

# Studying and Working in Germany

Intercultural Forum

Prof. Peter Fromm



# Agenda



8:30	SSC and IO	Mrs Frenzel, Mrs Arias Bravo
8:50	Lab and Lecture registration	Prof. Kuhn
9:00	Intercultural Studying / Working	Prof. Fromm



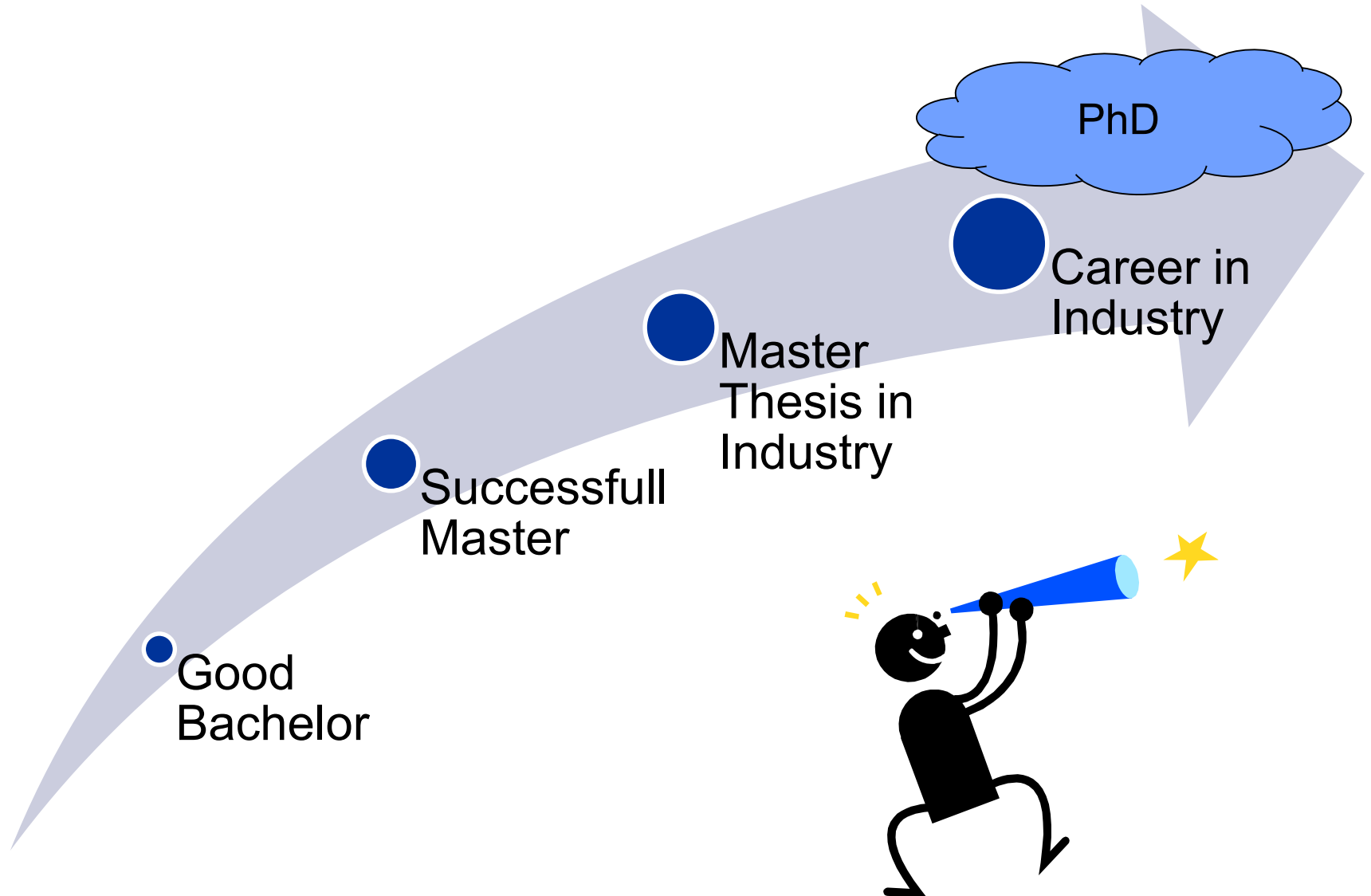
- Motivation and Self Organization
- Online Tools
- Study structure
- Levels of learning
- Success Factors
- Examination Rules & Regulations
  
- Facts about Germany: Economy
- Labour Market
- Entering the Labour Market
- Application Letter
- German Business Customs



# Looking back at the presemester classes



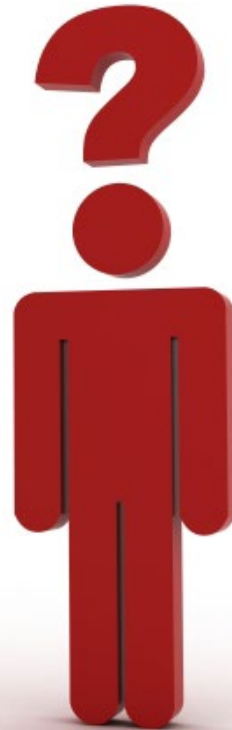
# Career Expectations



## Success factor – Performance!

We provide the pool, you have to swim....

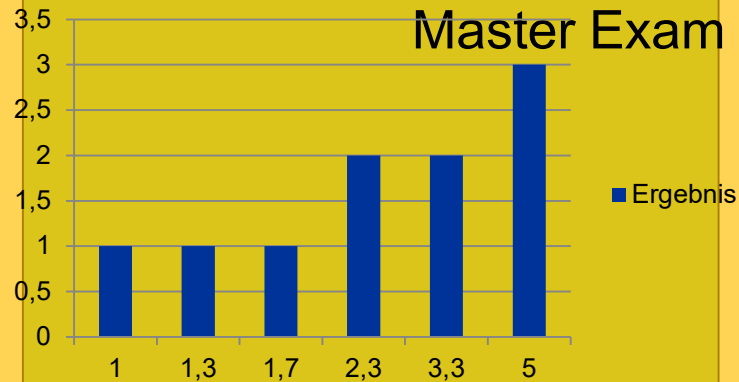
...Cultural Adaption  
...Self Organisation  
...Application of Skills



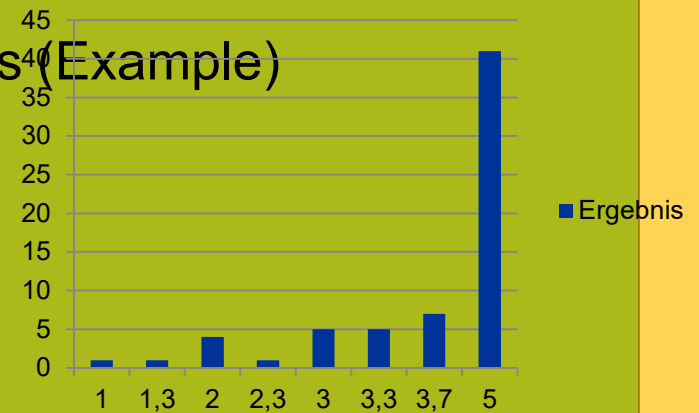
**YOU**  
create your own  
opportunities.



## German Students



## International Students

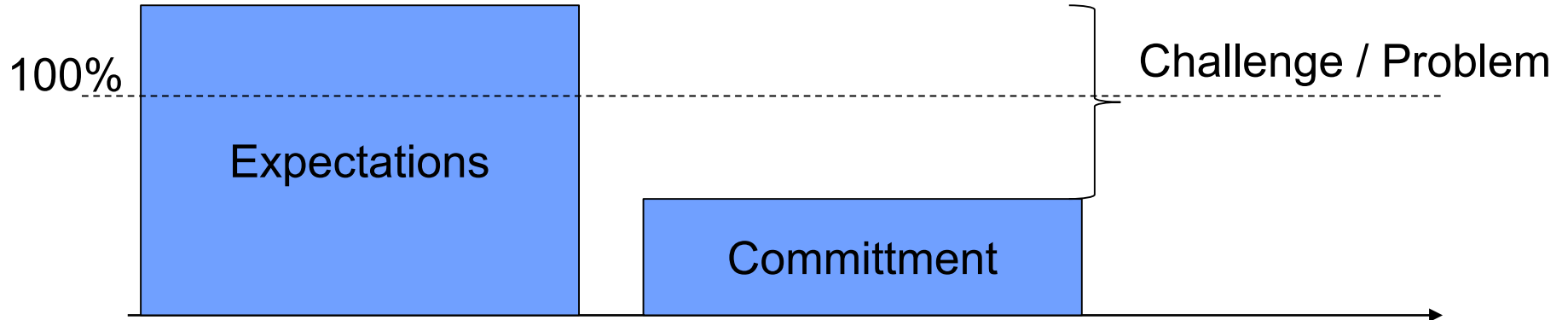


## Bachelor Marks

65% - 75%

75% - 95%

# The millennial challenge? Or Corona? Or...?





## One of the mails....



I hope you are doing well. I, [REDACTED], am pursuing a master's in electrical engineering and Information Technology with Communication major. My Matriculation Number is [REDACTED]. This mail is in regards to third attempt of my ASDD (Advanced Software Design and Development) Exam.

I received my results yesterday. Unfortunately, I did not pass the exam. Well, I took the exam in the winter semester 2020/21, winter semester 2021/22 and summer semester 2022 respectively. **For this subject, I worked really hard, studied for months and really did my best to clear this subject, but unfortunately I was unable to clear this subject.**

I successfully completed all the other compulsory and relevant subjects with good grades. I also completed my mandatory internship at Würth Elektronik, and I'm now working as a work student for Bosch, while I am about to start my master thesis with Bosch Sensortec GmbH in the field of sensor development and chip packaging.

My master course, future and everything relies on this subject. This is to request you to provide me with an online or offline appointment for consultation regarding this issue.

## Another mail

Hello Prof. Wirth,  
I hope you are doing well.

I agree that this is a  
problem – but not of the  
professor....

I am a part of the **ASDD repeaters group** and I have found an Internship for coming October 2022.

I have however not yet accepted it yet since I know that my labs will clash with the Internship (Sept- March).

