



# *Best Practice* Tata Kelola Pendidikan Tinggi:

Inspirasi dari Jerman

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# Agenda

1. Gambaran Umum Pendidikan Tinggi di Jerman
2. Penyusunan Kurikulum Berkualitas
3. Manajemen Kualitas *Dosen*
4. Kerja Sama Internasional

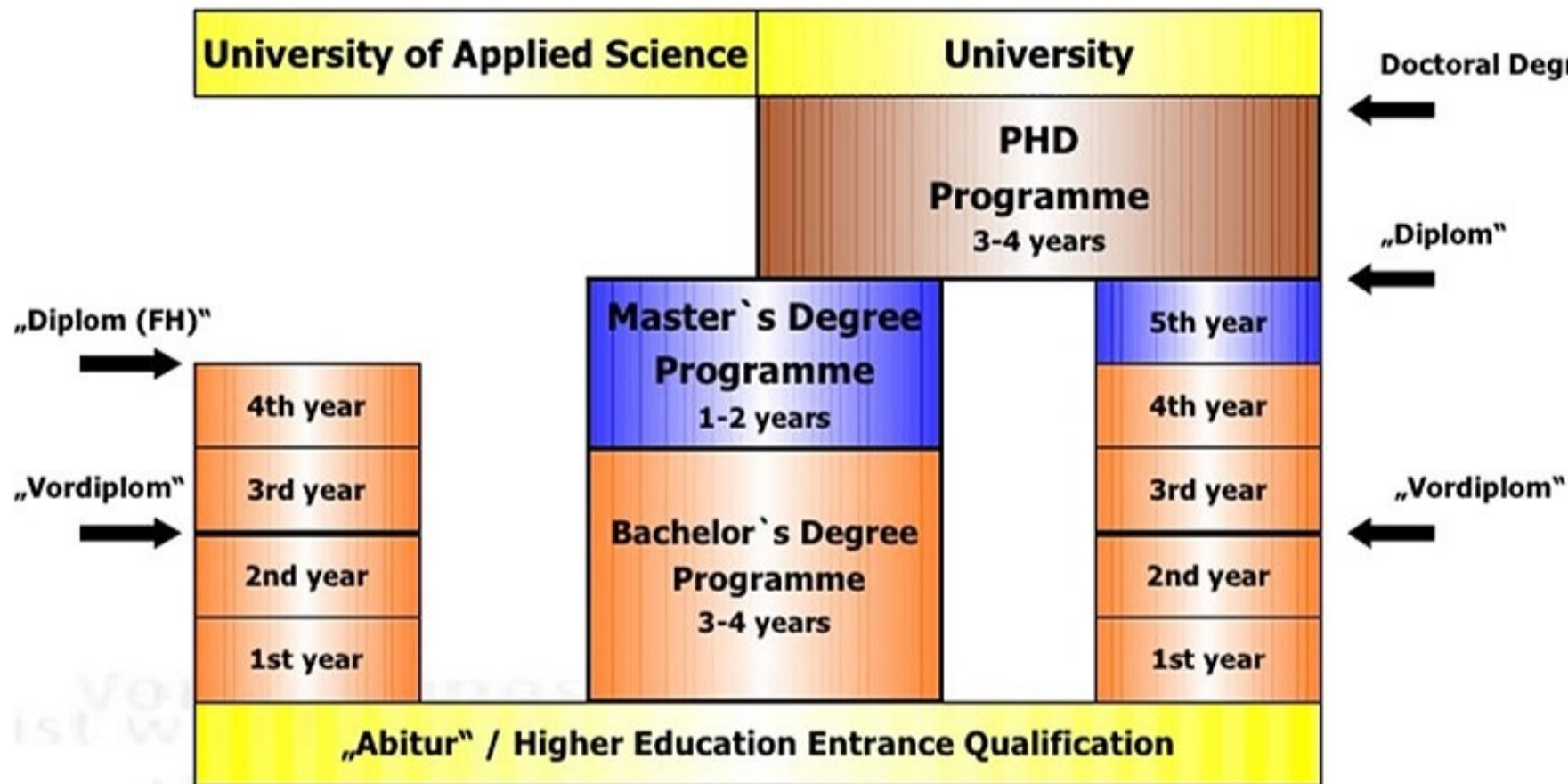




# Gambaran Umum Pendidikan Tinggi di Jerman



# Tipe perguruan tinggi di Jerman



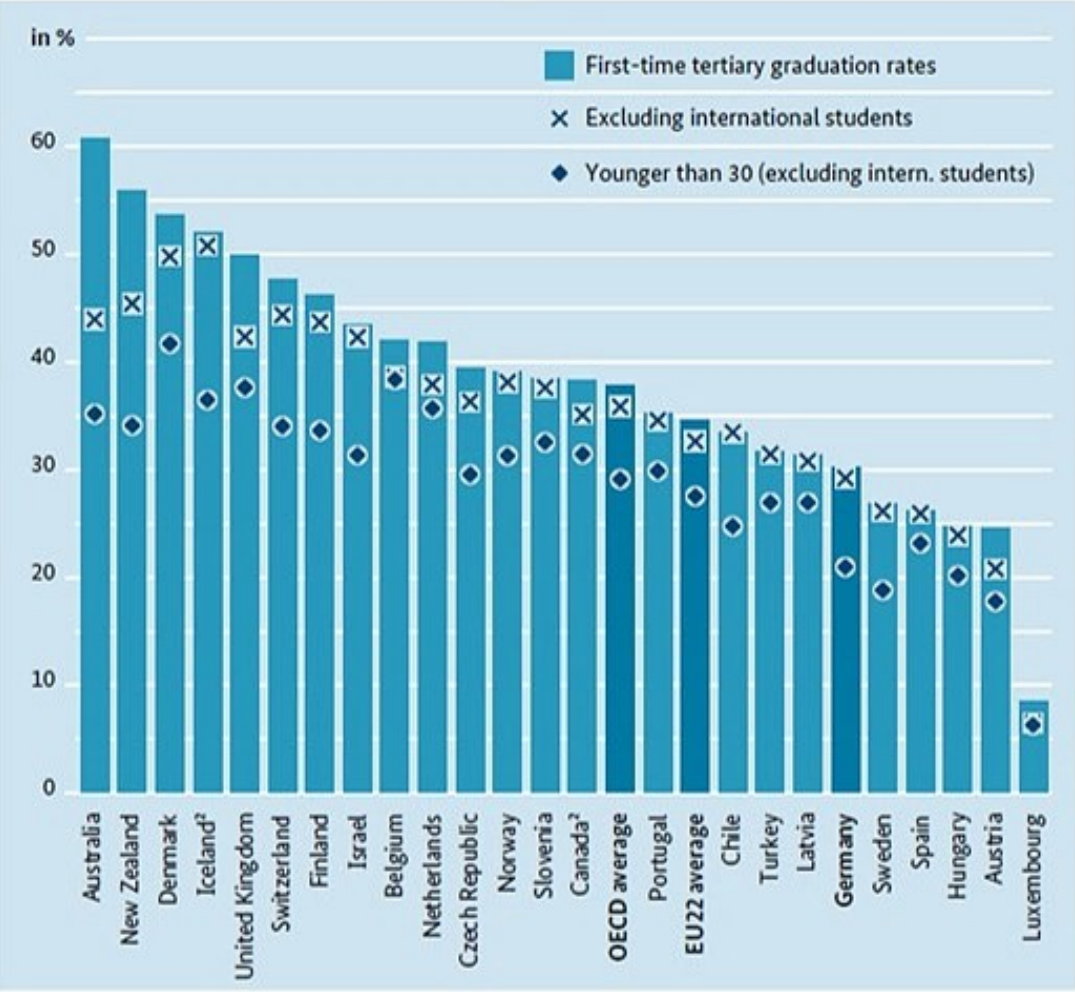
## Tipe perguruan tinggi lain

- Berufsakademie (BA)/ University of Cooperative Education: **dual system**
- Pädagogische Hochschule (pendidikan guru)
- Musisch-künstlerische Hochschule (perguruan tinggi kesenian)
- Theologische Hochschule (perguruan tinggi ilmu agama)
- Fachhochschulen für öffentliche Verwaltung (FHöV) and DHV Speyer (perguruan tinggi ilmu administrasi publik)

