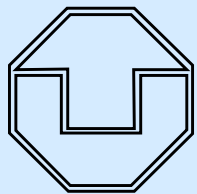


Experience in Early and Late Software Engineering Project Courses

Mike Fischer

Birgit Demuth

Heinrich Hussmann

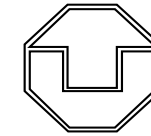


Technische
Universität
Dresden

ST

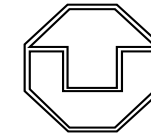
Softwaretechnologie

Software Engineering Group
Department of Computer Science
Dresden University of Technology



Where is Dresden?

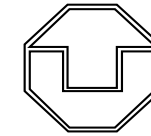




Where is Dresden?



Dresden

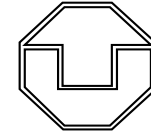


Where is Dresden?



Dresden

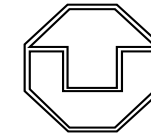




Software Engineering Education (1)

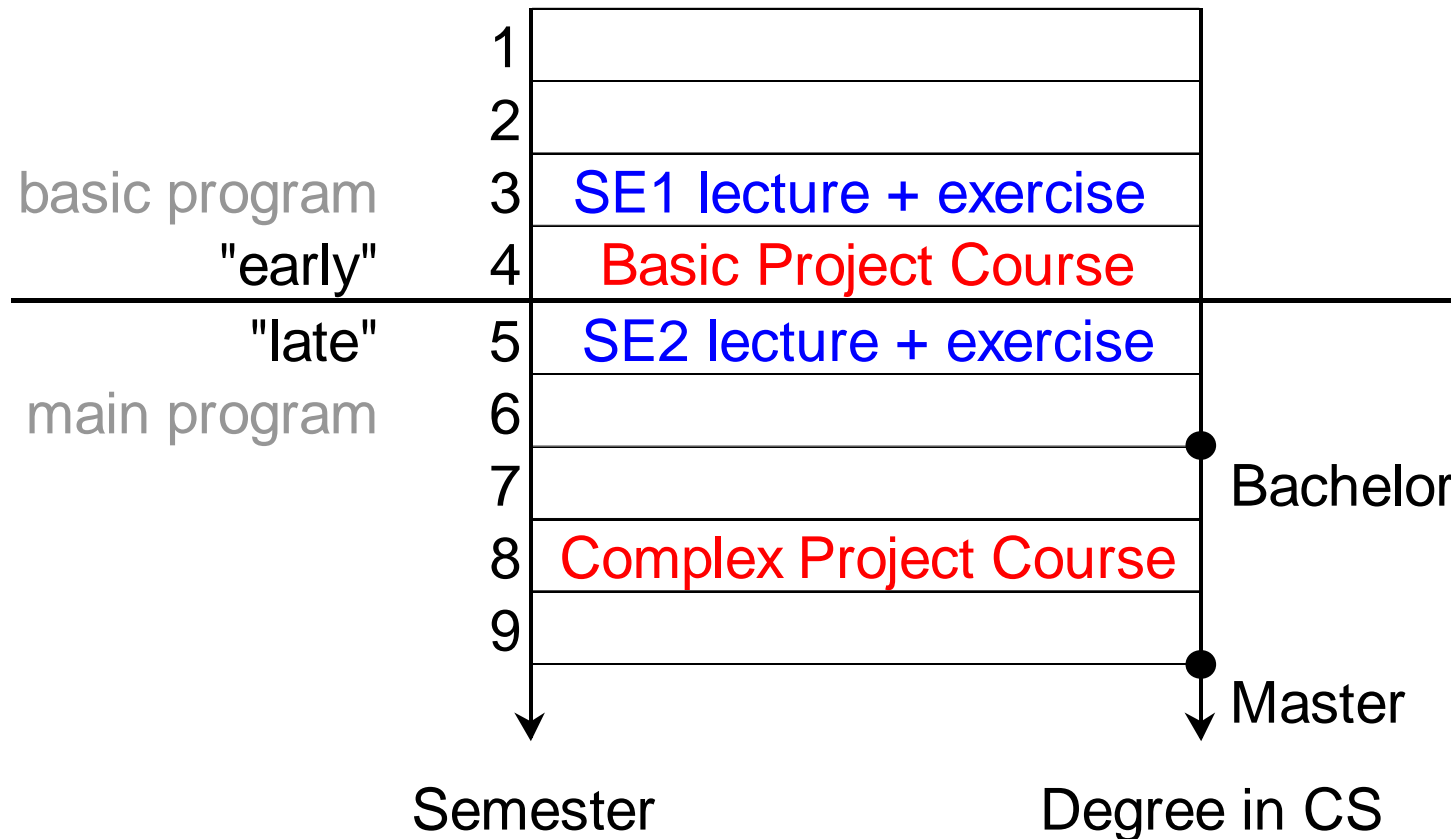
- Bachelor degree (6 semester) or master degree (9 semesters)
- Part of Computer Science education
- Students may choose SE as a specialization

