

# Introduction to The AMOS Project

---

Dirk Riehle, Univ. Erlangen

**AMOS A01**

Licensed under [CC BY 4.0 International](https://creativecommons.org/licenses/by/4.0/)

**To introduce students to agile methods by creating useful open-source software in a team**

[1] Professional = ambition + collaboration with external partner

[2] Agile methods = our focus here, specifically Scrum + XP

[3] We teach both overall processes as well as best practices

[4] Useful software is software that has value to someone!

# Course Goals 2 / 2

## Learning objectives

- Gain conceptual understanding and practical skills of using
  - agile software development methods
  - software project management tools
  - software development tools
- Learn how to work
  - with an external stakeholder
  - in a (student) project team

## Project objectives

- Develop useful open-source software
- Perform a great demo on demo-day!

# Industry Partners



ACTANO

adorsys



CONSILEON



GRAU DATA

Hisense



MekTEC

msg

NEWSTORE



Raiffeisen Bank International



SENACOR

SEALSYSTEMS

SICK  
Sensor Intelligence.

SIEMENS

SIEMENS  
energy

SIEMENS  
Healthineers

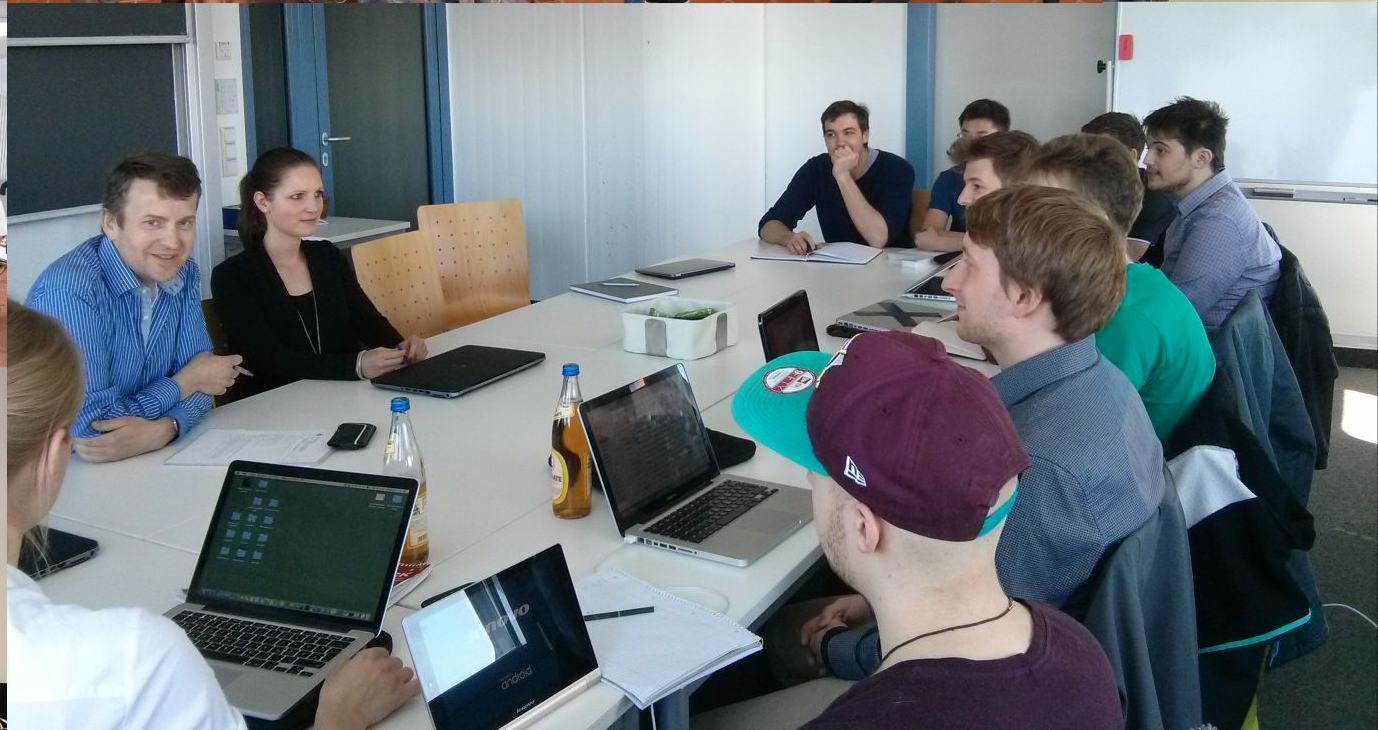
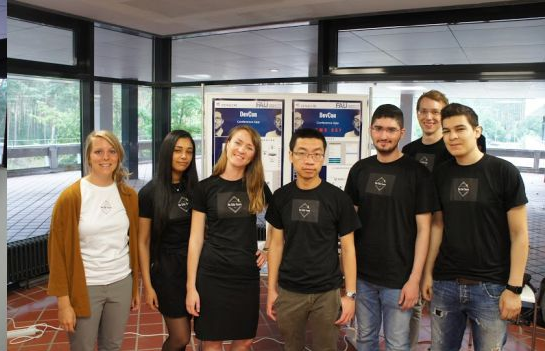
SOLYP



weber

WSAudiology





# Skills Required for Course

## General skills

- Willingness and ability to work in a team
- Ability to acquire skills during the project

