<table>
<thead>
<tr>
<th><strong>Unit study package number:</strong></th>
<th>314932</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mode of study:</strong></td>
<td>Area External</td>
</tr>
<tr>
<td><strong>Credit Value:</strong></td>
<td>25.0</td>
</tr>
<tr>
<td><strong>Pre-requisite units:</strong></td>
<td>Nil</td>
</tr>
<tr>
<td><strong>Co-requisite units:</strong></td>
<td>Nil</td>
</tr>
<tr>
<td><strong>Anti-requisite units:</strong></td>
<td>Nil</td>
</tr>
<tr>
<td><strong>Result type:</strong></td>
<td>Grade/Mark</td>
</tr>
<tr>
<td><strong>Approved incidental fees:</strong></td>
<td>Information about approved incidental fees can be obtained from our website. Visit <a href="fees.curtin.edu.au/incidental_fees.cfm">fees.curtin.edu.au/incidental_fees.cfm</a> for details.</td>
</tr>
</tbody>
</table>
| **Unit coordinator:**         | Name: Audrey Cooke  
Phone: 08 9266 2159  
Email: Audrey.Cooke@curtin.edu.au  
Building: 502D  
Room: W19 |
| **Teaching Staff:**           |        |

| **Administrative contact:**   | Name: OUA General Enquiries  
Phone: +61 8 9266 7590  
Email: hum.educationOUA@curtin.edu.au  
Building: Building 502B, Bentley Campus, Monday to Friday 8:30am - 4:30pm (WST) |
| **Learning Management System:** | Blackboard (lms.curtin.edu.au) |
Acknowledgement of Country
We respectfully acknowledge the Indigenous Elders, custodians, their descendants and kin of this land past and present.

Syllabus
This unit precedes a series of units on mathematics education and focuses on pre-service teacher mathematical content knowledge and personal numeracy. Personal numeracy skills in mathematical relationships, expressions, and applications will be developed and personal attitudes and anxiety towards mathematics and levels of confidence of educators about teaching mathematics will be explored and addressed. The impact of educator mathematical content knowledge on the development and application of appropriate numeracy teaching strategies will be emphasised. Personal numeracy required by educators will be extended through consideration of mathematics in work and leisure, as well its role as a tool for understanding the world. Mathematical language and how to communicate mathematical ideas with words, pictures and symbols are emphasised. Particular aspects of mathematics required for teaching, including basic statistics, interpretation of national test data, and interpretation of research and government documents, are also covered.

Introduction
The aim of The Numerate Educator 141 is to give student the opportunity to develop their personal numeracy by revisiting mathematical skills and examining how mathematics relates to the real world. A series of mathematical concepts and skills will be considered and resources to develop these concepts and skills will be explored. The way mathematics is conceptualised will be explored and the relationship to future teaching behaviours outlined. Attitudes towards mathematics will be investigated and viewed both in terms of being users of mathematics and potential mathematics educators. Confidence with mathematics and mathematical situations will also be reviewed and the construct of mathematics anxiety will be interrogated. To encourage mathematical discourse, a social constructivist approach will be used. As part of this, students will be expected to fully engage in their learning by making use of the plethora of resources provided.

Unit Learning Outcomes

<table>
<thead>
<tr>
<th>On successful completion of this unit students can:</th>
<th>Graduate Attributes addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrate increased personal numeracy skills in mathematical relationships, expressions and applications and recognise the importance of this knowledge for the effective use of numeracy teaching strategies.</td>
<td><img src="https://ctl.curtin.edu.au" alt="Apply discipline knowledge" /> <img src="https://ctl.curtin.edu.au" alt="Thinking skills" /> <img src="https://ctl.curtin.edu.au" alt="Information skills" /></td>
</tr>
<tr>
<td>2. Analyse personal levels of competence and confidence about mathematics and successfully implement a plan to meet required standards</td>
<td><img src="https://ctl.curtin.edu.au" alt="Communication skills" /> <img src="https://ctl.curtin.edu.au" alt="Technology skills" /></td>
</tr>
<tr>
<td>3. Critique and interpret test results then develop an appropriate way of communicating results to parents and/or stakeholders incorporating how results will be incorporated into future learning sequences and lesson planning.</td>
<td><img src="https://ctl.curtin.edu.au" alt="International perspective" /> <img src="https://ctl.curtin.edu.au" alt="Cultural understanding" /></td>
</tr>
<tr>
<td>4. Critically evaluate the use of mathematics in print and electronic media</td>
<td><img src="https://ctl.curtin.edu.au" alt="Professional Skills" /></td>
</tr>
<tr>
<td>5. Analyse the breadth of the occurrence of mathematics in the everyday world</td>
<td></td>
</tr>
</tbody>
</table>

