COURSE DESCRIPTION CARD - SYLLABUS

Course name
METHODOLOGY OF ACADEMIC TEACHING [S5SD1>MNA]

Course

Proposed by Discipline
–

Year/Semester
1/1

Level of study
Doctoral School

Course offered in
English

Form of study
full-time

Requirements
elective

Number of hours

Lecture
6

Laboratory classes
0

Other
0

Tutorials
0

Projects/seminars
0

Number of credit points

1,00

Coordinators

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Lecturers

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Prerequisites

Knowledge: the student has basic knowledge of social sciences and the fundamentals of didactics in higher education institutions (HEIs). Skills: the student is able to actively follow lectures and to select relevant literature or subject content based on literature review. Social competences: the student is aware of the importance of reflecting on their own and others' behavior and is prepared to work collaboratively in order to achieve common goals.

Course objective

1. To develop doctoral students' transversal skills essential for academic teaching, including interpersonal communication, critical thinking, initiative, teamwork, and problem-solving. 2. To provide participants with knowledge, experience, and pedagogical competences in diverse teaching strategies, lesson planning, and student-centered instructional methods relevant to higher education, especially in technical fields. 3. To enable the practical application of modern teaching approaches (e.g. flipped blended learning, project- and problem-based learning) and to create opportunities for exchanging good practices and reflecting on common challenges in university teaching.

Course-related learning outcomes

Knowledge

After completing the course, doctoral students will:

1. know and understand the main teaching methods applied in higher education, with special focus on engineering and technical disciplines, [SzD_W01]

2. be familiar with modern approaches to academic teaching and their theoretical foundations, [SzD_W02]

3. understand the role of transversal skills, such as teamwork, communication, creativity, critical thinking in higher education and in preparing students for the labour market. [SzD_W07]

Skills

After completing the course, doctoral students will be able to:

1. initiate debates and take part in scientific discourse, [SzD_U06, SzD_U07]

2. facilitate teamwork, including defining roles and responsibilities, and apply strategies for giving constructive feedback, [SzD_U09]

3. critically reflect on their own teaching practice and identify areas for self-improvement as well as inspire and organize development of others, [SzD_U10]

4. plan and conduct classes in line with current didactic methods and tools, [SzD_U11]

Social competences

After completing the course, doctoral students will be ready to:

1. acknowledge the importance of teaching competence as part of their academic identity and responsibility, [SzD_K02]

2. engage in lifelong learning and continuous improvement of their own teaching practice, [SzD_K03]

3. recognize the social role of the academic teacher in shaping students' knowledge, professional competences, and transversal skills needed in society and economy [SzD_K05, SzD_K06]

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

PQF code: SzD_W01, SzD_W02, SzD_W07

Methods for verification of learning outcomes

Knowledge and understanding of teaching methods, modern approaches to academic instruction, and transversal skills will be verified by:

a) preparation of a written lesson plan for a chosen topic in the doctoral student's discipline, including learning objectives, teaching methods, tools, and justification of chosen approaches,

b) active participation in discussions and tasks during the course.

Assessment criteria

A lesson plan will be evaluated with regard to clarity of objectives, appropriate choice and justification of methods and tools, and integration of transversal skills.

Active participation will be assessed based on the student's contributions to discussions and group tasks.

PQF code: SzD_U06, SzD_U07, SzD_U09, SzD_U10, SzD_U11

Methods for verification of learning outcomes

Skills related to class planning, teamwork, feedback, and academic discourse will be verified by:

a) delivery of a mini-lesson (video recording),

b) completion of a peer feedback form for another participant’s mini-lesson,

c) interactive collaboration and sharing of experiences during the course.

Assessment criteria

The mini-lesson will be evaluated for clarity of structure, effective use of methods and tools, and student engagement.

The peer feedback form will be assessed for constructiveness, specificity, and reflection.

Student's collaboration during the course will be evaluated through their active involvement in group activities and exchange of good practices.

PQF code: SzD_K02, SzD_K03, SzD_K05, SzD_K06

Methods for verification of learning outcomes

Social competences will be verified through:

a) student's continuous active participation in discussions and teamwork during classes,

b) reflection on another student's mini-lesson expressed in peer feedback forms.

Assessment criteria

The final grade will take into account the student’s ability to work collaboratively, provide constructive and respectful feedback, reflect on their own and others’ teaching practice, and acknowledge the academic teacher’s social role.