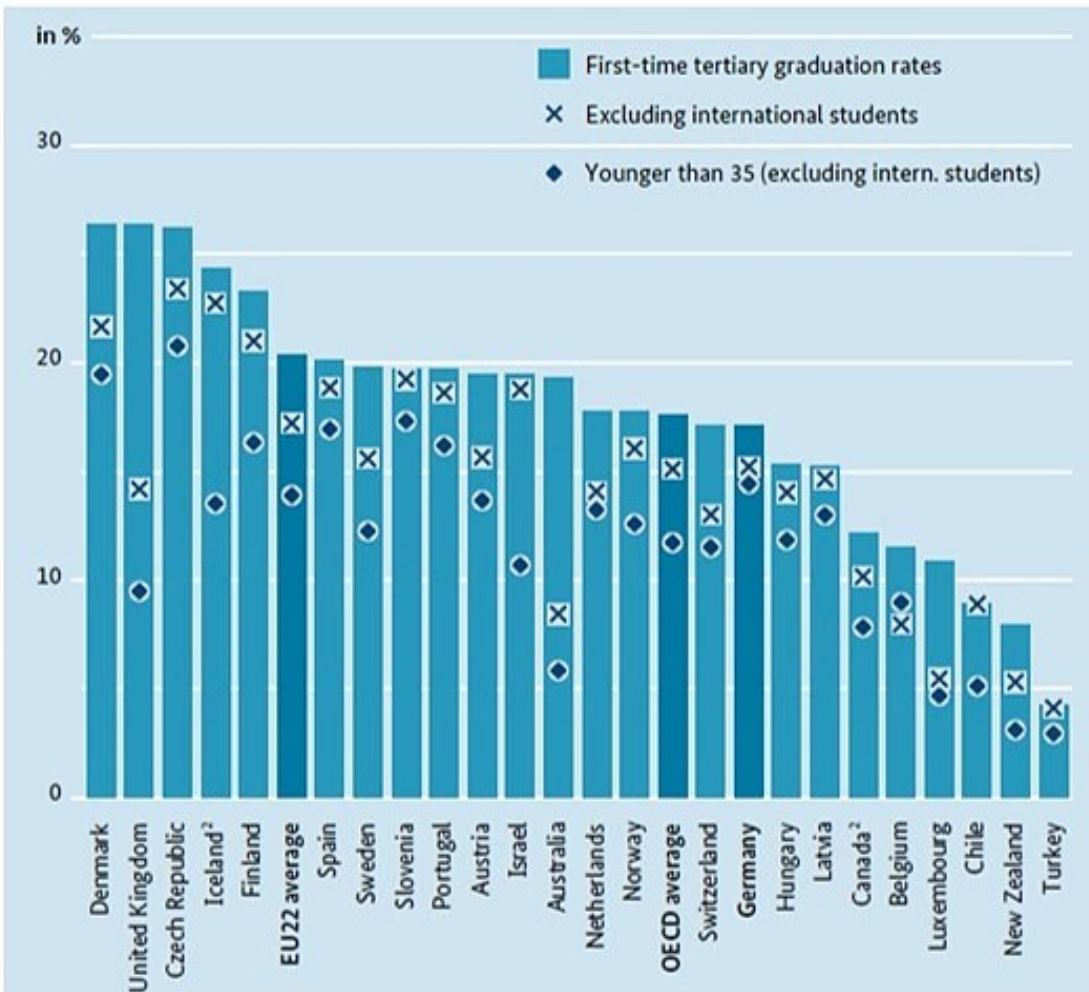
Sumber: campusgermany.de

# Prosentase Lulusan S1 dan S2 di Negara-negara OECD

Lulusan S1



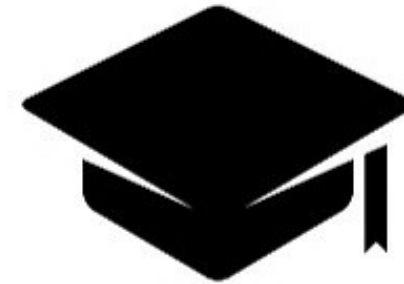
Lulusan S2



# Hubungan Timbal Balik antara Industri dan Perguruan Tinggi



- Rekrutmen tenaga pengajar (sains terapan)
- Kontrak dan pendanaan riset
- Dosen tamu
- Akreditasi



