

## Mathematics

In the NSS curriculum, Mathematics is a core subject for all students from F4 to F6. It is composed of two parts, namely the Compulsory Part and the Elective Part. The Elective Part embraces two optional modules, namely Module 1 (Calculus and Statistics) and Module 2 (Algebra and Calculus). The two modules serve as add-on mathematics knowledge to the Compulsory Part. All students must take the Compulsory Part. Students may take:

- (a) Compulsory Part only.
- (b) Compulsory Part and 1 elective module
  - (i) Compulsory Part and Module 1
  - (ii) Compulsory Part and Module 2

### Compulsory Part

#### (i) Objectives

- To develop in students the generic skills through learning mathematics, in particular, the capacity to use mathematics in solving problems, reason and communicate mathematically.
- To develop in students' positive attitude and interest towards mathematics learning.
- To develop in students' confidence and competence in dealing with mathematics needed in real-life.
- To provide a foundation for those students who may further their studies in mathematics or its related areas.
- To help students foster, develop and stretch their potential in mathematics.

#### (ii) Requirements

- Students should have a general sense of patterns and numbers.
- Students should concentrate in solving problems.

#### (iii) Syllabus

- Numbers and Algebra
- Measures, Shape and Space
- Data Handling
- Real-life mathematical problems

#### (iv) Assessment

- Only written examination is required.
- The examination will include a paper of conventional questions and another paper of multiple-choice questions.

## Electives

### (I) Module 1 (Calculus and Statistics)

#### (i) Objectives

- To provide skills and concepts beyond the Compulsory Part.
- To emphasize applications rather than mathematics rigour with a view of widening students' perspectives in mathematics.
- To equip students with a sound foundation in calculus and statistics for their future studies and careers.
- To provide intuitive concepts, basic skills and useful tools to prepare students to apply them in future.

#### (ii) Requirements

- Students should be interested in mathematics.

#### (iii) Syllabus

- The syllabus is similar to the former AS Level Mathematics & Statistics provided to the Arts students.
- Foundation Knowledge
- Differentiation and Integration with applications
- Probability and Statistics

#### (iv) Assessment

- Only written examination required.
- The examination will consist of only one paper of conventional questions.

### (II) Module 2 (Algebra and Calculus)

#### (i) Objectives

- To provide skills and concepts beyond the Compulsory Part.
- To emphasize understanding of mathematics for further advancement of mathematically inclined discipline.
- To equip students with a concrete foundation in mathematics for their studies and careers.
- To provide mathematics concepts for an in-depth treatment of mathematics in future.

#### (ii) Requirements

- Students should be good in mathematics and science.

#### (iii) Syllabus

- The syllabus is similar to the former HKCEE Additional Mathematics and HKAL Pure Mathematics provided to the Science students.
- Foundation Knowledge

- Limits , Differentiation and Integration
  - Matrices and Systems of Linear Equations
- (iv) Assessment
- Only written examination is required.
  - The examination will consist of one paper of conventional questions.

Entrance requirements of individual institutions (Related to Mathematics)

CUHK

Business Administration Insurance, Financial and Actuarial Analysis	Mathematics (Module 1 or 2) is required
Business Administration Quantitative analysis	Mathematics (Module 2) is required
Electronic Engineering; Mechanical and automatic engineering	Mathematics (Module 1 or 2) is required
Computer Engineering; Computer Science; Systems Engineering and Engineering Management	Mathematics (Module 1 or 2) is required
Mathematics and Information Engineering	Mathematics (Module 1 or 2) is preferred
Information Engineering	Mathematics (Module 1 or 2) is required
Mathematics	Mathematics (Module 1 or 2) is preferred
Physics	Physics is preferred, and Mathematics (Module 2) is preferred
Risk Management Science	Mathematics (Module 1 or 2) is required

PolyU

Applied Science	Preferably with any of the extended modules in Mathematics
Construction & Land Use	Preferably with any of the extended modules in Mathematics
Engineering	Preferably with any of the extended modules in Mathematics
Health Studies	Preferably with a relevant extended module in Mathematics

HKUST

Science	Physical Science (Preferably with any of the extended modules in Mathematics)
Engineering	Students are advised to complete Extended Module 1 or module 2 of Mathematics

HKU

Science	Mathematics (Module 1 or 2) is preferred for Mathematics & Physics stream
Engineering	Extended Module 1 or module 2 of Mathematics
Bioinformatics	Extended Module 1 or Module 2 of Mathematics preferred (but not required)
Business Administration (information system)	Extended Module 1 or Module 2 of Mathematics
Actuarial Science	Extended Module 1 or Module 2 of Mathematics