

The background of the slide is a photograph of a building's wooden skeleton under construction. The structure consists of numerous vertical studs and horizontal joists, creating a complex grid of wood. A worker is visible on a higher level of the frame, providing a sense of scale. The overall image has a slightly faded, light-colored appearance.

# Curriculum Framework NSSMC

Mathematics Education Section  
Education Bureau

# Background

## 高中及高等教育 新學制

— 投資香港未來的行動方案

HONG KONG

Future

ACTION PLAN

Investing

教育統籌局  
教育局

## The New Academic Structure for Senior Secondary Education and Higher Education

— Action Plan for Investing in the Future of Hong Kong

HONG KONG

Future

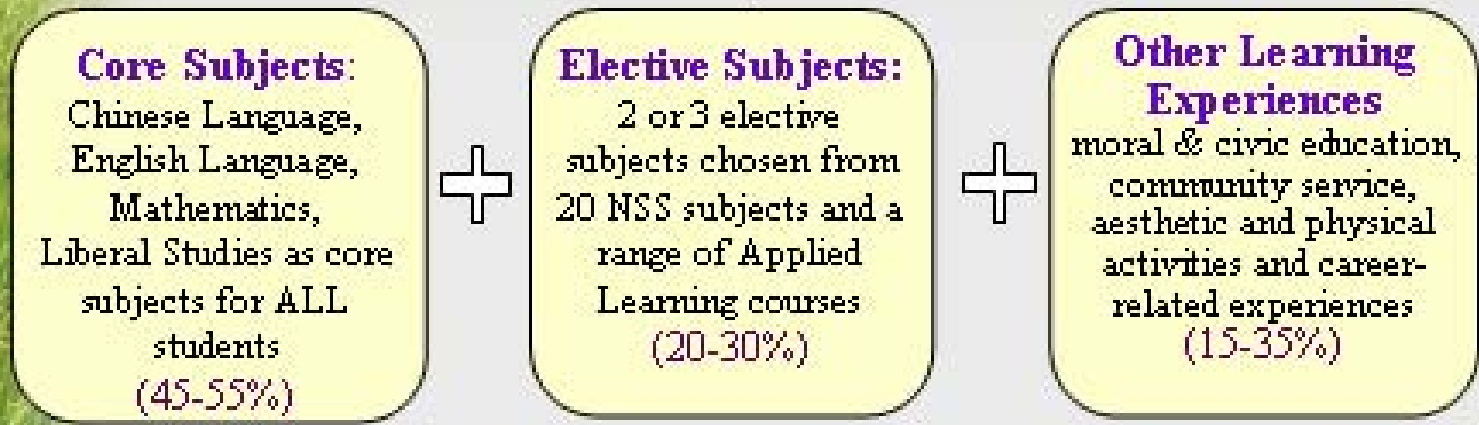
ACTION PLAN

Investing

Education and Manpower Bureau  
May 2005

# NSS Curriculum

## Student Programme - Whole Person Development & Diversification



Mathematics is one of the core subjects

# Rationale for Studying Mathematics as a Core Subject

- Mathematics is a powerful means to help students acquire the ability to communicate, explore, conjecture, reason logically and solve problems
- Mathematics provides a means to acquire, organise and apply information, and plays an important role in communicating ideas through pictorial, graphical, symbolic, descriptive and analytical representations

# Rationale for Studying Mathematics as a Core Subject

- Many of the developments, plans and decisions made in modern society rely on the use of measures, structures, patterns, shapes and the analysis of quantitative information
- Mathematics provides a foundation for the study of other disciplines in the senior secondary and post-secondary education system
- Mathematics is an intellectual endeavour through which students can develop their imagination, initiative, creativity and flexibility of mind, as well as their ability to appreciate the beauty of nature