Curtin’s Graduate Attributes

- **Apply discipline knowledge**
- **Thinking skills** (use analytical skills to solve problems)
- **Information skills** (confidence to investigate new ideas)
- **Communication skills**
- **Technology skills**
- **International perspective** (value the perspectives of others)
- **Cultural understanding** (value the perspectives of others)
- **Professional Skills** (work independently and as a team) (plan own work)

Find out more about Curtin’s Graduate attributes at the Office of Teaching & Learning website: [ctl.curtin.edu.au](https://ctl.curtin.edu.au)
Learning Activities
As the focus of this unit is on personal numeracy and mathematics in the real world, a range of activities have been provided that use a variety of sources. Specific mathematics content will be addressed through the Mathematics Competency Test, “What I know” activities, videos, websites, and online learning resources. Attitudes and confidence with mathematics will be explored through the use of surveys that provide students with a “snap-shot” of where they are at in several places during the unit. Views on how mathematics connects to the real world and students’ numeracy (that is, application of mathematical skills in the real world) will be developed through the use of real world problems and online activities.

Learning Resources
Essential texts
The required textbook(s) for this unit are:


  Note that this is a Curtin University custom text that includes an access code for MyMathLab Global. The ISBN is 9781486042111. Purchasing the book separate from the access code (that is, not in the bundle above) is more expensive.
Assessment

Assessment schedule

<table>
<thead>
<tr>
<th>Task</th>
<th>Value %</th>
<th>Date Due</th>
<th>Unit Learning Outcome(s) Assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflection on results</td>
<td>10 percent</td>
<td>Week: 3, Day: Friday, Time: 11:59 pm</td>
<td>1,2</td>
</tr>
<tr>
<td>Report on Assessment Results</td>
<td>40 percent</td>
<td>Week: 7, Day: Wednesday, Time: 11:59 pm</td>
<td>1,3</td>
</tr>
<tr>
<td>ePortfolio on personal Numeracy</td>
<td>50 percent</td>
<td>Week: 12, Day: Monday, Time: 11:59 pm</td>
<td>2,4,5</td>
</tr>
</tbody>
</table>

Detailed information on assessment tasks

1. **Reflection on the results of Mathematics Competency Test and Surveys**
   Analyse the results of the first Mathematics Competency Test to and identify areas of strength and areas needing attention. Compare the overall results of the first Mathematics Competency Test to the first round of surveys, looking for how they might reflect each other. Create a plan for continuous improvement in your mathematics skills and numeracy.

   Further information is available on Blackboard, specifically a proforma that contains questions that will guide the reflection on the results of the first Mathematics Competency Test and the first round of Surveys. Details on the structure of the submission are also provided.

2. **Report on Assessment Results**
   One of the roles of an educator is to be able to interpret data and statistics that are provided on the achievement of their children. This assessment is designed to explore large scale assessments. The first part investigates what assessments are conducted nationally and internationally by examining what these assessments address, how they are conducted, and how results are provided. The second part focuses on how to interpret the student results that are returned in the national assessment of numeracy.

   The full detail of what is to be submitted is provided on Blackboard.

3. **ePortfolio on personal Numeracy**
   This assessment is based on the work completed during the unit. Drafts for all items should have been completed during the topics using the proformas provided. Subsequent and final drafts should have been completed electronically using Word (with or without a page border, it is up to you). Not all of these drafts will be worked on as part of the final assessment – in most cases, you will be able to select those that show your best work. The work that will be submitted is based on the Mathematician Research, the Thinking Time problems, the “What I know about ...” activities, and the reflections on the results of the second and third Mathematics Competency Test and Surveys.

