



# How to Master (your) Thesis

Nuray Bayaslan | Esben Schukat

This presentation is not legally binding!

# Senior Student Advisor International Academy & Ph.D Candidate Esben Schukat (WZL)

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## Nuray Bayaslan, M. A.

- Problems occurring during your studies
- First contact regarding problems in your personal life
- Tutorials and Presentations
- Advisory for your Master's thesis, Visa issues and general questions
- **Please contact me mainly via [seniorstudents@academy.rwth-aachen.de](mailto:seniorstudents@academy.rwth-aachen.de)**



## Esben Schukat, M. Sc. RWTH M.Sc. RWTH

- Ph.D Candidate at the Laboratory for Machine Tools and Production Engineering WZL
  - Largest Institute of RWTH Aachen (founded in 1906)
  - Employee: 814 | Office space and laboratories: 16.000 m<sup>2</sup>
  - Focus: Integrated production technologies, Factory of the future, Industry 4.0
  - Field of activity: Industrial Consultancy, Research, Apprenticeship and further study
- Studied Mechanical Engineering as well as Business and Economics

# Agenda

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## What will we talk about today?



### Formal legal basis

General Overview about the Regulations

First Steps

Examination Regulations



### Thesis Do's and Don'ts...

Time Schedule and Research Field

Application Phase

Topic Development

Work Phase

Submission



### Tips

Problems with your Thesis

Time Problems

Asking for other Master's theses



# Agenda

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## 1 | Formal Legal Basis



### Formal Legal Basis

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### Thesis Do's and Don'ts...

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# Master's thesis Requirements

Study Program	Minimum CP	Faculty (internal)	Other Requirements
CAME	92 CP	Faculty 4	Mini Thesis + Internship
PSE	45 CP	Faculty 4	
MME-CAME	80 CP	Faculty 4, 8	
MME-PS	80 CP	Faculty 4, 8	
TEXTILE	80 CP	Faculty 4	
ROBOSYS	80 CP	Faculty 4	
MME-CONSTRUCT	80 CP	Faculty 3, 8	
MME-EPS	80 CP	Faculty 6, 8	

- **Please also keep in mind that you have to pass your „Auflagenfächer“ before you can register your Master's thesis!**
- These requirements are not legally binding! Please always check your examinations regulations at:  
<https://www.rwth-aachen.de/cms/root/Die-RWTH/Aktuell/~xhf/Amtliche-Bekanntmachungen/>

# Scope, Copies, Format and Submission

Study Program	Scope	Hard copies	Submission	Preparation Time
CAME	Min.max 80 pages without annexes	2 hard copies	ZPA	17 weeks
PSE		2 hard copies		22 weeks
MME-CAME		2 hard copies + PDF		6 months
MME-PS		2 hard copies		17 weeks
TEXTILE		2 hard copies + PDF		6 months
ROBOSYS		2 hard copies + PDF		4 months
MME-CONSTRUCT		2 hard copies + PDF		6 months
MME-EPS		2 hard copies + PDF		6 months

# Master's thesis

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## Where can I absolve my Master's thesis?

The Master Thesis has to be done in a field that is relevant to your course of study

The Master Thesis has to be supervised and approved (internally or externally) by a Faculty 3, 4, 6, 8 (depending on your study program) Institute of RWTH Aachen University

## What do I need to know when I do an external thesis?

Upon application with the **help of your Academic Advisor**, the thesis can be done externally (e.g. in a different faculty or in the industry)

Besides the external supervisor, you also need an internal supervisor

The internal supervisor has to be from a Faculty 3, 4, 6, 8 (depending on your study program) Institute of RWTH Aachen University

**Important:** This internal supervisor for the external thesis has to be „organized“ by the student themselves before starting the Master Thesis!

**Important:** The external supervisor **has to at least have a Master's degree of an university in your field of study!** Otherwise a supervision is not possible.