# Design Principles

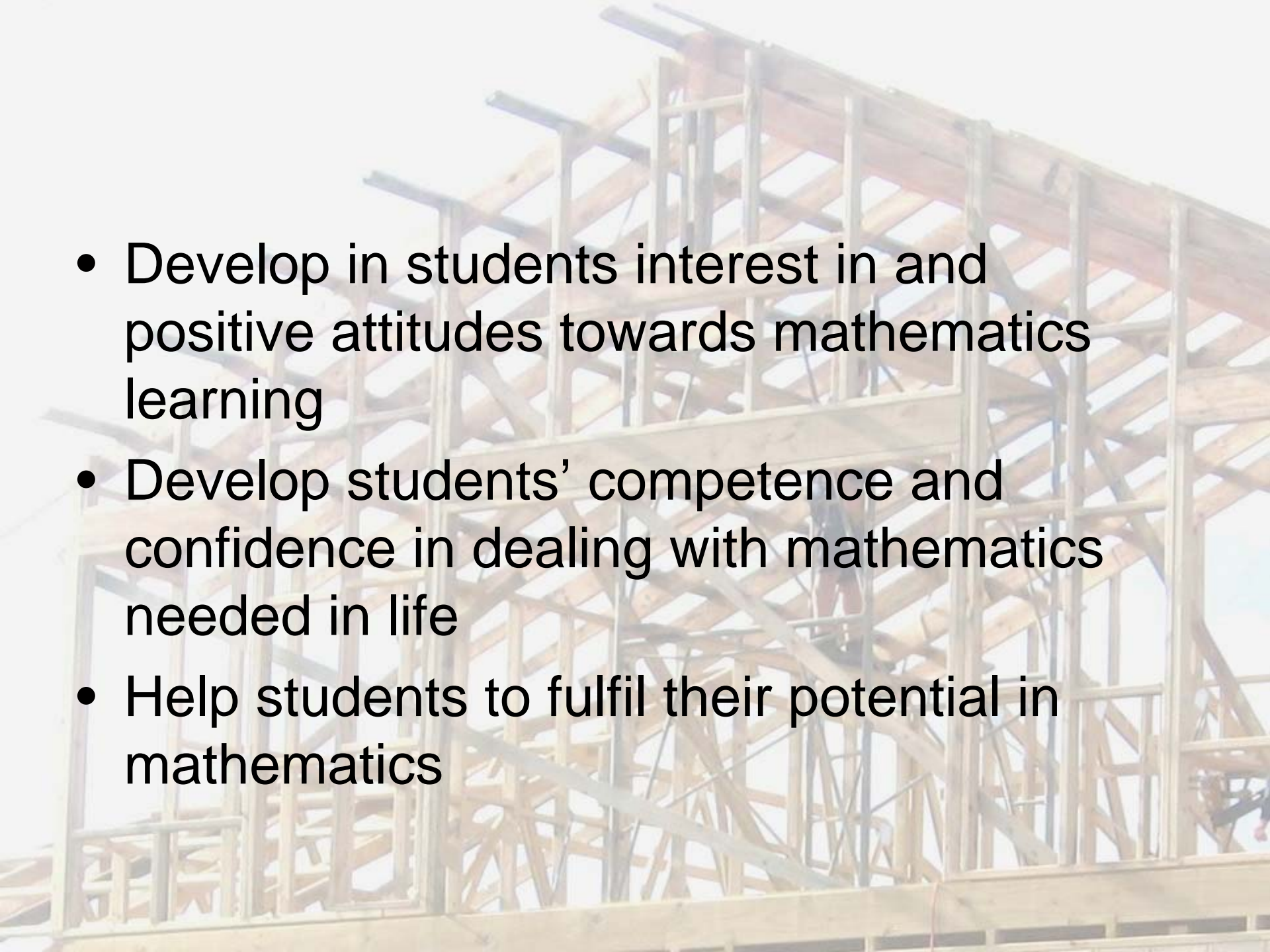
The background of the slide is a photograph of a wooden building's structural frame under construction. The image shows a complex network of wooden beams, joists, and rafters, creating a grid-like pattern. The lighting is bright, suggesting an outdoor setting during the day. The overall tone is light and airy, with a focus on the geometric and structural elements of the construction.

