Department of Mechanical and Process Engineering

Doctoral Program Presentation in LEE E 101 on 23 February 2016
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Facts and Figures 2015 of D-MAVT

- 3063 students enrolled (+ 60 exchange students)
- 452 Doctoral students, 937 Master’s students, 1674 Bachelor’s students
- 123 new Doctoral students, 365 new Master’s and 449 Bachelor’s beginners in 2015
- 77 doctoral examinations in 2015
- 885 employees
- 38 professors: 28 full and associated professors, 7 assistant professors, 3 titular professors
- 45.7 Mio. CHF federal financing budget + 34.6 Mio. CHF competitive funding
- More than 630 publications
- More than 30 honors and awards
- Technology transfer: 16 patents & 5 licenses, 2 spin-offs in 2015
- 7 ERC Grants on-going

Fundamental Disciplines
- Robotics, Systems, Control
- Design, Product Development & Manufacturing
- Mechanics, Materials, Structures
- Micro & Nano Systems
- Energy, Flows, Processes
- Bioengineering

Grand Challenges
- Transportation, Mobility, Autonomy
- Manufacturing, Product Development and Industrial Processes
- Energy and Environment
- Biomedical, Life Sciences Processes and Technology

Need for: Basic Knowledge Applications
D-MAVT Professors
D-MAVT Executive Board

Prof. D. Norris
Head of Department

Prof. Ch. Daraio
Deputy Head of Department

Prof. Ch. Müller
Director of Studies
D-MAVT Doctoral Committee

Responsibilities of Head of Doctoral committee
• Contact person for doctoral students
• Member of conciliation committee
• Chairperson of doctoral examinations
• Responsible for the agenda item “Doctorate” in PK/DK

Competences of committee
• Admission of doctoral students
• Approval of research plan
• Approval of co-examiners
• Deadline extensions
• Check on dossier for external theses
• Nominations for doctoral awards
D-MAVT Doctoral Administration

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Legal Basis of Doctoral Studies

ETH Zurich

- Ordinance on Doctoral Studies at the Swiss Federal Institute of Technology Zurich of 1 July 2008 (Version: 1 November 2013)
- Rector's Implementation Provisions for the Doctorate Ordinance on Doctoral Studies of 17 October 2013

D-MAVT

- Detailed Regulations of the Department of Mechanical and Process Engineering for Doctoral Studies of 11 March 2014
- D-MAVT Complementary Regulations on Doctoral Affairs of April 2014 and successive decision of DK
Admission in Doctoral Studies

Requirements
- Diploma or Master’s degree at university level
- Good scientific credentials
- Professor willing to supervise the students

Admission without qualifying exams
- Candidate with good grades (Master ETH > 5.0)
- Candidate with good grades and degree from university with the same level of ETH

Admission with additional qualifying exams
- MAVT request 3 qualifying exams at Master’s level
- The exams have to be passed in the first year of study
- Qualifying exams do not count as credits for doctoral studies
Supervisors in D-MAVT are:

- Professors in D-MAVT
- Accredited professors to D-MAVT
- Titular professors in D-MAVT

The thesis supervisor may appoint one or more additional mentors for the doctoral candidate.

The doctoral candidate submits every year a written report on the progress of his/her work to the supervisor.
Research Plan

The research plan must be submitted to the Doctoral Administration within 12 months of registration together with the form “Approval of research plan”.

Control of the deadline for the research plan is every two or three months.

The structure of the research plan requested in D-MAVT is as follows:

- cover sheet with date and signature of the doctoral student and supervisor
- abstract, max. ½ page
- scope of the project, research tasks
- relevance and relation to current work carried out at the institute/department
- literature review
- capacity for additional research
- time schedule
- planned publications
- teaching tasks
- additional duties of the doctoral candidate
Credits

- Doctoral candidate must earn at least 12 credits during his/her doctoral study. 1 credit corresponds to a workload between 25 and 30 hours. 1/3 of the required credits has to be outside the research field. Doctoral students need to enroll for courses and register for exams.

