**TAURANGA GIRLS’ COLLEGE**

**YEAR 12 MATHEMATICS WITH EXTENSIONS (12MAE), 2020**

**Course Outline**

**About 12MAE**

This course contains six of the L2 Achievement Standards (AS) with a total of 22 possible credits. There are three external AS (13 credits) and three internal AS (9 credits).

This year there will also be an opportunity to gain a further *2 optional internal credits* for students wanting to endorse L2 Mathematics with Excellence. To gain these credits students would need to do the majority of the learning independently using a workbook they purchase through school.

This course continues the formal mathematics introduced in the junior school and the Level 1 NCEA 11MAE course. It is theoretical in nature, placing emphasis on algebra and calculus. The course encourages extended abstract thinking and problem solving.

**Prerequisites for Year 13 Mathematics**

12MAE is a prerequisite for those students who intend to take Level 3 *Calculus* and/or *Statistics* in Year 13. The criteria necessary to gain entry are as follows:

*Calculus:* All 23 credits in 12MAE **and** Algebra 2.6 **and** Calculus 2.7 with Merit or Excellence **and** Achieved in Graphs 2.2 and Simultaneous Equations 2.14.

*Statistics:* A minimum of 19 credits in 12MAE **and** Statistical experiments 2.10 **and** Probability 2.12 with Merit or Excellence **and** Achieved in Algebra 2.6.

**Achievement Standards, Credits and Course Endorsement:**

Students can gain further recognition of their achievements in this course by attaining an Endorsement with Merit and Excellence. An Excellence Endorsement requires 14 or more credits at Excellence level, while students gaining 14 or more credits at Merit (or Merit and Excellence) will gain a Merit Endorsement. For Course Endorsement, at least 3 of the 14 credits must be from internally assessed standards, and 3 from external assessment.

The table below notes if the AS contributes towards Level 1 numeracy and literacy and which Vocational Pathway the AS may be credited towards. The Vocational Pathways are: Primary Industries (PI), Service Industries (SI), Social and Community Services (S+C), Manufacturing and Technology (M+T), Construction and Infrastructure (C+I), and Creative Industries (CI).

**Course Assessment Requirements and Reassessment**

Students are reminded that they need to be familiar with the requirements set out in the Tauranga Girls’ College handbook to students in regard to assessment.

In particular, it is noted that no reassessment is offered for the three internal AS (2.10, 2.2, 2.14). At least one practice will be completed before each internal AS is formally assessed. Student work will be held by the school for assessment requirements.

Those students who are participating in programmes that require them to be absent from their Mathematics class must ensure that their teachers are aware of any intended absences **well in advance**. If students are absent from class for any reason then **they** are responsible for catching up on missed *notes and exercises*, and being aware of such things as assignment deadlines which may have been given in their absence.

Common marking schedules will be used in all assessments and moderation will occur between 12MAE classes.

**Homework**

Completing all set homework is vital. There will be regular revision assignments that will help maintain skills. If no homework has been set, time should be spent reviewing work covered in earlier topics or practising problems that will improve your problem solving skills. Regular algebra maintenance sheets will be issued throughout the year to help maintain these fundamental skills

**Workbooks**

Commercially produced workbooks are used for all three external topics. If you wish to purchase a personal copy of the workbooks so that you can write in them and highlight any relevant notes, the total cost is $18. In 2020 there is an option to borrow a workbook from the school but you will NOT be able to write in it and it must be returned to the classroom teacher at the end of the topic. Your teacher will check the book has not been marked in any way.

If you choose to do the optional extra AS on Networks there will be a further workbook fee of $6.50

**Graphics Calculators:**

A graphics calculator (Casio fx-9750G PLUS) is required for students enrolled in this course and students need to have purchased these as soon as possible.

**Tutorials / Extra Help**

Help is available every lunch time in room J209. It is not always possible for every student to get the individual attention they need in their class time. Students are encouraged to seek this extra help when the need arises.

**YEAR 12MAE MATHEMATICS COURSE PLANNING SCHEDULE, 2020**

The schedule below summarises the approximate assessment dates and the number of credits allocated to each topic. Assessment dates are given as a best estimate at this stage. Due dates will be confirmed. Students should attach this sheet in the front of their notes book and keep a record of their assessment results throughout the year.

An “I can do” sheet is issued at the beginning of each unit, which gives the key skills covered in that topic and form the basis of the material assessed in the Achievement Standard.

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| --- | --- | --- | --- | --- | --- | --- |
| **Topic** | **Achievement Standard** | **Int/ Ext** | **L2**  **Credits** | **Numeracy / Literacy and Vocational Pathways** | **Assessment Week** | **STUDENT**  **RESULTS** |
| **TERM ONE** |  |  |  |  |  |  |
| Algebra | 2.6 [91261 v3]  Apply algebraic methods in solving problems | Ext | (4) | Numeracy,  PI, M&T, C&I, CI | T1 Week 7 | TEST |
| Graphs | 2.2 [91257 v3]  Draw straight-forward non-linear graphs | Int | 4 | Numeracy,  PI, SI, M&T, C&I, CI | T1 Week 11  Last lesson of term | TEST |
| **TERM TWO** |  | | | | |  |
| Experiments | 2.10 [91264 v3]  Conduct an experiment to investigate a situation | Int | 3 | Numeracy, Literacy,  PI, SI, S&C, CI | T2 Week 4  Exam week | Project |
| Simultaneous Equations | 2.14 [91269 v3]  Apply systems of equations in solving problems. | Int | 2 | Numeracy,  CI | T2 Week 7 | TEST |
| Probability | 2.12 [91267 v3]  Apply probability methods in solving problems | Ext | (4) | Numeracy, Literacy,  PI, SI, S&C, CI | T3 Week 1 | TEST |
| **TERM THREE** |  |  |  |  |  |  |
| Probability | 2.12 [91267 v3] | Ext | (4) |  | T3Week 1 | TEST |
| Calculus | 2.7 [91262 v3]  Apply calculus methods in solving problems | Ext | 5 | Numeracy,  PI, M&T, C&I, CI | In Exam week | TEST |
| **EXAMS** | **Testing Algebra and Calculus** | | |  | **T3 Week 8** |  |
| **TERM FOUR** |  |  |  |  |  |  |
| Algebra | 2.6 [91261 v3]  Apply algebraic methods in solving problems | Ext | (4) |  | T4 Week 2 | TEST |
|  | EXAM REVISION | | | | |  |
| **Total Credits** |  |  | **22** |  |  |  |