Software Systems Engineering
Introductory Meeting WS 2016/17

Dr. rer. nat. Stefan Schiffer

Head of Programme: Prof. Gerhard Lakemeyer, Ph.D.
Advisor/Co-Coordinator: Dr. rer. nat. Stefan Schiffer

RWTH Aachen University
Knowledge-Based Systems Group
(Lehr- und Forschungsgebiet Informatik 5)

October 14, 2016
1 Organization
   - SSE Website
   - Academic Advisor
   - Practical Things

2 Structure & Schedule
   - Master Examination Rules
   - Programme at a Glance
   - Sample Schedule
   - Structure of CS Department

3 Courses & CAMPUS
   - Types of Courses
   - Course Information System
   - Seminars & Lab Courses
4 Exams
- (Re-)Registration
- CAMPUS Office
- Central Examination Office (ZPA)
- Depth Oral Colloquium
- Thesis

5 Other Stuff
- Forms
- Residence Permit
- Transfer of Credits
Master Programme Coordination

**Head:** Prof. Gerhard Lakemeyer, Ph.D.
- Office hours: Thursday, 13h – 14h

**Advisor:** Dr. rer. nat. Stefan Schiffer
- Office hours: by appointment only(!)
- Mail: sse@kbsg.rwth-aachen.de

On the Internet
- **Website:** [http://dbis.rwth-aachen.de/SSE/](http://dbis.rwth-aachen.de/SSE/)
- **Mailinglist:** [/mailing-lists/sse20XX](http://dbis.rwth-aachen.de/SSE/.../mailing-lists/sse20XX)
  please subscribe to mailing list sse2016
Master Programme Software Systems Engineering

by [Name] — last modified Oct 09, 2016 10:39 AM — Master Programme Software Systems Engineering at RWTH Aachen University

Entry page of the SSE homepage. Contains pointers to all relevant information.

Welcome to the web pages of the International Master Programme Software Systems Engineering offered by the Department of Computer Science at RWTH Aachen University.

This two year master's programme is primarily intended for international students holding a bachelor's degree in Computer Science or a closely related field from an internationally recognized university. There is a detailed list of special entrance requirements applicants need to comply with for admission. For more information on the programme and how to apply, please follow the links to the left.

The programme is completely taught in English. (You do NOT need German language proficiency.) For the language entry requirements see the central page Language Requirements for RWTH Master's programmes.

The programme only starts in winter, i.e., in October.

Deadline for international applicants always is March 1 of the corresponding year. Please also have a look at the SSE frequently answered question (FAQ).

You might also be interested in general information about the Department of Computer Science at RWTH Aachen University and the CS Chairs and Institutes.

The Introductory Meeting 2016 takes place on October 14, 2016, at Informatik-Zentrum, room 5056! You can download last year's Intro Meeting Slides.

The Master Programme Software Systems Engineering (SSE) is one of the International Master’s Degree Programs at RWTH Aachen. There is General Information for Prospective International Students as well as Info on Deadlines for International Applicants for Master programmes and the likes. Once you got admission and you are enrolled you might want to check Formalities to be Completed. If you are interested in taking part in an Erasmus exchange rather than entering a full programme, have a look at Information for (Erasmus) Exchange Students.
Academic Advisor

- **Your Advisor**
  - faculty members of the CS department
  - assigned to each student by end of October
  - will advise you regarding the courses you should take
  - will possibly supervise your thesis

- **Change of Advisors**
  - you may decide to change your advisor
  - may depend on the specialization you choose
  - your new advisor has to agree
  - please contact sse@kbsg.rwth-aachen.de
  - there’s no deadline for a change
Practical Things to Do ...

- Get a computer account
  - Rechnerbetrieb Informatik (RBI)
  - user administration office, room 4U16a, Basement, E1
  - http://www-rbi.informatik.rwth-aachen.de/

- Get to know the CS Centre and its facilities

- Send your current mail address to us
  (if it has changed since application)

- Subscribe to the mailing list sse2016!
Structure(s) in SSE – MPO2011

- There exist different versions of the master examination rules ("Prüfungsordnung", MPO)
- New structure since winter term (WS 2011/12)
- You are “MPO2011” (master exam. rules 2011) let people know which version is yours!
  especially ZPA, student service, and other administr.
- Since last semester the “Übergreifende PO” is in effect:
  some minor changes, but no new major version
- New regulations ahead (re-accreditation in progress)
# SSE: The Programme at a Glance

