

MiniMasters™ (Science Education)

Course Code	Course Title	Course Synopses	AU
MSC902	Science Curriculum Change and Curriculum Evaluation	<p>The purpose of this course is to provide the participants with opportunities to examine key issues in conceptualisation, enactment and evaluation of the science curriculum, and their implications for research and development.</p> <p>The participants will learn about the history of changes to the science curriculum around the world. They will examine science standards documents from various countries and make connections to our Singapore science curriculum frameworks.</p> <p>They will unpack the term scientific literacy as discussed in 21 Century Competencies literature and understand its connections to PISA.</p> <p>With knowledge about the sociopolitical context of science curriculum reform and issues in science reform, course participants will appreciate the usefulness of understanding evaluation perspectives and methods and apply them to design an evaluation study of a school-based science curriculum or programme.</p>	4
MSC903	Science as Practice	<p>To provide more science education courses for participants to choose in the MEd programme .</p> <p>To strengthen the theory and practice nexus of science as practice in science teaching .</p> <p>To enable participants to make connections between the ideas of science as practice to other classroom practices</p>	4
MSC904	Alternative Conceptions and Conceptual Change in Science Learning	<p>This course introduces constructivist learning theories and conceptual change theories as well as methods to determine alternative conceptions in the context of science learning.</p> <p>It will create greater awareness of the difficulties in learning science, how to diagnose these difficulties, and how to design interventions to address them.</p>	4

MiniMasters™ (Science Education)

Course Code	Course Title	Course Synopses	AU
MSC905	Science Discourse: Language, Literacy & Argumentation	<p>Language plays an important role in science and in science teaching. Science teachers need to be cognizant of the nature and role of language in science, and how scientific language differ between everyday language.</p> <p>This will help teachers become more aware of the difficulties students have with learning the scientific language. Classroom talk plays an important role in socializing students into the language of science.</p> <p>A communicative framework will be introduced to help teachers understand the role of talk in science teaching and learning, and to analyse and orchestrate talk more effectively to support science learning. Argumentation, as an important scientific practice and discourse type, will be highlighted as a pedagogical approach and strategy in developing students scientific practices and conceptual understanding.</p>	4
MSC906	Representations & New Media in Science Education	<p>Learning science involves students making sense of and generating multiple modes of representations (e.g., written text, images and mathematical symbols) that characterise science.</p> <p>Classroom teachers also make use multiple media and forms of representations to present the subject matter and shape their students conceptual understanding.</p> <p>This course will offer participants an overview of the theories and analytical tools so that participants are able to examine representations and media that are used in research and in classroom practice.</p> <p>In addition, participants will apply the theories learned to analyse representational artifacts commonly used in the teaching of science (e.g., diagram, textbook), including the use of new media such as simulation and video to determine their efficacy in supporting student learning.</p>	4