & Institutional
Eng, Comp, Tech	Eng, Inf, Sci.	All	All

Akkreditierungsagentur für Studiengänge der Ingenieurwissenschaften, der Informatik, der Naturwissenschaften und der Mathematik (ASIIN)

What is ASIIN?

- Akkreditierungsagentur für Studiengänge der Ingenieurwissenschaften, der Informatik, der Naturwissenschaften und der Mathematik (ASIIN)
- Founded in 1999 as the non-profit association for the accreditation of degree programmes in engineering an informatics (ASII)
- Expanded to ASIIN in 2002 by **including** the fields of natural sciences and mathematics.
- Since 2000, ASII or ASIIN has the right to award the accreditation seal of the German Accreditation Council, in addition to the ASIIN quality seal

Founding Members of ASIIN e. V.

Coordination Group of Technical Universities

Respective deans' conferences as "guests"

Coordination Group of Universities of Applied Sciences

Respective deans' conferences as "guests"

An alliance anchoring in the scientific community and in the economy (universities, professional organizations, scientific societies,

chambers, trade unions, employers' federations) working together for quality assurance and improvement in higher education

Technical and Scientific Associations, Professional Organizations, Chambers

Employer's Federations, Trade Unions , Industry Associations

Members of ASIIN e. V.

- **Technical and scientific associations and trade organisations**
  - *German Professional Association of Geoscientists*
  - *German Association of Certified Surveyors*
  - *Federal Chamber of Engineers*
  - *German Mathematical Society*
  - *German Physical Society*
  - *etc*
- **Industrial and business associations**
  - *German Federation of Chemical Employers Associations*
  - *German Association for Information Technology, Telecommunications and New Media*
  - *German Trade Union Confederation*
  - *Association of German Mechanical and Plant Engineering*
  - *etc*
- **Coordination group of the universities organised by AVI**
- **Coordination group of the universities of applied sciences within the universities of applied sciences in Germany**

Technical Committee ASIIN

3 Persons from Universities	**3** Persons from universities of applied sciences	**3** Persons from industry	**1-2** Student members

Actual number of Technical Committees:

