Mathematics Analysis and Approaches

Rationale

Mathematics Analysis and Approaches (MAA) focuses on developing important mathematical concepts in a comprehensible, coherent and rigorous way. Students are encouraged to apply their mathematical knowledge to solve problems set in a variety of meaningful contexts. Development of each topic should feature justification and proof of results. Students embarking on this course should expect to develop insight into mathematical form and structure, and should be intellectually equipped to appreciate the links between concepts in different topic areas. There is an emphasis on algebraic methods in this class.

Curriculum

This is a challenging course designed for students who have demonstrated a high level of interest and ability in mathematics. It requires students to study a broad range of mathematical topics through a number of different approaches and to varying degrees of depth. It is for students who enjoy developing mathematical arguments, problem solving and exploring real andabstract applications with and without the use of technology.

 Topics included are:

Topic 1— Number & Algebra

Topic 2—Functions

Topic 3—Geometry & Trigonometry

Topic 4—Statistics & Probability

Topic 5—Calculus

The content of all 5 core topics must be taught, although not necessarily in the order in which they appear.

Where does it lead to?

This course caters for students with a good background in mathematics who are competent in a range of analytical and technical skills. The majority of these students will be expecting to include mathematics as a major component of their university studies, either as a subject in its own right or within courses such as physics, engineering, economics and technology. Others may take this subject because they have a strong interest in mathematics and enjoy meeting its challenges and engaging with its problems.