# Master's thesis Registration

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- **Your internal supervisor will go through the Registration Sheet with you**
- Please always make a final copy of your registration sheet **before** handing it to the Central Examination Office ([Ms. Lisa Schumacher](#)) for the official registration of your topic
- The Master's thesis can be started at any time during a semester once the minimal required CP are reached

## Registration Sheets

**Faculty 3: ZPA**

**Faculty 4: [Registration form “Erfassungsbogen Masterarbeit”](#)**

**Faculty 6: ZPA**

**Faculty 8: ZPA**



# Submission of your Master's thesis

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- Always check your deadline of your thesis at RWTHOnline!
  - Submitting your Master's thesis after the day of the deadline leads to a 5.0
  - **Not submitting your Master's thesis at all** leads to a 5.0 as well after the day of the deadline
  - Your Master's thesis starts from the signature of the head of the institute, not the registration date of the ZPA!!
- If you notice that you cannot finish your Master's thesis in time, please contact me via [seniorstudents@academy.rwth-aachen.de](mailto:seniorstudents@academy.rwth-aachen.de)
  - Contact me as soon as possible **(at least 3 weeks before the deadline)**
- You can currently submit your work via the „Fristenbriefkasten“.
  - All the information about the regulations due COVID-19 [can be found here](#)
- The Master's thesis must be submitted in bound form
  - You can find copy shops in Aachen via Google! Please note the opening hours of the copy shops to avoid time problems
  - Please briefly check your work after printing in case that the formats or color have changed
- Make sure to address the envelope with your Master's thesis correctly

# And at lastly, check this page!

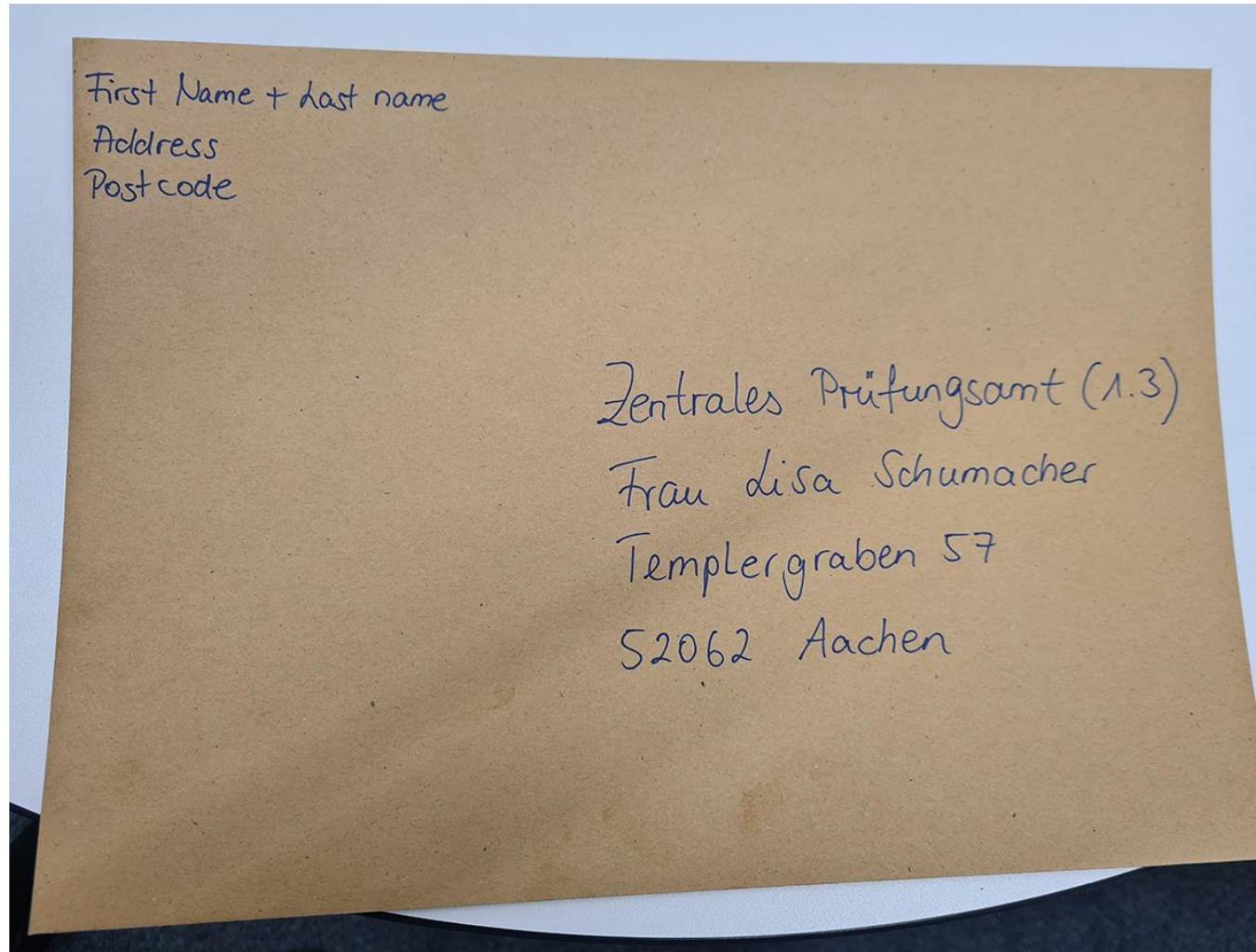
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- Don't forget your Affidavit „eidesstaatliche Versicherung“ **(this is mandatory!)** and
- Using the logo for written examinations **(Logo use is voluntary!)**