- Building on knowledge developed at the basic educational level
- Providing a balanced, flexible and diversified curriculum
- Catering for learner diversity
- Achieving a balance between breadth and depth
- Achieving a balance between theories and applications
- Fostering lifelong learning skills
- Promoting positive values and attitudes to learning

# Aims of NSSMC

The background of the slide is a faded, light-colored image of a wooden building's structural frame under construction. The frame consists of numerous vertical studs and horizontal beams, creating a complex geometric pattern. The image is slightly out of focus, emphasizing the text in the foreground.

- Further develop students' mathematical knowledge, skills and concepts
- Provide students with mathematical tools for their future personal development
- Provide a foundation for students who may further their studies in Mathematics or related areas
- Develop in students the generic skills, and in particular the capacity to use mathematics to solve problems, reason and communicate

- 
- Develop in students interest in and positive attitudes towards mathematics learning
  - Develop students' competence and confidence in dealing with mathematics needed in life
  - Help students to fulfil their potential in mathematics

# NSSMC Framework

The background of the slide is a photograph of a multi-story building's wooden skeleton under construction. The structure consists of numerous vertical studs and horizontal beams, creating a complex grid-like pattern. The lighting is bright, suggesting an outdoor setting during the day. The overall tone is light and airy.

- Compulsory Part  
(Foundation Topics + Non-foundation Topics)
- Extended Part
  - Module 1 (Calculus and Statistics)
  - Module 2 (Algebra and Calculus)

