

# Introduction to The AMOS Project

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**AMOS A01**

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# Create useful **open-source software** and learn **agile methods** in a Scrum 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

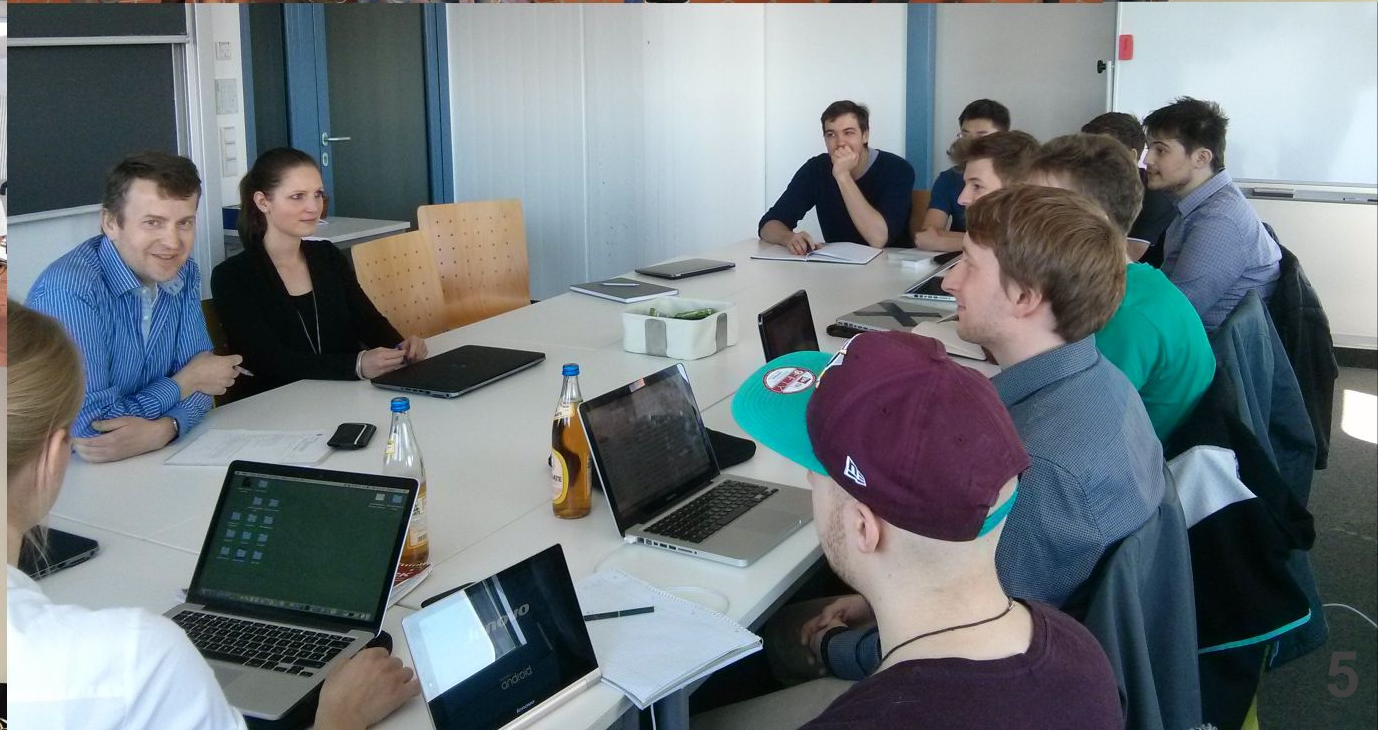
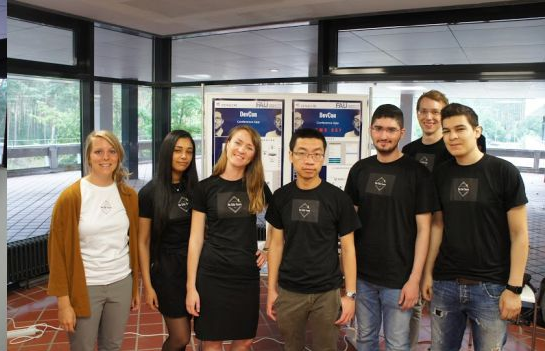
SOLYP