<table>
<thead>
<tr>
<th>Semester</th>
<th>Theoretical Foundations of SSE</th>
<th>Communication</th>
<th>Data &amp; Information Management</th>
<th>Applied Comp. Science</th>
<th>Software Engineering</th>
<th>Total ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&lt;sup&gt;st&lt;/sup&gt;</td>
<td>12 – 35</td>
<td>0 – 35</td>
<td>0 – 35</td>
<td>16 – 35</td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>2&lt;sup&gt;nd&lt;/sup&gt;</td>
<td>30</td>
<td></td>
<td></td>
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<td>30</td>
<td></td>
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<tr>
<td>3&lt;sup&gt;rd&lt;/sup&gt;</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td></td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Master’s Thesis</td>
<td></td>
<td></td>
<td></td>
<td>30</td>
<td></td>
</tr>
</tbody>
</table>

**Table:** Structure of the SSE Programme (MPO’2011)
# SSE: The Programme at a Glance

## What is required? (2 years = a total of 120 ECTS)

### Cover courses from five areas:

<table>
<thead>
<tr>
<th>Area</th>
<th>ECTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical Foundations of SSE</td>
<td>12 – 35</td>
</tr>
<tr>
<td>at least two courses (min. 12 CP) from “Core Subjects”:*</td>
<td></td>
</tr>
<tr>
<td>Communication</td>
<td>0 – 35</td>
</tr>
<tr>
<td>Data &amp; Information Management</td>
<td>0 – 35</td>
</tr>
<tr>
<td>Applied Computer Science</td>
<td>0 – 35</td>
</tr>
<tr>
<td>Software Engineering</td>
<td>16 – 35</td>
</tr>
<tr>
<td>mandatory Lecture Software Project Management</td>
<td>4 ECTS</td>
</tr>
<tr>
<td>further min. 12 CP from at least two “Core Subjects”:</td>
<td></td>
</tr>
<tr>
<td>Model-based Software Engineering, Generative Software Engineering, Software Architectures, Object Oriented Software Construction, Designing Interactive Systems, Information Management (a.k.a. Implementation of DB), Safety and Reliability of Software-controlled Systems</td>
<td></td>
</tr>
</tbody>
</table>
SSE: The Programme at a Glance

- **Courses**
  - Lectures in five areas
  - two Seminars
    - at least one has to be from Theo. Found. of SSE/Softw. Eng.
  - one Lab Course
    - ! Seminars and Lab must not be all from same area
  - depth oral colloquium ("Schwerpunktkolloquium")
    - on 3 connected courses (often from one area)
      - ask examiner (professors) for possible combinations
  - German Language Course
    - for german-proficient students (need proof!): replaceable by additional non-technical course (4 ECTS with grade!)

- Master’s Thesis

**ECTS**: 90 (Courses), 68 (Lectures), 8 (Seminars), 7 (Lab Course), 3 (Colloquium), 4 (German Language), 30 (Thesis)
For Your Orientation: The SSE Map

International Master Programme
Software Systems Engineering

Theoretical Foundations Core Curriculum

Theoretical Foundations of Software Systems Engineering

Communication

Data and Information Management

Applied Computer Science

Software Engineering Core Curriculum

Software Engineering

Other Software Engineering Lectures

Software Project Management Lecture

Other Theoretical Lectures

German Language Course

Depth Oral Colloquium

Master Thesis

Seminar I

Seminar II

Lab Course

Community

≥ 12 ECTS

≤ 35 ECTS

0 . . . 35 ECTS

0 . . . 35 ECTS

≤ 35 ECTS

12 ECTS

4 ECTS

30 ECTS

3 ECTS

4 ECTS

4 ECTS

7 ECTS

# Sample Schedule

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
<th>Fall</th>
<th>Spring</th>
</tr>
</thead>
</table>
| 5 courses
3×V3Ü2 [3×6ECTS]
+ V2Ü1 [4ECTS]
+ V3Ü1 [6ECTS] | 3 courses
3×V3Ü2 [3×6ECTS]
Proj. Mgmt.
V2Ü1 [4ECTS]
Seminar 1
2h [4ECTS] | 3 courses
3×V3Ü2 [3×6ECTS]
Lab Course
4h [7ECTS]
Seminar 2
2h [4ECTS] | Master’s Thesis
[30ECTS]
Depth Oral Colloquium
[3ECTS] |
| German-I
2h [2ECTS] | German-II
2h [2ECTS] |
Chairs/Teaching and Research Areas

- Overview:
  
  http://www.cs.rwth-aachen.de/Fachgruppe/forschungsbereiche_eng.php

- 12 Chairs
  - one “chair professor” each (head of department)
  - additional professors (teaching and research areas)

- Details on chairs:
  - Follow links on overview site
  - Switch language if necessary
  - Check “teaching” and “research” links
Courses Offered

