



MATH0017

**MATHEMATICS FOR
HEALTH SCIENCE**

2022

SUBJECT OUTLINE

Last amended:	January 2022
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Subject name	Mathematics for Health Science
Subject number	MATH0017
Learning and Teaching Coordinator	Michael Casey
Term	2022.1
Handbook summary	This subject has been written to prepare students for further study at university level in the areas of health science and, in particular, nursing. Undergraduate study in health science places a particular emphasis on mathematical skills in the workplace and this subject provides a basis for developing those skills. The subject places equal emphasis on both theoretical and practical application of mathematical techniques as would apply in practice in the health environment.
Credit point value	10
Prerequisite/s	N/A
Corequisite/s	N/A
Subject incompatible with and not to be counted for credit with	N/A
Assumed knowledge	Mathematics at Year 10 level or equivalent
Subject level	Level Z — Foundation subject
Attendance requirements	Students are expected to attend at least 80% of classes. Educational research consistently demonstrates that this attendance level is associated with a high likelihood of achieving a passing grade.
Enrolment restrictions	Only students at The College enrolled in Foundation Studies courses may enrol in this subject.
Learning outcomes	<p>On successful completion of this subject, students should be able to:</p> <ol style="list-style-type: none"> 1. solve real-life problems involving basic mathematical concepts 2. construct appropriate graphs, charts and tables and interpret them 3. identify different mathematical techniques to solve problems related to healthcare 4. identify different terminology used in health care situations relevant to mathematical calculation 5. solve mathematical problems in areas that are peculiar to health care, with and without technological assistance, and 6. interpret and communicate mathematical ideas in a clear and effective manner, using appropriate units and notation.

Subject content	<p>In this subject, students will learn about:</p> <ul style="list-style-type: none">• Module 1: Basic mathematics<ul style="list-style-type: none">– Basic mathematical operations with whole numbers, decimals and fractions– Ratios and rates– Percentages– Metric system– Graphs and data• Module 2: Mathematical calculations in health care<ul style="list-style-type: none">– Oral medications — dosage: tablets and mixtures– IV fluid management — rate of flow, drop factor, burettes, pumps– Injections — types, mixing solutions, calculating dosage– Paediatrics — determine body surface area, dosage by body weight, verifying safe dosages by comparison with recommendations– Volumes/rates — calculating complex volumes using the metric system, oral, parenteral and intravenous medications
Mode of delivery	<p>This subject is taught on a face-to-face basis and includes six hours of classes per week. In addition, students are required to access vUWS regularly to download additional learning material, and to check for any announcements about the subject that may be posted there.</p>
Essential requirements	<p>Recommended text</p> <p>Hext, V & Mayner, L 2003, <i>Practical nursing calculations — getting the dose right</i>, Allen & Unwin, Sydney.</p> <p>Additional readings</p> <p>Brotto, V & Rafferty, K 2012, <i>Clinical dosage calculations for Australia and New Zealand</i>, 1st edn, Cengage Learning Australia.</p> <p>Essential equipment</p> <ul style="list-style-type: none">• Approved non-programmable scientific calculator• Computer with internet access

ASSESSMENT ITEMS AND WEIGHTING

Assessment for this subject will be based on the following components:

Task	Weighting	Learning outcomes assessed	Mandatory task
1. Intra-term exam 1 (1 hour)	10%	1, 2, 5, 6	Yes
2. Intra-term exam 2 (1 hour)	25%	1-6	Yes
3. Case study (1 hour)	25%	1-6	Yes
4. End of Term exam (2 hours)	40%	1-6	Yes
Total	100%		

For details of assessment due dates, please refer to the learning guide for this subject.

All marks will be determined in accordance with The College [Assessment Policy](#).

All assessment tasks are mandatory unless otherwise specified. Should a student fail to attempt/submit the first formal assessment task in a subject, they will be deemed to be at risk and will need to follow an intervention plan in order not to receive a Fail Non-Submission (FNS) grade. However, failure to attempt/submit all other mandatory assessment tasks will result in an immediate FNS grade for the subject.

Students must achieve an overall mark of at least 50% to pass this subject.