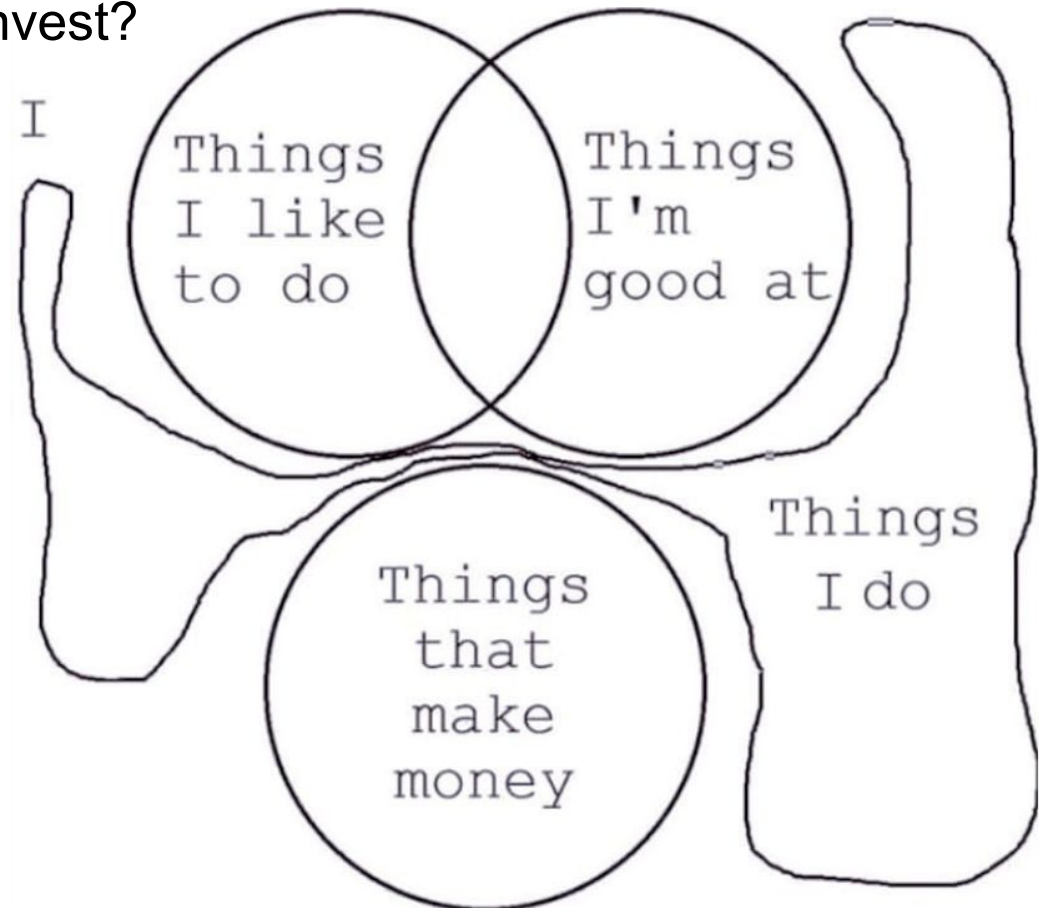
It could be very great of you if you could let me know if I could do the labs myself on the weekends in 3rd Semester and still manage to do the Internship since I do not want to miss this opportunity. Please advice me on an alternative, I do not want to miss either. Your guidance is much appreciated.

Thank You. Good day

## Another view at the challenge



- What is your motivation?
- What do you want to achieve?
- What are you willing to invest?



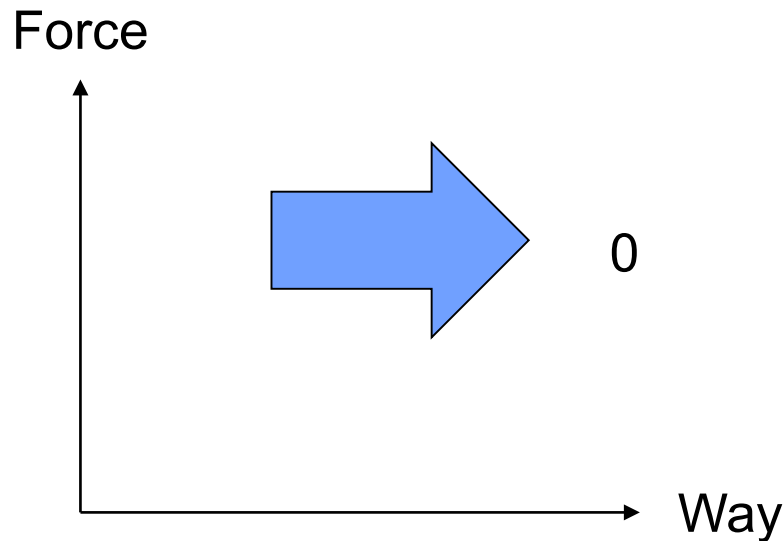
# About performance



$$\text{Mark} = \text{Performance}$$

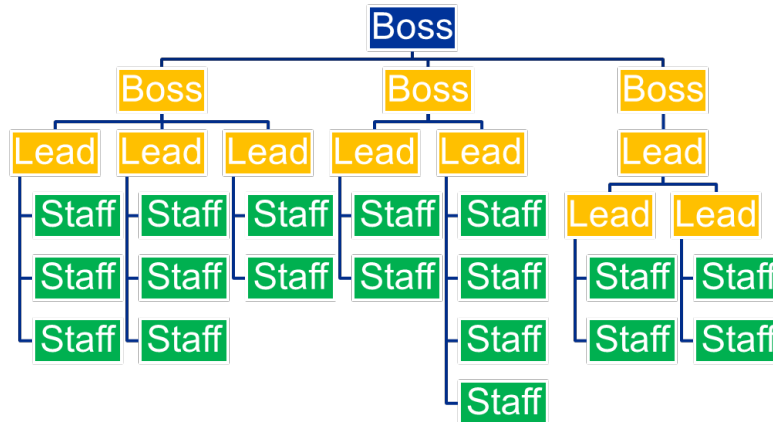
$$\text{Performance} = \frac{\text{Work}}{\text{Time}}$$

$$\text{Work} = \text{Force} \times \text{Path}$$





# Let's look into the future – company organization

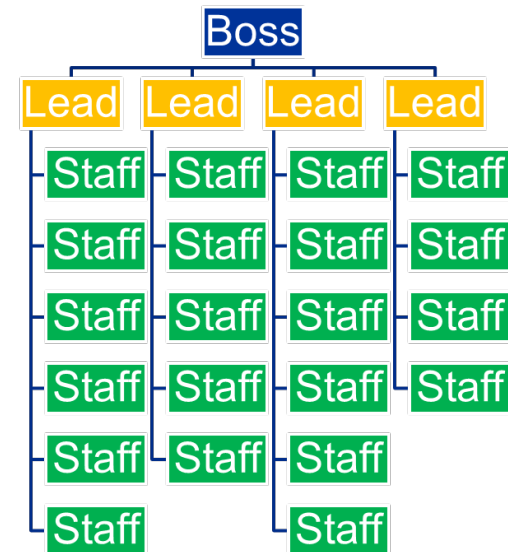


Many places

Micromanagement

Own responsibility – including the responsibility to change!

Germany





- Future Manager: master yourself. Make the best of challenging situations.
- Try to find a solution. If you need help. Team up.
- Do not wait for others to solve your problem.
- Do not wait for others to take action.
- READ, stop, think, act.

Until you make the  
**unconscious**  
conscious, it will  
direct your life and  
you will call it fate



Below the surface: Emotional Life of Individuals and Organisations

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# It all starts by finding the right information...



- Faculty: <http://www.eit.h-da.de/>
- MSE: <https://mse.h-da.de/>
  
- Moodle: [www.lernen.h-da.de](http://www.lernen.h-da.de)
- MyHDA: <https://my.h-da.de/>
- Email: <https://webmail.stud.h-da.de>
- Software: <http://tools.eit.h-da.de>

h\_da  
HOCHSCHULE DARMSTADT  
UNIVERSITY OF APPLIED SCIENCES  
fbt  
FACHBEREICH ELEKTROTECHNIK  
UND INFORMATIONSTECHNIK

PROGRAM ADMISSION OUR SERVICE **ENROLLED**

You are here: <#> | Enrolled

ALL NEWS FOR MSE-STUDENTS

NEWS FOR ENROLLED MSE-STUDENTS

Informations WS 2021/2022 - No. 1  
Dear students,  
The pandemic has not only kept the whole world in suspense, but also the university operations of the h\_da and in particular our more...

CORONAVIRUS UPDATE FOR STUDENTS

Enrolled

Gateway for enrolled students:

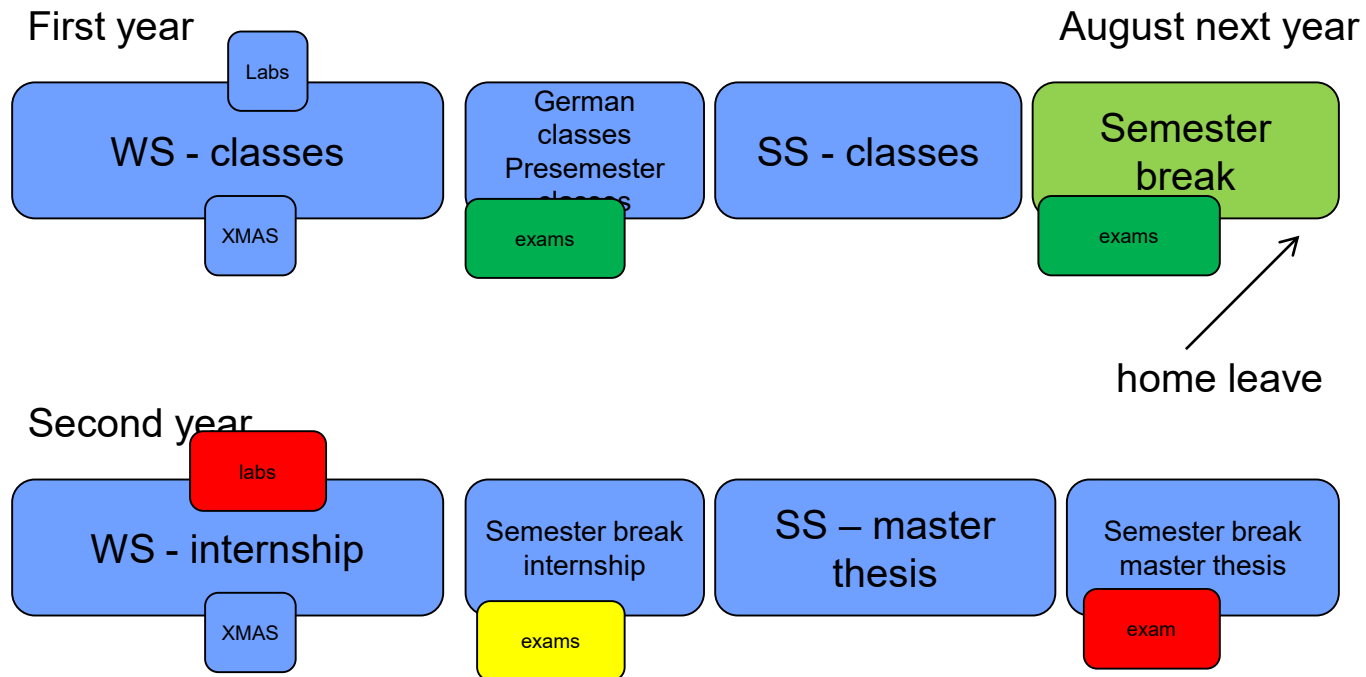


# Checklist



- I have found and understood myHDA
  - Personal data up to date
  - Exam registration
  - Semester fee payment
  - Relevant study certificates
  