- Kerja praktek
- Transfer hasil riset
- Konsultasi
- Pasokan tenaga kerja



# Universitas vs. Universitas Sains Terapan



## Universitas

- Hampir semua program studi
- Menawarkan program S3
- Fokus ke riset, teori, dan sains
- Kegiatan mengajar di kelas-kelas besar
- Bimbingan ke mahasiswa minimal
- Dosen/profesor berpengalaman dalam riset

## Universitas Sains Terapan

- Tidak ada program studi kedokteran, pendidikan guru, hukum, dan MIPA
- Tidak menawarkan program S3
- Fokus ke penerapan sains
- Kegiatan belajar-mengajar di kelas-kelas kecil
- Bimbingan ke mahasiswa intensif
- Dosen/profesor berpengalaman dalam penerapan di industri

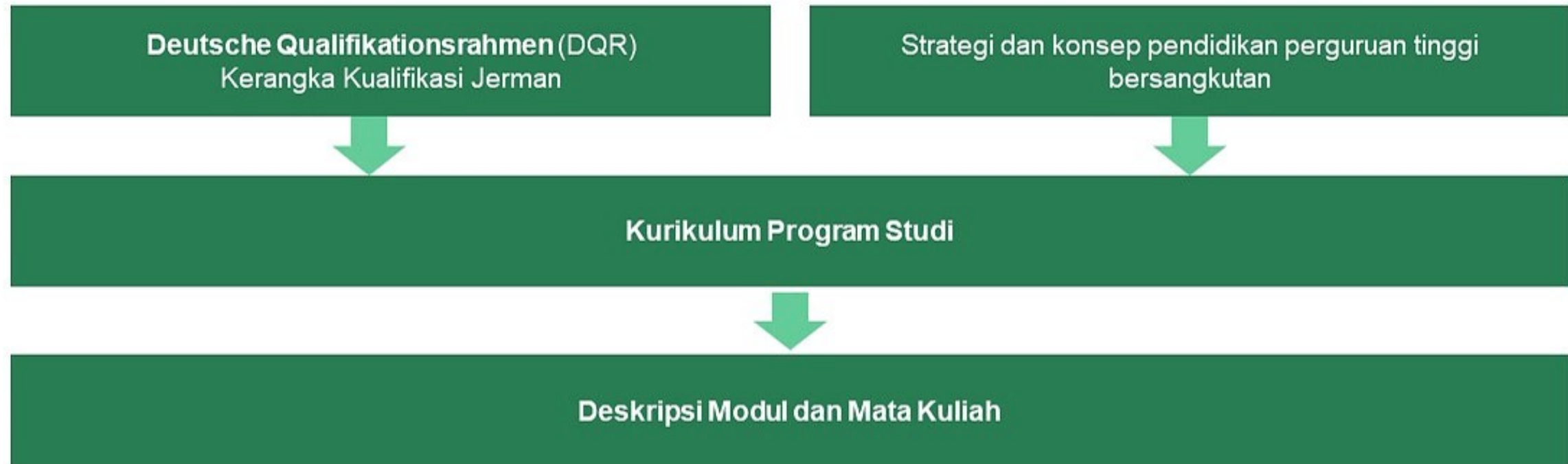


# Penyusunan Kurikulum Berkualitas

Praktik umum di Jerman



# Proses Penyusunan Kurikulum Sebuah Program Studi



## Tahap umum penetapan kurikulum dan deskripsi modul/mata kuliah



# Contoh Konsep Pendidikan Level Universitas

Tujuan Utama	Karakteristik yang ingin dicapai	Instrumen yang dipilih
Kualitas akademis	Pengajaran yang berkualitas	<ul style="list-style-type: none"> <li>▪ Aturan integritas akademik</li> <li>▪ Prosedur seleksi profesor/dosen</li> <li>▪ <i>Onboarding</i> untuk dosen</li> <li>▪ Format belajar-mengajar</li> <li>▪ Sistem <i>Choice-Core-Career (CCC)</i></li> <li>▪ <i>Academic advising</i></li> </ul>
	Kelayakan untuk studi	
Pengembangan kepribadian	Kompetensi diri	<ul style="list-style-type: none"> <li>▪ <i>Interdisciplinarity</i></li> <li>▪ <i>World track</i></li> <li>▪ <i>Campus life</i></li> <li>▪ Format belajar mengajar</li> <li>▪ Komunitas</li> </ul>
	Komperensi sosial	
Internasionalitas	Keragaman budaya	<ul style="list-style-type: none"> <li>▪ Kelas internasional</li> <li>▪ Mobilitas internasional</li> <li>▪ Kampus internasional</li> <li>▪ Intercultural training and conseling</li> </ul>
	Kompetensi antarbudaya ( <i>intercultural competence</i> )	
Kualifikasi untuk dunia kerja	Kompetensi profesional	<ul style="list-style-type: none"> <li>▪ Sistem CCC</li> <li>▪ Triangle</li> <li>▪ World track</li> <li>▪ Proyek dalam mata kuliah</li> <li>▪ Proyek dengan industri</li> <li>▪ Kerja praktek</li> <li>▪ <i>Career service center</i></li> </ul>
	Kompetensi antar bidang	



# Komponen dalam sebuah kurikulum

1. Deskripsi umum program studi dan kelebihanannya dibanding program-program lain
2. Qualification aims dan Intended Learning Outcomes (ILO) program studi
3. Pilihan karir
4. Persyaratan masuk
5. Struktur kurikulum: 3C, Major-Minor, Kerja Praktik, Spesialisais, dll.
6. Deskripsi modul/ mata kuliah
7. Matrix ILO

Dikomunikasikan ke mahasiswa sebelum masuk

# Contoh Deskripsi Modul/ Mata Kuliah

<b>Module Name</b>			<b>Module Code</b>	<b>Level (type)</b>	<b>CP</b>
Industry 4.0 and Blockchain Technologies			CA-SIEM-801	Year 3 (Specialization)	5
<b>Module Components</b>					