   The full detail of what is to be submitted is provided on Blackboard.

**Fair assessment through moderation**
Moderation describes a quality assurance process to ensure that assessments are appropriate to the learning outcomes, and that student work is evaluated consistently by assessors. Minimum standards for the moderation of assessment are described in the Assessment Manual, available from [policies.curtin.edu.au/policies/teachingandlearning.cfm](policies.curtin.edu.au/policies/teachingandlearning.cfm)

**Late assessment policy**
This ensures that the requirements for submission of assignments and other work to be assessed are fair, transparent, equitable, and that penalties are consistently applied.
1. All assessments which students are required to submit will have a due date and time specified on the Unit Outline.

2. Accepting late submission of assignments or other work will be determined by the unit coordinator or Head of School and will be specified on the Unit Outline.

3. If late submission of assignments or other work is not accepted, students will receive a penalty of 100% after the due date and time i.e. a zero mark for the late assessment.

4. If late submission of assignments or other work is accepted, students will be penalised by ten percent per calendar day for a late assessment submission (e.g., a mark equivalent to 10% of the total allocated for the assessment will be deducted from the marked value for every day that the assessment is late). This means that an assignment worth 20 will have two marks deducted per calendar day late. Hence if it was handed in three calendar days late and marked as 12/20, the student would receive 6/20. An assessment more than seven calendar days overdue will not be marked. Work submitted after this time (due date plus seven days) may result in a Fail - Incomplete (F-IN) grade being awarded for the unit.

Assessment extension

A student wishing to delay the completion or submission of an assessment task after the original published date/time (e.g., examinations, tests) or due date/time (e.g., assignments) must apply for an assessment extension using the Assessment Extension form (available from the Forms page at http://students.curtin.edu.au/administration/) as prescribed by the Academic Registrar. It is the responsibility of the student to demonstrate and provide evidence for exceptional circumstances beyond the student's control that prevented them from completing/submitting the assessment task.

The student will be expected to lodge the form and supporting documentation with the unit coordinator before the assessment date/time or due date/time. An application may be accepted up to five working days after the date or due date of the assessment task where the student is able to provide an acceptable explanation as to why he or she was not able to submit the application prior to the assessment date. An application for an assessment extension will not be accepted after the date of the Board of Examiners' meeting.

Additional assessment information

Pass requirements

In order to pass this unit, all assessment tasks must be submitted and an overall mark of 50% or more must be achieved. Assessments are not considered as submitted if any required sections are incomplete, or if the electronic file is unreadable. It is a student's responsibility to ensure that assessments are complete and have been successfully uploaded in a readable format.

A student who has received a Fail Grade (less than 50%) for an assessment, but achieves at least 40% of the possible mark for an assessment that was handed in on time, may be offered the opportunity to resubmit. The maximum a resubmission can be awarded is 50% of the possible mark and only one assessment resubmission per unit is possible.

Referencing style

The referencing style for this unit is APA 6th Ed.

More information can be found on this style from the Library web site: library.curtin.edu.au.

Plagiarism

Plagiarism occurs when work or property of another person is presented as one's own, without appropriate acknowledgement or referencing. Plagiarism is a serious offence. For more information refer to academicintegrity.curtin.edu.au.

Plagiarism monitoring

Work submitted may be subjected to a plagiarism detection process, which may include the use of systems such as 'Turnitin'. For further information, see academicintegrity.curtin.edu.au/students/turnitin.cfm.
Additional information

Curtin School of Education Assessment Extension

The unit coordinator is responsible for determining whether the reasons provided by a student for her/his inability to complete an assessment task by the due date can be accepted as being due to exceptional circumstances beyond the student’s control. Such exceptional circumstances that may warrant approval of an Assessment Extension include, but are not limited to:

- Injury, illness or medical condition
- Family issues
- Commitments to participate in elite sport
- Commitments to assist with emergency service activities
- Unavoidable and unexpected work commitments

Students must apply for an Assessment Extension using the Assessment Extension form located at: http://students.curtin.edu.au/administration/forms.cfm. The form and any supporting documentation must be submitted to the unit coordinator or delegate (i.e., lecturer) before the assessment date/time or due/time. An application may be accepted up to five working days after the due date of the assessment task where the student is able to provide an acceptable explanation as to why he/she was unable to submit the application prior to the assessment date.