<https://www.rwth-aachen.de/cms/root/Studium/Im-Studium/Pruefungen-Abschlussarbeiten/~hjxv/Hinweise-zu-schriftlichen-Arbeiten/?lidx=1>

# Exemplary Envelope to submit your Master's thesis

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# Once upon a long long time ago (about 4.000 BC) ...

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... there was a lonely Master's thesis student sitting in the library, all alone. Who could it be?



# Once upon a long long time ago (about 4.000 BC) ...

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Every day, this eager student worked on her Master's thesis.

But every day, she also noticed, that she was all alone, day by day.

But this loneliness finally paid off ...



# Once upon a long long time ago (about 4.000 BC) ...

Finally, after what felt like an eternity,

I submitted my Master's thesis to the  
Fristenbriefkasten of RWTH Aachen!

**If I can do it, you can do it too!**

*I want to thank Coca Cola Zero, the library  
of RWTH Aachen, my family, my friends and  
the Fristenbriefkasten for making this  
possible. Without you I would not have a  
Master's degree today.*



# Agenda

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## 2 | Thesis Do's and Don'ts



### Formal legal basis

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### Thesis Do's and Don'ts...

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Time Schedule and Research Field

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Application Phase

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Topic Development

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Work Phase

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Submission



### Tips

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Problems with your Thesis

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Time Problems

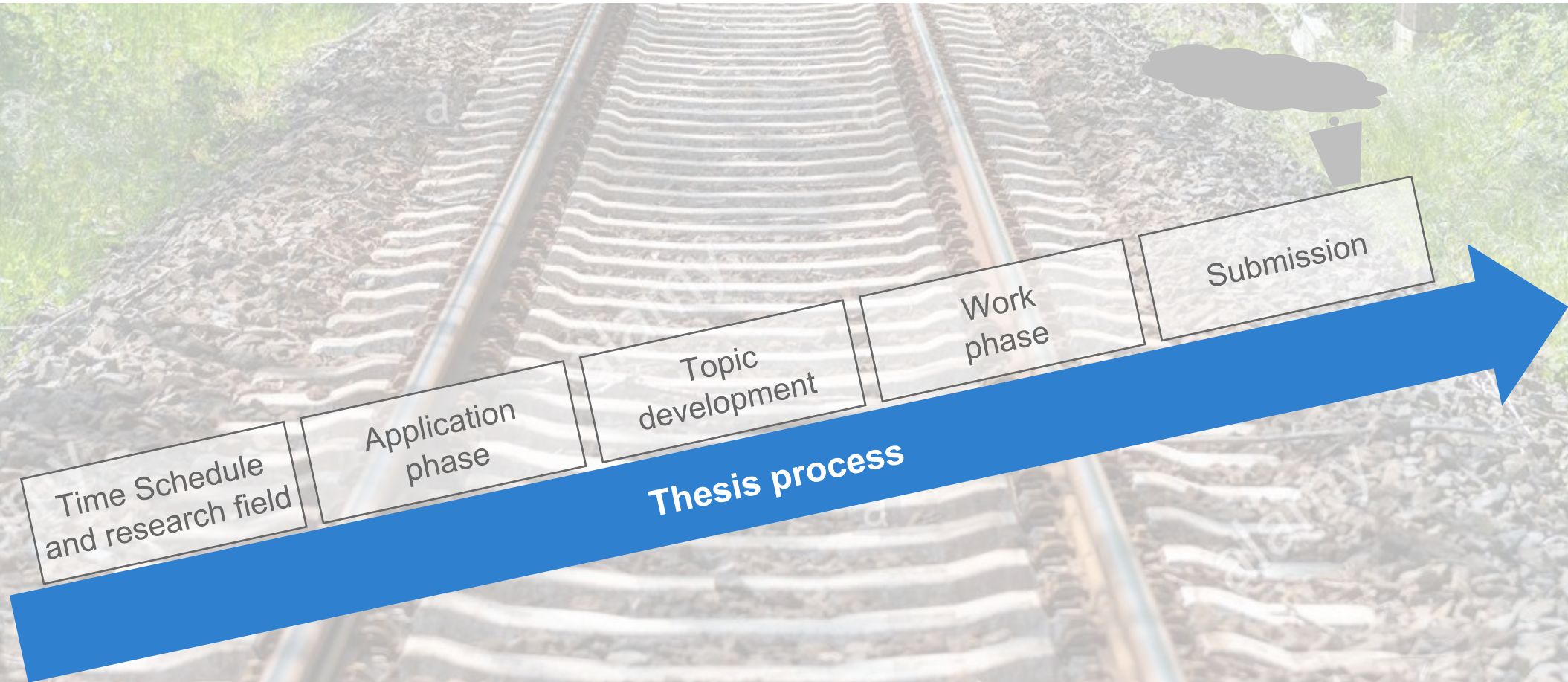
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Asking for other Master's theses



# Thesis Do's and Don'ts | Rough phases of your upcoming thesis

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# Time Schedule and research field | title

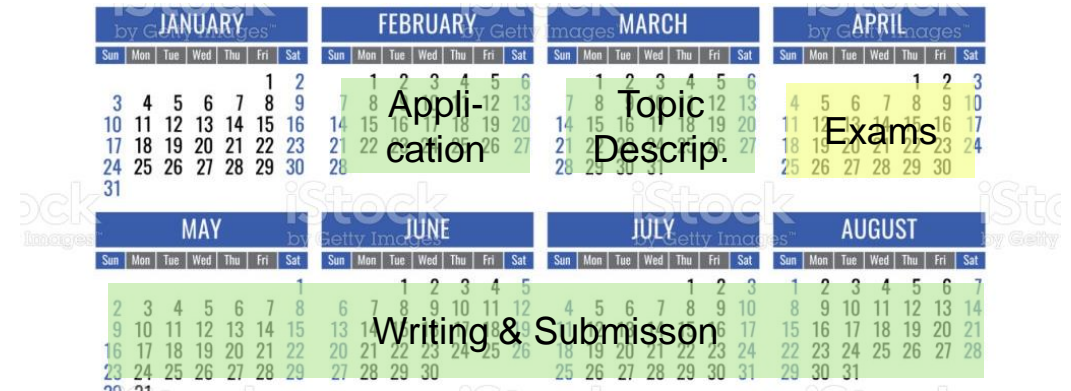
## When do I want to start the thesis and in which research field?

