COURSE UNIT (MODULE) DESCRIPTION

Course unit (module) title	Code
Partnership based STEAM education design	

Lecturer(s)	Department(s) where the course unit (module) is delivered
Coordinator: dr. Paulius L. Tamošiūnas **Other(s):** Eglė Daunienė, Lina Bagdzevičiūtė, dr. Kadri Mettis.	Faculty of Philosophy

Study cycle	Type of the course unit (module)
First (bachelor)	Selectable

Mode of delivery	Semester or period when it is delivered	Language of instruction
Mixed-mode instruction (blended learning)	Spring semester	English

Requisites	
Prerequisites: English language knowledge B2 level	**Additional requirements (if any):** Group size no more than 16 students

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	133	48	85

Purpose of the course unit
This course focuses on introducing students to the STEAM education concept and building the needed toolbox for further implementation of STEAM education design in learning environments and establishing the necessary partnerships. The aims of the course are to: a) to introduce students with STEAM philosophy; b) to create a pedagogical STEAM "toolbox", that will be used for creating learning environments; c) to help students find "teachable" moments and recognise STEAM opportunities; d) to encourage creativity and out-of-the-box thinking; e) to promote collaboration between the university community, institutions, schools and citizens.

Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
Upon completion of the course, the student will demonstrate a comprehensive understanding of the principles and structure of general education and STEAM pedagogy, including its historical development, scope of application, and its impact on learners' motivation and engagement across diverse educational contexts. (3.1, 3.2, 5.4, 6.4, 2.4)	Theoretical lectures, literature review.	Summative assessment during the course (reflection 1 and 2, memorandum of understanding, and feedback for growth).
Upon completion of the course, the student will be able to apply educational and subject-specific	Theoretical lectures, hands-on activities in different	Summative assessment during the course (reflection 1 and 2,

knowledge creatively, selecting and integrating appropriate STEAM methods, strategies, and technologies to plan, organise, and evaluate effective teaching and learning processes. (5.2, 5.4, 6.4, 2.1, 3.1)	environments, with on-site analysis of pedagogical STEAM methods.	memorandum of understanding, feedback for growth) and final evaluation of the designed STEAM lesson (final report of activity and chosen methods).
Upon completion of the course, the student will be capable of identifying spontaneous and contextual learning opportunities ("teachable moments") and utilising them to promote interdisciplinary connections, inquiry-based learning, and learner engagement within STEAM contexts. (5.1, 5.2, 6.2, 6.1, 2.2)	Theoretical lectures, hands-on activities in different environments, with on-site analysis of pedagogical STEAM methods.	Summative assessment during the course (reflection 2) and final evaluation of the designed STEAM lesson (final report of activity and chosen methods).
Upon completion of the course, the student will demonstrate the ability to employ critical, systemic, and creative thinking techniques to address pedagogical challenges. (2.4, 3.1, 4.3, 1.3)	Theoretical lectures, hands-on activities in different environments.	Summative assessment during the course (reflection 2) and final evaluation of the designed STEAM lesson (final report of activity and chosen methods).
Upon completion of the course, the student will be able to identify, initiate, and sustain collaborative relationships with peers and educational stakeholders, applying co-creation principles to foster inclusive, supportive, and innovation-oriented learning environments. (1.2, 1.3, 2.1, 2.2, 5.1, 6.1)	Theoretical lectures, hands-on activities in different environments, and analysis of literature.	Summative assessment during the course (memorandum of understanding).

Content	Contact hours							Individual work: time and assignments	
	Lectures	Tutorials	Seminars	Workshops	Laboratory work	Internship	Contact hours, total	Individual work	Tasks for individual work
Introduction to the course and basics about general education. 1.1. Introduction to the course (methods, summative assessment and evaluation of the final STEAM lesson) 1.2. Short history and development of general education; 1.3. Introduction to pedagogical principles and main philosophies in general education; 1.4. How can general education prepare for the future? (21 st century skills, STEAM literacy)	3						3	6	To read: a) STEAM Education Theory and Practice 2019 Chapter 1 Inquiry, Investigative Processes, Art, and Writing in STEAM b) Constructivism: Way to new learning c) Bloom's Taxonomy: Original and Revised

Topic									References
2. Empowering curiosity and intrinsic motivation: 2.1. Motivation theories and causes for developing internal motivation; 2.2. Curiosity and its effects on learning; 2.3. Connection between curiosity and creativity.	3						3	9	To read: David Aguilera, Jairo Ortiz-Revilla STEM vs. STEAM Education and Student Creativity: A Systematic Literature Review 2021 Use theory of motivation to reflect on your own motivation to learn/create/study (Reflection 1)
3. Origins and development of STEAM education: 3.1. STEAM philosophy and differences from STEM, holistic education and integrated lessons; 3.2. Context importance in STEAM education; 3.3. STEAM derivations.	3						3	6	To read A PRACTICAL HANDBOOK ON EFFECTIVE DEVELOPMENT AND IMPLEMENTATION OF STEAM TEACHING AT SCHOOL part 1
4. Building pedagogical STEAM toolbox 4.1.Design thinking in education. Theory and practice with mobile phones apps. Presenting their achievements using online artistic tools. 4.2.Phenomenon based learning in education, theory and practice. Practical works are carried out in a laboratory.; 4.3. Trying out STEAM activities outside auditorium to understand wide spectrum and possibilities of STEAM education; analysis of STEAM education design in activities; finding STEAM opportunity; Students split into groups and try out different activities. 4.4. Group presentations of activities that were carried out on week 6			12				12	12	To read A PRACTICAL HANDBOOK ON EFFECTIVE DEVELOPMENT AND IMPLEMENTATION OF STEAM TEACHING AT SCHOOL part II and III Reflection 2. To write a reflection on weeks 4-7.