- I check my HDA email account once a day
  - Official information will **ONLY** be sent to your HDA account
  - Use your HDA Account for all internal and external official information
  - Provide a professional signature
  
- I check the MSE enrolled webpage before asking Sabine Francois

# Study timeline...



# Labs, lectures and exams - in a nutshell



## Labs (and German Classes)

- Have mandatory attendance
- Successful participation is a prerequisite for the module exam
- Are only offered once a year
- Cannot be retaken during internship!

## Lectures

- Have highly recommended attendance
- Are offered once a year
- Electives upon resource situation

## Exams

- Are offered after every semester
- For mandatory subjects, you are automatically registered once you have been enrolled once – we want to avoid shifting difficult exams to the end

# Study program



- New program started in WS2020, minor modifications/improvements for WS2021
- More but smaller subjects (4 x 7.5CP → 6 x 5 CP)
- Stronger focus on engineering responsibility
- More electives
- For details, please check the Module Handbook.

You will be enrolled in the major you have been accepted for.

# Automation



		Vertiefungsrichtung Automation (AUT)																								
		Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Prakt.	Sem.	Σ
1. Semester WS		M01				MA01				MA02				MA03				MA04				MAWP01				
		Technical Management				Safety in Industrial Automation				Adaptive Control, Modeling and Identification				Computer Vision				Advanced Programming Techniques				Elective 1				
	SWS	4				3			0,5 (1)	3			0,5 (1)	3			0,5 (1)	2			2	4				24
	ECTS	5				5				5				5				5				5				30
2. Semester SS		M02				MA05				MA06				MA07				MAWP02				MAWP03				
		Team Project				Information Technology in Industrial Automation				Industrial Robotics				State Space Control Design				Elective 2				Elective 3				
	SWS		4			3			0,5 (1)	3			0,5 (1)	3			0,5 (1)	4				4				24
	ECTS	5				5				5				5				5				5				30
3. Semester		M03 Internship (4-semester course only)																								
	SWS																									
	ECTS	30																								30
4. Semester		M04 Master Module (Masterthesis and Colloquium)																								
	SWS																									
	ECTS	30																								120
<b>Legende</b>		Modul für alle Vertiefungen										Wahlpflichtmodul														
		vertiefungsspezifisches Modul																								
																										CP = Credit Points
																										SWS = Semesterwochenstunden
																										SS = Sommersemester
																										WS = Wintersemester

# Communications



## Vertiefungsrichtung Communications (COM)

	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Prakt.	Sem.	Σ	
1. Semester WS	M01		MC01				MC03				MC04				MCWP01				MCWP02							
	Technical Management		Advanced Digital Signal Processing				Microwave Components and Systems				Advanced Software Design and Development				Elective 1				Elective 2							
	SWS	4				3		0,5 (1)			3		0,5 (1)			2		2				4			4	25
	ECTS	5				5				5				5				5				5			4	30
2. Semester SS	M02		MC05				MC06				MC07				MC02				MCWP03							
	Team Project		System-Driven Hardware Design				Fields, Waves and Antennas				Information Networks				Advanced Modulation				Elective 3							
	SWS		4			2		2			3		0,5 (1)			3		0,5 (1)				3		0,5 (1)	4	23
	ECTS	5				5				5				5				5				5			4	30
3. Semester	M03																									
	Internship (4-semester course only)																									
	SWS																									
ECTS	30																								30	
4. Semester	M04																									
	Master Module (Masterthesis and Colloquium)																									
	SWS																									
ECTS	30																								120	

### Legende

Modul für alle Vertiefungen  
vertiefungsspezifisches Modul

Wahlpflichtmodul

CP = Credit Points  
SWS = Semesterwochenstunden  
SS = Sommersemester  
WS = Wintersemester

# Embedded and Microelectronics



## Vertiefungsrichtung Embedded and Microelectronics (EMIC)

	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Prakt.	Sem.	Σ	
1. Semester WS	M01				MM01				MM02				MM03				MM04				MMWP01					
	Technical Management				Advanced Programming Techniques				VLSI Design and Testing				Advanced Microcontroller Systems and Embedded OS				FPGA-based System on Chip Design				Elective 1					
	SWS	4			2		2		3		0,5 (1)		3		0,5 (1)		3		0,5 (1)				4		24	
	ECTS	5			5				5				5				5				5				30	
2. Semester SS	M02				MM05				MM06				MM07				MMWP02				MMWP03					
	Team Project				Embedded Architectures and Applications				System Driven Hardware Design				Embedded Signal Processing Systems				Elective 2				Elective 3					
	SWS		4		3		0,5 (1)		2		2		3		0,5 (1)				4			4			24	
	ECTS	5			5				5				5				5				5				30	
3. Semester	M03																									
	Internship (4-semester course only)																									
	SWS																									
ECTS	30																									30
4. Semester	M04																									
	Master Module (Masterthesis and Colloquium)																									
	SWS																									
ECTS	30																									120

<b>Legende</b>	Modul für alle Vertiefungen	Wahlpflichtmodul	CP = Credit Points
	vertiefungsspezifisches Modul		SWS = Semesterwochenstunden
			SS = Sommersemester
			WS = Wintersemester



## Vertiefungsrichtung Power Engineering (POW)

	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Lab.	Sem.	Vorl.	Übung	Prakt.	Sem.	Σ													
1. Semester WS	<b>M01</b>				<b>MP01</b>				<b>MP02</b>				<b>MP03</b>				<b>MP04</b>				<b>MPWP01</b>																	
	<b>Technical Management</b>				<b>Advanced High Voltage Technology</b>				<b>Power System Operation</b>				<b>Renewable Energy Systems</b>				<b>Embedded Programming &amp; Design of Real-Time Control Systems</b>				<b>Elective 1</b>																	
	SWS	4				3				0,5 (1)				3				0,5 (1)				4				2				2			2			2		
ECTS	5				5					5				5							5				5				5								30	
2. Semester SS	<b>M02</b>				<b>MP05</b>				<b>MP06</b>				<b>MP07</b>				<b>MPWP02</b>				<b>MPWP03</b>																	
	<b>Team Project</b>				<b>Power Electronics for Drives and Energy Systems</b>				<b>Advanced Control of Electrical Drives</b>				<b>Model-Based Design HiL &amp; PiL Systems</b>				<b>Elective 2</b>				<b>Elective 3</b>																	
	SWS		4							4					3							0,5 (1)					4				4						23	
ECTS	5				5					5				5							5				5				5								30	
3. Semester	<b>M03</b>																																					
	<b>Internship (4-semester course only)</b>																																					
	SWS																																					
ECTS	30																																					30
4. Semester	<b>M04</b>																																					
	<b>Master Module (Masterthesis and Colloquium)</b>																																					
	SWS																																					
ECTS	30																																					120





## MSE Electives for the WS 2019/20

Supplier	Subject	CP	Prerequisites:					
			9/20	AUT	COM	EM	POW	
AUT	High Level Language Frameworks			x				
COM	Network Security	2,		x	x			
COM	Mobile Communications	2,			x			
COM	IOT and Cloud Networking	2,		x	x		x	
COM	Smart Systems	2,			x			x
COM	Image and Video Processing	2,			x		x	
EM	Advanced Software Design Techn			x			x	x

Note for the semester:

- Choice of Software subject only
- Applied Programming (Default)
- Embedded Programming & Design of Real-Time Control Systems (not offered in WS20)
- Advanced Microcontroller Systems and Embedded OS (replacement WS20 for prev. subject, requires excellent embedded skills)

Electives will be offered based on professors availability.