- D-MAVT tabulates the credits for the ETH courses and activities as follows:
  - **Course with examination:**
    - \# credits = ECTS
    - results visible in myStudies (Functions: Transcript of records)
  - **Course without examination:**
    - the lecturer defines the requirements for the confirmation (Testat)
    - if the Testat is “received” \# credits = \# hours (V+U, G)
    - results visible in myStudies (Functions: Studies overview)

- The supervisor is authorized to approve credit units for courses/activities that are not within the ETH program (using D-MAVT Form: https://www.mavt.ethz.ch/doctoral-studies/credit-points.html)
Disagreements and Conciliation Committee

- In the case of serious disagreement between the supervisor and the doctoral candidate, the Head of the Department (Prof. Norris) together with the Delegate of Doctoral Affairs (Prof. Daraio) will attempt to settle the dispute. If necessary, the Prorector Doctorate (Prof. Togni from 1.4.2016) will act as mediator.

- Should the mediation efforts fail, and the supervisor no longer wants to act in this role, the Prorector for Doctoral Studies will refer the matter to the Conciliation Committee (Prorector for Doctoral Studies (chair), the Head of D-MAVT or Delegate, and a representative of the ETH Association of Scientific Staff (AVETH))

- Should no agreement be reached, the Rector will take over the matter.
The title page of the doctoral thesis must comply with the requirements of Appendix 2 of the Rector’s Implementation Provisions for the Regulations for Doctoral Studies (RSETHZ 340.311).

The doctoral thesis must include an abstract in an official Swiss language and in English, as well as a CV and publications list.

Use proper citations and references in text, figures, tables, etc. from other works, see "citation etiquette", https://www.ethz.ch/students/en/doctorate/doctoral-thesis-examination.html.

For copyright reasons it is only allowed to quote paragraphs, images, charts, etc. from other works if the quotation serves as an explanation, a reference or illustration and the extent of the quotation is justified for such purpose (Copyright Law art. 251).

In all other cases authorisation of the owner of the right of reproduction has to be requested.

The title and content of the doctoral thesis may not be altered after approval by the Department Conference.
D-MAVT is usually requesting standard doctoral thesis.

A doctoral candidate may submit a doctoral thesis in the form of a “cumulative” thesis. If the thesis is declared as “cumulative”, in the sense that it consists on several publications (published or accepted in a peer reviewed journal (ISI journals or comparable standard), following requirements must be satisfied:

- the doctoral candidate must be the first author of all publications;
- an extended introduction chapter which includes: i) the overriding research question; ii) the methodology used; iii) the relevance and the contribution of the thesis to specific subjects;
- an extended conclusion chapter which integrates the results of the different publications and includes suggestions for future research, plus providing evidence for a coherent research framework of the thesis.
Doctoral Examination

- Examination must be taken not later than six years after matriculation
- Co-examiners must have been approved by Doctoral Committee
- Doctoral thesis has to be provided to co-examiners at least 6 weeks before examination
- Examination date proposed by supervisor and organised by MAVT
- Registration for the doctoral exam with confirmation of 12 credits
- Examinations oral, public: presentation (40 min), discussion (up to 50 min)
- Decision about the awarding of doctoral degree in Department Conference
Retake

- The doctoral candidates who have not successfully completed the doctoral examination may retake the examination once within six months.

- If the doctoral thesis has been rejected, it can be revised once. In consultation with the supervisor, the department determines the deadline for the revision and informs the doctoral student in writing about further procedures.

- Possibility of appeal in case of failure.
Awarding of the Doctoral Degree

- On the basis of the report / recommendation by the examination committee, the D-MAVT Department Conference decides whether the doctoral degree is to be awarded or denied.
Are you teaching a course or supervising exercises, lab work or excursions? Do you have questions like these? Attend the Learning to Teach programme and get answers.

Who is Learning to Teach for?
The Learning to Teach programme is designed for Doctoral Teaching Assistants from all ETH departments.

How can Learning to Teach help you?
Learning to Teach will help you to
- Design targeted learning activities
- Use feedback for teaching and learning
- Get familiar with tools for teaching

What does participation in Learning to Teach require?
Participants must
- Complete an online phase
- Attend three classroom days
- Write a teaching project report

What do participants say?
“Students learn much better if they do things themselves.”