- Make up your mind about a possible time schedule: When are you able to start working on your thesis? When would you like to have finished your thesis? Do these two dates seem to be compatible?
- Have a look on the homepage or on the noticeboards of the institutes you are interested in.
  - All advertised theses can be found here: <https://www.rwth-aachen.de/cms/root/Studium/Im-Studium/Pruefungen-Abschlussarbeiten/~cmjw/Studien-und-Abschlussarbeiten/?lidx=1>
- Formulate your expectations
  - Theoretical vs. practical thesis
  - Coding vs. conceptual vs. experimental work
  - Team vs. independent work



### Links

- Current job opportunities
- Employees





## Application phase | Advises for the application process

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*Time management*



*Detailed information*



*Research assistant*



*Personal meeting*

- Start your planning at least two months before you want to start working on your thesis.
- If you want to write an external thesis (e.g. at a company), start planning at least three months before you want to start.
- Inform yourself: What are the research fields of the institute and of the research assistant you want to contact?
- Write a detailed and personally addressed e-mail to the corresponding employees in which you point out your interest in a specific research field or topic (and add your CV if requested)
- If you are planning an external thesis: Don't name a specific topic! The internal supervisor has to be involved in the process, otherwise he/ she will have no benefit.
- Ask for a personal meeting and prepare yourself accordingly



# Application phase | Pitfalls when first making contact

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A *negative* example of an email:

Respected Sir,

I am a master Student from Production Systems Engineering in the 3rd semester (Matriculation number 3xxxxx). I currently have the opportunity from company XY to do a master thesis in the area of ... I want to start my master thesis in two weeks.

It would be great if you could supervise me on the thesis or help me find a suitable supervisor.

Thesis topic: Optimization of ...

Please find attached my CV and transcript.