# Study program – timetable (example embedded)



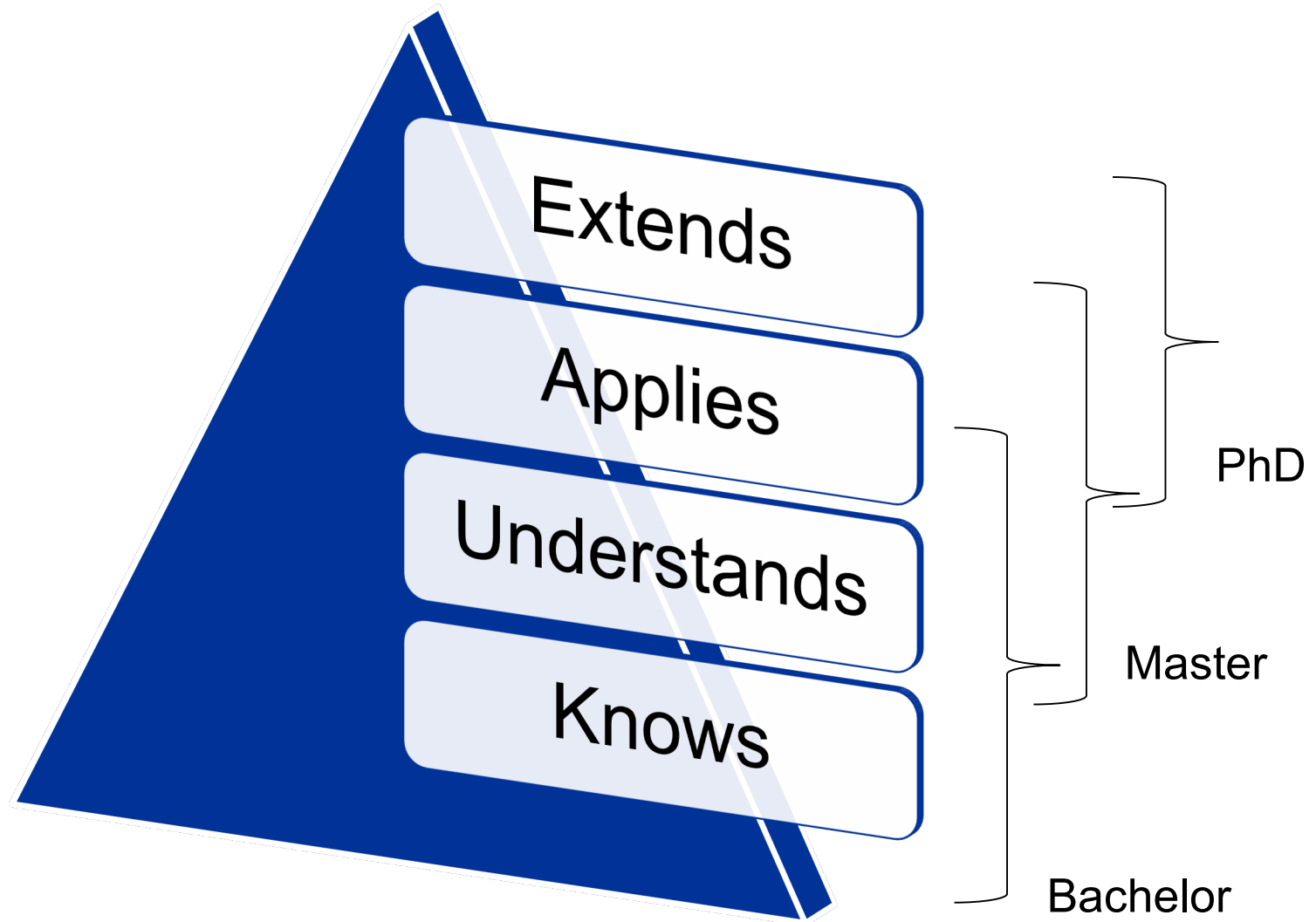
	Monday	Tuesday	Wednesday	Thursday	Friday
08:30 – 10:00		<p>Helko Koch, Gunter Trautmann <b>L: Advanced Microcontroller Systems And Embedded Operating Systems - Lab</b> in: D1701-16, PEE-420</p> <p>Helko Koch, Gunter Trautmann <b>L: Advanced Microcontroller Systems And Embedded Operating Systems - Lab</b> in: D1701-16, PEE-420</p> <p>Peter Fromm, Gunter Trautmann <b>L: Advanced Microcontroller Systems And Embedded Operating Systems - Lab</b> in: D1701-15, PEE-420</p> <p>Peter Fromm, Gunter Trautmann <b>L: Advanced Microcontroller Systems And Embedded Operating Systems - Lab</b> in: D1701-15, PEE-420</p> <p>Thomas Schumann, Herbert Wälnth <b>L: WLSI Design and Testing - Lab</b> in: D110-108, PEE-420</p> <p>Thomas Schumann, Herbert Wälnth <b>L: WLSI Design and Testing - Lab</b> in: D110-108, PEE-420</p> <p>Thomas Schumann, Herbert Wälnth <b>L: WLSI Design and Testing - Lab</b> in: D110-108, PEE-420</p> <p>Thomas Schumann, Herbert Wälnth <b>L: WLSI Design and Testing - Lab</b> in: D110-108, PEE-420</p>	<p>Helko Koch <b>V: Advanced Microcontroller Systems And Embedded Operating Systems</b> in: C103-01, PEE-420</p>		
10:15 – 11:45		<p>Helko Koch, Gunter Trautmann <b>L: Advanced Microcontroller Systems And Embedded Operating Systems - Lab</b> in: D1701-16, PEE-420</p> <p>Helko Koch, Gunter Trautmann <b>L: Advanced Microcontroller Systems And Embedded Operating Systems - Lab</b> in: D1701-16, PEE-420</p> <p>Peter Fromm, Gunter Trautmann <b>L: Advanced Microcontroller Systems And Embedded Operating Systems - Lab</b> in: D1701-15, PEE-420</p> <p>Peter Fromm, Gunter Trautmann <b>L: Advanced Microcontroller Systems And Embedded Operating Systems - Lab</b> in: D1701-15, PEE-420</p> <p>Thomas Schumann, Herbert Wälnth <b>L: WLSI Design and Testing - Lab</b> in: D110-108, PEE-420</p> <p>Thomas Schumann, Herbert Wälnth <b>L: WLSI Design and Testing - Lab</b> in: D110-108, PEE-420</p> <p>Thomas Schumann, Herbert Wälnth <b>L: WLSI Design and Testing - Lab</b> in: D110-108, PEE-420</p> <p>Thomas Schumann, Herbert Wälnth <b>L: WLSI Design and Testing - Lab</b> in: D110-108, PEE-420</p>	<p>Michael Lipp <b>V: FPGA-based System on Chip Design</b> in: C106-01, C106-01/0</p>	<p>Peter Fromm <b>V: Advanced Software Design Techniques (WP)</b> in: C106-02, PEE-420</p> <p>Christian Jakob <b>V: FPGA-based System on Chip Design</b> in: C106-02, PEE-420</p>	<p>Peter Fromm <b>V: Advanced Microcontroller Systems And Embedded Operating Systems</b> in: C103-01, PEE-420</p>
12:00 – 13:30	<p>Thomas Schumann <b>V: WLSI Design and Testing</b> in: C106-02, PEE-420</p>	<p>12:00-14:00 Thomas Schumann <b>V: WLSI Design and Testing</b> in: C106-01, PEE-420</p>	<p>12:00-14:00 Christian Jakob <b>V: FPGA-based System on Chip Design</b> in: C106-01, PEE-420</p>	<p>12:00-14:00 Peter Fromm <b>V: Advanced Software Design Techniques (WP)</b> in: C106-02, PEE-420</p>	<p>12:00-14:00 Peter Fromm <b>V: Project Management</b> in: C103-01, PEE-1161</p>
14:15 – 15:45	<p>Sprachzentrum <b>S: German Course (Heutech)</b> in: C106-02, C106-03, C106-04, PEE-700</p>	<p>Sprachzentrum <b>S: German Course (Heutech)</b> in: C106-02, C106-03, C106-04, PEE-700</p>	<p>ONLINE Christian Burg, Christian Reimund <b>L: Advanced Programming Techniques - Lab</b> in: PEE-250/450</p> <p>ONLINE Alexander König, Michael Lipp <b>L: Advanced Programming Techniques - Lab</b> in: PEE-250/450</p> <p>ONLINE Christian Burg, Christian Reimund <b>L: Advanced Programming Techniques - Lab</b> in: PEE-250/450</p> <p>ONLINE Michael Lipp, Boris Zartel <b>L: Advanced Programming Techniques - Lab</b> in: PEE-250/450</p>	<p>Peter Fromm, Christian Schulz <b>L: Advanced Software Design Techniques - Lab (WP)</b> in: D1701-16, PEE-420</p> <p>Peter Fromm, Christian Schulz <b>L: Advanced Software Design Techniques - Lab (WP)</b> in: D1701-16, PEE-420</p> <p>Peter Fromm, Christian Schulz <b>L: Advanced Software Design Techniques - Lab (WP)</b> in: D1701-16, PEE-420</p> <p>Christian Jakob <b>L: FPGA-based System on Chip Design - Lab</b> in: C106-02, C106-03, PEE-420</p>	<p>Sprachzentrum <b>S: German Course (Heutech)</b> in: C106-02, C106-03, C106-04, PEE-700</p>
16:00 – 17:30		<p>Sprachzentrum <b>S: German Course (Heutech)</b> in: C106-02, C106-03, C106-04, PEE-700</p>	<p>ONLINE Christian Burg, Christian Reimund <b>L: Advanced Programming Techniques - Lab</b> in: PEE-250/450</p> <p>ONLINE Alexander König, Michael Lipp <b>L: Advanced Programming Techniques - Lab</b> in: PEE-250/450</p> <p>ONLINE Christian Burg, Christian Reimund <b>L: Advanced Programming Techniques - Lab</b> in: PEE-250/450</p> <p>ONLINE Michael Lipp, Boris Zartel <b>L: Advanced Programming Techniques - Lab</b> in: PEE-250/450</p>	<p>Peter Fromm, Christian Schulz <b>L: Advanced Software Design Techniques - Lab (WP)</b> in: D1701-16, PEE-420</p> <p>Peter Fromm, Christian Schulz <b>L: Advanced Software Design Techniques - Lab (WP)</b> in: D1701-16, PEE-420</p> <p>Peter Fromm, Christian Schulz <b>L: Advanced Software Design Techniques - Lab (WP)</b> in: D1701-16, PEE-420</p> <p>Christian Jakob <b>L: FPGA-based System on Chip Design - Lab</b> in: C106-02, C106-03, PEE-420</p>	<p>Sprachzentrum <b>S: German Course (Heutech)</b> in: C106-02, C106-03, C106-04, PEE-700</p>
17:45 – 19:15				<p>Matthias Schassak <b>V: Engineering Responsibility</b> in: C103-01, PEE-1162</p>	

# How to read the timetable



- The timetable on the website shows ALL subjects and ALL labgroups, you will only participate in some of them!
- There are 2 timetables per major, the one with the mandatory and major internal electives and the one with additional electives from other majors.
- Lab organisation and registration will be communicated in the lecture
- For exams, a formal registration will be required!

