Introduction to Nailing Your Thesis

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NYT A01

Course Learning Goals

Learning objectives

- Understand science in general
- Understand the scientific process, including
  - Research process and designs
  - Research methodologies and methods
  - Publications and the scientific community
- Learn how to write a research paper (thesis)

Project objectives

- Learn by performing a small research project

Definition of Science (Working Definition)

Science is the **process of acquiring knowledge** for **correct prediction and reliable outcome.** [DR]

Course Content and Structure

Overview

1. What is science?
2. Scientific research

Theory building

3. Qualitative data analysis
4. Systematic reviews
5. Qualitative surveys
6. Action research
7. Case study research

Theory validation

8. Survey research
9. Controlled experiments

Comprehensive

10. Design science

Academia

11. Academic writing
12. Academic publishing

Skills Required for Course

No particular requirements, but …

- Strong conceptual and analytical thinking

Requirements for Final Theses

From the Bachelor-Prüfungsordnung Informatik (“writing about science”)

- “Die schriftliche Bachelorarbeit soll ein wissenschaftliches Thema aus dem Bereich der Informatik behandeln.”

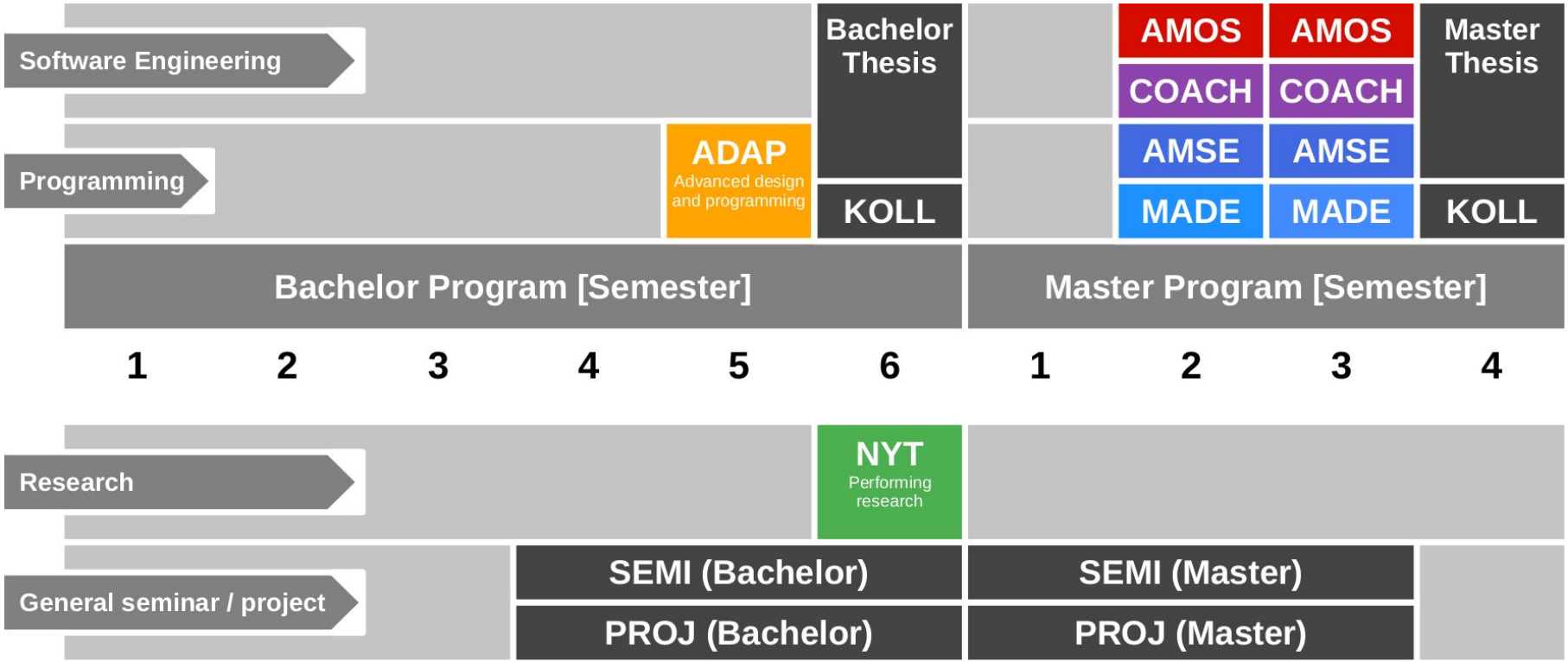
From the Master-Prüfungsordnung Informatik (“applying results of science”)

- “Die Masterarbeit dient dazu, die selbständige Bearbeitung von wissenschaftlichen Aufgabenstellungen der Informatik nachzuweisen.”

