



# ENGINEERING CONFERENCES –

## AN INTRODUCTION TO SCIENTIFIC PUBLISHING FOR MASTER STUDENTS IN ENGINEERING

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### BEFORE THE COURSE ...

#### Students usually have ...

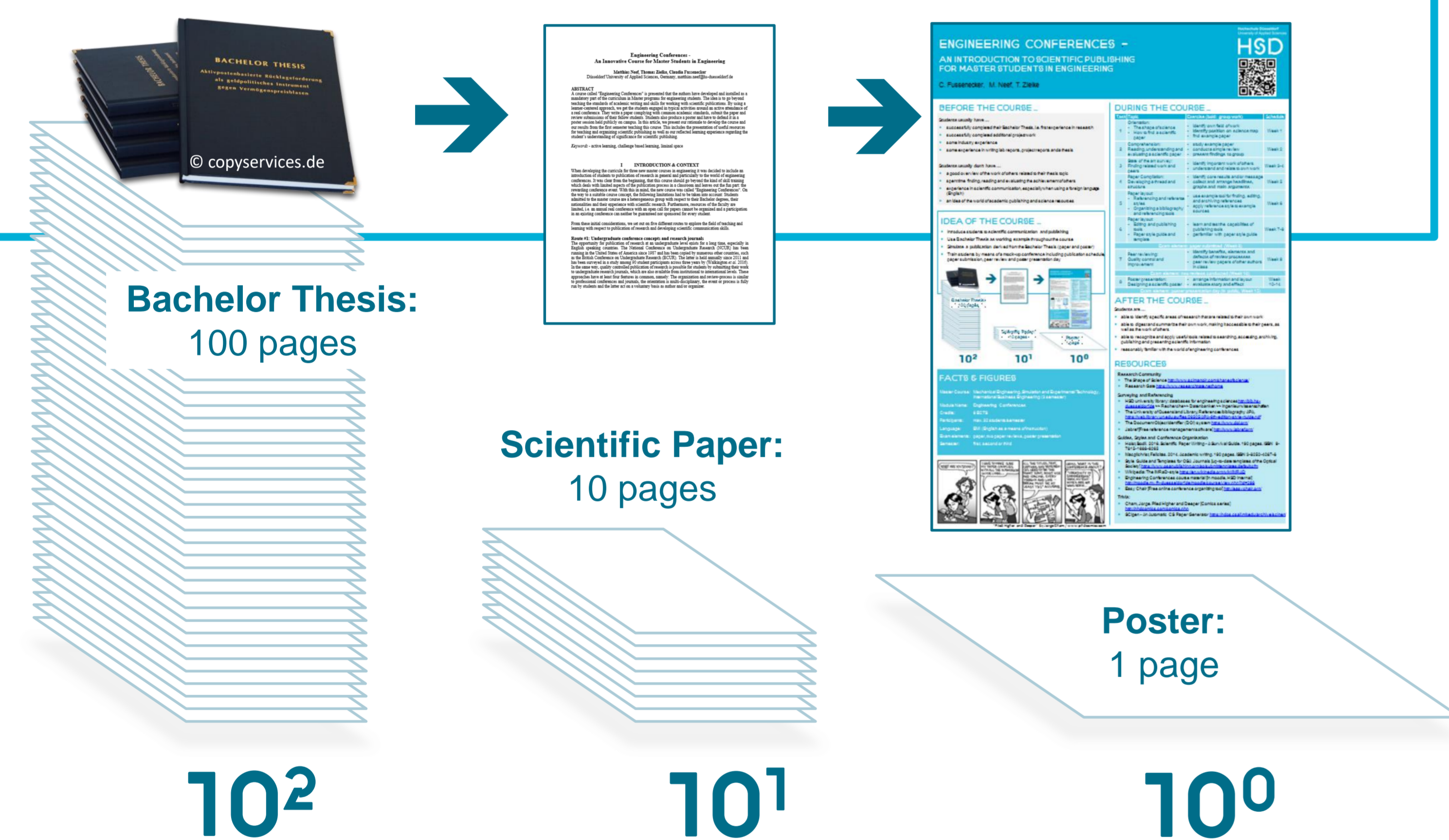
- successfully completed their Bachelor Thesis, i.e. first experience in research
- successfully completed additional project work
- some industry experience
- some experience in writing lab reports, project reports and a thesis