## Role-specific skills

- Product owner (PO) role
  - Strong conceptual thinking, ability to communicate well, affinity to technology
- Software developer (SD) role
  - Technology (specific to project), development tools like git, test-driven development
- Scrum Master (SM) role
  - Past successful experience as an AMOS product owner or software developer



# Structure and Content of Course

## #1 Team and tools

1. Team contract
2. Team logo / T-shirt
3. Planning documents
4. Feature board
5. Code repository
6. Impediments backlog
7. Standup emails
8. Happiness index

## #2 Scrum and AMOS

1. The AMOS process
2. The team meeting
3. Sprint review
4. Sprint release
5. Sprint retrospective
6. Sprint planning
7. Bill of materials
8. Software architecture

## #3 Agile processes

1. Software development
2. Plan-driven development
3. Agile methods
4. Scrum

## #4 Agile planning

1. Product goal
2. Product glossary
3. Product backlog
4. Sprint planning
5. Release planning
6. Definition of done
7. Roadmapping

## #5 Agile programming

1. Daily scrum
2. Programming
3. Refactoring
4. Test-driven development
5. Code review
6. Build processes

## #6 Agile coaching

1. Agile coaching
2. Process improvement
3. Sprint retros
4. Release retros
5. Project retros
6. Documentation

## #8 Workshop

1. Workshop

## #12 Demo day prep

1. Demo day slide
2. Demo video

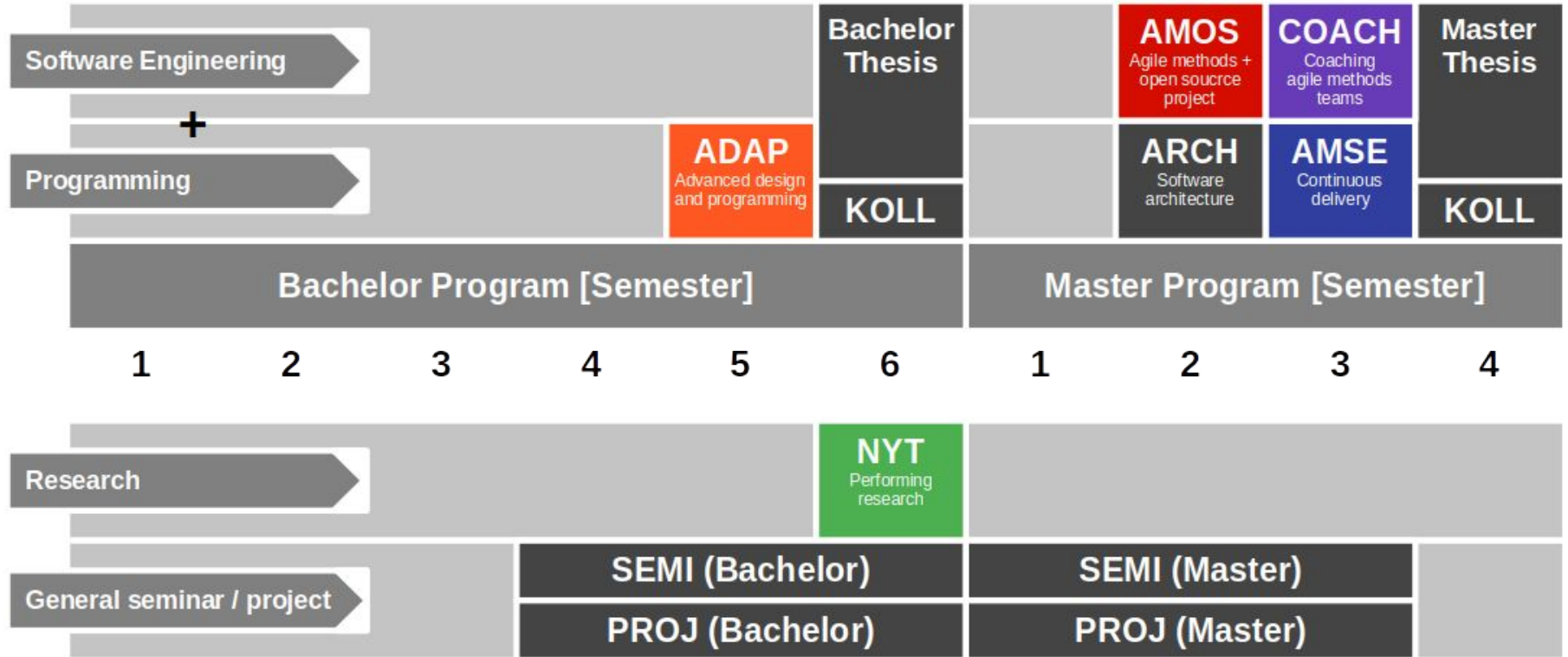
## #14 Demo day

1. Demo day!

## #15 Project retro

1. Project report
2. Project retrospective

# Course Position in Curriculum





# Modules and Courses

		Courses (Lehrveranstaltungen)			
		AMOS-VL	AMOS-UE (Team Meeting)	COACH-VL	Total ECTS
Modules	AMOS-PO	x	x	–	5
	AMOS-SD	x	x	–	9 / 10
	AMOS-SM	+	x	x	3
	COACH	+	x	x	5