From the Promotionsordnung Informatik (“creating scientific progress”)

- “Die Dissertation soll die Fähigkeit des Bewerbers belegen, ingenieurwissenschaftliche Probleme selbständig und mit Erfolg zu bearbeiten und Wege zu ihrer Lösung zu finden.

Course Position in Curriculum



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Courses and Modules

		Courses (Lehrveranstaltungen)			
		Lecture (2 SWS)	Exercise (2 SWS)	Project (2 SWS)	Total ECTS
Modules	NYT-VUE	x	x		5
	NYT-PROJ			x	5
	NYT-VUE+PROJ	x	x	x	10

VUE = Lecture + exercise (Vorlesung + Übung)
PROJ = Project

Availability of Modules

		University			
		Univ. Erlangen			
Modules	NYT-VUE	x			
	NYT-PROJ	x			
	NYT-VUE+PROJ	x			

x = available
– = not available

NYT-VUE Grading [1]

Lecture-time contributions = 50% of total grade

- Lecture content (4 SWS) = 60 / 150 = 40% (of semester contributions)
  - Graded using [0..10] each class session using class quizzes
- Method exercises = 90 / 150 = 60% (of semester contributions)
  - Graded using [0..10] using tool and grading rubric

Oral exam = 50% of total grade

- If both you and we agree on not having an oral exam, it can be dropped
  - If you insist on an oral exam, please tell us within two weeks after the last session

[1] See https://oss.cs.fau.de/teaching/course-resources/grading-schemes-and-scales/

Class Quizzes

Each class session starts with a class quiz

- A quiz will test your understanding of last session's topic
- A quiz typically has 5 questions and will last 10 minutes
- The overall quiz is graded using [0..10] scheme (10 points in total)

A class quiz will open precisely when class starts

- The quiz is administered automatically
- It is your job to have reliable Internet access etc.
- There is no way to make up for a missed quiz

Please sign up on https://myc.uni1.de for the quizzes

Method Exercises (Qualitative Data Analysis)

Graded using a structured metric (intercoder reliability) against our solution

One qualitative written assignment (presentation of resulting theory)

Grading Rubric for Homework Submissions

Categories	Points					Criteria
	Disagree	Disagree some	Neutral	Agree some	Agree	
Form (10%)	Does the deliverable meet formal requirements?					Does it meet length requirements, is it written in the right language, etc.?
Language (10%)	Is the language clear, concise, and helpful?					Are sentences complete, is the grammar correct, are statements coherent, etc.?
Structure (20-30%)	Does the deliverable have a clear logical structure?					Does it follow established or suggested structure? Is the argument logical?
Content (50-60%)	Does the discussion touch on all relevant issues?					As a reference, use your own deliverable as well as what you learned in class.

NYT-PROJ Grading

Six submissions and one presentation

1. Paper outline = 5%
2. Related work = 10%
3. Contributions 1 = 5%
4. Contributions 2 = 10%
5. Paper draft = 15%
6. Final paper = 40%
7. Final presentation = 15%

No Oral or Written Exam [1] [2]

[1] If both you and we don’t want to
[2] You still have to register for the course

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Course Language [1]

Class

- Lecturer: English
- Student: Choice of German or English

Exercise

- Instructor: English
- Homework: Choice of German or English

Project

- English only

[1] See https://oss.cs.fau.de/2012/03/10/english-or-german-deutsch-oder-englisch/

Course Participation (Auditing)

The course is provided publicly, you can always audit it

Auditing will not give you credit points towards a degree

Course Registration / Waitlist

Students must have passed a (trivial) entrance test

We use stratified randomized sampling to select students

Our current student limit for the course is 120 students

Everyone is required to participate in this first class

We will inform you after class if you got off the waitlist

Course vs. Exam Registration [1]

Course registration and exam registration are two separate things

If you want to receive a grade

- You must register through your university's exam registration system
  - **Your degree program may have split the course into two (VL + UE)**
  - **Please check asap that the course is available in your degree program!**

Otherwise: No grade

[1] German: Prüfungsanmeldung

Course Organization

Course organization

- See https://nyt.uni1.de

Course schedule

- See **Schedule** tab on Course organization doc

Project allocation

- See **Projects** tab on Course organization doc

Work Rhythm

Lecture (class)

- Review of last week (quiz)
- Presentation of this week’s topic

Method exercise

- Discussion of articles
- Discussion of homework

Written homework

- See Course organization doc
- Self-organized

Course Communication

Announcements by email

- Through course management system

Questions to teaching team

- Please ask your question in the course forum
- For private questions, use the teaching team email alias

Non-urgent questions will be answered in class

This Semester’s Projects

Let’s see… https://nyt.uni1.de

Thank you! Any questions?

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