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

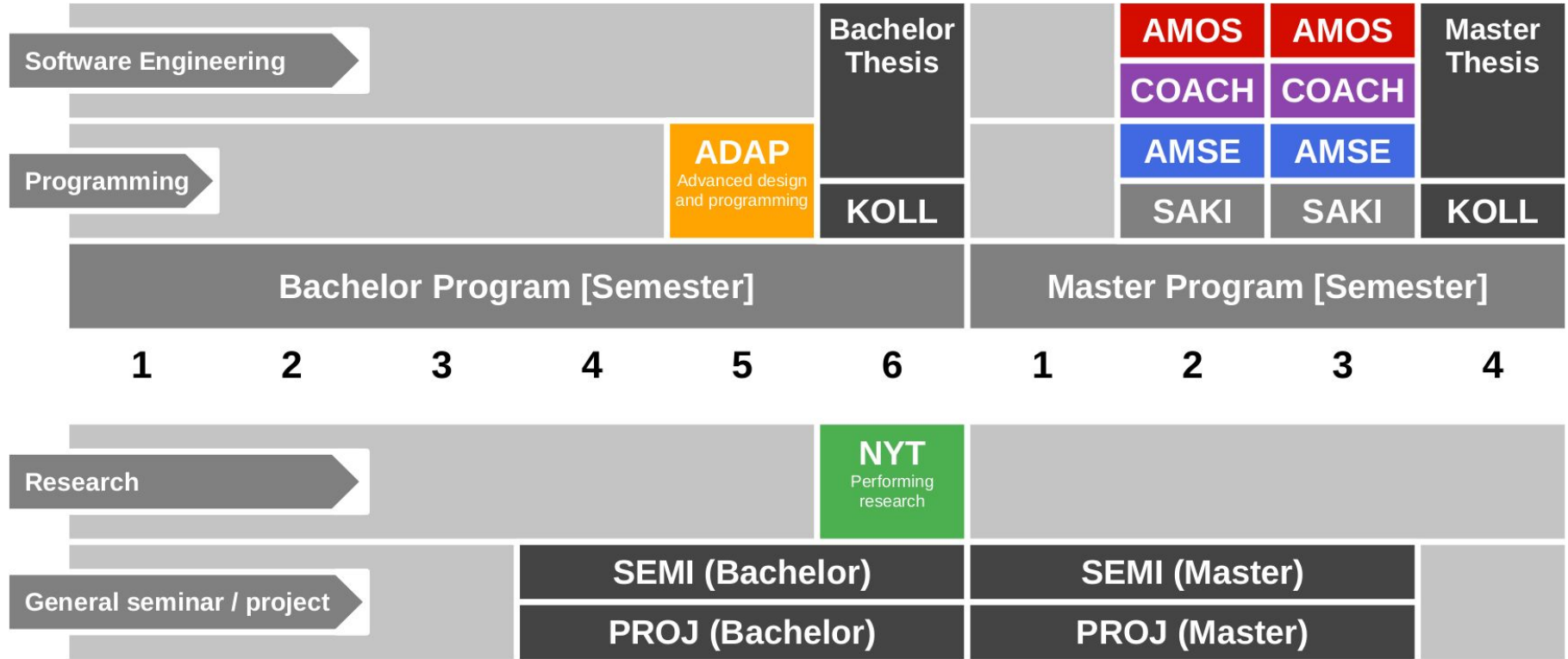
# Structure and Content of Course

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See course organization at <https://amos.uni1.de>



# Course Position in Curriculum





# Courses and Modules

		Courses (Lehrveranstaltungen)			
		Lecture (AMOS)	Exercise (team meeting)	Lecture (COACH)	Total ECTS
Modules	AMOS-PO	x	x	–	5
	AMOS-SD	x	x	–	9 / 10
	AMOS-SM	-	x	x	3
	COACH	-	x	x	5

x = applies  
– = does not apply

# Availability of Modules

		University			
		FAU	FUB	TUB	
Modules	AMOS-PO	x	–	x	
	AMOS-SD	x	x	x	
	AMOS-SM	–	–	x	
	COACH	x	–	–	

x = available  
– = not available

# 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) = 80% 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) = 90% 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]

# Scrum Master (COACH / AMOS-SM)

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## Scrum Master (AMOS-SM)

- Grading is handled in separate 5-ECTS course COACH / AMOS-SM
- The Scrum Master leads process improvement / questions
- The Scrum Master does not represent the teaching team
- They do not handle student performance questions

# Class Participation

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Participation is mandatory for

- First day of class
- Build process review
- Mid-project review
- AMOS demo day

For all other class days

- Class >> Slides >> Videos

# 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

# Project Work

We grade by deliverables, see homework document, including

- Regular deliverables (product backlog, code contributions, ...) every sprint [1]
- Irregular (one-time) deliverables as they happen

We also grade anyone's individual teamwork contribution when

- We are present in the team meetings (class days 3, 5, 7, 10, and 12 or 13)

Our expectations are explained in class and documented as the

- [Capabilities timeline](#) and the
- [Capabilities timeline explanation](#)



# Collaboration and Grading

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We (have to) grade you individually

If you collaborate, for example,

- by pair programming
- by pair designing

you agree to be graded jointly

# Major Milestones

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1. Build process review (quality gate)
  - a. You are expected to demo a well working build process
  - b. Everyone in the team should be able to do this
2. Mid-project review (quality gate)
  - a. You are expected to demonstrate your work
  - b. If you fail, you may lose your industry partner
3. Final project release and demo day

# Team Issues

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We grade your individual performance, not the team performance

- A great team motivates everyone, increases productivity
- Encourage slackers to improve and don't cover for them

The Scrum master is responsible for resolving process impediments

# Risk Management

Please spend some time thinking about potential risks of your project

- Predictable risks are delays through unavailability of resources

Example risk: Need for computing power to train ML models

- Define your expected needs, ask your industry partner early
- Work on alternative solutions, e.g. use university resources [1]

[1] Almost all universities have a high-performance computer (HPC) center

# The AMOS Consultancy

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You can ask questions using the **AMOS** course channel on Slack [1] at

- <https://join.slack.com/t/amosproj/signup>

There is no downside to asking questions (no malus)

- Quality answers will afford a bonus to the answering student

# 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

	FAU	FUB	TUB
Course registration	StudOn	Whiteboard	???
Exam registration	Campo	CampusManagement	???

# 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



# Course Language [1]

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## Class

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

## Project

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

# Course Organization

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## 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

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## Lectures

- Class day (90min.)

## Team meetings

- Next slot after lecture

## Project work (self-organized)

- Deliverables due according to schedule

# Course Communication

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**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

# Thank you! Any questions?

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