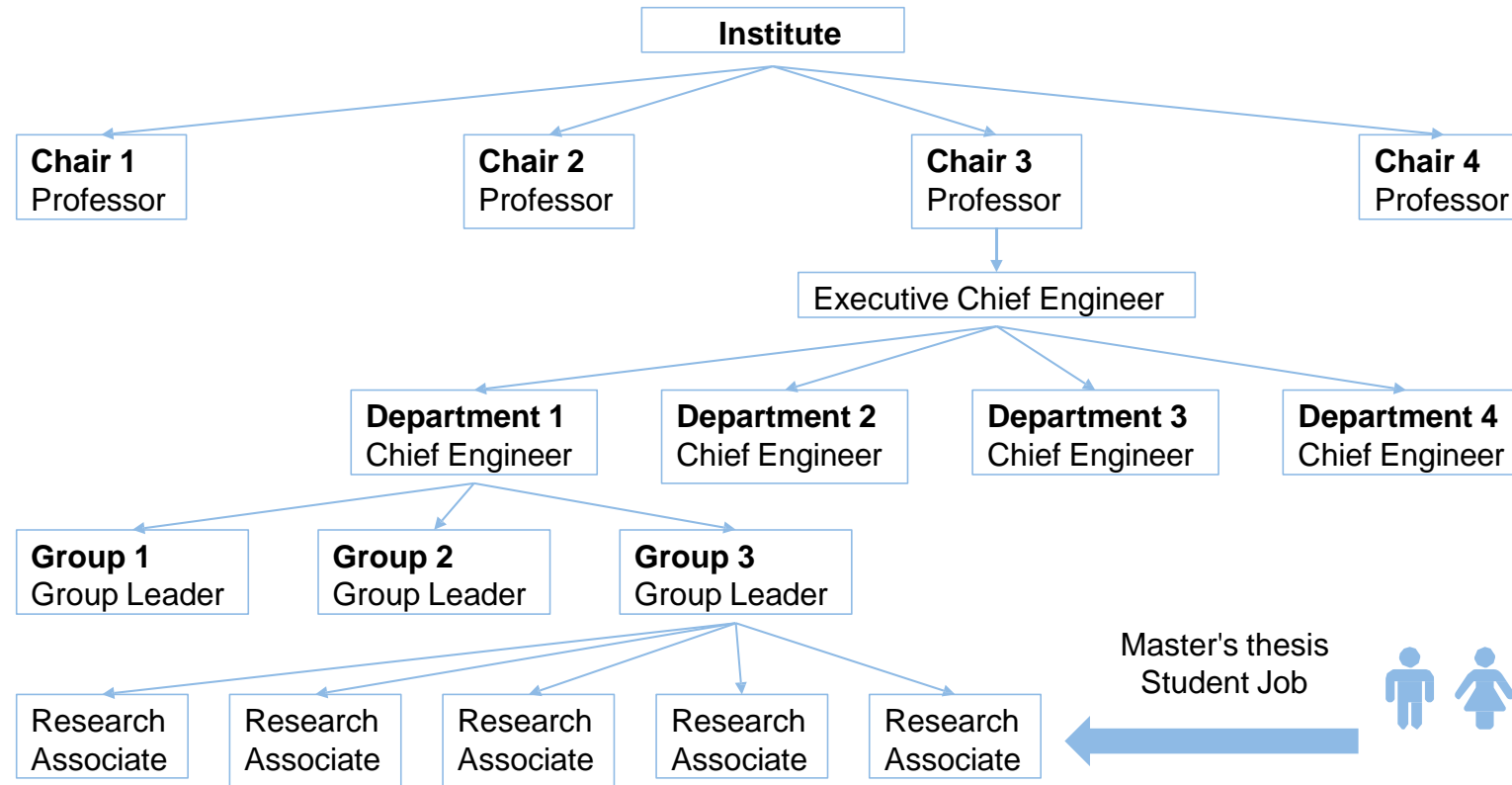
Best regards

Student

- Respected Sir → not a personal start, the assistant will think that this is a standard email to many persons
- The student named a specific topic → the assistant is not involved in the definition process and is not able to put own ideas in the thesis content (both supervisor has to be satisfied with the content of the thesis)
- Start in two weeks → no good time management
- Nothing said about why the student is interested in the research field of the supervisor.
- „or please help me find a suitable supervisor“ → with this part of the sentence the student nearly said that he doesn't really care about who the supervisor is as long as he has an internal supervisor.
- The student did not asked for a personal meeting.

The rules of professional business e-mailing do not only apply for your supervisor, but for all other aspects of your academics and career

# Application phase | Exemplary organizational structure



Students should rather contact research associates as they are working on the operative side.

## Topic development | First meetings

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***Why are you interested in the research field/ the specific topic?***



***What are your personal skills and your knowledge to work on this specific topic?***



***What is the predicted time frame and does it fit well with your personal time schedule?***



***What questions would you like to ask us? Be prepared for each meeting!***

# Topic development | Formulation of the topic

Im Einzelnen sind die folgenden Teilaufgaben zu lösen:

- Aufbereitung Stand der Technik zu Montagesystem- und Layoutgestaltung bzw. -planung
- Ermittlung von Methoden zur Bewertung von Flexibilität und Investitionskosten
- Literaturgestütztes Abgrenzen von Elementen und detaillieren der Anforderungen mit Blick auf eine hochflexible investitionsarme Montagestruktur
- Ermittlung verschiedener investitionsminimaler und flexibler Lösungen für die Elemente

Aachen, den 05.10.2016  
K. Müller – katharina.mueller@rwth-aachen.de

**Masterarbeit**

Für Frau Cand. M.Sc.: Katharina Müller  
Matrikelnummer: 234969

Thema: Gestaltung einer hochflexiblen investitionsarmen Montagestruktur in der automatisierten Kleinserienmontage

