Minor Title	Minor in Computational and Financial Mathematics
Offered to students admitted to Year 1 in	**2012**

Objectives:
The Minor in computational and financial mathematics provides the students with fundamental undergraduate education in both computational mathematics and financial mathematics. It is specifically designed for students who are interested in the above subjects and those whose majors require sophisticated mathematical skills. It aims to nurture quantitative reasoning, logical, analytical and critical thinking, innovative imagination, meticulous care to work, ability to conceptualize, skills for problem-solving, in particular for mathematical problems arising from computational sciences and financial industry and capability to tackle novel situations and ill-defined problems.

Learning Outcomes:
Students should be able to:

a. understand and describe fundamental concepts in computational and financial mathematics;
(by means of coursework, tutorial classes and project-based learning in the curriculum)

b. apply mathematical methods and analysis to real life problems;
(by means of coursework, tutorial classes and project-based learning in the curriculum)

c. communicate and discuss scientific issues related to mathematics.
(by means of coursework, tutorial classes and presentation opportunities in the curriculum)

Impermissible Combination:
Major in Mathematics
Minor in Mathematics

Required courses (42 credits)

1. Introductory level courses (18 credits) (note 4)
MATH1013 University mathematics II (6)
MATH2101 Linear algebra I (6)
MATH2211 Multivariable calculus (6)

2. Advanced level courses (24 credits)
MATH3601 Numerical analysis (6)
MATH3906 Financial calculus (6)

Plus at least 12 credits selected from the following courses:

MATH3408 Computational methods and differential equations with applications
MATH3603 Probability theory (6)
MATH3904 Introduction to optimization (6)
MATH3911 Game theory and strategy (6)
MATH4602 Scientific computing (6)
MATH4907 Numerical methods for financial calculus (6)

Notes:
1. A course may appear as required course in two or more Science majors/minors. Each course can only be considered to satisfy the requirement of one major or one minor, even if that appears in the curriculum of two majors/minors. Students have to select another course to replace the course in the second major/minor.

2. Courses at the advanced level are subject to change.

3. Students must have level 2 or above in HKDSE Extended Module 1 or 2 of Mathematics or equivalent to take this major. Students who do not fulfill this requirement are advised to take MATH1011 University mathematics I.

4. Students having completed the two courses MATH1821 Mathematical methods for actuarial ccience I and MATH2822 Mathematical methods for actuarial science II are deemed to have satisfied the 18 credits Introductory Level Courses requirement of Mathematics Minor. Such students should, however, take at least 30 credits of advanced courses in order to fulfil the credit requirement of the Minor.

Remarks:
Important! Ultimate responsibility rests with students to ensure that the required pre-requisites and co-requisite of

selected courses are fulfilled. Students must take and pass all required courses in the selected primary science major in order to satisfy the degree graduation requirements.