The unit coordinator shall notify the student of the outcome of their application for Assessment Extension within five working days of the application.

For assignments or other submitted work, an extension will normally be granted up to seven days after the initial due date/time, unless the circumstances warrant a longer delay.

If an application for Assessment Extension is rejected, the unit coordinator must provide reasons for her/his decision. Students have the right of appeal (to the Head of School).

Curtin School of Education Assessment Appeals

Any student dissatisfied with the mark awarded for an assessment task or the final result for a unit has the right to request a review of the mark or final result. If this review process is unable to resolve the issue, a formal assessment appeal may be lodged.

In all cases, the process involves an initial review of the assessment by the lecturer, marker or unit coordinator. It is expected that most situations will be resolved without the need for a formal appeal.

- Step 1 – Initial Request for Review
- Step 2 – Formal Appeal: Students contact the unit coordinator to begin a formal appeal.

Corrupted or Unreadable Files

Assessments are not considered as submitted if the electronic file is not readable. It is a student’s responsibility to ensure that assessments have been successfully uploaded in a readable format. If a lecturer or marker encounters a problem with a submitted file, the student will be notified and must provide a readable file within 48 hours of this notification, after which time it will be considered as a late submission.

Student Support

Smarthinking through OUA

This service is designed to supplement students’ learning experiences while studying at Open Universities Australia. Students are linked to a service administered outside the Blackboard environment and independent of Curtin University and OUA. Smarthinking enables students to connect to a tutor 24 hours a day, 7 days a week. More information is available on Blackboard. Note that
Smarthinking tutors do not have any details relating to assessment tasks and so the help they offer may not align with actual assessment requirements.

Enrolment

It is your responsibility to ensure that your enrolment is correct - you can check your enrolment through the eStudent option on OASIS, where you can also print an Enrolment Advice.

Supplementary and Deferred Exams

Deferred examinations will be held at a date to be advised (see next section). Supplementary examinations, where applicable and when granted by the Board of Examiners, will be held at a date to be advised (see next section). Notification to students will be made after the Board of Examiners meeting via the Official Communications Channel (OCC) in OASIS.

It is the responsibility of students to be available to attend a supplementary or deferred examination on the date advised and to check their OASIS account on a weekly basis for official Curtin correspondence. If your results show that you have been granted a supplementary or deferred examination you should immediately check your OASIS email for details.

Student Rights and Responsibilities

It is the responsibility of every student to be aware of all relevant legislation, policies and procedures relating to their rights and responsibilities as a student. These include:

- the Student Charter
- the University's Guiding Ethical Principles
- the University's policy and statements on plagiarism and academic integrity
- copyright principles and responsibilities
- the University's policies on appropriate use of software and computer facilities

Information on all these things is available through the University's "Student Rights and Responsibilities website at: students.curtin.edu.au/rights.

Student Equity

There are a number of factors that might disadvantage some students from participating in their studies or assessments to the best of their ability, under standard conditions. These factors may include a disability or medical condition (e.g. mental illness, chronic illness, physical or sensory disability, learning disability), significant family responsibilities, pregnancy, religious practices, living in a remote location or another reason.

If you believe you may be unfairly disadvantaged on these or other grounds please speak to the Student Equity Advisor Team member in your Faculty. Contact details are at: http://eesj.curtin.edu.au/contact.html

You can also contact Counselling and Disability services: http://www.disability.curtin.edu.au or the Multi-faith services: http://unilife.curtin.edu.au/diversity_and_faith/faith_services.htm for further information.

