Chapter 1 Aims and Objectives

Mathematics pervades all aspects of life, whether at home, in civic life or in the workplace. It has been central to nearly all major scientific and technological advances. Many of the developments and decisions made in our Community rely to an extent on the use of mathematics. Besides foundation skills and knowledge in mathematics for all citizens in the society, it is important to widen mathematics experience to those students who are mathematically inclined.

This Additional Mathematics Curriculum has been designed as a two-year course for Secondary 4-5 students whose interest and maturity has developed to a level that enables them to benefit from more advanced mathematical studies at an early stage beginning at Secondary 4. Students embarking on this course should also be studying simultaneously the more basic course that follows the *Syllabus for Mathematics (Forms I-V) 1985* prepared by the former Curriculum Development Committee, Hong Kong and from 2004 years onwards the *Syllabus for Secondary Schools – Mathematics (Secondary 1-5) 1999* prepared by the Curriculum Development Council, Hong Kong.

Some topics in this guide are built upon the contents of the secondary mathematics syllabus as foundations, but they are studied to a greater depth and breadth. Other topics are foreign to the secondary mathematics syllabus. It is in this sense that the contents in this curriculum guide is considered more advanced. This guide is presented as a revised edition of the version published in 1992. It has been scheduled for implementation in schools with effect from September 2002 at Secondary 4.

Overall Aims[1] of Mathematics Education

The overall aims of mathematics education are to develop:

- our youngsters' knowledge, skills and concepts of mathematics and to enhance their confidence and interest in mathematics, so that they can master mathematics effectively and are able to formulate and solve problems from a mathematical

[1] Further explanations can be found in CDC (2000). *Learning To Learn—Key Learning Area Mathematics Education (Consultation Document)*, Chapter 5 (The Framework) and Appendix 3. HK: Education Department.

perspective; and

- their thinking abilities and positive attitudes towards learning mathematics and build related generic skills throughout their life time.

Objectives of the Additional Mathematics Curriculum

The objectives of the Additional Mathematics Curriculum are to:

- extend students' mathematical horizons beyond the general mathematics education, provide a sound and inspiring introduction to more advanced mathematical concepts and processes, and build up better foundations to those students wishing to study mathematics in future;

- strengthen students' abilities to conceptualize, inquire and reason mathematically, and to use mathematics to formulate and solve problems in mathematical context and other disciplines;

- strengthen students' abilities to communicate with others logically and critically in mathematical languages; and

- develop students a positive attitude towards mathematics learning and the capability of appreciating the aesthetic nature and cultural aspect of mathematics.