The Teaching of Mathematics (Secondary)

Table 1: CS1 Mathematics Structure for BA/BSc (Ed)

Year	Course Code	Title	Course Category	No. of AUs	Pre-requisites
2	ACM22A	Teaching and Learning Mathematics I	Core	3	-
3	ACM32A	Teaching and Learning Mathematics II	Core	3	-
4	ACM42A	Teaching and Learning Mathematics III	Core	3	-
	ACM42B	Specialised Areas in Teaching and Learning of Mathematics	Core	3	-

Table 2: CS2 Mathematics Structure for BA/BSc (Ed)

Year	Course Code	Title	Course Category	No. of AUs	Pre-requisites
2	ACM22A	Teaching and Learning Mathematics I	Core	3	-
3	ACM32A	Teaching and Learning Mathematics II	Core	3	-
4	ACM42A	Teaching and Learning Mathematics III	Core	3	-

ACM22A Teaching and Learning Mathematics I

This is the first course in the Teaching and Learning Mathematics series. For this course, student teachers will have opportunities to explore the teaching and learning of specific mathematical topics, such as Arithmetic, Basic algebra, Matrices, Sets, Probability and Statistics. We will focus on developing a deep understanding of the mathematical concepts in these topics, and an inquiry mindset towards improving teaching. In addition, we will discuss a variety of issues related to classroom teaching and learning mathematics in Singapore—SG Mathematics Curriculum Framework,

aims of mathematics education, mathematical problem solving, learning theories relevant to mathematics education, and lesson planning. Student teachers will find many opportunities to develop crucial craft skills for teaching mathematics: Explaining concepts, demonstrating examples, selecting and sequencing questions, and using appropriate ICT tools when appropriate.

ACM32A Teaching and Learning Mathematics II

The main objectives of this course are: (1) Strengthen the student teachers' grasp in the principles of teaching secondary mathematics covered in the first course by integrating these principles with the use of technology. Student teachers have hands-on opportunity to learn the use of suitable computer tools, such as graphing and Dynamic Geometry software, to design instructional materials; (2) broaden the scope of study in the teaching and learning of mathematics to other topics, such as Geometry, Mensuration, Functions and Graphs, and Trigonometry.

ACM42A Teaching and Learning Mathematics III

This course is designed to be practice-oriented in that you will have opportunities to further your inquiry about teaching and learning of mathematics by studying problems and challenges of actual classroom practice. You will get to analyse authentic materials such as student errors and classroom videos, weigh the merits of different instructional pathways in light of principles and practice of mathematics education covered in earlier

ACM courses, develop workable theory-based classroom materials for quality instruction, and design suitable assessment tools for the evaluation of teaching and learning.

ACM42B Specialised Areas in Teaching and Learning of Mathematics

This course provides student teachers with the opportunity to deepen knowledge and expertise in relevant specialised areas within the scope of secondary mathematics education in Singapore. These areas include: developing pedagogical content knowledge in more advanced mathematics topics; exploring re-designs of instructional units in order to integrate specific implements, such as mathematical modelling, into practice; and designing instruction in a way that meets the needs of diverse learners in the classroom.