# Availability of Modules

		University			
		Univ. Erlangen	TU Berlin	FU Berlin	
Modules	AMOS-PO	x	–	–	
	AMOS-SD	x	x	x	
	AMOS-SM	–	x	–	
	COACH	x	–	–	

# Course Grading [1] by Role (Module)

## Product Owner (AMOS-PO)

- ~~Theory (lectures) = 20% of grade~~
  - ~~2 SWS in 5 ECTS = 20%~~
  - ~~As measured by class quizzes~~
  - ~~Grading scale is [0..10] points~~
- Practice (project) = 100% of grade
  - Contribution to teamwork = 50%
    - As measured in team meetings
    - Grading scale is [0|1|2|3]
  - Independent work = 50%
    - As measured by artifacts
    - Grading scale is [0|1|2|3]

## Software Developer (AMOS-SD)

- ~~Theory (lectures) = 10% of grade~~
  - ~~2 SWS in 10 ECTS = 10%~~
  - ~~As measured by class quizzes~~
  - ~~Grading scale is [0..10] points~~
- Practice (project) = 100% of grade
  - Contribution to teamwork = 50%
    - As measured in team meetings
    - Grading scale is [0|1|2|3]
  - Independent work = 50%
    - As measured by artifacts
    - Grading scale is [0|1|2|3]

# Collaboration and Grading

---

We are required to grade you individually

If you collaborate, for example,

- by pair programming
- by pair designing

you agree to be graded jointly

# Receiving a Grade for the Course

If you want to receive a grade

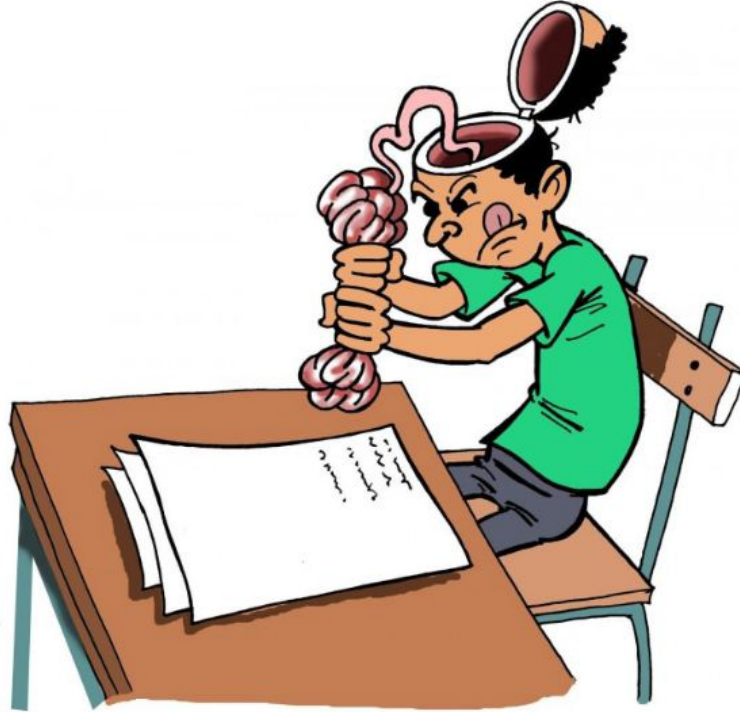
- You must register through your university's exam registration system
  - Your degree program may have split the course into two (VL + UE)
  - Registration system is different from the course management system
  - Please check asap that the course is available in your degree program!

In case of problems, please see

- <https://oss.cs.fau.de/teaching/course-resources/course-registration/>

Otherwise: No grade

# No Oral or Written Exam [1]



[1] You still have to register for the course



# Course Language [1]

---

## Class

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

## Project

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

# Course Organization

---

## Course organization

- See <https://amos.uni1.de>

## Course schedule

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

## Project descriptions

- See **Project Descriptions** on Course Organization doc

## Project teams

- See **Project Teams** tab on Course Organization doc

# Work Rhythm

---

## Lectures

- Class day (90min.)

## Team meetings

- Next slot after lecture

## Project work (self-organized)

- Deliverables due according to schedule

# Course Communication

---

**Announcements** are sent by email

- Through email aliases
- Through course management system

**Administrative questions** to teaching team

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

**Process questions** to your Scrum Master

# Thank you! Any questions?

---

[dirk.riehle@fau.de](mailto:dirk.riehle@fau.de) – <https://oss.cs.fau.de>

[dirk@riehle.org](mailto:dirk@riehle.org) – <https://dirkriehle.com> – [@dirkriehle](#)

# Legal Notices

---

## License

- Licensed under the [CC BY 4.0 International](https://creativecommons.org/licenses/by/4.0/) license

## Copyright

- © Copyright 2023 Dirk Riehle, some rights reserved