It is important to note that the staff of the university may not be able to meet your needs if they are not informed of your individual circumstances so please get in touch with the appropriate service if you require assistance. For general wellbeing concerns or advice please contact Curtin's Student Wellbeing Advisory Service at: http://unilife.curtin.edu.au/student_wellbeing_service.htm

Recent unit changes

We welcome feedback as one way to keep improving this unit. Students are encouraged to provide unit feedback through eVALUate, Curtin's online student feedback system (see evaluate.curtin.edu.au/info/). Recent changes to this unit include:

- Providing proformas suitable for printing and for editing electronically;
- Varying the due dates of the assessments;
- Modifying the length of the assessments;
- Focusing the content more on personal numeracy.

See evaluate.curtin.edu.au to find out when you can eVALUate this unit.
<table>
<thead>
<tr>
<th>Teaching Week</th>
<th>Begin Date</th>
<th>Topic</th>
<th>Activities</th>
<th>Assessment Due</th>
</tr>
</thead>
</table>
| 1.            | 2 June     | Personal Mathematics Competency | Famous mathematicians  
Self-awareness – you as a mathematician  
What I know about ... counting  
Thinking time problem – The morning walk | (First attempt of the Mathematics Competency Test and first round of surveys.) |
| 2.            | 9 June     | Extended Personal Use of Mathematics | Your mathematical competency  
Your disposition towards maths  
You as a mathematician  
What I know about ... fractions  
Thinking time problem – The circus problem |
| 3.            | 16 June    | Essential Statistics | Numeracy and statistical literacy  
What I know about ... statistics  
Thinking time problem – The cats of Australia | Assessment 1 due on Friday |
| 4.            | 23 June    | NAPLAN – what is it and what does it mean? | Statistics in Education  
A focus on NAPLAN  
What I know about ... patterns  
Thinking time problem – Do we want too much? |
| 5.            | 30 June    | Personal Numeracy and the Use of Mathematics | How do mathematical ideas connect Mathematics Competency Test and Surveys – Round 2  
What I know about ... place value  
Thinking time problem – What happened to my money? | (Second attempt of the Mathematics Competency Test and second round of surveys.) |
| 6.            | 7 July     | Numeracy in the Real World | Using the connected ideas to explore aspects of mathematics  
Revisiting earlier mathematics using connected ideas  
What I know about ... probability  
Thinking time problem – The Joined-hands Problem |
| 7.            | 14 July    | Technologies and Mathematics | Technology and mathematics  
Using Technology and Mathematics for Significant Problem Solving  
What I know about ... algebra  
Thinking time problem – The Million Dollar Problem | Assessment 2 due on Wednesday |
<table>
<thead>
<tr>
<th>Date</th>
<th>Subject</th>
<th>Activities</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.</td>
<td>21 July</td>
<td>The Australian Curriculum: Mathematics</td>
<td>Australian Curriculum: Mathematics Virtual Maths Trails What I know about ... chance Thinking time problem – The Good-luck/Bad-luck Problem</td>
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<tr>
<td>9.</td>
<td>28 July</td>
<td>Mathematical Language and Terminology</td>
<td>Language and terminology of mathematics Mathematics Competency Test and Surveys – Round 3 What I know about ... geometry Thinking time problem – The iPhone problem</td>
</tr>
<tr>
<td>10.</td>
<td>4 August</td>
<td>Mathematics of the Human Body</td>
<td>How is mathematics used in regards to the human body? What I know about ... measurement Thinking time problem – The Billion Bloop Problem</td>
</tr>
<tr>
<td>11.</td>
<td>11 August</td>
<td>Mathematics: a history</td>
<td>A mathematical timeline - the progression of mathematical ideas</td>
</tr>
<tr>
<td>12.</td>
<td>18 August</td>
<td>Exploring Mathematics and using it to Communicate</td>
<td>Mathematics in science, physics, architecture, and music Mathematics and nature</td>
</tr>
<tr>
<td>13.</td>
<td>25 August</td>
<td>Open Forum Discussion and Review of the Unit Outcomes</td>
<td>Pulling together the ideas from the unit Progression of the results of the Mathematics Competency Test and Surveys</td>
</tr>
</tbody>
</table>