

## University of the West of Scotland

## Module Descriptor

Session: 2024/25

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| <b>Title of Module:</b> Mathematics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                |                             |                                                                |
| <b>Code:</b> EDLR11002                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | <b>SCQF Level: 11</b><br><b>(Scottish Credit and Qualifications Framework)</b> | <b>Credit Points:</b><br>20 | <b>ECTS: 10 30</b><br><b>(European Credit Transfer Scheme)</b> |
| <b>School:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | School of Education & Social Sciences                                          |                             |                                                                |
| <b>Module Co-ordinator:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | R Egan                                                                         |                             |                                                                |
| <b>Summary of Module</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                |                             |                                                                |
| <p>This module is an Education Option at level 8 of the B.A. in Education. This module seeks to provide students with knowledge, understanding and skills necessary to critically examine and further develop the main theories, concepts and principles underlying Mathematics. There will be further development of knowledge, skills and understanding, as well as critical analysis and evaluation of contemporary issues within Mathematics education. The module will engage students in investigative approaches to learning Mathematics and will further develop their own mathematical thinking.</p> <ul style="list-style-type: none"><li>Through studying this module, students will know how to access and apply relevant findings from educational research (2.3.2) and will work collaboratively to share their professional learning and development with colleagues (1.2).</li><li>In relation to learning for sustainability, students will engage in critical reflection and use enquiring/critical approaches. They will also work collaboratively to develop their participatory competence.</li></ul> <p>Through participating in the module, students will develop UWS Graduate Attributes and will demonstrate that they are critical thinkers, effective communicators, collaborative and research minded. They will also develop as problem solvers and be provided with experiences to develop their analytical skills.</p> |                                                                                |                             |                                                                |

| <b>Module Delivery Method</b>         |                          |                          |                          |                          |                            |
|---------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------------------------|
| <b>Face-To-Face</b>                   | <b>Blended</b>           | <b>Fully Online</b>      | <b>HybridC</b>           | <b>Hybrid 0</b>          | <b>Work-Based Learning</b> |
| <input checked="" type="checkbox"/>   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>   |
| <b>See Guidance Note for details.</b> |                          |                          |                          |                          |                            |

|                                       |
|---------------------------------------|
| <b>Campus(es) for Module Delivery</b> |
|---------------------------------------|

|                                                                                                                                                                       |                                     |                          |                          |                          |                           |          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|--------------------------|--------------------------|--------------------------|---------------------------|----------|
| The module will <b>normally</b> 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:   |
| <input type="checkbox"/>                                                                                                                                              | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/>  | Add name |

| Term(s) for Module Delivery               |                          |        |                                     |        |                          |
|-------------------------------------------|--------------------------|--------|-------------------------------------|--------|--------------------------|
| (Provided viable student numbers permit). |                          |        |                                     |        |                          |
| Term 1                                    | <input type="checkbox"/> | Term 2 | <input checked="" type="checkbox"/> | Term 3 | <input type="checkbox"/> |

| Learning Outcomes: (maximum of 5 statements)<br>These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module.<br>At the end of this module the student will be able to: |                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| L1                                                                                                                                                                                                                   | Apply knowledge, skills and understanding in carrying out routine lines of enquiry, development or investigation into professional level problems and issues within Mathematics. |
| L2                                                                                                                                                                                                                   | Undertake critical analysis, evaluation and/or synthesis of a limited range of theories, principles and concepts in Mathematics.                                                 |
| L3                                                                                                                                                                                                                   | Convey complex information to a range of audiences and for a range of purposes.                                                                                                  |
| L4                                                                                                                                                                                                                   | Develop understanding of how to analyse and critique tasks to enhance mathematical thinking.                                                                                     |
| L5                                                                                                                                                                                                                   | Click or tap here to enter text.                                                                                                                                                 |

| Employability Skills and Personal Development Planning (PDP) Skills |                                                                                                                                                                                                              |
|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>SCQF Headings</b>                                                | During completion of this module, there will be an opportunity to achieve core skills in:                                                                                                                    |
| Knowledge and Understanding (K and U)                               | SCQF Level <b>8</b><br><br>Demonstrate a knowledge of the scope, defining features, and main areas of Mathematics studied in the module.                                                                     |
| Practice: Applied Knowledge and Understanding                       | SCQF Level <b>8</b><br><br>Apply knowledge, skills and understanding: in carrying out routine lines of enquiry, development or investigation into professional level problems and issues within Mathematics. |