Topic								Readings / Tasks
5. Co - creation and how to start thinking creatively. 5.1. Stakeholder management in creative projects, theory and practice, forming action- learning groups and prepare to assignment to develop the MoU (Memorandum of Understanding) 5.2. Groups work independently (task: "Go out and find partners"); available consultations for the process of stakeholder dialogue 5.3. Using the actual experience of developing and signing MoU, reflect on the process, identify key aspects for stakeholder engagement, share learning with the whole class. 5.4. Develop stakeholder journey map, using lessons from experience.	4	3				7	18	To present MoU To read: a) Online collection of co - creation strategies b) 5 steps to creating a stakeholder engagement plan (with template) c) How do you communicate with STEM stakeholders? d) Understanding stakeholder experience through the stakeholder journey (2022), Roya Derakhshan, Rodney Turner
6. Immersion of local context into STEAM education design and creation of partnership based STEAM education design; 6.1. Ice breaking role play game. Groups from Vilnius and Tallinn universities. 6.2. Co - creation of STEAM lesson idea. 6.3. Presenting a developed STEAM lesson. 6.4. Trying out each group's STEAM lesson (if it is possible). 6.5. Redesigning created lesson and writing a final report of activity and chosen methods.		17				11	34	To give feedback for growth To write a final report of activity and chosen methods.
7. Final reflection of a course	3							-
Total	16	32				48	85	

Assessment strategy	Weight, %	Deadline	Assessment criteria
Summative assessment during the course	40	Week 4 Week 7 Week 11 Week 13	Reflection 1 and 2, MoU and feedback for growth, each marked pass if it follows the criteria: ● Is presented on given time; ● Criteria for reflections: You have to use at least 3 resources, at least 100-200 words in lengh. ● Criteria for MoU: all key items are included in the document: identified partners, shared goals, roles and responsibilities, leadership structure, norms, benefits and data sharing agreements. ● Criteria for feedback: comes from the task (structure, pedagogical methods, tools used, level of instructions prepared, suggestions to improve). Use of AI tools is prohibited. Each part is worth 1 point of the final grade.

Final report of designed STEAM lesson.	60	Week 15	Students present a written final report, that follows the criteria: ● Has certain parts - idea, goals, tools and materials, analysis of STEAM methods behind lesson idea; ● STEAM lesson has clear transdisciplinarity; ● At least one method or tool used that was discussed during lectures; ● STEAM lesson is partnership-based (or has capacity for partnership) and has partnership analysis (student should present an elaborated plan or vision of partnership-based activity); ● Has analysis of upsides and downsides of the lesson; ● Shows how STEAM lesson has changed since the starting idea; ● Presents possible plans for further development; ● Final report is presented in a format of essay, booklet or slides. The report is assessed by the ten-points grading scale: 10 (Excellent): The report demonstrates exceptional depth of understanding, critical analysis, and creativity. All required components are fully developed; STEAM integration is sophisticated, and the partnership analysis is comprehensive and insightful. 9 (Very good): The report shows a high level of understanding and coherence. All components are complete, with well-grounded analysis and clear application of STEAM principles. Minor weaknesses do not affect overall quality. 8 (Good): The report meets all main requirements, showing clear understanding and sound analysis. The STEAM approach and partnership elements are applied appropriately, though with limited originality or depth. 7 (Satisfactory): The report demonstrates adequate understanding of course content. STEAM connections and analysis are present but somewhat superficial or uneven. 6 (Adequate): The report shows basic understanding but lacks depth, clarity, or consistency. Some required parts are underdeveloped or contain inaccuracies. 5 (Weak): The report meets only minimum requirements. Integration of STEAM concepts is limited, and the analysis and reflection are incomplete. 4–1 (Unsatisfactory): The report does not demonstrate essential knowledge or skills. Major sections are missing or inadequately addressed.

Author (-s)	Publishing year	Title	Issue of a periodical or volume of a publication	Publishing house or web link
Compulsary reading				
Athanasios Christopoulos et al.		A PRACTICAL HANDBOOK ON EFFECTIVE DEVELOPMENT AND IMPLEMENTATION OF		https://dose-project.eu/?page_id=38

		STEAM TEACHING AT SCHOOL		
David Aguilera, Jairo Ortiz-Revilla	2021	STEM vs. STEAM Education and Student Creativity: A Systematic Literature Review	Integrated STEAM Education: A Global Perspective	Education sciences
Myint Swe Khine, Shaljan Areepattamannil	2019	STEAM Education Theory and Practice 2019 Chapter 1 Inquiry, Investigative Processes, Art, and Writing in STEAM		Springer
		Co- designing schools toolkit		https://www.codesigningschools.com/toolkit-phase-one
Choudhry, Monika	2013	Constructivism : Way to new learning		Constructivism : Way to new learning
Mary Forehand	2005	Bloom's Taxonomy: Original and Revised		Bloom's Taxonomy: Original and Revised
	2022	5 steps to creating a stakeholder engagement plan (with template)		https://asana.com/resources/stakeholder-engagement-plan-template
Roya Derakhshan, Rodney Turner	2022	Understanding stakeholder experience through the stakeholder journey (2022), Roya Derakhshan, Rodney Turner		Understanding stakeholder experience through the stakeholder journey (2022), Roya Derakhshan, Rodney Turner
AI and the LinkedIn community	2023	How do you communicate with STEM stakeholders?		https://www.linkedin.com/advice/0/how-do-you-communicate-stem-stakeholders-skills-k-12-education
AI and the LinkedIn community	2023	How do you deal with resistance or reluctance from stakeholders in collaborative work?		https://www.linkedin.com/advice/0/how-do-you-deal-resistance-reluctance-from-stakeholders