#### Students usually don't have ...

- a good overview of the work of others related to their thesis topic
- spent time finding, reading and evaluating the achievement of others
- experience in scientific communication, especially when using a foreign language (English)
- an idea of the world of academic publishing and science resources

### IDEA OF THE COURSE ...

- Introduce students to **scientific communication and publishing**
- Use **Bachelor Thesis as working example** throughout the course
- **Simulate a publication** derived from the Bachelor Thesis (paper and poster)
- Train students by means of a **mock-up conference** including publication schedule, paper submission, peer review and poster presentation day



### DURING THE COURSE ...

Task	Topic	Exercise (bold: group work)	Schedule
1	Orientation: ▪ The shape of science ▪ How to find a scientific paper	▪ identify own field of work ▪ <b>identify position on science map</b> ▪ find example paper	Week 1
2	Comprehension: Reading, understanding and evaluating a scientific paper	▪ study example paper ▪ conduct a simple review ▪ <b>present findings to group</b>	Week 2
3	State of the art survey: Finding related work and peers	▪ identify important work of others ▪ understand and relate to own work	Week 3-4
4	Paper Compilation: Developing a thread and structure	▪ identify core results and/or message ▪ <b>collect and arrange headlines, graphs and main arguments</b>	Week 5
5	Paper layout: ▪ Referencing and reference styles ▪ Organizing a bibliography and referencing tools	▪ use example tool for finding, editing, and archiving references ▪ apply reference style to example sources	Week 6
6	Paper layout: ▪ Editing and publishing tools ▪ Paper style guide and template	▪ learn and test the capabilities of publishing tools ▪ get familiar with paper style guide	Week 7-8
<b>Exam element: paper submitted (Week 8)</b>			
7	Peer reviewing: Quality control and improvement	▪ <b>identify benefits, elements and defects of review processes</b> ▪ peer review papers of other authors in class	Week 9
<b>Exam element: two reviews conducted (Week 10)</b>			
8	Poster presentation: Designing a scientific poster	▪ arrange information and layout ▪ <b>evaluate story and effect</b>	Week 10-14
<b>Exam element: poster presentation day (in public, Week 15)</b>			

### AFTER THE COURSE ...

#### Students are ...

- able to identify specific areas of research that are related to their own work
- able to digest and summarize their own work, making it accessible to their peers, as well as the work of others
- able to recognize and apply useful tools related to searching, accessing, archiving, publishing and presenting scientific information
- reasonably familiar with the world of engineering conferences

### RESOURCES

#### Research Community

- The Shape of Science <http://www.scimagojr.com/shapeofscience/>
- Research Gate <https://www.researchgate.net/home>

#### Surveying and Referencing

- The University of Queensland Library, References/bibliography APA, <https://web.library.uq.edu.au/files/26505/APA-6th-edition-style-guide.pdf>
- The Document Object Identifier (DOI) system <https://www.doi.org/>
- Jabref [Free reference management software] <http://www.jabref.org/>

#### Guides, Styles and Conference Organisation

- Holst, Bodil. 2016. Scientific Paper Writing - A Survival Guide. 190 pages. ISBN 9-7815-1688-6265
- Macgilchrist, Felicitas. 2014. Academic writing. 190 pages. ISBN 3-8252-4087-8
- Style Guide and Templates for OSA Journals [up-to-date templates of the Optical Society] <https://www.osapublishing.org/ao/submit/templates/default.cfm>
- Wikipedia: The IMRaD-style <https://en.wikipedia.org/wiki/IMRAD>
- Easy Chair [Free online conference organizing tool] <http://easychair.org/>
- "Engineering Conferences" course website <http://engineering-conferences.eu/>

#### Trivia:

- Cham, Jorge. Piled Higher and Deeper [Comics series] <http://phdcomics.com/comics.php>
- SCIGen - An Automatic CS Paper Generator <https://pdos.csail.mit.edu/archive/scigen/>

### FACTS & FIGURES

Master Course: Mechanical Engineering, Simulation and Experimental Technology, International Business Engineering (3 semester)

Module Name: **Engineering Conferences**

Credits: 6 ECTS

Participants: approx. 30 students/semester

Language: EMI (English as a means of instruction)

Exam elements: paper, two paper reviews, poster presentation

Semester: first, second or third



"Piled Higher and Deeper" by Jorge Cham / www.phdcomics.com