Course Description

MEDD6388 Curriculum research and development in mathematics

Course description

This course discusses issues that revolve around the mathematics curriculum and its development in schools. Without limiting the discussion to Hong Kong, a deeper understanding of the issues and concepts concerned with curriculum research and development is expected to be emerging from a better knowledge about the mathematics curricula in various other countries. Important issues to be discussed include: the ongoing development of curriculum in mathematics; current mathematics curriculum projects overseas; the history of the mathematics curriculum; forces that shape the mathematics curriculum in Hong Kong; the relevance of school mathematics; mathematics across the curriculum; assessment in mathematics; school mathematics that caters for individual differences; and diversification and standardization of the mathematics curriculum.

Coursework / Examination ratio: 100 % Coursework, 0 % Examination

Course objectives

The objectives of the module are to enable students to

(a) understand the notion of curriculum and what mathematics curriculum means in an education system;

(b) understand the various factors and forces that shape the mathematics curriculum in an education system (e.g. that in Hong Kong);

(c) reflect critically the relevance of mathematics curriculum in light of the aims of education in general and mathematics education in particular;

(d) explore the complexity of the development of mathematics curriculum through the examination of a selection of curricular issues such as mathematics assessment, mathematics textbook, mathematics for all, etc;

(e) understand the meaning and significance of a variety of research studies on mathematics curriculum, particularly those on the historical development of mathematics curriculum and international comparison.

Course learning outcomes

1. understand the inter-relationships among the nature of mathematics, the purposes of learning it, the mathematics curriculum and its assessment;
2. understand the forces, both local and global, that shape the mathematics curriculum in schools;
3. reflect critically on the bases, both general ideal and contextual factors, on which the mathematics curriculum of a certain education system is constructed;
4. explore the role of a professional mathematics teacher in the curriculum development of mathematics.

Course assessment methods

Assessment method	Type of assessment (e.g. description of assignment)	Weighting (%)	Aligned course learning outcome(s)
	Comparative Study of a Chosen Curricular Aspect		
	Critical Review of Selected Curriculum Material(s)		

Course content and topics

Mathematics curriculum
Mathematics as a subject for all in virtually all curricula
Curriculum Reforms – with a focus on the mathematics curriculum in Hong Kong
International comparisons

Required / recommended readings and online materials (to be entered in the SIS / Moodle)

Hoyles, C., Morgan, C., & Woodhouse, G. (Eds.). (1999). Rethinking the mathematics curriculum. London: Falmer Press.

Leung, F. K. S., Graf, K.-D., & Lopez-Real, F. J. (Eds.). (2006). Mathematics education in different cultural traditions: A comparative study of East Asia and the West. The 13th ICMI Study. (particularly Section 2 on Curriculum, pp. 153-284). Springer. [eBook at HKU Libraries]

Leung, F. K. S., & Li, Y. (Eds.). (2010). Reforms and issues in school mathematics in East Asia: Sharing and understanding mathematics education policies and practices. Rotterdam: Sense Publishers.

Wong, N. Y., Han, J., & Lee, P. Y. (2004). The mathematics curriculum: Towards globalization or westernization? In L. Fan, N.Y. Wong, J. Cai, & S. Li (Eds.), How Chinese learn mathematics: Perspectives from insiders (pp. 27-70). Singapore: World Scientific. [eBook at HKU Libraries]

Other additional course information[20] (e.g. course schedule, course quota, etc.)

Nil