# 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.**

Secondary Mathematics  
Curriculum

Additional Mathematics  
Curriculum

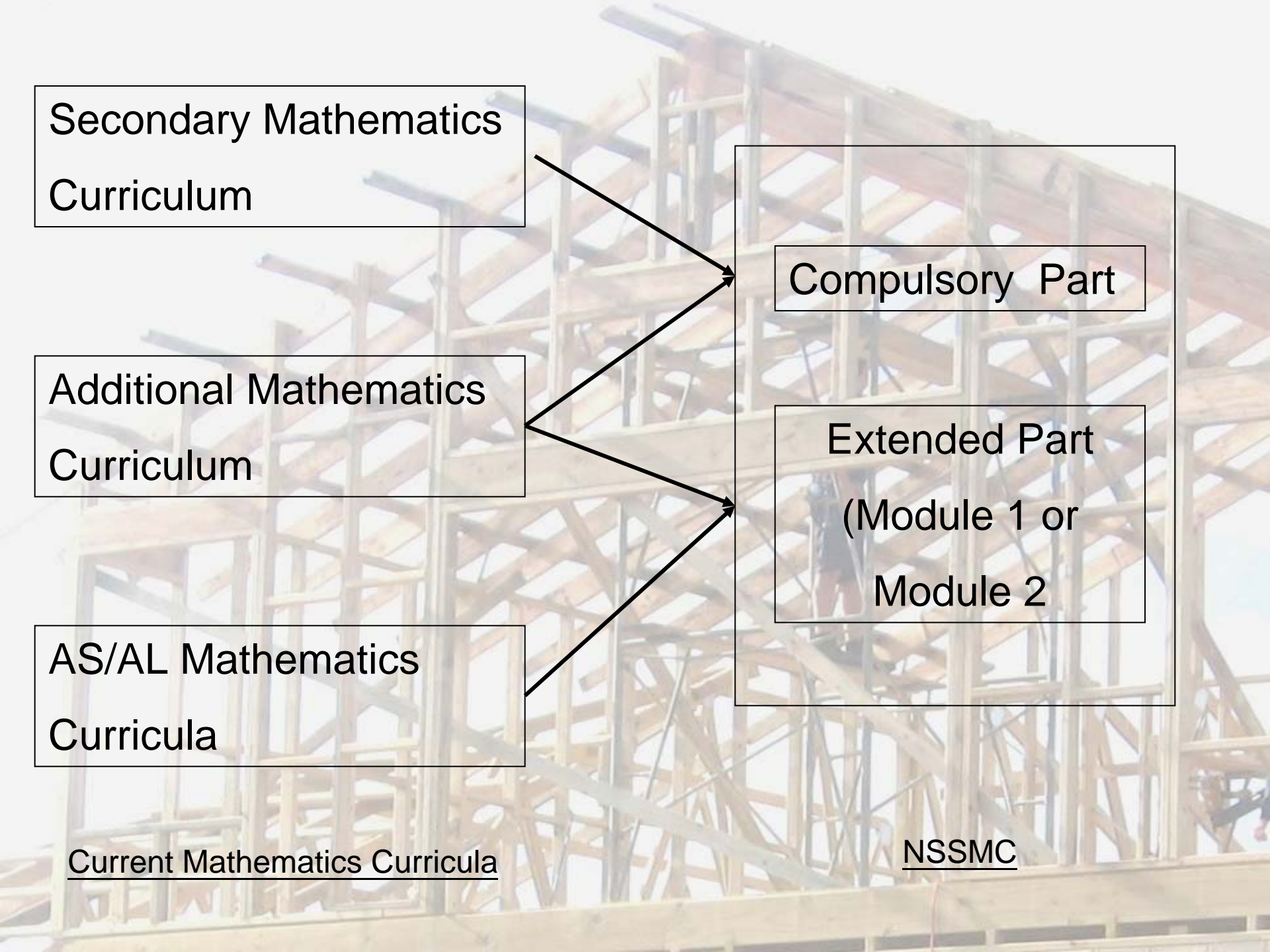
AS/AL Mathematics  
Curricula

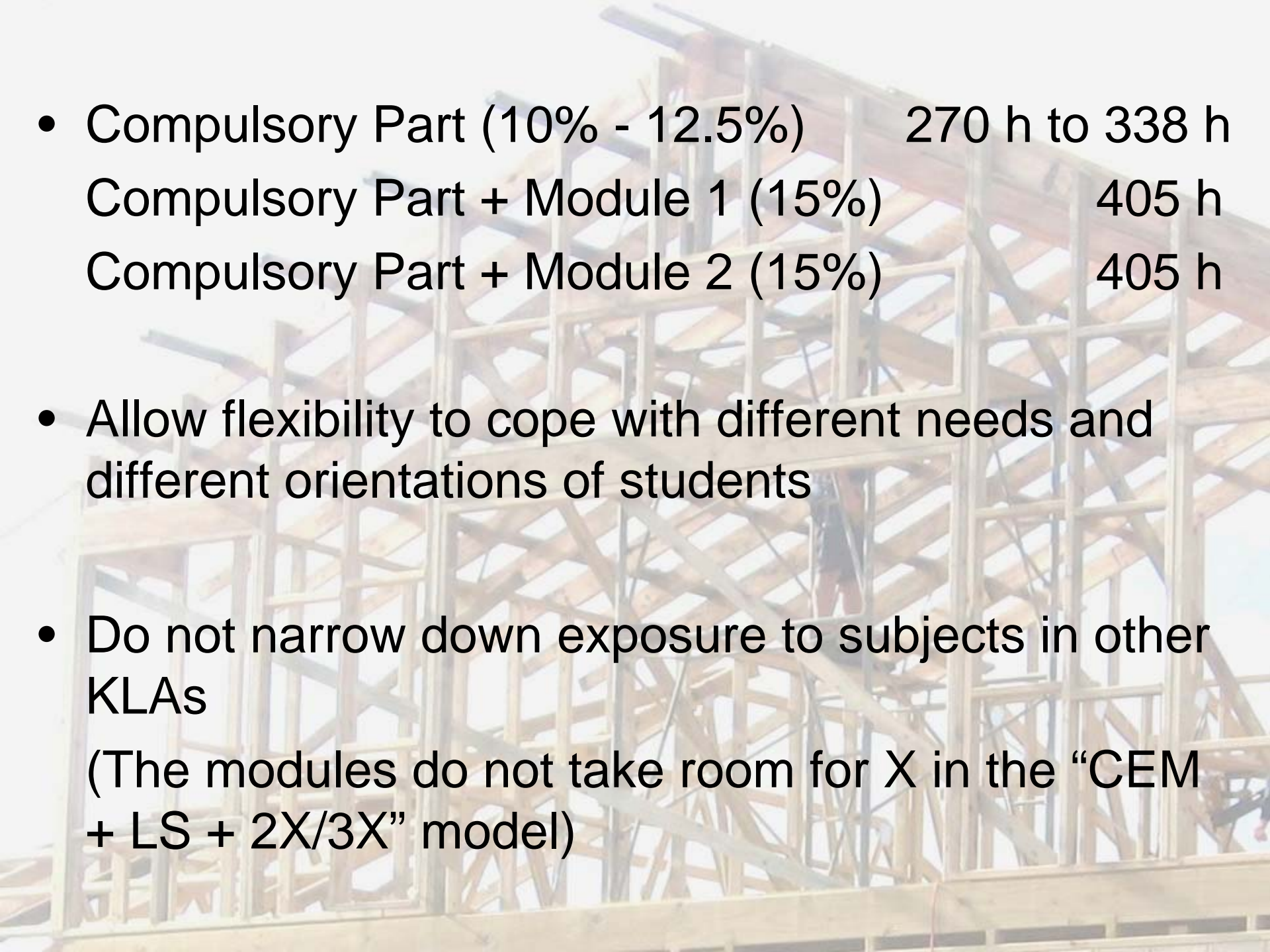
Compulsory Part

Extended Part  
(Module 1 or  
Module 2)

Current Mathematics Curricula

NSSMC

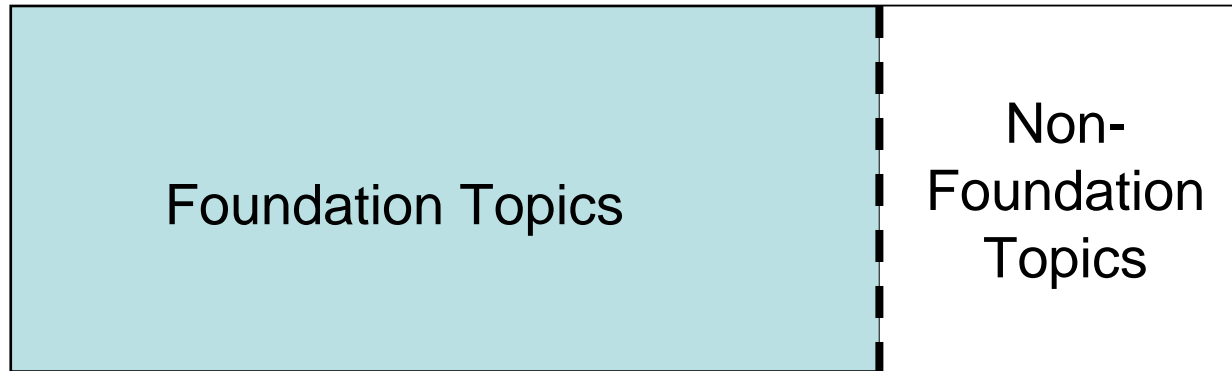


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- Compulsory Part (10% - 12.5%) 270 h to 338 h
  - Compulsory Part + Module 1 (15%) 405 h
  - Compulsory Part + Module 2 (15%) 405 h
  - Allow flexibility to cope with different needs and different orientations of students
  - Do not narrow down exposure to subjects in other KLAs  
(The modules do not take room for X in the “CEM + LS + 2X/3X” model)