“Students learn much better if they do things themselves.”

“Students learn much better if they do things themselves.”

“In this course, I experienced the difference that good teaching can make.”

Information, current dates and registration
www.let.ethz.ch/schulung

Contact persons
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Training courses for doctoral students
Training courses offered by ETH-Bibliothek

- **Public courses**: fixed dates, open to everybody, free of charge, semester program

- **By appointment**: for research groups, institutes, etc.; minimum 5 people; possible topics: *those* from public courses, as well as subject specific databases; from 15 min (to get the idea) to 1.5 h (to get the full details) per topic; any combination possible; free of charge

- For general questions on training courses please contact: [info@library.ethz.ch](mailto:info@library.ethz.ch)
PhD Event, February 23, 2016
What is AV@MAVT?

Professors

Scientific Staff
(Doctoral Students, PostDocs, ...)

Students

AVETH
(Academic Association of Scientific Staff at ETH Zurich)

AV@MAVT

VMUWIS

VMI

VMITET
What does AV@MAVT do?

- **Political representation**
  - Represent scientific staff in decisions at D-MAVT level

- **Socializing events**
  - Provide platforms for scientific staff to meet, discuss, and have fun
Political activities of AV@MAVT

- Represent interests of scientific staff in **department conference** (DK)
  - Highest and most important institution of department
  - Professors, students, technical/administrative staff and scientific staff (AV D-MAVT)
  - Issues concerning PhD students (e.g. PhD Regulations)
- Work in various **committees**
  - Unterrichtskommission (UK) → Teaching
  - Raumkommission → Allocation of lab/office space
  - Wahlvorbereitungskommission (WVK) → Pre-selection of new professors
Socializing events

- Social Activities for scientific staff of D-MAVT
  - Friday beer events
  - Summer-BBQ
  - Football tournament
BBQ on the roof top of CLA-building
Some useful hints for ETH employees

- ETH-wide inventory on ETHIS
  - Find out if another group at ETH owns the equipment you need
  - [www.ethis.ethz.ch](http://www.ethis.ethz.ch) (Einkauf & Verkauf -> Geräte -> Objekt suchen und anzeigen)

- Microscope services (SEM, TEM, Confocals...)
  - ScopeM: [www.scopem.ethz.ch](http://www.scopem.ethz.ch)

- Corporate Design (Poster, Presentations, ...)
  - [www.cd.ethz.ch](http://www.cd.ethz.ch)

- SBB offers
  - Free Halbtax (Half fare card for all public transportation in CH)
    or 15% reduced GA (unlimited use of all public transportation)
  - [www1.ethz.ch/fc/services/reisen](http://www1.ethz.ch/fc/services/reisen)
Search term and user interface need to be in the same language
A search for courses in English AND German requires 2 separate searches
More hints on the VVZ help page
List of interesting courses for PhD students
How to sign up (mystudies)

Doktorat D·MAVT
Frühjahrssemester 2014
ingeschrieben

Freiwillige Beiträge
Freiwillige Beiträge, die Sie bei der letzten Semestereinschreibung gewählt haben. Diese können bis zum 16.03.2014 geändert werden.

| Stiftung Solidaritätsfonds für ausl. Studierende (CHF 5.-) | Ja | Nein |
| Memberschaft SOSETH (CHF 5.-) | | |
| Mitgliedschaft VSSEETH (CHF 10.-; für Doktoranden und MAS/MBA CHF 35.-) | | |
| Neue Mitgliedschaft AVETH (CHF 4.- pro Monat) | | |

Speichern
Who we are

Manuel Zündel (UK / DK)

Manuel Zündel (UK)

Lisa Joss (UK)

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Interested in organizing an event or in working in a committee?

- **Information Event**: Thursday, Feb. 25, 17:30, ML E13
- **General assembly**: Thursday, Feb. 25, 18:00, ML E13
- **Contact us**: [www.av.mavt.ethz.ch](http://www.av.mavt.ethz.ch)
- **avatmavt@sympa.ethz.ch**