<b>Number</b>	<b>Name</b>			<b>Type</b>	<b>CP</b>
CA-IEM-801-A	Industry 4.0 Technologies			Lecture	2.5
CA-IEM-801-B	Blockchain Applications in Industrial Engineering			Seminar	2.5
<b>Module Coordinator</b>		<b>Program Affiliation</b>		<b>Mandatory Status</b>	
Prof. Dr.-Ing. Hendro Wicaksono		<ul style="list-style-type: none"> <li>Industrial Engineering &amp; Management (IEM)</li> </ul>		Mandatory/elective for IEM	
<b>Entry Requirements</b>			<b>Frequency</b>	<b>Forms of Learning and Teaching</b>	
<b>Pre-requisites</b>	<b>Co-requisites</b>	<b>Knowledge, Abilities, or Skills</b>	Annually (Spring)	<ul style="list-style-type: none"> <li>Lecture (17.5 hours)</li> <li>Seminar (17.5 hours)</li> <li>Private Study and Project Work (90 hours)</li> </ul>	
<input checked="" type="checkbox"/> Production and Technology Management	<input checked="" type="checkbox"/> None	<input checked="" type="checkbox"/> None	<b>Duration</b>	<b>Workload</b>	
			1 semester	125 hours	
<b>Recommendations for Preparation</b>					
Learn or practice basic functions in SQL database.					
<b>Content and Educational Aims</b>					
<p>In the "Industry 4.0 Technologies" module component, industry 4.0, a concept coined by the German Federal Government that refers to the fourth industrial revolution, will be introduced. Industry 4.0 is characterized by the interlinking of industrial production with modern information and communication technologies, such as the internet of things, big data, and augmented/virtual/mixed reality. This module aims to provide exposure to a range of information and communication technologies currently applied to support production and logistics processes. Afterwards, the core Industry 4.0 technologies and their technical, business, and ethical impacts will be introduced. The students will work on a group case study project to analyze the applications and impacts of industry 4.0-related technologies in different sectors, such as manufacturing, logistics, agriculture, and construction.</p> <p>In the "Blockchain Applications in Industrial Engineering" module component, students will learn and experience the blockchain approach. The potential of blockchain technology for the field of industrial engineering will be discussed and different blockchain applications in this field will be presented. This module covers private blockchains (i.e., applications in industrial engineering) and public blockchains (e.g., token-based blockchains and cryptocurrencies). During the module, a project will be carried out covering the design, development, and implementation of a blockchain simulation. With the support of the lecturer, the students create a simulation on a pen-and-paper basis. The simulation follows the game-based learning principle so that the students experience the concept of the blockchain approach and its application.</p>					