# Levels of Learning at the H-DA

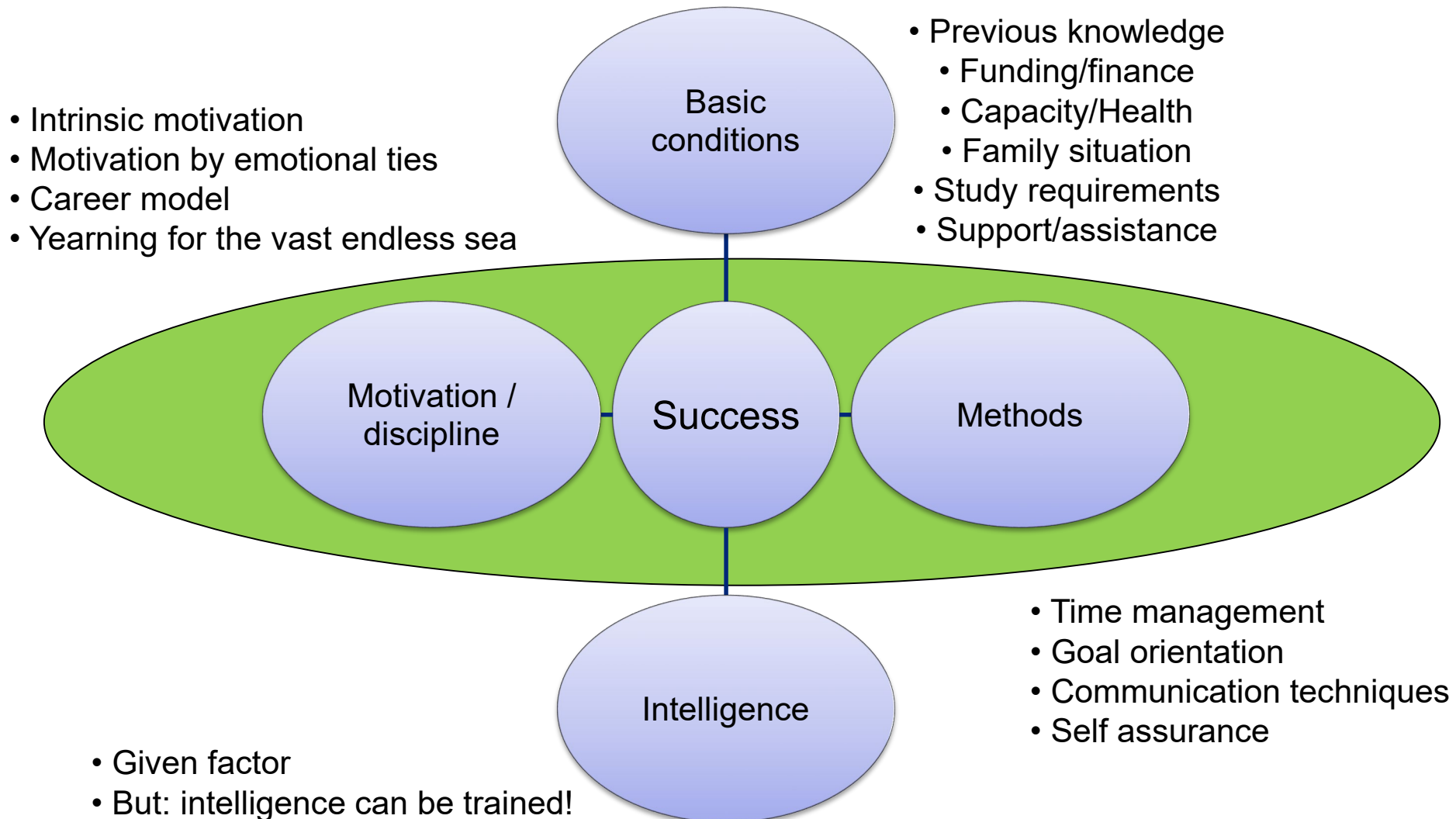


# Different expectations

## How important is...



# Success Factors

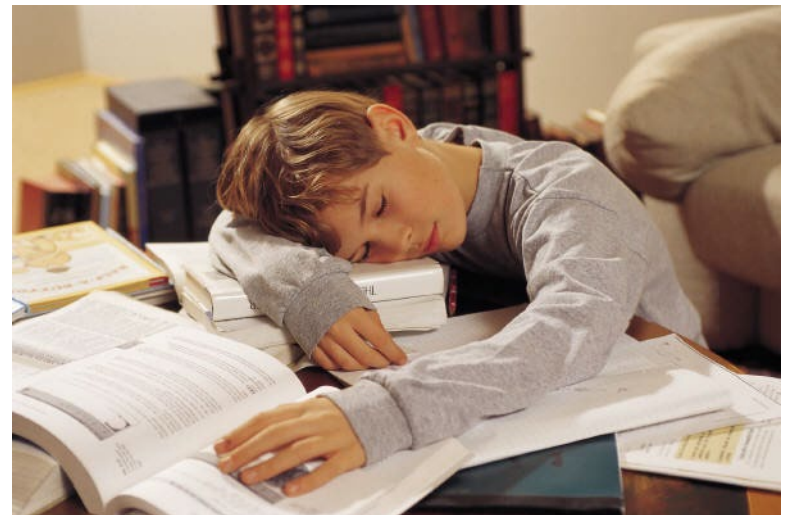




Different phases:

- October – getting started
- November / December – advanced content
- January – close to the exam

**Don't waste time! And be efficient!**



# Time management



Workload calculation per semester:

- 6 courses, 5 CP each
- 1 CP = 30 hours workload
- Per semester = 900 hours workload
- Classes and labs per semester: 300h
- Own studies: 600h





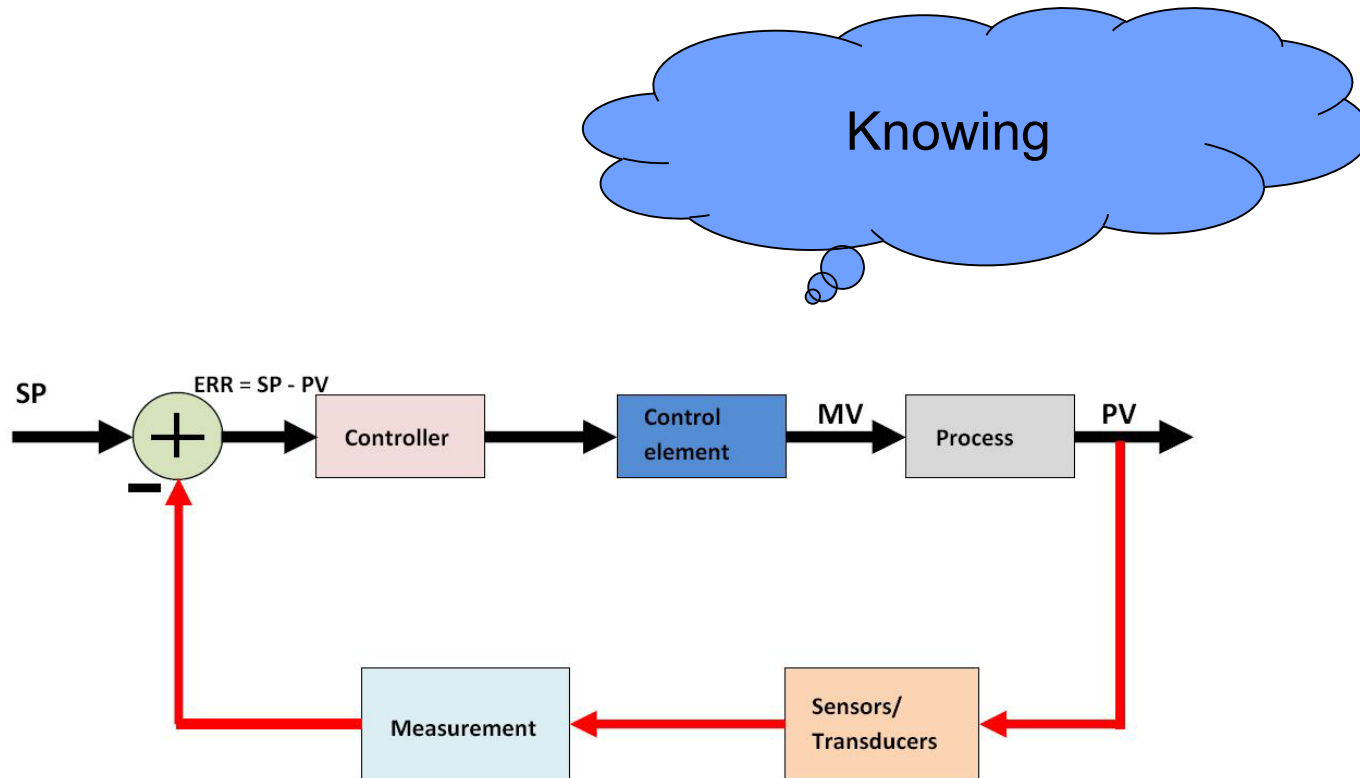
# Learn to apply your knowledge



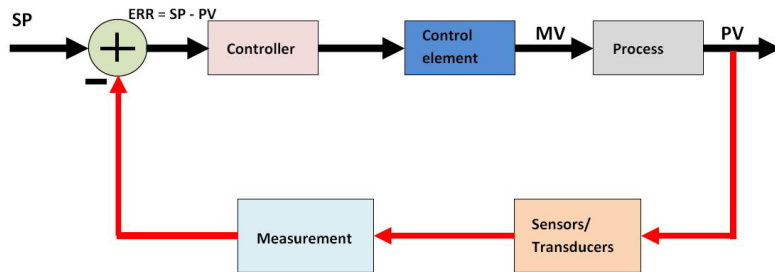
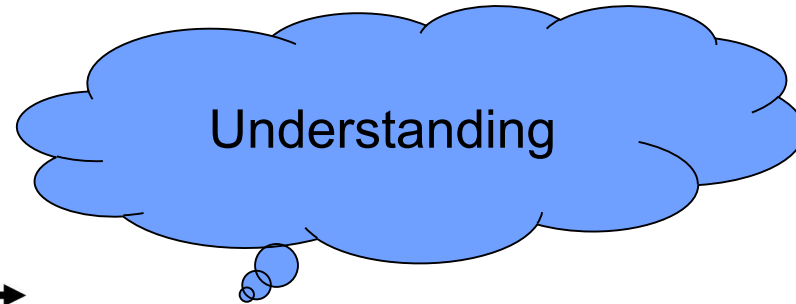
- Guessing is not knowing!
- Listening / reading is not understanding!
- Understanding is not applying!



