



New Senior Secondary Curriculum and Assessment Guide Mathematics

(Provisional Final Draft)



Development of Curriculum and Assessment Guide

- 1st Consultation (Oct 2004 to Jan 2005)
- 2nd Consultation (Jun 2005 to Sept 2005)
- 3rd Consultation (from Sept 2006)



2nd Consultation **(Jun 2005 to Sept 2005)**

- Consultation Seminars
- Questionnaires for KLA Coordinators /Panel Heads
- Focus Group Meetings
- Overseas Academic Organisations
- Local Universities
- Local Scholars



3rd Consultation

- NSS Curriculum and Assessment Guide
 - On 30 June 2006, the Provisional Final Draft was uploaded on to the website http://www.emb.gov.hk/FileManager/EN/Content_5630/maths_e_060630a.pdf
 - The finalised Curriculum and Assessment Guide will be available in early 2007

Contents of Provisional Final Draft

- Chapter 1 Introduction
- Chapter 2 Curriculum Framework
- Chapter 3 Curriculum Planning
- Chapter 4 Learning and Teaching
- Chapter 5 Assessment
- Chapter 6 Effective Use of Learning and Teaching Resources
- Appendices

Contents of Provisional Final Draft

- Chapter 1 Introduction
 - 1.1 Background
 - 1.2 Rationale
 - 1.3 Curriculum Aims
 - 1.4 Interface with the Junior Secondary Curriculum and Post-secondary Pathways
- Chapter 2 Curriculum Framework
 - 2.1 Design Principles
 - 2.2 The Mathematics Education Key Learning Area Curriculum Framework
 - 2.3 Aims of New Senior Secondary Mathematics Curriculum
 - 2.4 Framework of New Senior Secondary Mathematics Curriculum
 - 2.5 Compulsory Part
 - 2.6 Extended Part



- Chapter 3 Curriculum Planning

- 3.1 Guiding Principles

- 3.2 Curriculum Planning Strategies

- 3.3 Progression of Studies

- 3.4 Curriculum Management

- Chapter 4 Learning and Teaching

- 4.1 Knowledge and Learning

- 4.2 Guiding Principles


- 4.3 Choosing Appropriate Learning and Teaching Approaches and Strategies

- 4.4 Quality Classroom Interaction

- 4.5 Learning Community

- 4.6 Catering for Learner Diversity

- 4.7 Appropriate Use of Information Technology (IT) in Learning and Teaching

- 
- Chapter 5 Assessment
 - 5.1 The Roles of Assessment
 - 5.2 Formative and Summative Assessment
 - 5.3 Assessment Objectives
 - 5.4 Internal Assessment
 - 5.5 Public Assessment
 - Chapter 6 Effective Use of Learning and Teaching Resources
 - 6.1 Purpose and Function of Learning and Teaching Resources
 - 6.2 Guiding Principles
 - 6.3 Types of Resources
 - 6.4 Flexible Use of Learning and Teaching Resources
 - 6.5 Resource Management
 - Appendices
 - 1. Reference Books for Learning and Teaching
 - 2. Useful Websites



Chapter 1

Introduction

Elective Part

選修部分



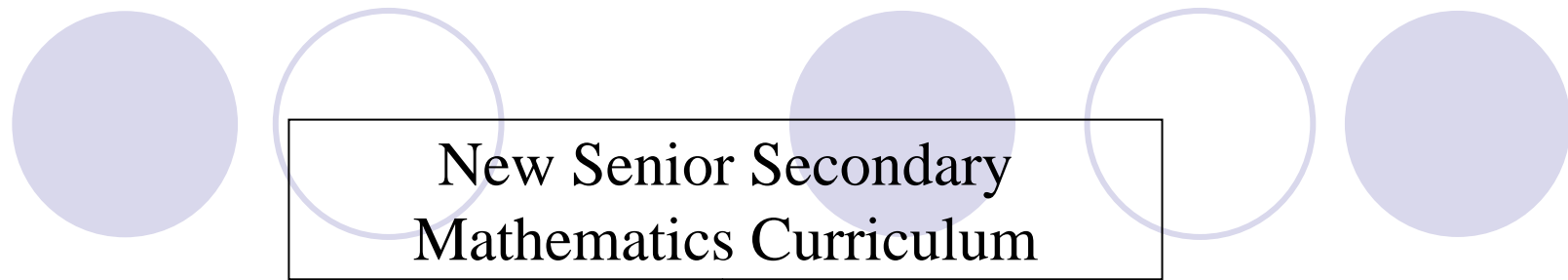
Extended Part



延伸部分

Chapter 2 Curriculum Framework

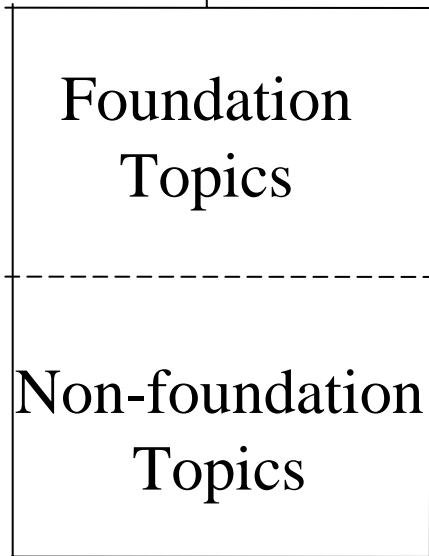
- No change in curriculum framework
- Learning Objectives
 - Unifying wording
 - Adding new learning objectives
 - Deleting learning objectives
 - Rephrasing learning objectives
 - Adjusting lesson time of learning objectives
 - Enriching contents of remarks