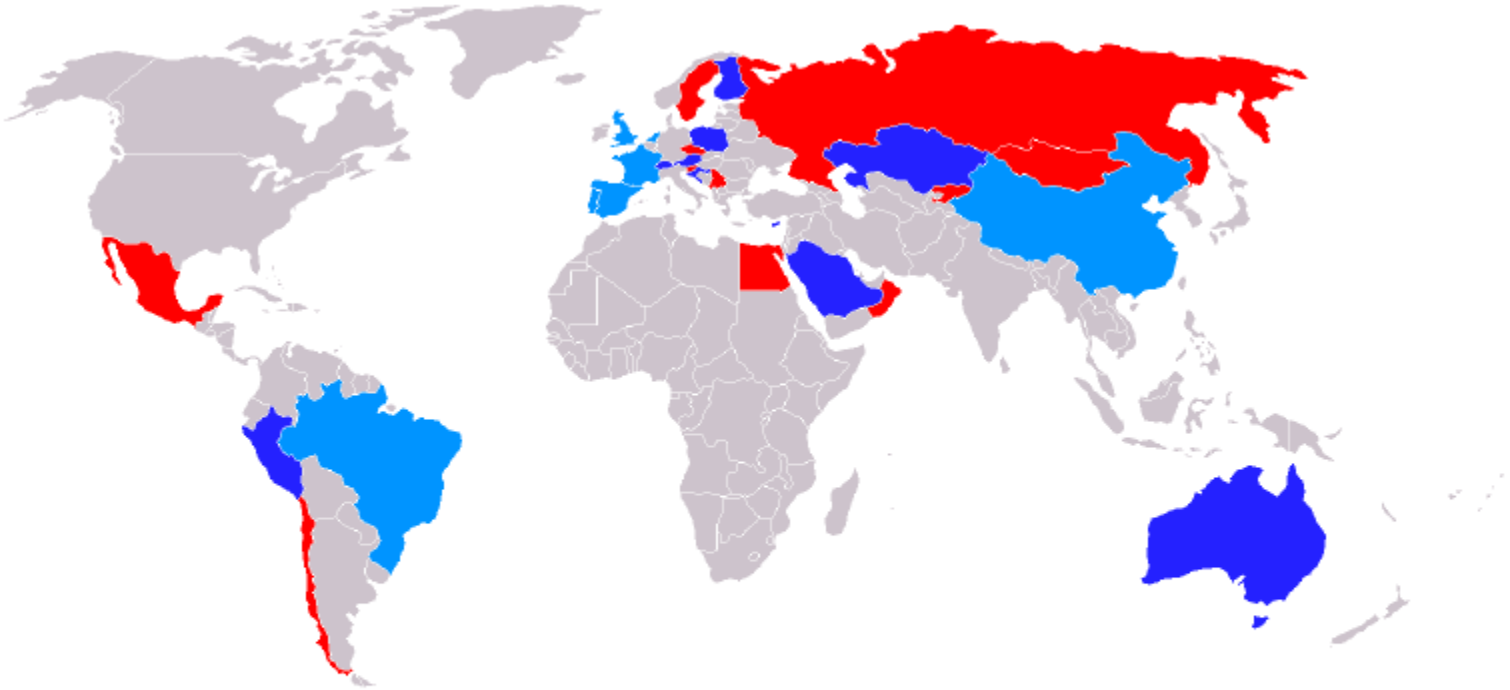
Techn. Comm. 1 Mechanical Engineering/ Process Engineering	**Techn. Comm. 2** Electrical Engineering/ Information Technology	**Techn. Comm. 3** Civil Engineering/ Surveying	**Techn. Comm. 4** Information Technology	**Techn. Comm. 5** Physical Technologies, Materials and Process Engineering
Techn. Comm. 6 Industrial Engineering	**Techn. Comm. 7** Information Management	**Techn. Comm. 8** Agricultural and Nutritional Sciences	**Techn. Comm. 9** Chemistry	**Techn. Comm. 10** Biology
Techn. Comm. 11 Geosciences	**Techn. Comm. 12** Mathematics	**Techn. Comm. 13** Physics		

Programme accreditation

Bachelor's and Master's degree programmes:

- In engineering
- In computer science
- In the natural sciences
- In mathematics
- In all interdisciplinary areas which include one of the aforementioned subject areas
- In international and European cooperation, e.g. "double degree" or "joint degree", which include one of the aforementioned subject areas
- In teacher training programmes

ASIIN's Accreditation (International)



As of: 28.01.2013

International degree programme accredited

Joint-Programme accredited

More than 100 accredited degree programmes worldwide

Accreditation Request received / procedure started

ASIIN's International Seal dan Quality Label

An ASIIN-procedure on the programme / course / module level may lead to different seals

National German (public, generic)

Stiftung zur Akkreditierung von Studiengängen in Deutschland
Akkreditierungsrat

Engineering, Natural Sciences, Informatics (Economics)

