ENG-629

Lecturing and Presenting in Engineering

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Cursus	Sem.	Type
EDOC General and external courses		Opt.

Language of teaching	English
Credits	2
Session	
Exam	Project report
Workload	60h
Hours	**35**
Lecture	15
Practical work	20
Number of positions	**35**

Frequency

Every year

Remark

For PhD via IS-Academia, for Master students https://go.epfl.ch/registering-courses-exams

Summary

Informed by contemporary research on teaching engineering, participants design and deliver lessons for specific audiences. This course is relevant for teaching assistants and those who intend to make teaching science or engineering part of their career, in a formal or informal way.

Content

While research has established that learning is an effortful process, which requires students to process information, classroom practices in science and engineering have yet to undergo the transformation necessary to make active and collaborative learning the norm.
This course offers an opportunity to discover and practice effective research-supported strategies for teaching and presenting in science and engineering. We focus on techniques that enable students to engage in disciplinary thinking, effectively transfer their skills into practice, address challenges inherent to different audiences and differences within audiences, make effective use of high tech or low tech presentation tools.
The goals of this course are:

- To present research-informed strategies for teaching and presenting in science and engineering.
- To offer intensive opportunities for students to practice interactive lecturing and to receive feedback.
- To provide a framework for continued progress towards personal goals for teaching science and engineering for diverse audiences.

This course focuses on lecturing in higher education, and does not lead to a recognized teaching qualification for primary or post-primary schools.
Format
Intensive course in runs for **5 full days in Spring 2024: Feb 8, 9, 16, and 23 and March 1. Each day consists of an interactive morning lecture and afternoon skill labs, preceded by preparatory reading assignment. The final project report is due on 18.03.2024.**

Keywords

teaching; lecturing; presenting; pedagogy; didactics; learning

Learning Outcomes

By the end of the course, the student must be able to:

- Design and facilitate interactive lessons using evidence-informed strategies
- Present teaching content effectively across different levels of study (Ba,Ma)
- Interpret , elicit, and manage student responses to improve learning
- Use slides/blackboard/paper to present information in a clear, organised manner
- Structure presentations to effectively communicate key messages, including a special focus on how to incorporate and visually represent data
- Differentiate one's own response to a presentation from the message of the presentation
- Model disciplinary thinking
- Integrate strategies that reduce barriers and increase inclusion in classrooms
- Defend pedagogical choices based on current research findings

Transversal skills

- Evaluate one's own performance in the team, receive and respond appropriately to feedback.
- Communicate effectively with professionals from other disciplines.
- Communicate effectively, being understood, including across different languages and cultures.
- Assess one's own level of skill acquisition, and plan their on-going learning goals.
- Demonstrate the capacity for critical thinking
- Take feedback (critique) and respond in an appropriate manner.
- Make an oral presentation.

Teaching methods

The course has 4 components:
(a) interactive lectures on discipline-specific teaching practises in Engineering contextualised with recent advances in educational research (15h),
(b) preparatory reading and online actitivites around research evidence on teaching and learning in Engineering (5h independent work),
(c) skills labs in which participants will give practice lessons and get feedback (20h), and
(d) preparation of 5 mini lessons and a project report describing the evidence base you employed (20h independent work).

Assessment methods

Daily preparation and reflection activities 33% and final project report 66%.

Resources

Bibliography

Tormey, R and Isaac, S. with Hardebolle, C. and LeDuc, I. (2021) Facilitating Experiential Learning in Higher Education; Teaching and Supervising in Labs, Fieldwork, Studios, and Projects. London: Routledge

Carter, M. Designing Science Presentations. eBook: http://www.sciencedirect.com/science/book/9780123859693

Ressources en bibliothèque

- Tormey, R and Isaac, S. with Hardebolle, C. and LeDuc, I. (2021) Facilitating Experiential Learning in Higher Education; Teaching and Supervising in Labs, Fieldwork, Studios, and Projects
- Carter, M. Designing Science Presentations

Moodle Link

- https://go.epfl.ch/ENG-629