## Intended Learning Outcomes

By the end of this module, students will be able to

- explain the motivation, development history, and core technologies of industry 4.0;
- distinguish between the roles of technical and business information systems;
- distinguish and give examples of functions covered by different information systems;
- explain the infrastructure and technologies required for industry 4.0 and the resulting improvements;
- assess the possible business models, environmental, social, and ethical impacts of industry 4.0 applications.
- explain the blockchain approach, including the basic concepts of cryptography and smart contracts;
- discuss the challenges, advantages, and disadvantages of private and public blockchains;
- analyze different consensus algorithms and demonstrate their advantages and disadvantages;
- illustrate different applications of the blockchain approach in the field of Industrial engineering (e.g., production, logistics, and finance);
- design and implement a blockchain simulation;

## Indicative Literature

Not specified

## Usability and Relationship to other Modules

- Mandatory elective specialization module for 3rd year IEM major students
- Elective for all other undergraduate study programs

## Assessment

Type: Project (Group Assessment)

Weight 100%

Scope: All intended learning outcomes of the module.





Sumber: US Department of Defense

# Manajemen Kualitas *Dosen*

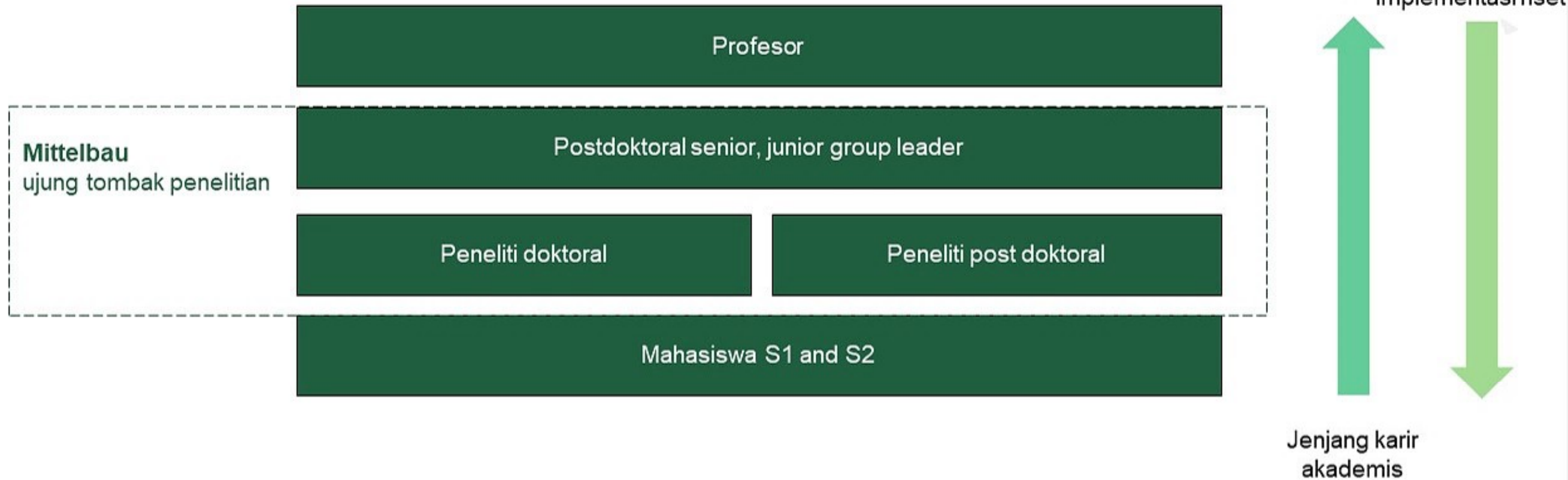
Praktik umum di Jerman

# Perbedaan dosen di Indonesia dan Jerman

		
<b>Kualifikasi</b>	S2 atau S3	++ S3 ++
<b>Linearitas vs. transdisiplin</b>	Linearitas penting	Transdisiplin adalah kekuatan
<b>Penentu perekrutan</b>	Pengambil kebijakan	Pengguna: sejawat, industri, mahasiswa, ...
<b>Otoritas</b>	Sesuai kebijakan pemerintah/ pengambil kebijakan	<i>Freedom of teaching and research</i>
<b>Akses sumber daya</b>	Dikelola oleh „home base“, seperti program studi, fakultas	Sebagai pengelola
<b>Beban mengajar</b>	12 SKS?	9/10 SWS (Uni), 18 SWS (FH/UAS)
<b>Evaluasi kinerja</b>	Terstandardisasi nasional	Berdasarkan kesepakatan dengan memperhatikan kelebihan dan kekurangan
<b>Mobilitas karir akademis- industri</b>	Hampir tidak memungkinkan	Memungkinkan



# Struktur Organisasi Research University





# Sinergi Pembelajaran dan Penelitian

Praktik umum di Jerman

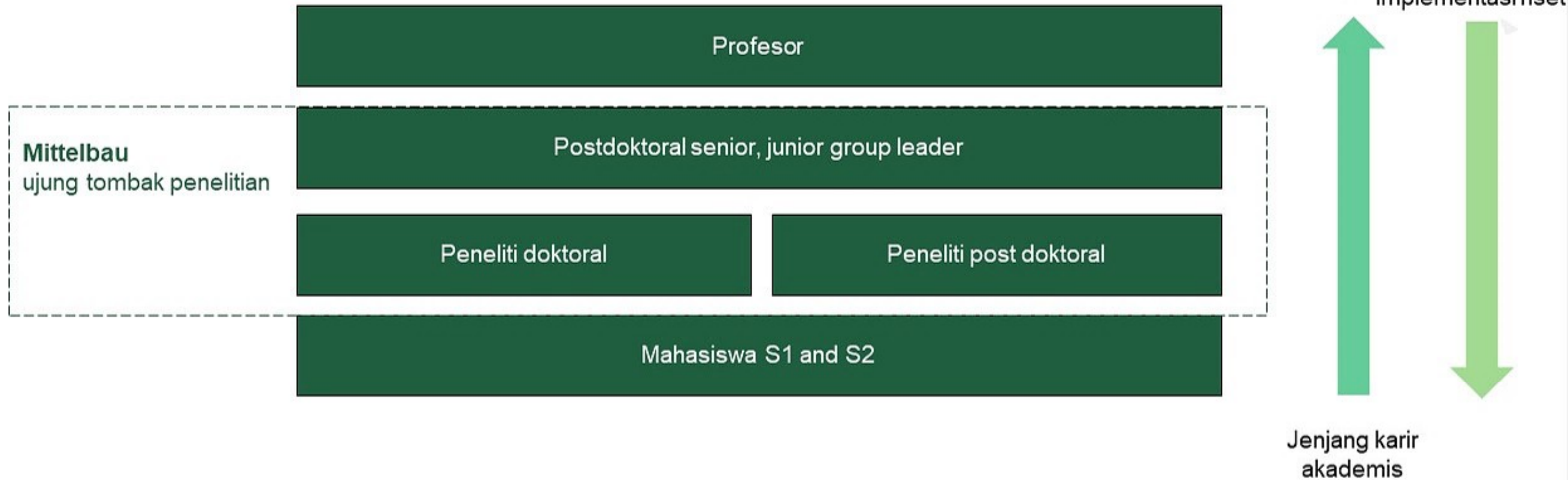


# Penelitian di dalam Universitas

- Pendanaan:
  - Pendanaan dasar: negara bagian, yayasan
  - Pendanaan dari lembaga publik (EU, kementerian, DFG)
  - Pendanaan dari industri melalui kontrak riset
- Tata kelola dan implementasi dilakukan oleh institut atau research group
- Organisasi penelitian bersifat independen dari organisasi program studi