ASIIN — Accredited Degree Programme 2013-2018

ASIIN CONSULT — Certified Module 2013-2018

Informatics

Euro-Inf Master awarded by EQANIE

Chemistry

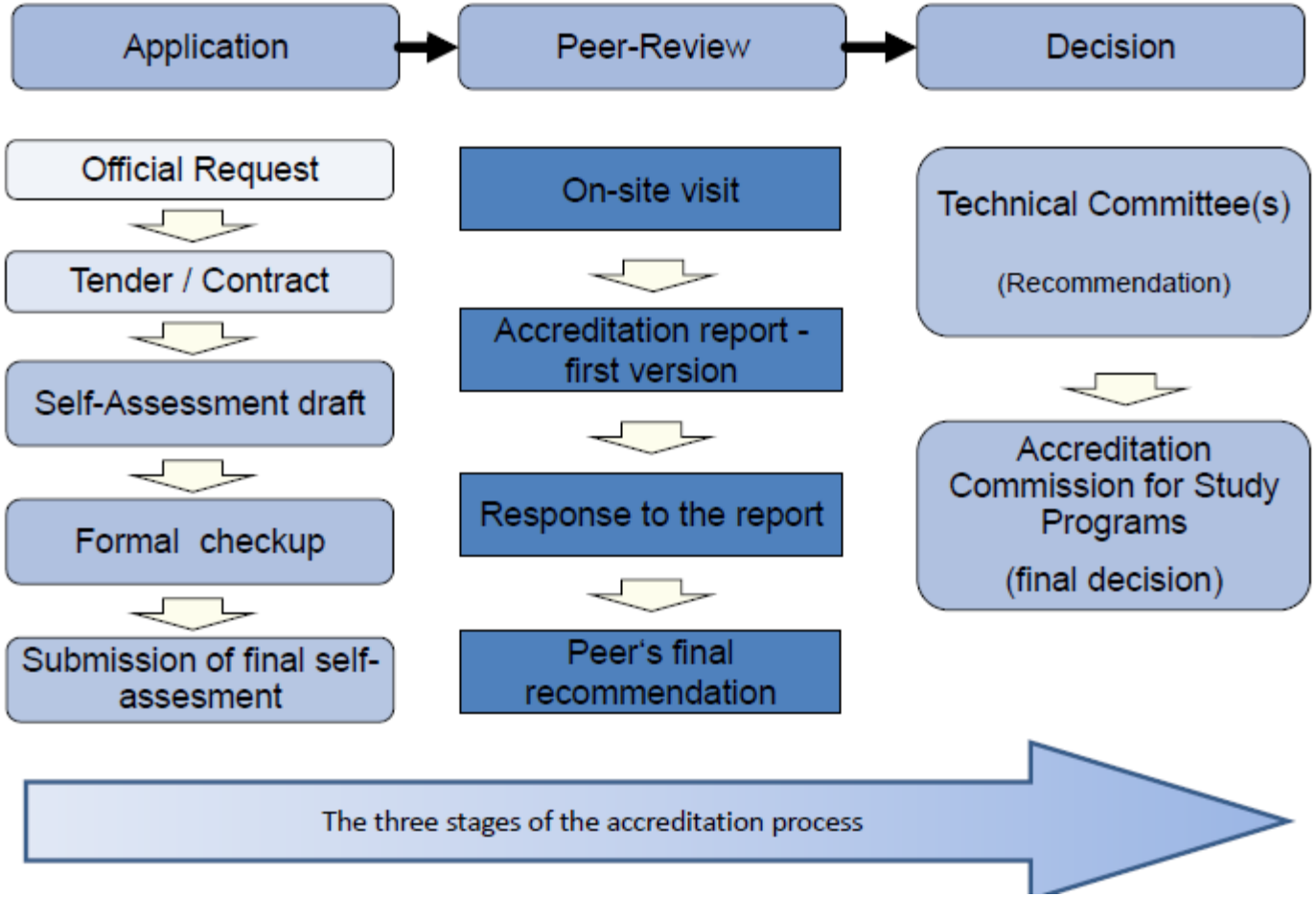
ECTN European Chemistry Thematic Network — European Chemistry Thematic Network Association — EUROMASTER®

ECTN European Chemistry Thematic Network — European Chemistry Thematic Network Association — EUROBACHELOR®

Engineering

European Accreditation of Engineering Programmes EUR-ACE®

What is the procedure of accreditation?



