Module Title:	STEM Curriculum for Early Childhood and Afterschool Education
Language of Instruction:	English

Credits:	5

NFQ Level:	7

Module Delivered In	[2 programme(s)](#)

Teaching & Learning Strategies:	Students will engage in a variety of teaching and learning methods, including videos, physical activities and exercises, evaluation of case studies, class discussions, and written tasks. Active participation will be required in this module to encourage thorough understanding of the analytical and evidence-based approaches used in STEM. Students will be conducting a series of experiments, such as growing peas and beans, mapping ecological growth and biodiversity, and reflecting on their experience of virtual reality and digital presence. The module will be supported with on-line learning materials through Blackboard and Microsoft Teams, and students will be expected to engage in self-directed learning to develop autonomous learning and work practices.

Module Aim:	The aim of this module is to explore the role and influences in engaging young children in science, technology, engineering, and mathematics (STEM). Through this module, students will evaluate and plan activities for children to experiment, investigate, observe, and problem-solve their world. Focusing on pedagogy, students will integrate STEM into practice and use STEM based principles to support children in developing their understanding of a changing environment.

Learning Outcomes
On successful completion of this module the learner should be able to:

LO1	Highlight the role STEM has in child development and in early childhood education;
LO2	Plan and deliver a series of STEM activities for children that extends the current curriculum;
LO3	Compare and contrast the theory and practice of applying STEM into ECEC contexts;
LO4	Demonstrate creativity and flexibility in applying STEM activities into the ECEC curriculum;
LO5	Students will demonstrate the ability to navigate the scientific method by outlining to core procedures involved in STEM-based experiments.

Pre-requisite learning
Module Recommendations *This is prior learning (or a practical skill) that is recommended before enrolment in this module.*
No recommendations listed
Incompatible Modules *These are modules which have learning outcomes that are too similar to the learning outcomes of this module.*
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed
Requirements *This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.*
No requirements listed

Module Content & Assessment

Indicative Content
Practical and Personal Approaches to STEM Reflecting on our own experiences and interactions with STEM; Core debates and perspectives in STEM; Barriers and Challenges; Overcoming Diversity in STEM;
Pedagogical Application of STEM in ECEC How to support children's scientific thinking and exploration; Encouraging STEM Literacy in the Early Years; Using the emergent curriculum to support STEM activity; Children as STEM'genieers; Designing STEM materials for ,indoors and outdoors
Arts and (Space) Crafts Experiments in Ecology and Biology; Upcycling and Botany: the observable lifecycle of plants; Virtual reality and exploring new worlds; Human-Computer Interaction: Screens and Machines; Modelling Maths and Setting Trends;

Assessment Breakdown	%
Project	100.00%

No Continuous Assessment

Project				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Project	Learners will plan and pilot a STEM activity for an Early Childhood Setting	1,2,3,4	40.00	n/a
Project	Students will provide an overview of their journey through STEM and specifically outlining experiments conducted [Blog/Journal]	1,2,3,4,5	60.00	n/a

No Practical

No End of Module Formal Examination

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
Lecture	Per Semester	2.00
Independent Learning Time	Per Semester	3.00
	Total Hours	125.00

Workload: Part Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
Lecture	Every Week	1.50
	Total Hours	1.50

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_HHECE_B	[Bachelor of Education (Honours) in Early Childhood Education and Practice](#)	5	Mandatory
CW_HHECE_D	[Bachelor of Education in Early Childhood Education and Practice](#)	5	Mandatory

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