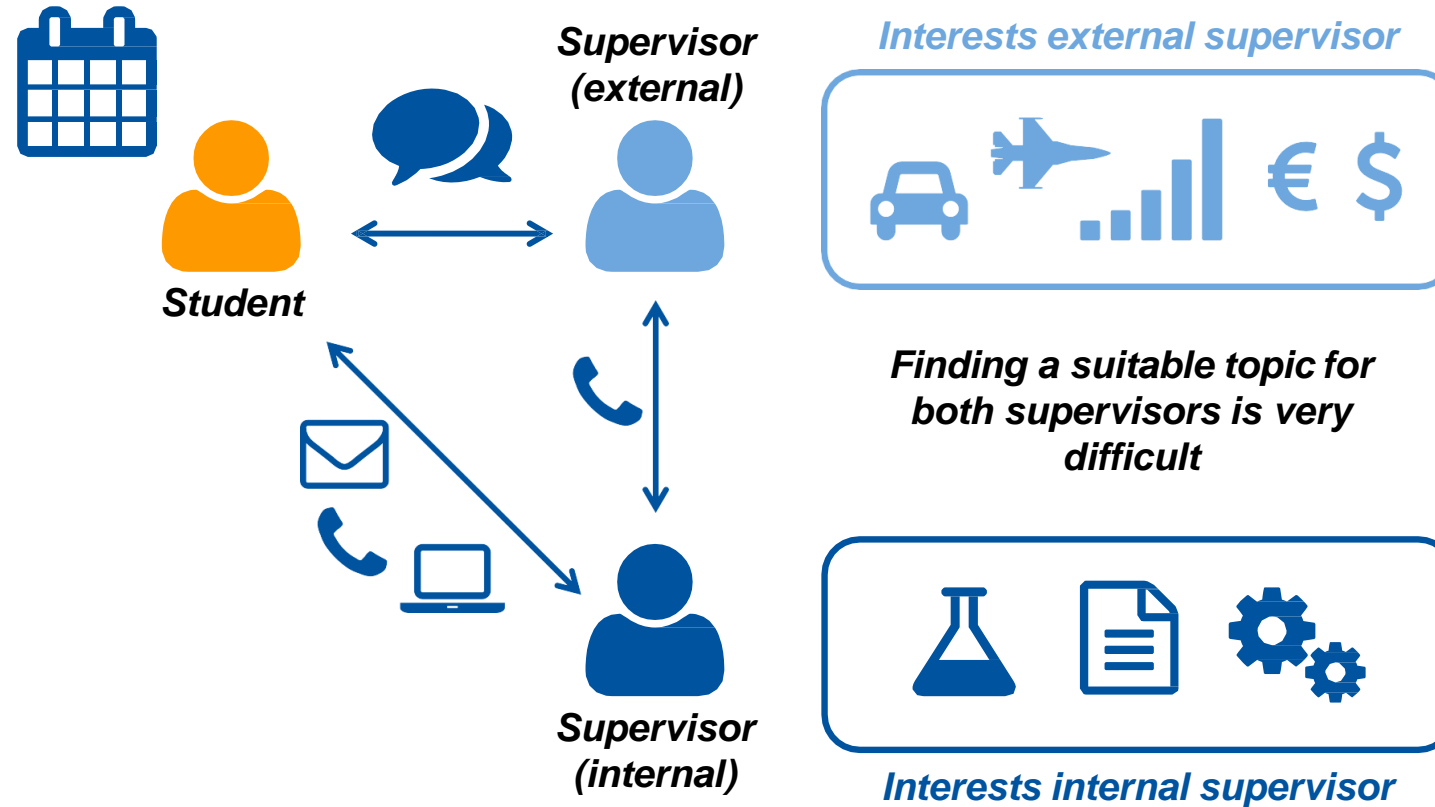
Die Automobilbranche befindet sich im Wandel. Kürzere Produktlebenszyklen, hohe Markteintrittsbarrieren sowie eine steigende Variantenvielfalt erfordern neue Produktionskonzepte und führen zu einer steigenden Anzahl an Kleinserien. Die Folge sind erhöhte Flexibilitätserfordernisse sowie zunehmender Kostendruck im Hinblick auf Investitionen.

Als einer der investitionsintensivsten Teile der Produktion spielt die Montagestruktur dabei eine entscheidende Rolle. Um eine maximale Effektivität und Wettbewerbsfähigkeit sicher zu stellen, sollte sie stets optimal auf die bestehende Produktion angepasst sein. Eine ideale Produktionsstruktur existiert nur kurzzeitig bevor geänderte Prämissen und Anforderungen Anpassungen erfordern. Diese erhöhte Dynamik muss von der Montagestruktur abgeleitet werden können. Eine Verlängerung der Lebensdauer einer Montagestruktur kann erreicht werden, wenn sie aufwands- und investitionsarm angepasst werden kann oder in ihrem Aufbau bereits so flexibel ist, dass sie sich automatisch anpasst.