Initiation of the Accreditation Process

- HEI is asked to turn in the Accreditation Request
- Discussion in ASIIN‘s Technical Committee(s)
- HEI will receive tender letter (including benefits, price and a proposed timeline)

Preparing the Self-Assessment

- Self assessment report must be compiled by the university
- It should be based on the internal QA-system
- Compilation takes 6-12 months to prepare
- University staff (administrative and academic) needs to contribute content
- Preparation and discussion of the draft of the self assessment based on: General Criteria + Subject-Specific Criteria

The on-site visit

- Standard team for initial accreditation:

  4 ASIIN peers, representatives from

  - Technical Universities or Universities (more research oriented; 1-2 peers)
  - Universities of Applied Sciences (1-2 peers)
  - Industry (1 peer)
- Discussion with representatives of institution‘s administration
- Discussion with professors responsible for the development of the programme

The on-site visit

- Discussion with academic staff
- Discussion with students/alumni/ representatives of industry
- Review of exams (written, final, projects…)
- Visitation of the institution (laboratories, library, …)
- Final internal discussion of auditors
- Final meeting with institution‘s representatives

After the on-site visit

- **Audit** and production of **auditor report** (2 weeks)
- **Comments** by university (submission of additional information material, if required) (4 weeks)
- Final **recommendation** by the auditors (1 week)
- Discussion in relevant **Technical Committee(s)** (4 weeks)
- Discussion in the **Accreditation Commission** ☐ **Decision and conclusion** (2 weeks)

The accreditation decision: Possible outcomes

1. **Accreditation without reservation:** Accreditation valid for five years.
2. **Conditional accreditation with requirements and recommendations:** Accreditation initially limited to one year, extended to a total of five years after fulfillment of the requirements.
3. **Suspension of the accreditation process:** With conditions, for up to 18 months. The process will be taken up again after the conditions have been met.
4. **Rejection**

Accreditation without reservations: Timeline

- Accreditation decision

- Report and certificates delivered three (to four) weeks after the accreditation decision

- Begin collecting data and implementing quality assurance processes immediately - five years to next accreditation visit!

Recommendations

- …identify issues that **require medium- to long-term efforts** for further improvement; for example completing the quality assurance system.
- …should have been **implemented before the next accreditation visit**; if not, explicit justification is required.
- …are **not merely „suggestions"**, but may lead to stronger sanctions in the future.

Limited accreditation: Timeline

- Accreditation decision

- Fulfillment of requirements due: about nine months later

- Four years to next accreditation visit!

Requirements

- …identify issues that require **immediate efforts for further improvement**; for example completing the module handbook or improving single modules/courses.
- …must be demonstrated to have been **implemented within ca. nine months** after the accreditation decision.
- …often **require efforts by the entire academic staff** – plan with enough time for discussion and implementation.

Suspension - Conditions

- The accreditation process can be suspended, if the degree programmes in question require **substantial improvement** before an accreditation decision can be reached (i.e. formulating coherent objectives and learning outcomes on all levels, major curricular changes, completion of infrastructure).
- Suspension requires a **decision by the accreditation commission**.

Comments and suggestions

- The accreditation report may contain further comments, suggestions and examples of good practice.
- These items will not be of immediate relevance for the accreditation decision, but may be useful for further quality improvement
  - Follow-up should include a concentrated review ("information mining") of the accreditation report and the entire process – maximise the utility of the peer review principle

Financial Framework

- ASIIN e.V. is a non-profit organisation
- Costs depend on:
  - Number of peers (☐ travelling, accommodation and subsistence)
  - Number of programmes to be accredited
  - Duration of audit

Accreditation of degree programmes based outside of Germany

- The **content-related core of the ASIIN General Criteria** is decisive for the award of the ASIIN quality seal, irrespective of the country the organisation applying for accreditation is located in.
- Those parts of the ASIIN General Criteria related to the implementation of **specific national and regional structural features and legal provisions** may not be applied in other countries or regions. This element is adapted to national or regional standards.