- Filed in one of the five areas
- Information on Courses
  - **CAMPUS** (information system of RWTH)
    http://www.campus.rwth-aachen.de/rwth/all/groups.asp
    → Master of Science (M.Sc.) → Software Systems Engineering (M.Sc.)
  - German-speaking students may also look at:
    → Master of Science (M.Sc.) → Informatik (M.Sc.) → ...
  - Detailed descriptions also on the chairs’ websites
  - Some (very few!) courses in Electrical Engineering

- Introductory Presentation at beginning of each semester this year: 2016-10-13, 14h, Fo1, Kármán Auditorium
  (presentation of courses offered this semester)
Vorlesungen: WS 2013/2014

- Bachelorstudiengänge (D)
- Masterstudiengänge (M.A.)
- Staatsexamen Lehramtsstudiengänge (GYM•98, BK, SL)
- Lehramtsbezogene Bachelorstudiengänge (GeGe)
- Lehramtsbezogene Bachelorstudiengänge (BK)
- Master of Education (GeGe) ab WS 2014/15
- Master of Education (BK) ab WS 2014/15
- Medizinische Studiengänge (St)
- Bachelor of Arts (B.A.)
- Bachelor of Science (B.Sc.)
- Master of Arts (M.A.)

**Master of Science (M.Sc.)**

Aufbau (A), Ergänzungs (E) und Zusatzstudiengänge (Z)

- Prüfungen (Zentrales Prüfungsamt)
- Sprachenzentrum
- Interdisziplinäres Lehrangebot
- Studierende unterrichten Studierende
- Lehrerfortbildungstermine
- Schülerverlosungsverzeichnis
- Seniorenstudium
- CAMPUS Studiengänge
- G8 Planungsstudiengänge

Aktuelles:

- **CAMPUS Schulungstermine** finden Sie im [Veranstaltungsverzeichnis](#) des Rechen- und Kommunikationszentrum der RWTH Aachen.
- **Sommersemester 2014**: Das Sommersemester ist seit 18.03.2013 für Dozenten und Fachstudiendberater zur Planung freigegeben. Wichtige Termine der Planungsphase sind:
  - **17.01.2014**: Stichtag für Dozenten zur Veranstaltungsbearbeitung für gedruckte Verzeichnisse.
  - **24.01.2014**: Stichtag für Fachstudiendberater zur Strukturierung und Sortierung der Studiengänge für gedruckte Verzeichnisse.
  - **27.01.2014**: Offizielle Freischaltung des Planungssemesters.
The Master Programme in Software Systems Engineering focuses on the design and implementation of complex software systems, including their embedding in technical and socio-technical systems. It is these latter aspects that distinguish this programme from other master programmes in Computer Science. This two year Master programme is primarily intended for international students holding a Bachelor degree in Computer Science or a closely related field.

Link: [http://disis.rwth-aachen.de/SS17/](http://disis.rwth-aachen.de/SS17/)

E-Mail: ssse@disis.rwth-aachen.de

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5 areas (disregard those entries with other MPO-version prefix)
Seminars & Lab Courses

- **Central allocation procedure**
  within Computer Science faculty
  
  [https://www.graphics.rwth-aachen.de/apse](https://www.graphics.rwth-aachen.de/apse)

- takes place end of preceding semester’s lecture period
  - in January for summer term
  - in June for winter term

- register and choose which seminar(s)/lab you want
  slots are being alloted thereupon

- provide meaningful information, choose carefully!

- [http://web-info8.informatik.rwth-aachen.de/stube/Ankuendigung_zentrale_Anmeldung.pdf](http://web-info8.informatik.rwth-aachen.de/stube/Ankuendigung_zentrale_Anmeldung.pdf)

- reminder E-Mail with instructions will be send
Information about Exams

For all courses

- exam(s) at the end of the course
- either oral (30-45 min) or written (60 – 90 min)
- admission to exams may have prerequisites
  (e.g., 50 % of homework assignments)

Separate registration for exams needed

- you have to register for each exam via CAMPUS
  - usually either two dates (if written) [de: Klausur]
    or individual dates (if oral) [de: mündl. Prüfung]
  - one CAMPUS-event for every exam, each with a modular registration procedure (type B) attached

Registration deadline:

- summer: next to last Friday in May
- winter: next to last Friday in November

- no delayed registration!!
**(Re-)Registration for Exams**

- two exam dates per semester, need extra registration each! register for *only one of the two!* (e.g. due to date conflicts)
- pre-requisites are NOT carried over to another semester
- **no automatic (re-)registration** for exams
  - if you *fail* an exam, you need to *re-register* manually!
  - you can *de-register* an exam (as often as you want) but only until *three days* before the exam date!
  - registration for second attempt via VZPA only possible when results from first exam have been entered

