

**The University of Hong Kong
Faculty of Education**

Postgraduate Diploma in Education

Key Learning Area / Major: Mathematics Education – Mathematics (Secondary) (Full-time and Part-time)

The aim of the course is to provide professional preparation for student-teachers to become informed, competent and reflective practitioners. The general objectives are to help student-teachers:

- Reflect on the aims and objectives of mathematics education
- Broaden their awareness of mathematics as a school subject
- Gain an understanding of the mathematics curriculum in Hong Kong
- Become competent in the basic skills of teaching mathematics and assessing student performance
- Gain an understanding of how school students learn mathematics
- Gain an understanding of appropriate use of technology in teaching mathematics
- Consider various current issues pertaining to mathematics education

The course consists of two main strands:

- i. Generic concepts and skills related to the teaching and learning of mathematics
- ii. Application of skills and concepts to the teaching and learning of specific mathematical content

Broadly speaking, the above two strands may be seen as covering the theoretical and practical aspects of learning to become a mathematics teacher in a secondary school. However, the two are inter-related throughout the course so that they continually reinforce and complement one another.

The areas covered in the two strands are shown below:

Strand 1: Generic Issues

(The listed order does not necessarily correspond to the teaching order)

The Context of School Mathematics

- Aims and objectives
- The mathematics curriculum
- Assessment

The Nature of Mathematics and its Learning

- Re-thinking mathematical concepts
- Historical development of mathematics
- Problem-solving and investigating
- Psychological theories of learning mathematics
- Individual differences in learning mathematics

Becoming a Mathematics Teacher

- Planning
- Effective teaching
- Explaining and questioning
- Classroom organization
- Use of IT and other resources
- Reflection and professional development

Strand 2: Specific Applications

Working in small groups, students will regularly prepare and present their ideas related to the teaching and learning of specific topics in the mathematics curriculum. For each presentation there may be a particular focus for the follow-up discussion, related to some generic elements covered.