ASIIN's approach to assessment

- *Definition of goals:*
  - *For each programme, the main focus lies on the learning* outcomes that should be achieved by students during their studies.
  - The overall learning outcomes aimed at in the programme must be rigorously collated with the goals of the learning outcomes of the individual modules in the programme.
- *Implementation:*
  - *The measures, instruments and resources* which are the product of the supporting or organisational processes of a higher education institution that it invests in the implementation of a programme (input) in order to attain the defined goals (outcome).
- *Further development and checking results:*
  - *The institution's internal quality assurance* process is considered at this juncture;
  - Feedback mechanisms should lead to continuous improvements in the programme.

ASIIN's approach to assessment – procedural view

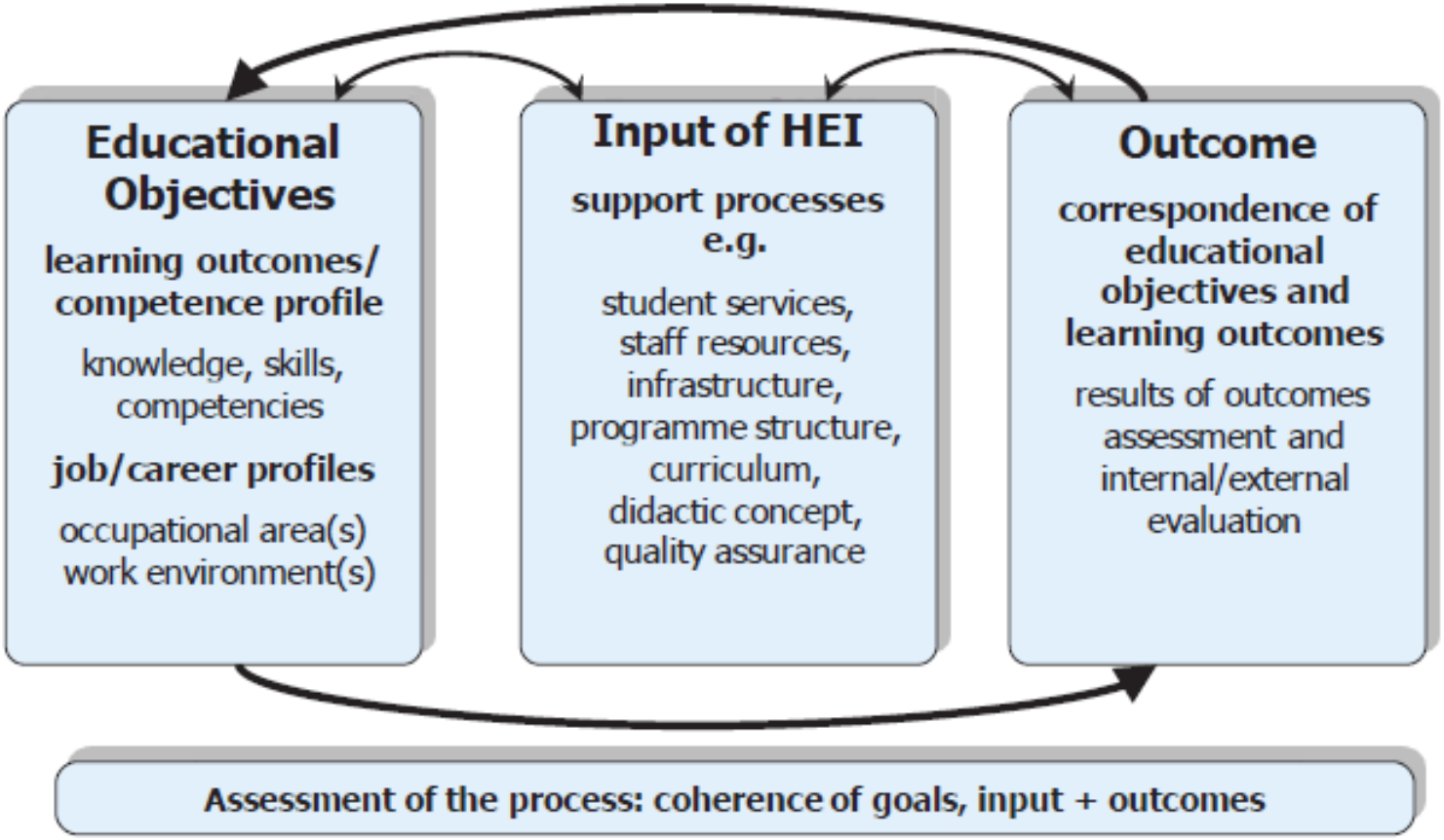


Figure 1: ASIIN's approach to assessment – procedural view

General requirements for the accreditation of degree programmes

- **FORMAL SPECIFICATIONS**
- **DEGREE PROGRAMME: CONTENT CONCEPT AND IMPLEMENTATION**
  - Objectives of the degree programme
  - Learning outcomes of the programme
  - Learning outcomes of the modules/module objectives
  - Job market perspectives and practical relevance
  - Admissions and entry requirements
  - Curriculum/content

- **DEGREE PROGRAMME: STRUCTURES, METHODS AND IMPLEMENTATION**
  - Structure and modularity
  - Workload and credit points
  - Educational methods
  - Support and advice
- **EXAMINATIONS: SYSTEM, CONCEPT AND ORGANISATION**
  - Type, organization and distribution
  - Information and regulation
  - Final thesis
  - Supervision

- **RESOURCES**
  - Staff involved
  - Staff development
  - Institutional environment, financial and physical resources
- **QUALITY MANAGEMENT: FURTHER DEVELOPMENT OF DEGREE PROGRAMMES**
  - Quality assurance and further development
  - Instruments, methods and data
- **DOCUMENTATION AND TRANSPARENCY**
  - Relevant regulations
  - Diploma Supplement and qualification certificate

Subject Specific Criteria

Requirements for Bachelor's Degree Programmes - Physics)

- They have **sound knowledge of classical physics** (mechanics, electrodynamics, thermo-dynamics, vibrations, waves and optics) and are familiar with the fundamentals of **quantum, atomic and molecular, nuclear, elementary particle and solid state physics.**