# Struktur Organisasi Research University





# Sinergi pengajaran - penelitian

## Pengajaran ⇨ penelitian

- Tema penelitian dosen dibreakdown menjadi tema-tema penelitian doktoral/postdoktoral => skripsi S1 dan skripsi S2
- Pelaksanaan skripsi S1 15 ECTS ( $\pm$  450 jam), S2 30 ECTS ( $\pm$  900 jam)
- Pembimbing sekaligus penguji. Titik berat penilaian adalah proses bukan hasil akhir.

## Penelitian ⇨ pengajaran

- Freedom of research and teaching, dosen dapat mengampu mata kuliah yang berisi diseminasi hasil riset
- Tema riset menjadi motivasi mata kuliah

Name		First Name:												
Topic		How do bonus programs affected the customer behaviour towards sustainable packaging: A survey based consumer behaviour analysis												
Scales	Weight	Extremely Negative				Extremely Positive			Points x Weight					
		1	2	3	4	5	6	7						
1. <b>Problem Definition</b> <small>Explicit Definition of the topic • Outline/ delimitation of the topic</small>	3.0								x			21		
2. <b>Scientific Methods</b> <small>Clarification of scientific instruments • Usage/ adoption of methods</small>	3.0										x	21		
3. <b>Systematic Approach</b> <small>a) Structure (Design) b) Train of thought (Central theme/ conclusiveness)</small>	3.0 (1,5) (1,5)										x	21		
4. <b>Problem solving</b> <small>Completeness of topics • Reasoning of statements • Traceability • Originality</small>	5.0										x	35		
5. <b>Literary Foundation</b> <small>International literature • Journals • Monographs</small>	2.0									x		12		
6. <b>Linguistic Presentation</b> <small>Conciseness of expressions • style • Compliance to writing norms</small>	2.0									x		12		
7. <b>Citations</b>	1.0										x	7		
8. <b>Thesis Appearance</b> <small>Indices • Tables • Figures • Text • Evidence</small>	1.0										x	7		
									<b>Points:</b>		<b>136</b>			
<b>Points</b>	20-62	63-69	70-76	77-83	84-90	91-97	98-104	105-111	112-118	119-125	126-132	133-140	<b>Result</b>	<b>%</b>
<b>Grade</b>	5.00	4.33	4.00	3.67	3.33	3.00	2.67	2.33	2.00	1.67	1.33	1.00	1.00	97%



# Kerja Sama Internasional

Praktik umum di Jerman



# Tipe Internasionalisasi Pendidikan Tinggi

## Kontribusi Pendapatan Nasional

- Alokasi dana untuk perguruan tinggi rendah
- Strategi pemerintah adalah komersialisasi, implementasinya otonomi perguruan tinggi
- Contoh: Inggris, Australia, Selandia Baru, Amerika Serikat (sebagian), Kanada (sebagian)

## Mendapatkan *skilled labour*

- Mendapatkan *best talent* dunia
- Kemudahan izin kerja dan tinggal setelah mahasiswa lulus
- Penyetaraan hak mahasiswa asing dan lokal
- Contoh: Swedia, Belanda, Jerman, Kanada (sebagian)

## Meningkatkan kualitas akademis

- Pemberian beasiswa ke luar negeri untuk belajar *best practice* sebanyak mungkin
- Ranking matters
- China: dua arah, merekrut dosen/peneliti dan menyediakan fasilitas berkelas dunia
- Rusia: 100000 beasiswa untuk bidang studi terapan
- Outbound mobility: Brazil, Mexico, Kenya, Senegal, Afrika Selatan

## Internasionalisasi di rumah

- Kompetensi internasional memperkaya kompetensi lokal
- International class room/ program studi internasional
- Contoh: Belanda, Jacobs University Bremen

# Kerjasama dengan Universitas Jerman







# Terima Kasih

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<http://indeed.user.jacobs-university.de/i> 🌐