



# Statistics and Modelling, MSM 333 2009

## **Aims/General Learning Outcomes**

- To apply mathematics in context
- To develop effective problem solving skills
- To develop investigation skills

## **Course Content**

The course covers Time Series, Confidence Intervals, Probability, Solving Equations, Bivariate Data, Probability Distribution Models, and Curve Fitting. Topics are listed in order in the assessment programme over the page.

At the start of each topic you will be given a handout of the achievement standard and the learning outcomes (objectives) for the topic. These reflect the Achievement Objectives in Level 8 of the National Curriculum.

## **Equipment**

Students are required to have a scientific calculator. It is an advantage to have a graphics calculator.

## **Scholarship**

There is an opportunity to enter Scholarship in this subject. The scholarship result is determined by a separate 3 hour examination in late November or early December.

## ***Outcome Description***

You will need to demonstrate the ability to apply mathematical, statistical and probability knowledge and methods to complex problems which may be unfamiliar, interpret and, where appropriate, generalise results and clearly communicate concepts and findings.

## ***Entry for Scholarship***

If you wish to enter scholarship please discuss this with your teacher. Students entering will be given the standard for the examination and past examination papers. Some additional tuition will be available in lunch times or after school to help the students who enter.

## **Appeals**

Any queries about an assessment decision should be made to your class teacher when the assessment is handed back. Any formal appeals should be made, **within one week** of the assessed work being returned to the Head of Department, Mrs Bull, or the Principal's Nominee, Ms Lynch in term1 and Mrs Butler in terms 2, 3 and 4, who will investigate it further.

Work done in pencil or which has 'white-out' corrections cannot be reconsidered for appeals. Appeals need to be made within one school week of receiving a result.

## **Further assessment opportunities**

For two of the internal achievement standards there will be one reassessment opportunity for each.

Where a reassessment opportunity is offered it will be available to all eligible students regardless of the level of achievement in the first assessment.

**MATHEMATICS: STATISTICS AND MODELLING 333  
TEACHING AND ASSESSMENT PROGRAMME 2009**

<i>Term 1</i>			<i>Achievement Standard</i>	<i>Credits</i>	<i>Result</i>
Weeks 2 - 4	<b>Solve equations</b> Solving systems of linear equations	Test on basic skills	Part 90644		
Weeks 5 – 9	<b>Time Series</b> Determine the trend for time series data	Internal NCEA task Reassessment T2 week 2	90641 (v2)	3	
Weeks 10	Start probability				
<i>Term 2</i>					
Weeks 1 - 4	<b>Probability</b> Solve straightforward problems involving probability	Practice test	90643 (v2)	4	
Weeks 5 - 8	<b>Bivariate data</b> Select and analyse continuous bi-variate data	Internal NCEA task Reassessment T2 week 10	90645 (v2)	3	
Weeks 9 - 10	<b>Probability distributions</b> Use probability models to solve straightforward problems				
<i>Term 3</i>					
Weeks 1 - 3	<b>Confidence intervals</b> Calculate confidence intervals for population parameters	Topic test	90642 (v2)	3	
Weeks 4 –5	<b>Probability distributions</b> Use probability models to solve straightforward problems	Practice test	90646 (v2)	4	
Week 6	School examinations	External practice tasks	90643, 90644, 90646		
Weeks 7 - 10	<b>Modelling</b> Use a mathematical model involving curve fitting to solve a problem	Internal NCEA task Reassessment T4 week 1	90647 (v3)	3	
<i>Term 4</i>					
Weeks 1 – 3	<b>Solve equations</b> Solve nonlinear equations using numerical methods	Topic Test	90644 (v2)	4	
Week 4 - 5	<b>Revision</b>				