LAIDLAW COLLEGE
Te Wananga Amorangi

BACHELOR OF TEACHING (PRIMARY) & WORLDVIEW STUDIES

852.515 Mathematics and Statistics 1
Course Assessment and Delivery Outline

Campus: Henderson/Manukau
Semester 2, 2015
Lecturer: Dianne Scouller
NQF Level: 5, 15 credits

CONTENT OVERVIEW
a. The relationship between Christian worldview perspectives and mathematics
b. The New Zealand Curriculum
c. Assessment in mathematics
d. Numeracy: a critical exploration
e. Lesson planning
f. Reflections
g. Games as a way of reinforcing learning

ASSESSMENT TASKS AND DUE DATES

ASSIGNMENT ONE
Students will:
- develop a one week sequence of numeracy lessons and a one week sequence of strand lessons for a pre-secondary class. These must include clear outcomes and assessment as well as identifying appropriate resources and activities.

Assignment One Criteria
Students will demonstrate:
- depth of understanding of curriculum content;
- an awareness of relationships within and between curriculum strands;
- developing skill in planning mathematics lessons;
- knowledge and awareness of children's understanding of mathematical concepts;
- a developing understanding of all aspects of the New Zealand numeracy initiatives.

% Final Grade 50%
Related Learning Outcomes a, c, d, e
Due Date: Thursday 29 October 2015

ASSIGNMENT TWO
Students will:
- demonstrate clear and critical understanding of numeracy assessment issues.

Assignment Two Criteria
Students will demonstrate:
- sound understanding of the Mathematics and Statistics learning area of *The New Zealand curriculum (2007)*;
- developing professional understanding of Numeracy Professional Development booklets.

% Final Grade   40%
Related Learning Outcomes   b, d, e
Due Date: Thursday 24 September
                                 2015

ASSIGNMENT THREE
Students will:
- demonstrate an appropriate level of competence in assigned knowledge content tasks.

Assignment Three Criteria
Students will demonstrate:
- ability to undertake ongoing personal mathematics learning;
- willingness to pursue excellence in this learning;
- willingness to develop the habits of a reflective mathematics teacher.

% Final Grade   10%
Related Learning Outcomes   a, b
Due Date: ongoing

EXPECTED ALLOCATION OF LEARNING HOURS
Class time   36 hours
Self-directed learning   44 hours
Assignments   70 hours
TOTAL   **150 hours**

RECOMMENDED TEXT
Duncan, A. (1996). *What primary teachers need to know about mathematics. (2nd Edition).* Great
      Britain: Hodder & Stoughton.
Ministry of Education Professional Development Numeracy booklets.

Students are advised to use the electronic data bases *Education Research Complete,* and
      Academic Search Premier available through the Deane Memorial Library.

BIBLIOGRAPHY
Booker, G. (2000). *The maths game.* Wellington: NZCER.

Burke, M. & Curcio, F. (Eds.). (2000). *Learning mathematics for a new century.* Reston, Virginia:
      NCTM Yearbook.

Koshy, V., Ernest, P., & Casey, R. (2000). *Mathematics for primary teachers*. London: Routledge.

Ministry of Education, (2001). *An evaluation of the year 4-6 numeracy exploratory study*.
      Wellington: Learning Media.

Ministry of Education, (2002a). *An evaluation of the early numeracy project 2001*. Wellington:
      Learning Media.

Ministry of Education, (2002b). *An evaluation of the early numeracy exploratory study years 7-10*.
      Wellington: Learning Media.

Ministry of Education, (2007). *The New Zealand Curriculum*. Wellington: Learning Media Ltd.

J. Neyland (Ed.) (1994). *Mathematics education. A handbook for teachers. Vol. 1.* Wellington:
      Wellington College of Education.

J. Neyland (Ed.) (1994). *Mathematics education. A handbook for teachers. Vol.2.* Wellington: Wellington College of Education.

Nickel, J. (1990). *Mathematics. Is God silent?* California: Ross House Books.

Ritchie, D. (2002). What does teaching mathematics from a biblical perspective mean? *Nurture, 36*(3), 16-17.

Scouller, D. (2009). Has strategy become the new algorithm? *The New Zealand Mathematics Magazine, 46 (3),* 1-11

van Brummelen, H. (1994).*Stepping stones to the curriculum. A biblical path.* Seattle, Washington: Alta Vista Press.

Vorderman, C. (1998). *How mathematics works.* London: Dorling Kindersley.

Westwood, P. (2000). *Numeracy and learning difficulties.* Victoria, Australia: ACER.

Recommended sites:

www.nzmaths.co.nz

www.mathsonline.com

www.nctm.org

http://www.ee.surrey.ac.uk/Personal/R.Knott/fibonacci

http://forum.swarthmore.edu/geometry

http://www.dositey.com/games.htm

http://www.stetson.edu/~efriedma/numbers/

http://www.sparklebox.co.uk/numeracy

http://teachers.work.co.nz