

LANCASTER GIRLS' GRAMMAR SCHOOL

MATHEMATICS AT AS AND A LEVEL

INTRODUCTION

This hand out is to remind you of the key facts concerning A-level Mathematics, the various modules on offer, the choices you have and the different courses available in the lower and upper sixth.

Over recent years there have been many changes made to A-levels. Whilst most subjects have changed their syllabus and structure, it is not the same for Mathematics.

You will require **three modules for an AS level** and **another three (to make a total of six) for an A- level**. What has been altered is the content of some specialized modules. Some modules are designated as compulsory by the examination boards. However, unlike other subjects, there is an element of choice in selecting some of the modules you wish to study. The basic structure is outlined below and whatever combination is used by a student, **there is no coursework at AS or A2 level in this subject**.

THE MODULES AT AS AND A2

At AS and A2, the subject is split into four areas, namely

- Pure Mathematics
- Statistics
- Mechanics
- Decision Theory

As usual, it is hoped that in September 2011, LGGS will be able to offer modules in all four of these areas. However, **the choice on offer in the lower sixth is usually restricted**. Choices in the upper sixth are more varied as students are in a better position to make a well informed decision as to which module is best suited for their needs.

AS MATHEMATICS

You require **three modules** for this examination and it is a compulsory requirement of the examination board that you take two modules in Pure Maths. The third is chosen by yourself from the above list although, as mentioned, the choice may be very restricted in the lower sixth. If you are studying Physics at AS you should select the Mechanics option, otherwise you should be selecting the Statistics option.

A LEVEL MATHEMATICS

In the upper sixth you will require **another three modules**. Two of these, again, are compulsory Pure Maths modules (making a total of four out of the six studied) and the final module is once again chosen from the other areas. The latter module is not decided until your examination results are published and you return into the upper sixth. The choice may be affected by your performance in the June examinations as well as timetabling constraints.

FURTHER MATHEMATICS

This course is **very important for any student thinking of studying Mathematics (or related subject), Physics or Engineering at university**. This is a second **AS or A-Level in Mathematics** and counts as two option choices (when combined with A-Level Mathematics). You still require an additional **three modules** for the award of AS Further Maths and another **three additional modules** (making a total of six) for the full A-level.

These modules consist of new Pure Maths modules from the Further Maths Syllabus and other modules not yet studied from the above list. The AS in Further Maths is obtained at the end of the lower sixth (along with your AS in Mathematics) and the A level in Further Maths is obtained at the end of the upper sixth (along with your A level in Mathematics).

It is also important to note that some students do take Further Mathematics to AS level only (ie one and a half A-levels in Maths). This gives them some additional maths beyond A-level and can be extremely beneficial for certain degree courses other than those mentioned above.