# Example: Implementation of a control loop on a microcontroller

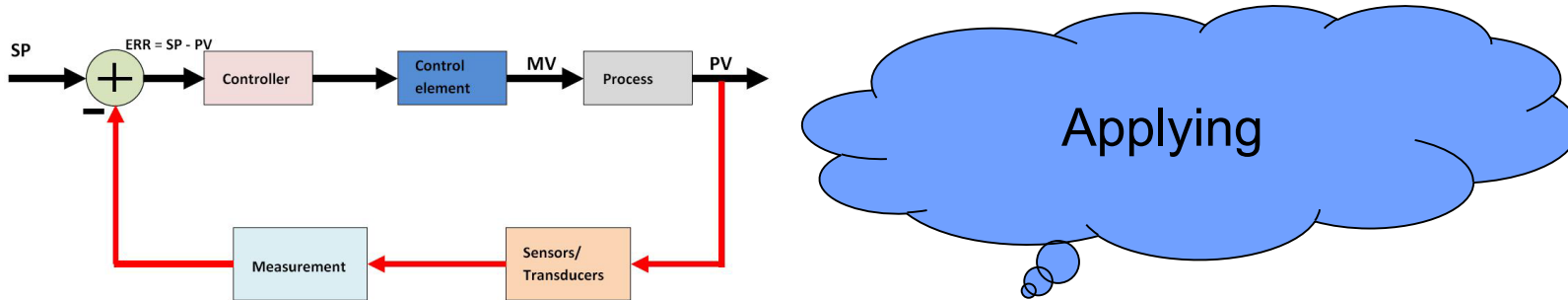


# Example: Implementation of a control loop on a microcontroller



The first point of interest for any process control endeavor is the process variable, **PV**. It is the variable we have chosen to control or maintain at a given reference value or setpoint. So as shown in the process control loop above, the process variable, **PV**, is measured with the aid of sensors/transducers. This measured signal is then fed into a controller incorporating an error detector device. Here, the Process variable, **PV** is compared with the desired value of the process variable or the setpoint, **SP** and an error signal with a specific magnitude and polarity is generated and further processed within the controller. Based on the processed error signal, the controller initiates a control action with the aid of the control element or final control element as it is often known. The final control element, initiates a change in the process by changing the manipulated variable, **MV**, which then alters the process until it settles at the setpoint. In this way, the process variable is taken back to its desired value or setpoint. This is essentially how a process control loop works. Most complex process plants are operated with this simple underlying principle of process control.

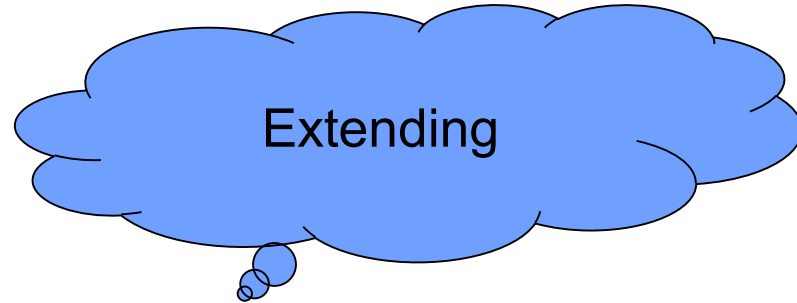
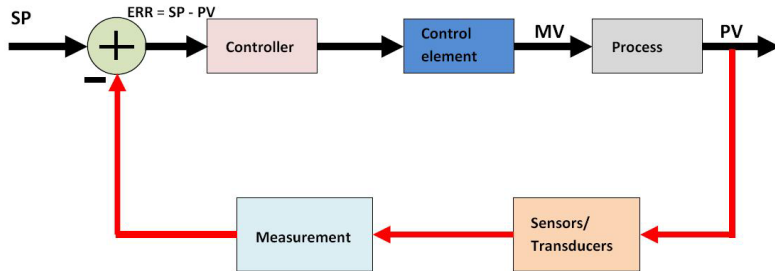
# Example: Implementation of a control loop on a microcontroller



We need:

- A timer tick (base time calculated how? Shannon? Fourier?)
- We need an input device for the setpoint and sensors for the measurement
- We need to know how to describe the process in mathematical terms
- and how to translate this into C-code
- and probably some more stuff...

# Example: Implementation of a control loop on a microcontroller



- How about implementing a self adapting MIMO controller?
- How about using a new micro with some programmable hardware blocks?
- The control loop is used in a SIL4 application, what does this mean?
- ...



What workpackage are we starting with?

Theory

Challenging new topics

Things which need  
preparation time

Workpackages containing  
uncertainties and risks

Reality

Topics I know and I am  
good at

Things which can quickly  
be finished

Easy workpackages

# Goal orientation – some thoughts about risks



Elementary risk management:

If you are expecting problems, face them early!

- Think about your learning strategy – change it, if needed!
- Do the extra exercises
- Prepare labs well and ask questions in the lab
- Get your hands dirty!
- Plan exams carefully, but avoid not attending exams
- In case you fail in an exam, learn from the mistakes

Don't

- Copy a friend's results
- Wait for a miracle
- Argue with the Prof. after the exam

## Risk: Repetition exams

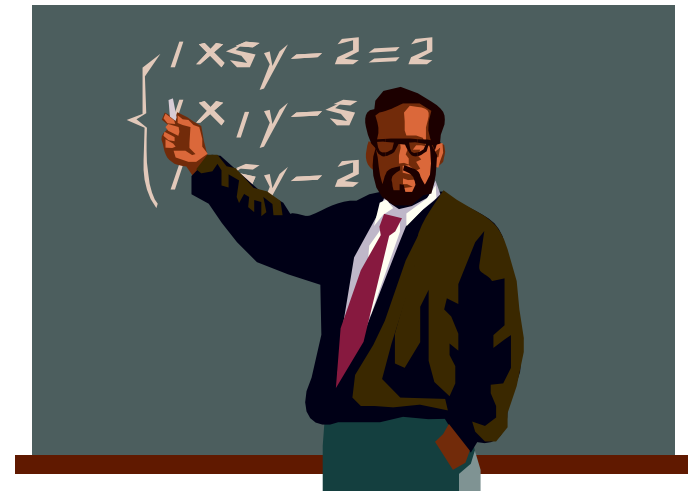


- Repetition exam will be after the next semester
- Additional workload
- Lecture and exam are 1 semester away
- The subject has proven to be challenging – for you!





- All courses during the master's program are set up as „attendance class“
- The courses focus on „applied science“, you cannot learn the content only from books
- Take notes and participate actively
- Own studies are expected in addition to the lectures
- Professors provide hints – take them serious
- Professors are friendly, fair and strict!
- Be on time!
- Work in groups
- Get advice from seniors!





- In labs you will practice the theory learned in classes
  - Participation in labs is mandatory and must be prepared
  - You probably will have to study additional items
  - You will make mistakes – accept them as learning experience
  - Not only the result counts, but also the road to it
  - Labs require preparation, doing and after care
  - Start early
- 
- Eat your own beef - if somebody else solves an exercises, it always looks easy!
  - Copy and paste does not mean understanding



# Examination rules and regulations



- Student's responsibility to register and de-register for exams and labs
- 3 written attempts + 1 oral
- No make-up exams
- Deregistration is only possible for the first attempt
- After a failure, student will automatically be registered for next attempt
- Head of MSE examination board: Prof. Kuhn
- Examination office: tba

Additional presentation!



## Your takeaways



- Very likely you will find some subjects very challenging, not only from a technical perspective, but also from an „expectation“ perspective
- Understand, what the professor expects in his/her subject and take up the challenge – ignoring or waiting for a miracle is no option
- Be honest to yourself – control your progress
- Plan realistic – if 30 credits are too much, reduce them
- If a subject is very demanding, work harder
- Find peers to work together
- Don't be afraid to ask questions

You are your own manager – there will be no micro management from the universities side!

# Team up with the Germans





## Economy

- Germany is the largest national economy in Europe, the fifth largest in the world
- Germany is the world's third largest exporter
- Germany is poor in raw materials and imports about two thirds of its energy
- Germany the world's third largest producer of cars
- The European Central Bank is located in Frankfurt-am-Main.
- Frankfurt International Airport claims the world record in the most international destinations served.
- The largest department store in continental Europe is the KaDeWe in Berlin, with over 60,000 square metres.





## Global players – the flagships of the economy



- 37 of the world's 500 largest stock market listed companies are headquartered in Germany.
- The ten largest companies (by volume of sales) are Volkswagen, E.ON, Daimler, BASF, Siemens, BMW, Schwarz-Gruppe (Lidl), Metro, Deutsche Telekom, Aldi.
- Other large German companies include: Robert Bosch, ThyssenKrupp and MAN (diversified industrials); RWE (energy) Bayer and Merck (pharmaceuticals); Adidas and Puma (clothing and footwear); Commerzbank and Deutsche Bank (banking and finance); Rewe and Edeka (retail); SAP (computer software); Infineon (semiconductors); Henkel (household); Deutsche Post (logistics); and Hugo Boss (luxury goods), Continental (technology).