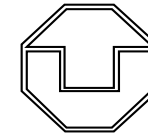
- Main focus on OO techniques, teamwork



Software Engineering Education (2)

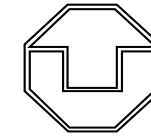
- Curriculum





Basic Project Course (1)

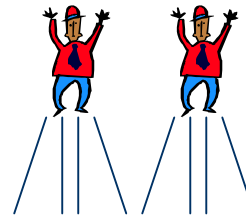
- First hands-on experience in SE
- Our challenge
 - Lead students to good OO craftsmanship
 - Hundreds of students
 - 600 students next semester!
- Our technical solution
 - Using a domain framework (SalesPoint)
 - Domain: sales applications
 - Tasks have simulation character



Basic Project Course (2)

- Our organizational solution

supervisor



2 university staff

consultant
and
customer

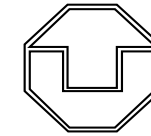


25 senior
students

project team



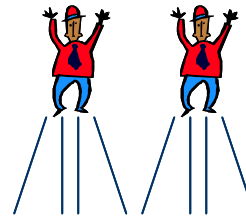
100 teams of
circa 6 students



Basic Project Course (2)

- Our organizational solution

supervisor



2 university staff

consultant
and
customer



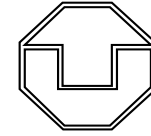
25 senior
students

project team



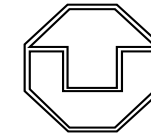
100 teams of
circa 6 students

- Project team success rate about **90%** !



Complex Project Course

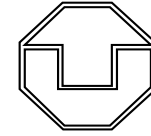
- Advanced theoretical and medium practical skills
- Our challenge
 - High complexity and moderately realistic tasks
- Our solution
 - Task with requirements derived from real customers
 - Most intensive support from university staff
 - Larger project teams (9 members)
 - No predefined architecture and technology



Comparison

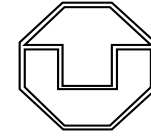
- Organization of the project courses

	Basic Project Course	Complex Project Course
Number of project teams	25 .. 100	1 (to be enlarged in future)
Members per project teams	4-6	8-10
Project time	13 weeks	almost half a year
Mentored by	senior students	teaching and research staff
Consultation	once per week	on demand of the students
Project deadline	hard	soft



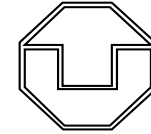
Experience & Lessons learned (1)

- There are never too many project courses!
- OO analysis is hard work!
- Often, students do not use documents created during early software development phases as tools for their project work!
- Architecture and OO design needs much experiences!
- The framework-based approach is suitable for beginners!



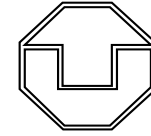
Experience & Lessons learned (2)

- Real tasks motivate students to complete their work!
- Students underestimate the project effort!
- A strict deadline is a powerful tool for project success!
- Coding and testing are mostly trouble-free!



Open Issues

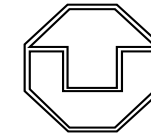
- Determine the success rate of individual project team members
- Transfer Basic Project Course in industrial environments
- Increase number of teams of the Complex Project Course



Thank you for your Attention!

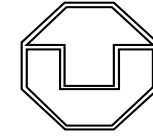


Questions are welcome



Dresden University of Technology

- Was founded in 1828
- Largest university in the German state of Saxony
 - 27 600 students and 4 500 employees, including about 600 professors.
- 14 faculties cover a wide range of fields
 - science and engineering,
 - humanities,
 - social sciences and
 - medicine



Department of Computer Science

- Students can earn a bachelor's degree (6 semester) or a master's degree (9 semesters)
- Courses of Study
 - Computer Science
 - Information and System Technology
 - Multimedia and Computer Science
 - Postgraduate Study in Software Engineering
 - and further