<u>Course Description</u> MEDD8915 Integrating IB Philosophy into the Teaching of Mathematics

Course description

This course includes an in-depth exploration into how to integrate IB DP philosophy in curriculum design, teaching and learning, assessment and research. Students will be guided on designing and refining Mathematics curriculum that reflects the overall IB DP philosophy and learner profile and at the same time aligns with the Mathematics curriculum guides. Students will also be engaged in exploring various pedagogies and technological tools to integrate IB philosophy and learner profiles in Mathematics instruction. Students will explore TOK, CAS and Extended Essay in relation to Mathematics education. Furthermore, the course will also enhance students' understanding on how to reflect IB philosophy, cross-disciplinary application and learner profile in assessment design and how to design assessments that reflect IB subject matter specific assessment criteria. In this course, students also generate a series of research questions around the integration of IB philosophy in instruction.

Course learning outcomes (CLOs)	Aligned programme learning outcomes (PLOs)
1. Students should be able to understand the core of IB philosophy	PLO 1
2. Students should be able to integrate IB philosophy into curriculum development, lesson design, class instruction, and assessment	PLO 2
3. Students should be able to conduct action research on integrating IB philosophy in teaching and engage in reflective thinking	PLO 3

Course assessment methods

- Individual essay Planning
- Individual essay Applying
- Individual essay Reflecting

Course content and topics

- How might the five Approaches to Learning (ATL) skills contribute to student competency and engagement in Mathematics?
- How might integrating the IB's Approaches to Teaching (ATTs) enhance the effectiveness of Mathematics learning and foster a deeper understanding among students?
- IB Core Elements: Theory of Knowledge, Extended Essay, & Personal Project. Taster experience of TOK
- Inquiry methods in the mathematics classroom
- How does concept-based teaching in DP Mathematics courses foster deep conceptual understanding among students?
- How do the four criteria in MYP Mathematics assess beyond the student's subject content knowledge and develop powers of generalization, clear communication, and ability to apply maths in real-life contexts?
- How might the exploration in DP Mathematics provide students with opportunities to increase their understanding of mathematical concepts and processes, and to develop a wider appreciation of mathematics?
- How does the integration of technology enhance the effectiveness of inquiry-based approaches in fostering critical thinking and problem-solving skills among students?

Required / recommended readings and online materials

Hill, I. (2012). Evolution of education for international mindedness. Journal of Research in International Education, 11, 245-261.

Wathall, J. (2016). Concept-Based Mathematics: Teaching for Deep Understanding in Secondary Classrooms (1 edition). Corwin.

Wells, J. (2011). International education, values and attitudes: A critical analysis of the International

Baccalaureate (IB) learner profile. Journal of Research in International Education, 10, 174-188.

Other additional course information

Nil