|                                                  |                                                                                                                                                                                          |                                                           |
|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Generic Cognitive skills                         | <b>SCQF Level 8</b><br><br>Undertake critical analysis, evaluation and/or synthesis of ideas, concepts, information and issues that are within the common understandings in Mathematics. |                                                           |
| Communication, ICT and Numeracy Skills           | <b>SCQF Level 8</b><br><br>Convey, formally and informally, information on standard/mainstream topics within Mathematics to a range of audiences.                                        |                                                           |
| Autonomy, Accountability and Working with others | <b>SCQF Level 8</b><br><br>Work with others to bring about development of new approaches to thinking in Mathematics.                                                                     |                                                           |
| <b>Pre-requisites:</b>                           | Before undertaking this module the student should have undertaken the following:                                                                                                         |                                                           |
|                                                  | <b>Module Code:</b><br><br>EDUC07019                                                                                                                                                     | <b>Module Title:</b><br><br>Mathematics for Understanding |
|                                                  | <b>Other:</b>                                                                                                                                                                            |                                                           |
| <b>Co-requisites</b>                             | <b>Module Code:</b>                                                                                                                                                                      | <b>Module Title:</b>                                      |

| <b>Learning and Teaching</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>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.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                             |
| <p>In all modules on the BA Education programme, we take an authentic, best-practice and forward-looking approach to learning activities and assessment. There is a strong emphasis on situated learning and real professional scenarios. We are committed to interactive learning and the small number of learning activities that are purely transmission of information are normally pre-recorded. In workshops, which utilise classrooms, and other facilities as appropriate, the outdoors and the Aula VLE, main methodologies include collaborative working, problem-based learning, enquiry-based learning, and games. All learning activities are aligned to relevant aspects of the professional standards. Individual, group or tutor-led reflection is required throughout. Learning activities</p> | <p><b>Student Learning Hours</b><br/>(Normally totalling 200 hours):<br/>(Note: Learning hours include both contact hours and hours spent on other learning activities)</p> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|
| develop 21 <sup>st</sup> century skills such as communication, collaboration, creativity and critical thinking.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |
| <b>Learning Activities</b><br>During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |
| Lecture/Core Content Delivery                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 28              |
| Independent Study                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 164             |
| Tutorial/Synchronous Support Activity                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 8               |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Hours Total 200 |
| <b>**Indicative Resources: (eg. Core text, journals, internet access)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |
| <p>The following materials form essential underpinning for the module content and ultimately for the learning outcomes:</p> <p>Mason, J., Burton, L., &amp; Stacey, K. (2011). Thinking mathematically. Pearson Higher Ed.</p> <p>Click or tap here to enter text.</p> <p>Mason, J. and Johnston-Wilder, S. (2006) Designing and Using Mathematical Tasks. St Albans: Tarquin Publications</p> <p>Haylock, D.&amp; Manning, R. (2019) Mathematics Explained for Primary Teachers sixth edition. London: Sage.</p> <p>Haylock, D. and Manning R. (2019) Student Workbook for Mathematics Explained for Primary Teachers.</p> |                 |
| (**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)                                                                                                                                                                                                                                                                                                                                                                                          |                 |
| <b>Attendance and Engagement Requirements</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |
| <p>In line with the <a href="#">Student Attendance and Engagement Procedure</a>: 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.</p> <p>For the purposes of this module, academic engagement equates to the following:</p>                                                                                                                                                                         |                 |

For the purposes of this module, academic engagement equates to the following: All fulltime students (part-time and distant learning students should check with their programme leader for any queries) are required to attend all scheduled classes and participate with all delivered elements of the module as part of their engagement with their programme of study. Consideration will be given to students who have protection under the appropriate equality law. Please refer to UWS Regulations, Chapter 1, 1.64 – 1.67, available at the following link:

<http://www.uws.ac.uk/current-students/rights-and-regulations/regulatory-framework/>

In accordance with module and programme handbooks, any student whose attendance has fallen below the 75% minimum requirement for a module could be withdrawn from and given a re-attend decision for that module. To assure placement partners that students are appropriately prepared to undertake periods of school experience, unsatisfactory attendance across academic modules may prevent progress to placement, or result in withdrawal from the programme, as a student would be deemed not to have met the professional requirements of the programme as accredited by the GTCS.

### 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](#).

Please ensure any specific requirements are detailed in this section. Module Co-ordinators should consider the accessibility of their module for groups with protected characteristics.

Aligned with the overall commitment to equality and diversity stated in the Programme Specification, the module supports equality of opportunity for students from all backgrounds and with different learning needs. Using the VLE, learning materials will be presented electronically in formats that allow flexible access and manipulation of content. 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.