- They are familiar with important **mathematical methods** used in physics and can use these to solve physics problems
- They have an extensive understanding of the fundamental principles of physics, their inherent relation and mathematical formulation and, based on this, have acquired methods suitable **for theoretical analysis, modelling and simulation** of relevant processes.
- They have applied their knowledge to physics problems in an exemplary manner and studied some areas in greater depth, thereby acquiring a first basis for **problem solving competence**

- They have a basic capacity to **comprehend physics problems**. This will in general however not yet facilitate a deeper understanding of current research areas
- They are therefore in a position to independently classify physics-based and to some extent also **interdisciplinary** problems that require a target-oriented and logic-based approach, and to analyse and/or solve them by using natural scientific and mathematical methods.
- They are familiar with basic principles of experimentation, are able to use **modern physics measurement methods**, and are in a position to assess the significance of results correctly.
- They have generally also acquired an overview knowledge in selected **other natural science** subjects or technical disciplines
- They are able to apply their knowledge to different fields and act responsibly in their professional activity. They are moreover able to **recognise new trends** in their subject area and integrate the relevant methodology – possibly after appropriate qualification – into their further work

- They are able to continuously and self-reliantly extend and deepen the knowledge acquired in the Bachelor's degree programme. They are familiar with suitable learning strategies (**lifelong learning**) for this; they are in particular capable of a consecutive Master's degree programme in principle
- They have gained initial experience with regard to generic qualifications (e.g. time man-agement, study and work techniques, willingness to cooperate, capacity for teamwork, **ability to communicate**, rules of good scientific practice) in their degree programme, and are able to develop these skills further
- They have learnt **communication techniques** and are familiar with the basic elements of the relevant specialised English
- They are able to **solve a simple scientific problem** and to present their results orally (lecture) and in writing (demonstrated in a Bachelor’s thesis).

Thank you