The final grade for the course will be calculated as the average of all assessment components (lesson plan, mini-lesson, peer feedback, and active participation). Each component is equally important for verifying the achievement of the intended learning outcomes in the areas of knowledge, skills, and social competences.

The final grade will be awarded according to the following grading scale:

>50% – 60%: 3.0 (satisfactory)
>60% – 70%: 3.5 (satisfactory plus)
>70% – 80%: 4.0 (good)
>80% – 90%: 4.5 (good plus)
>90% – 100%: 5.0 (very good)

Programme content

1. Theoretical foundations of academic teaching – general didactics and the role of transversal skills in higher education, especially in engineering and technical fields.

2. Principles of course design, lesson planning, and syllabus development.

3. Innovative instructional approaches in higher education – overview of main strategies and activating methods.

4. Exchange of good teaching practices and reflection on challenges.

Course topics

1. Overview of teaching methods in higher education; traditional and modern approaches: one-way vs. interactive communication, knowledge acquisition, self-study, case study, project-based and problem-based learning, flipped blended learning.

2. Lesson and course design in academic teaching - constructive alignment between learning outcomes, teaching methods, and assessment. Integrating transversal skills (teamwork, communication, critical thinking, creativity) into course design. The BOPPPS model in lesson planning.

3. Interactive tools in boosting learning processes, such as Miro, Mentimeter, Kahoot, Padlet, Genially.

4.The role of reflection, motivation, peer observations and self-development in academic teaching.

5. Project-based and problem-based learning: organizing teamwork: roles, collaboration, and conflict resolution. Constructive feedback as a tool for improving learning.

6. Practice and reflection: development of an individual lesson plan (assumptions, objectives, methods, assessment), delivery of a mini-lesson, exchange of good practices, reflection on common teaching challenges, and peer feedback.

Teaching methods

1. Lecture with multimedia presentation – use of slides, and practical examples to introduce teaching methods, approaches, strategies, and activating techniques.

2. Flipped blended learning – individual preparation before class and active engagement during sessions through participatory learning activities.

3. Student-centered methods – interactive discussions, teamwork, and problem-oriented assignments designed to foster critical thinking, initiative, creativity, and problem-solving skills.

4. Using modern interactive tools – e.g. Mentimeter, Miro, Kahoot to support collaboration, real-time feedback, knowledge sharing, and active student engagement.

Bibliography

Basic

1. Armstrong, & C. Fukami (Eds.) Handbook of Management Learning, Education and Development (pp. 42-68). SAGE Publications.

2. Bates A. W. & Poole G. (2003). Effective teaching with technology in higher education: Foundations for success. San Francisco: Jossy-Bass

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4. Isaac, S. & de Lima, J. (2024). Teaching Transversal Skills for Engineering Students: a playbook of practical activities with tangibles (3T PLAY, Ed.). EPFL Press, Lausanne.

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6. Kolb A. Y. & Kolb D. A. (2011). Experiential learning theory: A dynamic, holistic approach to management learning, education and development. In S. J.

7. Mehring, J., Leis, A. (2018), Innovations in flipping the language classroom, New York: Springer Nature Singapore.

Additional

1. Biggs, J. & Tang, C. (2011). Teaching for Quality Learning at University (4th ed.). McGraw-Hill.

2. Brookfield, S.D. (2017). Becoming a Critically Reflective Teacher (2nd ed.). Jossey-Bass.

3. Fink, L.D. (2013). Creating Significant Learning Experiences: An Integrated Approach to Designing College Courses (2nd ed.). Jossey-Bass.

4. Girvan C., Conneely C. & Tangney B. (2016). Extending experiential learning in teacher professional development. Teaching and Teacher Education. Volume 58, pp. 129-139.

5. Lang, J.M. (2016). Small Teaching: Everyday Lessons from the Science of Learning. Jossey-Bass.

6. Wankat, P.C. & Oreovicz, F.S. (2015). Teaching Engineering (2nd ed.). Purdue University Press.

7. The 6 Most Important Theories of Teaching, https://www.thoughtco.com/theories-of-teaching-4164514

8. The Power of Metacognition, https://spencerauthor.com/metacognition

9. Bloom’s Taxonomy, http://www.areasofmyexpertise.com/exploring-different-methods-teaching/

Breakdown of average student's workload

	Hours	ECTS
Total workload	25	1,00
Classes requiring direct contact with the teacher	6	0,00
Doctoral student's own work (literature studies, preparation for laboratory classes/tutorials, preparation for tests/exam, project preparation)	19	1,00