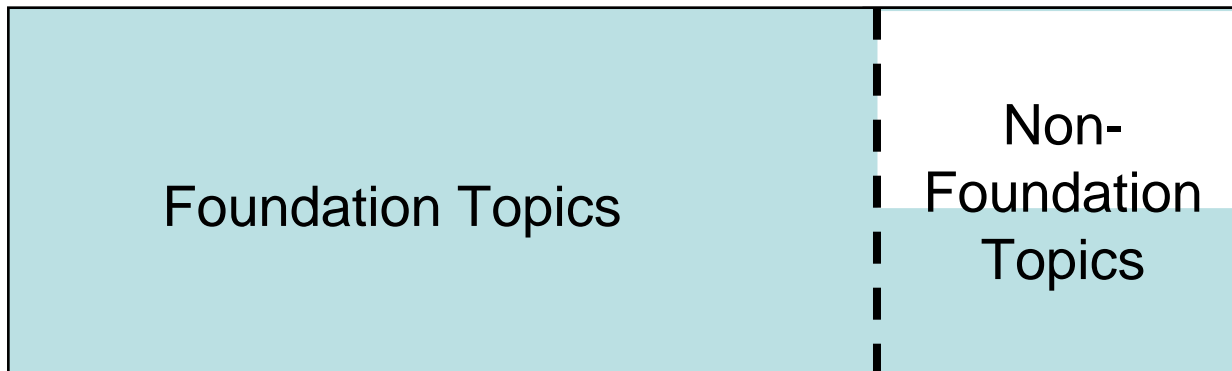
# Students can progress in different ways

- ALL Foundation Topics in the Compulsory Part
- All Foundation Topics and some Non-Foundation Topics
- All Foundation Topics and All Non-Foundation Topics
- All Foundation Topics, All Non-Foundation Topics and Module 1 (Calculus and Statistics)
- All Foundation Topics, All Non-Foundation Topics and Module 2 (Algebra and Calculus)

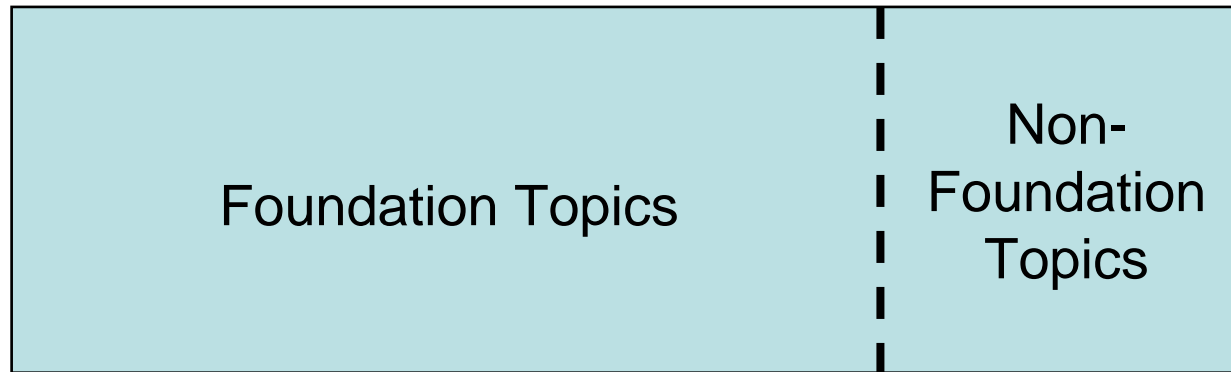
(1) Students study all Foundation Topics only