**BOSCH**



**SIEMENS**



Source: FAZ-net



## The powerhouse of Germany – a strong middle class

- 3,6 million small and medium sized companies
- Def: Annual sales below 50 million Euro, payroll less than 500
- Often family run
- 48,9% service providers, 31,4% manufacturing, 19,7% commerce
- Every third company has a woman at its head
- Excellent qualification of workforce
- Economic stimulus by government
- Swift realization of marketable products (niche products)
- International focus
- High degree in specialisation

Mittelständische Unternehmen stellen

**99,7%**

aller Unternehmen in Deutschland dar

Mittelständische Unternehmen tätigen

**40,8%**

aller steuerpflichtigen Umsätze

Mittelständische Unternehmen bieten

**70,2%**

aller Arbeitsplätze an

Mittelständische Unternehmen bilden

**81,9%**

aller Lehrlinge aus



# Location Factors

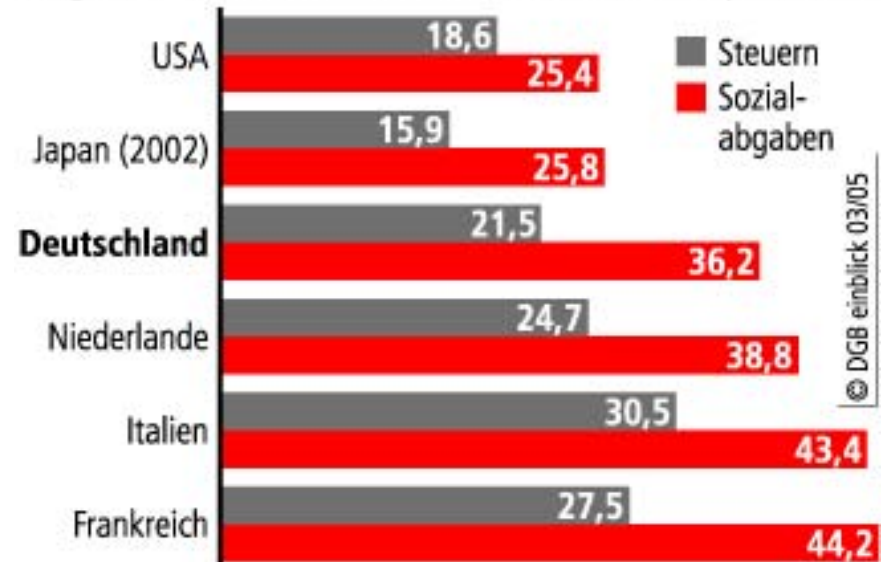


- High quality of infrastructure
- High R&D spendings
- High level of education
- High productivity
- Close networking of industry, science and research
- Average taxation of 22,8 % of GDP and welfare contributions 37,1% of GDP (source: OECD)
- Corporate tax is 29,82 % of companies' profit

(source: Bundeszentralamt für Steuern)

## Nicht an der Spitze

Steuer- und Sozialabgabenquoten im internationalen Vergleich\* 2003 (in Prozent des Bruttoinlandsprodukts)



\*Die OECD-Definitionen entsprechen nicht denen der deutschen Finanzstatistik.  
Quelle: OECD-Revenue Statistics 1965 – 2003, Paris 2004

# Labor Market

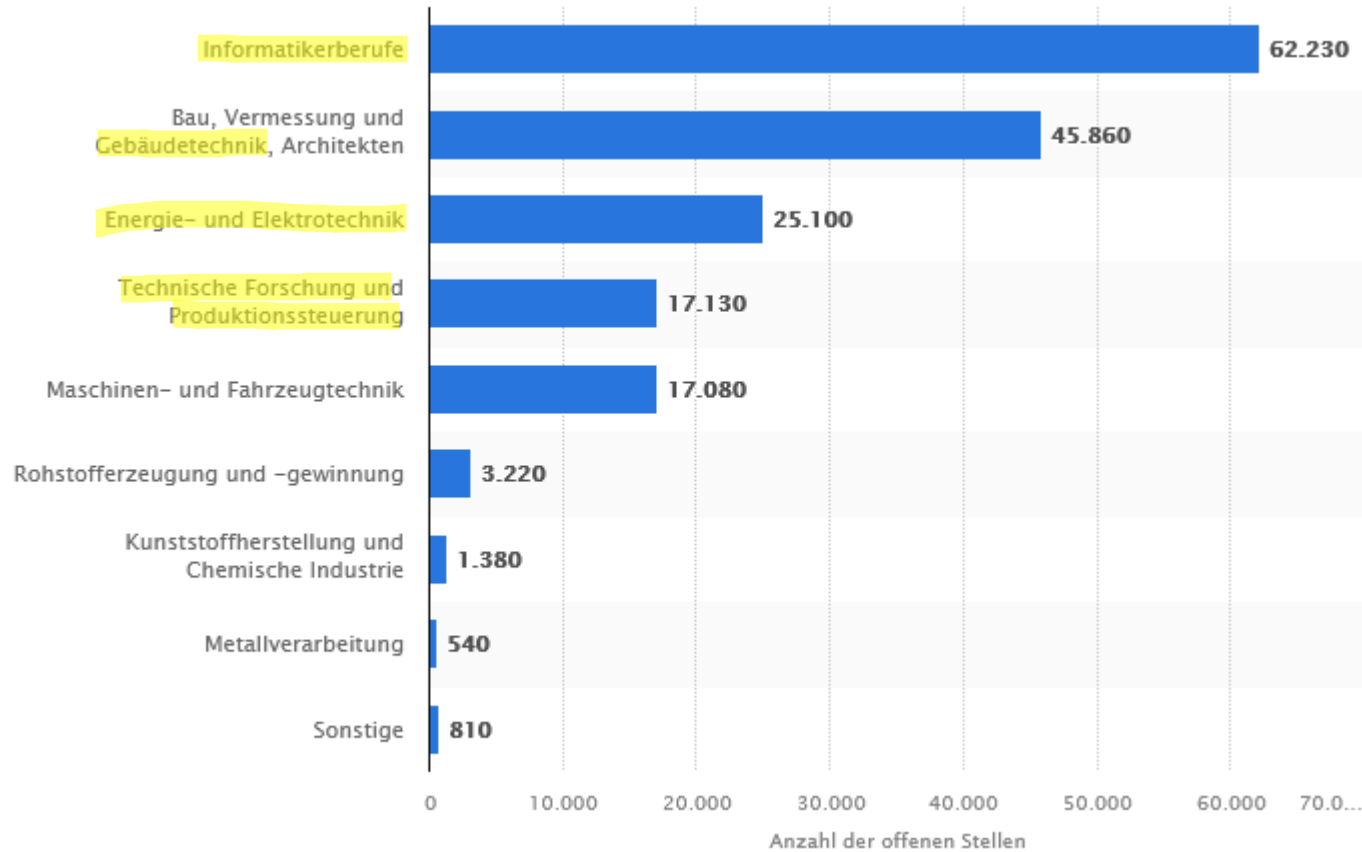


- 41,8 million persons are gainfully employed
- Number of unemployed fell below 3 million (5%)
- Majority works in service sector and in manufacturing
- 70 % work in small and medium size companies
- Strong apprenticeship system
- Though the unemployment rate is comparable low, it is more challenging for a non-german to find a job.



*"But Michael, the labor market is awaiting you!"*

# Open Jobs for Engineers 2023



<https://de.statista.com/statistik/daten/studie/420041/umfrage/ingenieursberufe-offene-stellen-in-deutschland-nach-branchen/>

# Working in Germany



## Formalities

- Work permit
- Social insurance number
- Tax number

## Alternatives

- Student job
- Werkstudent
- Non technical jobs

## Links

- <http://www.h-da.de/karriere-weiterbildung/career-center-cc/jobportal-der-h-da/>

**Beware: The MSE program is a  
fulltime program!**





## Germany

- Internship
- Thesis
- Trainee
- Job



Professor's recommendation (restricted)

## Your country

- ...
- ...
- ...



# Entering the German Labour Market



## Given Factors:

- Economy
- Hiring attitude (uncertainty avoidance)
- Hiring strategy of the company



## Factors you can control:

- Language skills
- Good degrees from a credited German University
- Technical performance
- Commitment during internship and master thesis
- Social/communication skills
- Practical experience
- Intercultural abilities
- Good manners
- Time of application



# A good Job Application



- Why do you want the job?
- Why should the company select you?
  
- Inform yourself about the company
- Names of contact persons
- Write personally
- Never copy standard applications
- Never use one application for more companies
- Present yourself in a positive way but don't exaggerate
- Write about your motivation
- Use your own words
- Stay concrete

**Exercise:** Where is your niche,  
why does the company need you?



# Application: The Cover Letter



- Clear
- Meaningful content
- Free from errors
- Short and concise sentences
- Tailored to the company
- Clearly distinguished paragraphs

**Introductory section** capture the readers attention.

**Main part** convince the reader why you are perfectly suited for this job

- refer to experience in your CV
- show knowledge of the company
- which aspects of the job interest you
- why do you particularly want to work for this company

**End** indicate your willingness to meet for a personal discussion



# Content of a cover letter



## COVER LETTER



ABB AG  
Recruiting Center  
Frank Marterer

Subject: Application for the Position of Intern for Automation of Test Systems.

Dear Hiring Manager,

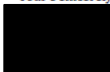
With a strong desire to work in one of the leading Electrical Power Engineering Company, I take this opportunity to apply for the position of intern for Automation of test Systems. I learnt about this position through your online Job portal. Having an internship experience in Testing Systems, Presentation skills and quick learning ability, makes me strongly believe that I am an excellent candidate for this position. Being a Masters student in Electrical Engineering from Hochschule Darmstadt University of Applied Sciences, Internship is integrated as third semester of our course curriculum and hence is mandatory.

Various fields related to Process Automation have been successfully studied by me during my Bachelors in Electronics Engineering. Subjects like Instrumentation system, Robotics and Automation have given me concrete understanding of Characteristics and Control of Measuring Devices. Enough hands on practical experience through lab tasks, I have become familiar to Labview. In the first semester of my masters, I have studied practical implementations of Safe Design and EMC through Advanced Automation Module. Current master's team project which deals with development of Labview Driver is helping me in gaining more expertise in Labview.

An Internship transformed me into a Product Stability department about different control, sensor operational phase.

After going through an opportunity to study the Computer Science

Your's sincerely,



Dear Hiring Manager,  
With a strong desire to work in one of the leading Electrical Power Engineering Company, I take this opportunity to apply for the position of intern for Automation of test Systems. I learnt about this position through your online Job portal. Having an internship experience in Testing Systems, Presentation skills and quick learning ability, makes me strongly believe that I am an excellent candidate for this position. Being a Masters student in Electrical Engineering from

After reading the first paragraph, the application will be thrown away!

