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):** lect. Eglė Daunienė, lect. Lina Bagdzevičiūtė, dr. Kadri Mettis** *In a non-recurring way, the course will give place to theoretical and practical interventions of Lithuanian and foreign researchers and experts in the field.*	Institute of Educational Sciences, Vilnius university

Study cycle	Type of the course unit (module)
First (Bachelor)	Elective

Mode of delivery	Period when the course unit (module) is delivered	Language(s) of instruction
Blended	Spring semester	English

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

Course (module) volume in credits	Total student's workload	Contact hours	Self-study hours
5	130	48	82

Purpose of the course unit (module): programme competences to be developed		
This course focuses on introducing students to the STEAM education concept and building needed toolbox for further implementation of STEAM education design in learning environments and establishing the necessary partnerships. The aims of the course is to: a) to introduce students with STEAM philosophy; b) to create pedagogical STEAM "toolbox", that will be used for creating learning environments; c) to help students find "teachable" moments and recognize STEAM opportunities; d) to encourage creativity and out of the box thinking; e) to promote collaboration between university community, institutions, schools and citizens.		
Learning outcomes of the course unit (module)	**Teaching and learning methods**	**Assessment methods**
After a course student will have an understanding about general education, STEAM pedagogy, its history, application scale in learning environments and benefits for motivation.	Theoretical lectures, literature review.	Summative assessment during the course (reflection 1 and 2, memorandum of understanding, feedback for growth).
After a course student will have a pedagogical STEAM toolbox for further application of gained skills and knowledge in learning environments.	Theoretical lectures, hands-on activities in different environments with on site analysis of pedagogical STEAM methods.	Summative assessment during the course (reflection 1 and 2, memorandum of understanding, feedback for growth) and final evaluation of designed STEAM lesson (final report of activity and chosen methods).

After a course student will be able to find "teachable" moments and recognize STEAM opportunities.	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 designed STEAM lesson (final report of activity and chosen methods).
After a course student will be able to apply techniques helping to start thinking outside of the box	Theoretical lectures, hands-on activities in different environments.	Summative assessment during the course (reflection 2) and final evaluation of designed STEAM lesson (final report of activity and chosen methods).
After a course student will be able to identify possible collaborations and will have needed skills for co-creation; besides student will be able to recognize benefits of such connections.	Theoretical lectures, hands-on activities in different environments, analysis of literature.	Summative assessment during the course (memorandum of understanding).

Content: breakdown of the topics	**Contact hours**							**Self-study work: time and assignments**	
	Lectures	Tutorials	Seminars	Exercises	Laboratory work	Internship/ workplacement	**Contact hours**	**Self-study hours**	**Assignments**
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
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.
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			17				17	31	To give feedback for growth To write a final report of activity and chosen methods.

report of activity and chosen methods.									
7. Final reflection of a course	3						3		-
Total	16		32				48	82	

Assessment strategy	**Weight,%**	**Deadline**	**Assessment criteria**
Summative assessment during the course	40		Reflection 1 and 2, MoU and feedback for growth. ● Is presented on given time; ● Criteria for reflections: You have to use at least 3 resources, at least 100-200 words. ● 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).
Final report of designed STEAM lesson	60		● 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.

Author	**Year of publication**	**Title**	**Issue of a periodical or volume of a publication**	**Publishing place and house or web link**
Compulsary reading				
Athanasios Christopoulos et al.		A PRACTICAL HANDBOOK ON EFFECTIVE DEVELOPMENT AND IMPLEMENTATION OF STEAM TEACHING AT SCHOOL		https://dose-project.eu/?page_id=38
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