New Senior Secondary
Mathematics Curriculum

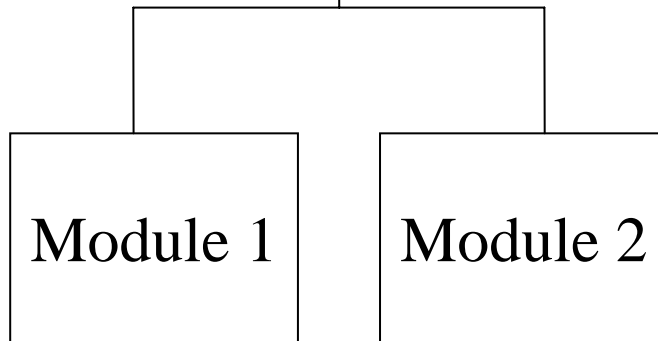
Compulsory
Part

Extended
Part



Foundation
Topics

Non-foundation
Topics



Module 1

Module 2

Note: Students may take the Compulsory Part only, the Compulsory Part with Module 1, or the Compulsory Part with Module 2.



Unifying Wording

recognise (認識)
comprehend (理解)
understand (理解)



recognise (認識)
understand (理解)

Changes in Contents of Compulsory Part

- Deletion

- understand the concept of radian measure
- determining whether the relations are functions

- Addition

- perform the addition, subtraction, multiplication and division of complex numbers
- understand the tests for cyclic quadrilaterals
- understand the applications of standard deviation to real-life problems involving standard scores and normal distribution

Changes in Contents of Module 1

- Deletion

- Recognise the expansion of $(1 + x)^n$, where n is not a positive integer and $|x| < 1$

- Addition

- transform the relations $y = kx^n$ and $y = ka^x$ to linear relations, where a , n and k are real numbers, $a > 0$ and $a \neq 1$
- use integration by substitution to find indefinite integrals
- use indefinite integration to solve problems
- use integration by substitution to find definite integrals
- use definite integration to solve problems

Content Added in Module 2

- Vector

- Introduction to vectors
- Scalar product and vector product
- Applications of vectors

Examples of rephrasing Learning Objectives

	2nd Consultation	Provisional Final Draft
Compulsory Part	<u>perform the addition, subtraction, multiplication and division of algebraic fractions with polynomial numerators and denominators</u>	<u>perform the addition, subtraction, multiplication and division of rational functions</u>

Examples of rephrasing Learning Objectives

	2nd Consultation	Provisional Final Draft
Module 1	Recognise the meaning of point estimates	recognise the meaning of point estimates including the sample mean, sample variance and sample proportion

Examples of rephrasing learning objectives

	2nd Consultation	Provisional Final Draft
Module 2	Sketch simple curves of polynomial functions and rational functions including asymptotes and points of inflexion	Sketch curves of polynomial functions and rational functions

Chapter 3 Curriculum Planning

- Progression of Studies
 - Flexible time allocation
 - Studying mathematics-related elective subjects and Applied Learning (formally named COS) courses
 - Change of module at S5
 - A “Taster” of a module in S4
- Curriculum Management
 - School Heads
 - Mathematics Panel Chairpersons
 - Mathematics Teachers

Chapter 4 Learning and Teaching

- Learning and Teaching Approaches and Strategies
 - Direct Instruction
 - Inquiry
 - Co-construction
- Quality Classroom Interaction
- Learning Community



Chapter 5 Assessment

- Internal Assessment
- Public Assessment

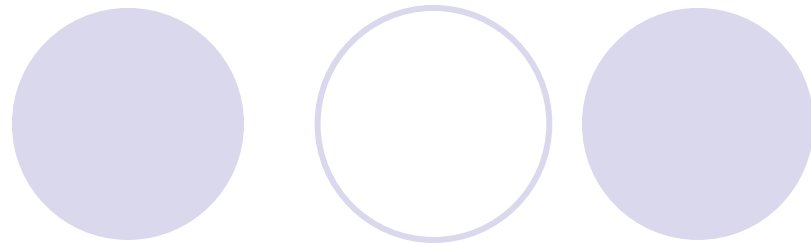
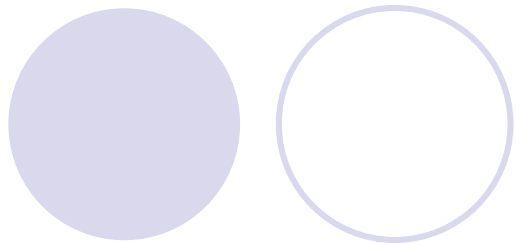
Chapter 6 Effective Use of Learning and Teaching Resources

- Textbooks
- Reference Books
- The Internet and Technologies
- Community Resources



Support to Schools

- Professional development courses
 - Understanding and interpreting the Curriculum
 - Assessment
 - Learning and Teaching Strategies
 - Enrichment
- Reference for Learning and Teaching
[http://www.emb.gov.hk/index.aspx?nodeid=5586
&langno=1&langn0=1](http://www.emb.gov.hk/index.aspx?nodeid=5586&langno=1&langn0=1)
- Seed Project
- Booklets on Learning and Teaching Resources



Thank You