# Application: Layout of a Cover Letter



Name, address	
Company address + name HR	Date
Subject	
Dear name!	
Why are you interested?	
Why should they select you?	
Looking forward for an invitation.	
Signature	

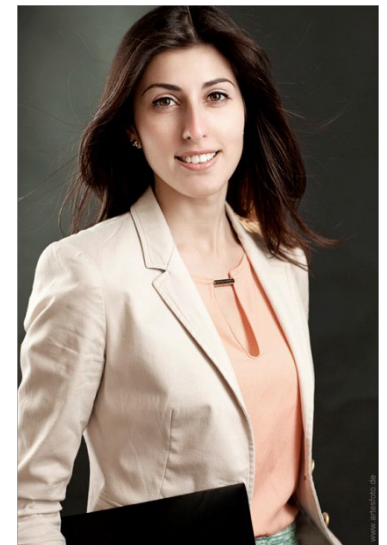
[www.h-da.de/career](http://www.h-da.de/career)  
[www.arbeitsagentur.de/Darmstadt](http://www.arbeitsagentur.de/Darmstadt)



# Application: Curriculum Vitae (CV)

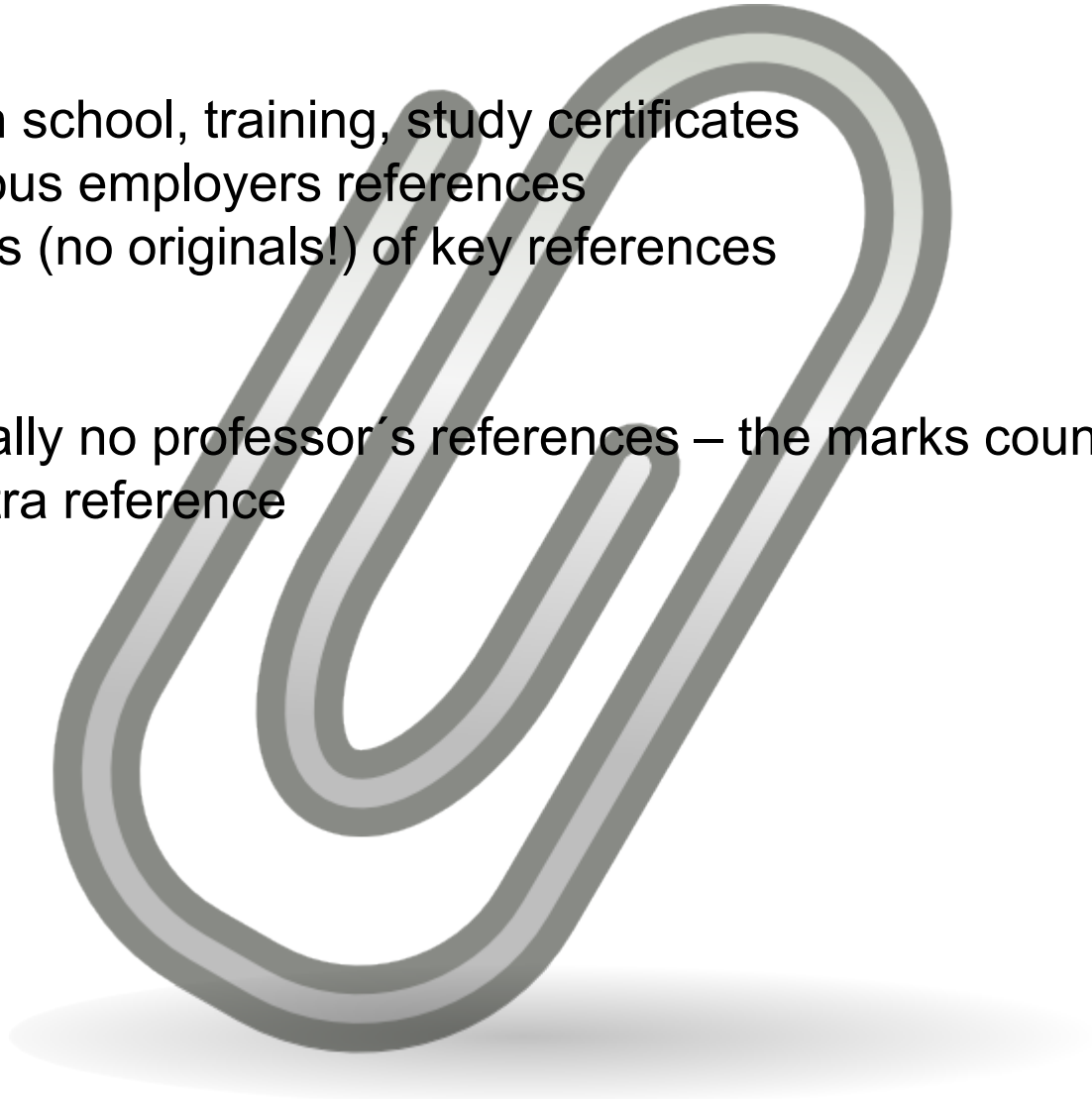


- Maximum of two pages
- Attach friendly application picture to the right corner of your CV
- Europass form
- Focus on relevant experiences
- Some companies require a special form
- Inform yourself





- Attach school, training, study certificates
- Previous employers references
- Copies (no originals!) of key references
  
- Typically no professor's references – the marks count, you won't get an extra reference



# Application letter: Why are you interested?



Ms. Carina Scotti  
Continental AG  
Human Resources  
Germany

Subject: Application for workstudent in System/ Requirement Engineering Role -Reference Id - 16424BR

Dear Ms. Scotti,

With reference to the above position in your portal, it's a great pleasure to express my interest towards this position. My professional experience in Automotive field includes Requirement Engineering - Receiving and Translating the customer raw requirements into High-Level and Low-level software design (along with the Function development). The importance of Requirement Engineering that closes the gap between Automotive requirements and consumer expectations motivates me to apply for this position.

Currently, I am a second semester student at Darmstadt University of Applied Sciences, pursuing Masters in Electrical Engineering with Specialization in "Embedded Systems and Microelectronics". The module "Project management" as a part of second semester focuses on Requirement Engineering, tool experience in Project Management, Quality assurance and Agile Project Management (SCRUM) through a technical project work. The module "System Design" during the course has enriched my skills in C and C++ programming. The module "Advanced Embedded Systems" has let me explore in depth of Realtime Operating Systems (OSEK and FreeRTOS). My academics during Bachelor's include "Electronics and Communication".

Post bachelors', I started my professional career as a Software Engineer in Robert Bosch Engineering and Business Solutions Limited, India. I worked for 4 years in the field of Automotive Embedded Systems. Along with a greater insight in Function development of modules related to Power Train, Advanced Driver Assistance systems and CAN, this experience has also strengthened my skills in preparing Functional Specifications and Tracking the changes in requirement using Change Request Management(CRM) tools and Tagging and Traceability Matrix(TTM). In the role of Function Developer, my focus on quality and functional safety standards (ISO26262) on customer needs elected me for a challenging position at Bosch Engineering GmbH, Vienna, Austria where I worked for a period of 6 months.

I express my confidence that, I can contribute innovatively towards this position. I would like to work for 20 hours a week for a period of 6 months. The possible date for me to start with the specified activities is 20.04.2015. I hereby enclose my resume and look forward to meet in person to answer any of your questions and further present my qualification.

Thank you very much for your time and your consideration.

Yours Sincerely

Dear Ms. Scotti,  
With reference to the above position in your portal, it's a great pleasure to express my interest towards this position. My professional experience in Automotive field includes Requirement Engineering - Receiving and Translating the customer raw requirements into High-Level and Low-level software design (along with the Function development). The importance of Requirement Engineering that closes the gap between Automotive requirements and consumer expectations motivates me to apply for this position.

# You got an invitation...



# Business Customs: Punctuality



## Be on time

- Being late in Germany is a cardinal sin. Turning up even five or ten minutes after the arranged time - especially for a first meeting - is considered personally insulting and can create a disastrous first impression. (Photo: DPA)





## Use titles and surnames

- German workers tend to stick to roles rigidly and rarely step out of strict office hierarchies.
- Stay in line and always address colleagues and business associates using their title and surname, unless or until they invite you to use first names.
- If you find yourself hosting, introduce your highest ranking guest to everyone else taking care to use full names and job positions. (Photo: DPA)







### If in doubt, shake hands

- As well as shaking hands in greeting, Germans also shake hands with everyone in a room before and after a business meeting or conference.
- The German handshake is firm and brief, said to convey confidence and reliability.
- A weak handshake will suggest you are unsure of your abilities.





## Dress like a professional

- German business attire is reserved and conservative, with both men and women typically wearing dark suits and few, if any accessories. Men are advised to avoid flashy ties and women should keep make-up and jewellery simple and low-key.





## Plan ahead

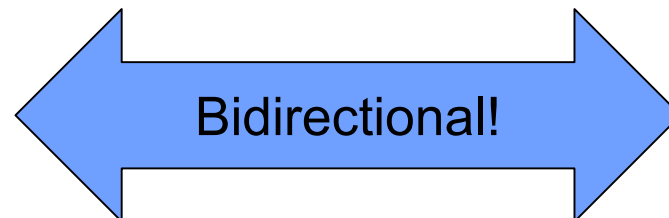
- Germans tend to keep full, relatively inflexible calendars, so be sure to schedule meetings well in advance.
- Surprises are generally frowned upon, so don't expect to be able to change or cancel an appointment at short notice without annoying your German associates.
- Last minute cancellations are an even worse sin than being late.



# Business Customs: The interview



- Different companies have different processes!
  - Upfront online
  - Assessment Center
  - Participants in the interview (HR, technical staff)
- But for all, the key question is the same like in the application letter
  - Why do you want to work at this company:
    - You need background information on the company
    - Assume the question: „What do you like about our products“ and you have no clue which products are being produced.
  - Why should they pick you:
    - What skills do they expect?
    - How can you persuade them about your skills?
- What would you like to know from the company?



# Business Customs: Salary Negotiation



- Germans tend to be direct and frank about what they want and they will expect you to do the same.
- Question:
  - What salary range can you expect?
  - What are the factors?
  - How can you persuade the company?



# Taking a decision...



- One offer, which is good → take it
- Potential conflict lines
  - The offer is not good
  - There is another interview pending or offer available
- There is always a certain risk in life, accept it.
- Don't try to wait until you receive „the best offer“. It probably will never come.
- Your reputation is important – stick to agreements.



**Any questions?**



Have a nice Weekend

