

University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Science Numeracy & Mathematics in Early Years			
Code: EDUC08045	SCQF Level: 8 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)
School:	School of Education		
Module Co-ordinator:	L Lindsay		
Summary of Module			
This module will focus on developing an understanding of extending and supporting children’s learning in Science and Mathematics in the Early Years. This module will allow students to investigate theories of learning including behaviourist, cognitive and social constructivist approaches. The importance of leadership and teamwork in childhood settings will be extended, taking account of own and others’ roles in leading learning in Science and Mathematics. Students will be encouraged to evaluate feelings towards, experiences and understanding of Science and Mathematics within their own education, reflecting on the impact of this upon children’s experiences in the Early Years. Students will reflect upon issues relating to equity of access for all children to experiences in the areas of Science, Numeracy and Mathematics. Students will apply theories of learning in the workplace, inspiring colleagues and /or leading learning in the area of Science, Numeracy and Mathematics. Students will develop their understanding of the language of science and mathematical and numerical concepts, enabling them to plan, deliver and evaluate curricular experiences with confidence. Students will explore the nature of scientific enquiry and problem solving, supporting young children to develop these skills.			

Module Delivery Method					
Face-To-Face	Blended	Fully Online	HybridC	Hybrid 0	Work-Based Learning
☒	☐	☐	☐	☐	☐
See Guidance Note for details.					

Campus(es) for Module Delivery

The module will normally be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit) (tick as appropriate)						
Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
☐	☒	☒	☒	☐	☐	Add name

Term(s) for Module Delivery					
(Provided viable student numbers permit).					
Term 1	☐	Term 2	☒	Term 3	☐

Learning Outcomes: (maximum of 5 statements) These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module. At the end of this module the student will be able to:	
L1	Demonstrate knowledge and understanding of theories of learning, reflecting upon approaches which promote learning effectively within the early years.
L2	Demonstrate understanding of the language of Science and Mathematics: planning, delivering and evaluating activities in the area of Science and Mathematics.
L3	Begin to reflect upon equity of access for all children, with a focus on learning in the areas of Science and Mathematics.
L4	Apply knowledge and understanding to lead learning in the area of Science and/or Mathematics, evaluating practice.
Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	During completion of this module, there will be an opportunity to achieve core skills in:
Knowledge and Understanding (K and U)	SCQF Level 8 Knowledge and theories of learning, including behaviourist, cognitive and constructivist approaches. Knowledge of the language of Science and Mathematics and the foundations of scientific enquiry and mathematical thinking.
Practice: Applied Knowledge and Understanding	SCQF Level 8 Carry out routine lines of enquiry, development or investigation into effective strategies which support Science and Mathematical development.

	Lead learning and/ or small-scale change in the area of Science and Mathematics within a childhood setting.	
Generic Cognitive skills	SCQF Level 8 Evaluate evidence-based solutions to support equitable access to Science and Mathematics in a setting. Reflect upon own and other's attitudes towards Science and Mathematics, and how this may impact upon children's experiences.	
Communication, ICT and Numeracy Skills	SCQF Level 8 Convey complex information to a range of audiences and for a range of purposes associated with relevant professional contexts.	
Autonomy, Accountability and Working with others	SCQF Level 8 Take continuing account of own and others' roles, responsibilities and contributions in carrying out and evaluating learning experiences across the curriculum.	
Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code:	Module Title:
	Other:	
Co-requisites	Module Code:	Module Title:

Learning and Teaching	
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.	
Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	Student Learning Hours (Normally totalling 200 hours): (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture/Core Content Delivery	36
Work Based Learning/Placement	35
Independent Study	129

	Hours Total 200
**Indicative Resources: (eg. Core text, journals, internet access)	
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Brunton, P. and Thornton, L. (2009) <i>Science in the early years: Building firm foundations from birth to five</i>. London: SAGE Publishing. Montague-Smith, A., Cotton, T., Hansen, A. and Price, A. (2017) <i>Mathematics in early years education</i> 4th edn. London: Routledge. Moomaw, S. (2013) <i>Teaching STEM in the early years: activities for integrating science, technology, engineering and mathematics</i>. St Paul, NM: Redleaf Press.	
(**N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)	
Attendance and Engagement Requirements	
In line with the Student Attendance and Engagement Procedure: Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time. For the purposes of this module, academic engagement equates to the following: In line with the Student Attendance and Engagement Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on VLE, and complete assessments and submit these on time.	
Equality and Diversity	
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. Aligned with the overall commitment to equality and diversity stated in the Programme Specifications, the module supports equality of opportunity for students from all backgrounds and with different learning needs. Using VLE, learning materials will be presented electronically in formats that allow flexible access and manipulation of content (part-time and distant learning students should check with their programme leader for any queries). The module complies with University regulations and guidance on inclusive learning and teaching practice. Specialist assistive equipment, support provision and adjustment to assessment practice will be made in accordance with UWS policy and regulations.	

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	Education
Assessment Results (Pass/Fail)	Yes ☐ No ☒
School Assessment Board	Early Years
Moderator	J. Ovington
External Examiner	I. Birnie
Accreditation Details	SSSC
Changes/Version Number	1.03

Assessment: (also refer to Assessment Outcomes Grids below)

Formative assessment opportunities will be provided through discussion and workshop activities throughout the course of the module. Digitally enabled, efficient and effective formative feedback will provide students with guidance on how to gauge and inform progress, including peer-assessment.

Assessment 1

The module will be assessed by a portfolio, which seeks to demonstrate students knowledge and understanding of the learning outcomes for this module. Section 1 of the Portfolio will consist of at least 3 planned learning experiences and Section 2 will consist of 1000 word focussed reflection of professional activity written essay.

(N.B. (i) **Assessment Outcomes Grids** for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed.

(ii) An **indicative schedule** listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Assessment Outcome Grids

Component 1							
Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Learning Outcome (4)	Learning Outcome (5)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Portfolio of written work.	✓	✓	✓	✓		100	
Combined Total for All Components						100%	0 hours

Change Control:

What	When	Who
Further guidance on aggregate regulation and application when completing template	16/01/2020	H McLean
Updated contact hours	14/09/21	H McLean
Updated Student Attendance and Engagement Procedure	19/10/2023	C Winter
Updated UWS Equality, Diversity and Human Rights Code	19/10/2023	C Winter
Guidance Note 23-24 provided	12/12/23	D Taylor
General housekeeping to text across sections.	12/12/23	D Taylor

Version Number: MD Template 1 (2023-24)