Student teachers are encouraged to reflect on their developing understanding of aspects relating to equality and diversity and to consider how this helps them to work towards meeting the Standard for Provisional Registration (GTCS, 2021), of which demonstrating commitment to social justice and inclusion is a significant part.

Through studying this module, student teachers develop the professional skills and abilities to employ teaching strategies and resources, including digital approaches, to meet the needs and abilities of every learner and engage critically with research to challenge and inform professional practice and question and challenge educational assumptions, beliefs and values of self and system.

Through studying this module, student teachers develop knowledge and understanding of

pedagogical and learning theories and draw on these appropriately to inform curriculum design and content where appropriate taking account of additional support needs.

A direct focus on these aspects not only advances equality in the student environment, by promoting empathy and affiliation, but also within the school settings where student teachers undertake their school experience.

(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

|                                       |                                                                     |
|---------------------------------------|---------------------------------------------------------------------|
| <b>Divisional Programme Board</b>     | Education                                                           |
| <b>Assessment Results (Pass/Fail)</b> | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> |
| <b>School Assessment Board</b>        | Education                                                           |
| <b>Moderator</b>                      | R Fotheringham                                                      |
| <b>External Examiner</b>              | F Hendry                                                            |
| <b>Accreditation Details</b>          | General Teaching Council for Scotland                               |
| <b>Changes/Version Number</b>         | 1                                                                   |

### Assessment: (also refer to Assessment Outcomes Grids below)

This section should make transparent what assessment categories form part of this module (stating what % contributes to the final mark).

Maximum of 3 main assessment categories can be identified (which may comprise smaller elements of assessment).

**NB: The 30% aggregate regulation (Reg. 3.9) (40% for PG) for each main category must be taken into account. When using PSMD, if all assessments are recorded in the one box, only one assessment grid will show and the 30% (40% at PG) aggregate regulation will not stand. For the aggregate regulation to stand, each component of assessment must be captured in a separate box.**

Please provide brief information about the overall approach to assessment that is taken within the module. In order to be flexible with assessment delivery, be brief, but do state assessment type (e.g. written assignment rather than “essay” / presentation, etc ) and keep the detail for the module handbook. [Click or tap here to enter text.](#)

**Assessment 1 –** There will be a selection of formative tasks with feedback provided to ensure that appropriate knowledge and understanding is developed in this module.

Written feedback will also be provided on a 500 word sample submitted prior to the summative assessment.

## Assessment 2 –

Summative assessment will be through the completion of a 2500 word written assignment.

## Assessment 3

(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 (See Guidance Note)**

| <b>Component 1</b>                   |                             |                             |                             |                             |                             |                                            |                                 |
|--------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------------------------|---------------------------------|
| <b>Assessment Type (Footnote B.)</b> | <b>Learning Outcome (1)</b> | <b>Learning Outcome (2)</b> | <b>Learning Outcome (3)</b> | <b>Learning Outcome (4)</b> | <b>Learning Outcome (5)</b> | <b>Weighting (%) of Assessment Element</b> | <b>Timetabled Contact Hours</b> |
| Formative                            | X                           |                             | X                           | X                           |                             | 0%                                         | 2                               |

| <b>Component 2</b>                   |                             |                             |                             |                             |                             |                                            |                                 |
|--------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------------------------|---------------------------------|
| <b>Assessment Type (Footnote B.)</b> | <b>Learning Outcome (1)</b> | <b>Learning Outcome (2)</b> | <b>Learning Outcome (3)</b> | <b>Learning Outcome (4)</b> | <b>Learning Outcome (5)</b> | <b>Weighting (%) of Assessment Element</b> | <b>Timetabled Contact Hours</b> |
| Summative                            | X                           | X                           |                             |                             |                             | 100%                                       | 10                              |

| <b>Component 3</b>                       |                             |                             |                             |                             |                             |                                            |                                 |
|------------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|--------------------------------------------|---------------------------------|
| <b>Assessment Type (Footnote B.)</b>     | <b>Learning Outcome (1)</b> | <b>Learning Outcome (2)</b> | <b>Learning Outcome (3)</b> | <b>Learning Outcome (4)</b> | <b>Learning Outcome (5)</b> | <b>Weighting (%) of Assessment Element</b> | <b>Timetabled Contact Hours</b> |
|                                          |                             |                             |                             |                             |                             |                                            |                                 |
| <b>Combined Total for All Components</b> |                             |                             |                             |                             |                             | <b>100%</b>                                | <b>12 hours</b>                 |

**Change Control:**

| <b>What</b>                                                                       | <b>When</b> | <b>Who</b> |
|-----------------------------------------------------------------------------------|-------------|------------|
| 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)**