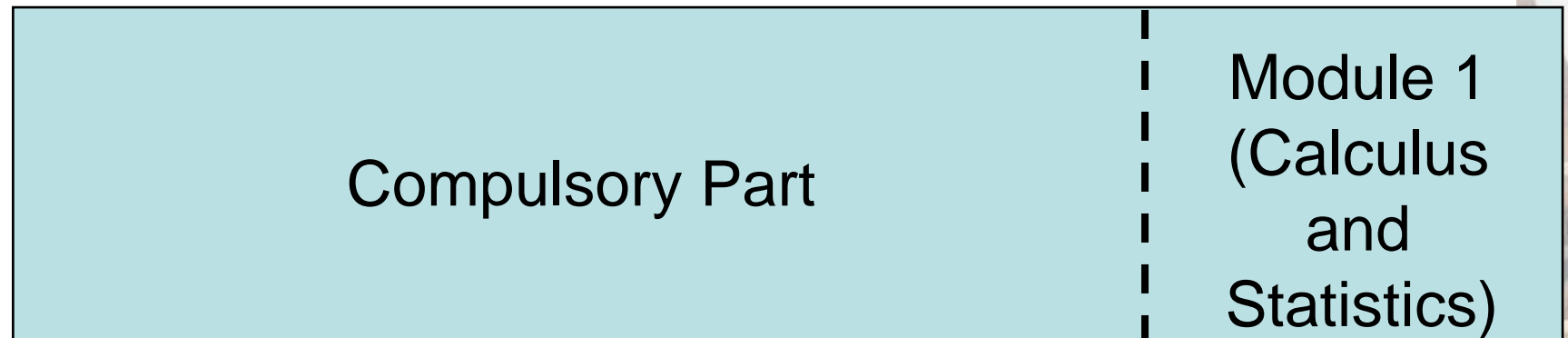
(2) Students study all Foundation Topics and some Non-Foundation Topics



(3) Students study all Foundation Topics and all Non-Foundation Topics



(4) Students study the Compulsory Part with Module 1 (Calculus and Statistics)





(5) Students study the Compulsory Part with  
Module 2 (Algebra and Calculus)

Compulsory Part

Module 2  
(Algebra  
and  
Calculus)



# Compulsory Part

- Serving as a foundation for all students and at the same time providing flexibility to cater for the diverse needs of individual students
- Emphasising the relevance of mathematics to various human activities
- Grouping topics into 3 strands
  - Number and Algebra
  - Measures, Shape and Space
  - Data Handling
- Categorising contents into
  - Foundation Topics
  - Non-Foundation Topics

# Extended Part

- Designing for students
  - who need more mathematical knowledge and skills for their future studies and careers
  - whose interests and maturity have been developed to a level that enables them to benefit from further mathematical study in different areas
- Aiming at extending students' mathematics horizon
- Handling more complicated problems
- Building on the Foundation Topics and the Non-Foundation Topics in the Compulsory Part

# Module 1 (Calculus and Statistics)

- Catering for those students who will be involved in disciplines or careers which demand a wider scope and deeper understanding, and for those who would like to learn more mathematical applications at the senior secondary level
- Aiming to
  - provide students with skills and concepts beyond the Compulsory Part
  - emphasise applications rather than mathematical rigour
  - Provide students with intuitive concepts of calculus and statistics, related basic skills and useful tools for their future studies and careers

# Module 2 (Algebra and Calculus)

- Catering for the needs of students who will be involved in mathematics-related fields and careers, and those who would like to learn more in-depth mathematics at the senior secondary level
- Aiming to
  - provide students with skills and concepts beyond the Compulsory Part
  - Emphasise understanding of mathematics for further progress in mathematically inclined disciplines
  - Provide students with a concrete foundation in algebra and calculus for their studies and careers

# Organisation of Module 1 and Module 2

- Contents are usually interwoven and are classified into areas
- Areas of Module 1
  - Foundation Knowledge
  - Calculus
  - Statistics
- Areas of Module 2
  - Foundation Knowledge
  - Algebra
  - Calculus

# Further Learning Unit

- An independent learning unit
- Enhance students' ability to inquire, communicate, reason and conceptualise mathematical concepts
- Compulsory Part
  - Further applications
  - Inquiry and investigation
- Module 1 and Module 2
  - Inquiry and investigation