- Changing modules / Dropping a module
  - If you *fail* an exam *3 times* you fail the programme!
  - **But** you can *change* modules, i.e. drop a module
Modulare Anmeldeverfahren

- MPO’2011 requires registration via so-called “modulare Anmeldeverfahren” (done in CAMPUS Office)

**Sommersemester**
- registration is only possible until the week before the last full week in May!

**Wintersemester**
- registration is only possible until the week before the last full week in November!

- proper modular registration for first attempt is a necessary condition for registration for the second attempt!
CAMPUS-Office

- web-based study organizer
  - [https://www.campus.rwth-aachen.de/office](https://www.campus.rwth-aachen.de/office)
  - login with your matriculation number and password

- features
  - browse courses in CAMPUS
  - timetable of your courses
  - list of registered exams
  - results of exams taken so far
  - online-access to central examination office
  - online-access to student secretary
  - ...
settings

CAMPUS

your (course) registrations
+ draft exam registrations
timetable
weekly view

Central Examination Office (ZPA)
registered exams (after deadline)
mark sheet
certificates
exams (de-)registration

student secretary
Central Examination Office (ZPA)

- Location
  - in the Super C building (Templergraben 57)
  - registration officers in room 2.22
  - Mr. Kevin Dörr

- Things to do when going to ZPA
  - show student ID / matriculation number
  - tell the name of the Master Programme (i.e. Software Systems Engineering) and version of master examination rules (MPO’2011)
  - explain what your request is about
Depth Oral Colloquium (D.O.C.)

- Oral examination on 3 connected courses (12–18 ECTS)
- You may have had exams in the individual courses but this is not a formal requirement!
- Examiner decides whether combination is OK
- You must register the D.O.C. with ZPA!

Procedure is as follows

1. Agree with Professor on courses and date
   He or she has to agree on combination of courses
2. Register D.O.C. with central examination office (ZPA) at least one week before the date
3. Take the D.O.C. at the appointed date
4. Let examiner file your mark with ZPA
Master’s Thesis

- Usually during the final six months of the programme
- Try to find a topic early (orientation phase)
- Before:
  - Topic is usually chosen from an area that you want to put emphasis on (i.e., you are very interested in)
  - Registration is necessary (get form via ZPA)
  - Prerequisites: successful completion of 60 ECTS
- After:
  - Thesis will be graded by your first supervisor (CS Prof) and another faculty member (second supervisor, also Prof)
  - You have to present and defend your thesis within an oral (makes up 3 ECTS from the total 30 ECTS)
Request Forms / Examination Board

- Request Forms for Applications to the Examination Board
  - Change Title of Master Thesis
  - Disregard Grade(s) in Final Grade Computation
  - Drop an Elective Course
  - Extend Deadline of Master Thesis (only for severe reasons!!)
  - Miscellaneous Application
  - General Question for your PA Contact Person

Prolongation of residence permit

- If you cannot finalize the programme in time, it is possible to prolongate your residence permit
- Procedure:
  - get your intermediate transcripts at the central examination office
  - get a certificate at the international office and a “Studienverlaufsbescheinigung” at my office
  - take certificates to aliens department of local authorities
- Further information:
  - Ulrike Brands
  - ulrike.brands@zhv.rwth-aachen.de
Transfer of Credits

“Transfer of Credits” to speed up your studies
What can be transferred:

- credits from your bachelor and master programmes so far
- programmes should have taken at least four years!
- courses must be Master’s-level CS courses
- may be similar to courses in the SSE programme
- will be filed according to SSE-Programme structure
- maximum: 30 credits
- grades of transferred courses have to be better than German 3.0

Deadline: end of November (we will send detailed instructions)

We need:

- letter containing which courses you want to be transferred (incl. your name, email, immatriculation #, prioritization)
- copy of the transcripts of your previous studies
- (official) description of grading scheme
Additional Notes / FAQs

- In WS 2011 the “Information Management” course was given in CAMPUS as “Implementation of Databases”
- In CAMPUS, for the lists given for the Core Subjects for the areas *Theoretical Foundations of SSE* and *Software Engineering*, look for “Veranstaltungen” (and do not pay too much attention to “Module”. The former is the list of courses offered this semester, the latter is the list of all modules that are generally considered as Core Subjects in that area.)
- If you have questions on a particular course/lecture, don’t hesitate to ask with the lecturer or better yet a corresponding research assistant.
Software Systems Engineering

Questions?