Das Ziel dieser Arbeit ist daher die Gestaltung einer hochflexiblen Montagestruktur, die einer diese Dynamik abbildet, gleichzeitig aber investitionsarm implementiert werden kann. Basierend auf Literatur zur Montageplanung und aktuellen Ansätzen der Flexibilisierung in Forschung und Praxis, werden zunächst die Elemente eines Montagesystems identifiziert, die signifikant zu einer Flexibilisierung beitragen bzw. mit hohen Investitionen verbunden sind. Anschließend werden Anforderungen an die Montagestruktur eines zukünftigen hochflexiblen und investitionsarmen Montagesystems gestellt und verschiedene Flexibilisierungsmöglichkeiten für die einzelnen Elemente erarbeitet und bewertet. Diese werden abschließend in ein Gesamtbild überführt, welches anhand zweier Anwendungsszenarien verdeutlicht werden soll.

- Topic development and formulation ideally consider both parties' interests (the student's and the research assistant's interests and ideas)
- Process of topic formulation improves understanding of the subject
- Questions worth considering:
  - Why is the topic relevant in the research field?
  - What are current developments and conditions which influence the topic and its relevance?
  - In which way is there a lack of research?
  - What is the aimed at outcome of the thesis?
  - Which sub-aims need to be fulfilled in order to reach the final goal?
- Description:
  - Helps to give a clear definition of the task
  - Is also taken into the registration sheet (possibly shortened)
  - Structure:
    - Header line (incl. place, date, name and surname and phone number)
    - Topic
    - Running text (abstract):
      1. Introduction
      2. Considered problem
      3. Approach
    - Subtasks (key points in word document, separate boxes in registration sheet)
- Description needs to be aligned with supervisor

## Topic development | Possible difficulties with external thesis





## Work phase | Tasks and responsibilities

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- What does the supervisor expect from the student?
  - Enthusiasm for the topic
  - Time to work on the thesis thoroughly
  - Willingness to go deep into literature (analyze state of the art)
  - Willingness to work analytically and to understand how processes work
  - Determination to try solving problems on his/ her own before asking the supervisor (e.g. Computer skills)
  - Use of starter kit and templates
  - Request of exemplary theses and related documents



- What can the student expect from the supervisor?
  - Regular meetings, which need to be fixed in advance though
  - Time to direct the student in the „right direction“
  - Discussions about what is good and what is wrong
  - Topic related support during the overall thesis process and also while potential experiments

In total it should be a “win-win-situation”, which is not always given during an external thesis

# Submission | Inform yourself in time about the required actions

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- Submission to ZPA:
  - Check your final submission date in RWTH Online (submission no earlier than 2 weeks prior to this date)
  - Inform yourself about the currently applicable guidelines
  - The ZPA will send the registration sheet and your submitted thesis to your supervisor
- Submission to institute and final colloquium
  - Coordinate the submission with your supervisor (because of possible holidays etc.)
  - Additional documents (e.g. figures as pptx) might be requested by the supervising institute
  - Inform yourself about the process and agree on a colloquium date with your supervisor (in advance)
  - Prepare your presentation and practice it. You might share it with your supervisor in advance for content related corrections
- Grading:
  - Approximately 2-4 weeks after the final presentation, your grade will be visible in RWTH Online
  - Your supervisor is not entering your grade in RWTH Online and thus cannot accelerate this process

# Agenda

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## 3 | Tips



### Formal legal basis

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### Thesis Do's and Don'ts...

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### Tips

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Problems with your Thesis

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Asking for other Master's theses

## Tips | Additional infos for your Master's thesis

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- If you have issues with creating the contents of your thesis, **please approach your [internal supervisor](#)**
  - If you are insecure whether a chapter is irrelevant, **better ask about it early**
  - Of course, prepare questions before approaching the internal supervisor and do your research in advance
- **Do not plagiarize!** Make sure to quote and paraphrase correctly
  - There are tools where you can check whether you plagiarized content
- If you experience issues with the formal processes of the thesis, please also **approach your internal supervisor first!**
- It is always good to have someone else look over your Master's thesis, **especially if they are also knowledgeable in the field.**
- Ask your assistant/institute for some past theses (graded 1,3 – 1,0) to familiarize yourself with a “good” style

**Thank you for your attention**