

ที่ ศธ ๐๒๑๑.๔/๒๙๐๔



สำนักงานคณะกรรมการส่งเสริมการศึกษาเอกชน  
สำนักงานปลัดกระทรวงศึกษาธิการ  
กรุงเทพมหานคร ๑๐๓๐๐

๙ กุมภาพันธ์ ๒๕๖๖

เรื่อง ประชาสัมพันธ์ทุนฝึกอบรมของศูนย์ SEAMEO QITEP in Mathematics ประจำปี ๒๕๖๖

เรียน ผู้รับใบอนุญาตโรงเรียนเอกชน

- สิ่งที่ส่งมาด้วย ๑. รายละเอียดทุนฝึกอบรม จำนวน ๑ ฉบับ  
๒. แบบฟอร์มข้อมูลผู้สมัคร จำนวน ๑ ฉบับ  
๓. แบบฟอร์มรายละเอียดผู้สมัคร จำนวน ๑ ฉบับ

ด้วยสำนักงานปลัดกระทรวงศึกษาธิการ สำนักความสัมพันธ์ต่างประเทศ แจกการให้ทุนฝึกอบรมของศูนย์ระดับภูมิภาคว่าด้วยการพัฒนาคุณภาพครูและบุคลากรทางการศึกษาด้านคณิตศาสตร์ของซีมีโอ (SEAMEO Regional Centre for Quality Improvement of Teachers and Education Personnel in Mathematics: SEAMEO QITEP in Mathematics – ซีมีโอซีทีพีด้านคณิตศาสตร์) เมือง Yogyakarta สาธารณรัฐอินโดนีเซีย ประจำปี ๒๕๖๖ จำนวน ๓ หลักสูตร ได้แก่ ๑) หลักสูตร Integrating ICT in Mathematics Education ๒) หลักสูตร Joyful Learning in Mathematics Education และ ๓) หลักสูตร Differentiated Instruction in Mathematics Education โดยผู้สมัครจะต้องมีคุณสมบัติตามที่กำหนด รายละเอียดตามสิ่งที่ส่งมาด้วย ๑

สำนักงานคณะกรรมการส่งเสริมการศึกษาเอกชน จะพิจารณาเสนอชื่อผู้ที่มีคุณสมบัติเหมาะสมสมัครเข้ารับทุนฝึกอบรมดังกล่าว หลักสูตรละ ๑ คน จึงขอให้โรงเรียนที่มีความประสงค์จะเสนอชื่อบุคลากร ให้ส่งหลักฐานการสมัคร ได้แก่ หนังสือโรงเรียนแจ้งรายชื่อผู้สมัคร พร้อมทั้งแบบฟอร์มข้อมูลผู้สมัคร และแบบฟอร์มรายละเอียดผู้สมัคร รายละเอียดตามสิ่งที่ส่งมาด้วย ๒ และ ๓ ไปยังสำนักงานคณะกรรมการส่งเสริมการศึกษาเอกชน กลุ่มงานนโยบายและแผน ฝ่ายวิเทศสัมพันธ์ ไปรษณีย์อิเล็กทรอนิกส์ koonraw@opec.go.th ภายในวันที่ ๒๔ มีนาคม ๒๕๖๖

จึงเรียนมาเพื่อทราบและประชาสัมพันธ์เรื่องข้างต้นให้บุคลากรของโรงเรียนทราบโดยทั่วกัน

ขอแสดงความนับถือ

(นายประพัทธ์ รัตนอรุณ)

รองเลขาธิการคณะกรรมการส่งเสริมการศึกษาเอกชน ปฏิบัติราชการแทน  
เลขาธิการคณะกรรมการส่งเสริมการศึกษาเอกชน

กลุ่มงานนโยบายและแผน

โทร ๐ ๒๒๘๒ ๑๐๐๐ ต่อ ๔๗๐

โทรสาร ๐ ๒๒๘๒ ๑๙๐๒

รายละเอียดทุนฝึกอบรมของศูนย์ระดับภูมิภาคว่าด้วยการพัฒนาคุณภาพครูและบุคลากรทางการศึกษา  
ด้านคณิตศาสตร์ของซีมีโอ

(SEAMEO Regional Centre for Quality Improvement of Teachers and Education Personnel  
in Mathematics: SEAMEO QITEP in Mathematics)

ประจำปี ๒๕๖๖

**๑. หลักสูตรฝึกอบรม**

๑.๑ หลักสูตร Integrating ICT in Mathematics Education อบรมระหว่างวันที่ ๒๖ กรกฎาคม ๒๕๖๖ ถึงวันที่ ๘ สิงหาคม ๒๕๖๖ ในรูปแบบออนไลน์ ซึ่งผู้เข้าอบรมควรเป็นครูคณิตศาสตร์ระดับมัธยมศึกษาตอนปลาย

๑.๒ หลักสูตร Joyful Learning in Mathematics Education อบรมระหว่างวันที่ ๒๑ สิงหาคม ๒๕๖๖ ถึงวันที่ ๑ กันยายน ๒๕๖๖ ในรูปแบบออนไลน์ ซึ่งผู้เข้าอบรมควรเป็นครูคณิตศาสตร์ระดับมัธยมศึกษาตอนต้น

๑.๓ หลักสูตร Differentiated Instruction in Mathematics Education อบรมระหว่างวันที่ ๑๖ – ๒๗ ตุลาคม ๒๕๖๖ ในรูปแบบออนไลน์ ซึ่งผู้เข้าอบรมควรเป็นครูคณิตศาสตร์ระดับมัธยมศึกษาตอนต้น

**๒. คุณสมบัติผู้สมัคร**

ผู้สมัครควรมีคุณสมบัติตามที่กำหนดข้างต้น มีอายุไม่เกิน ๕๐ ปี มีประสบการณ์ในการสอนอย่างน้อย ๓ ปี ตลอดจนมีความรู้ความสามารถด้านทักษะการใช้ภาษาอังกฤษ คอมพิวเตอร์ อินเทอร์เน็ต และไปรษณีย์อิเล็กทรอนิกส์เป็นอย่างดี



**Southeast Asian Ministers of Education Organization (SEAMEO)  
Regional Centre for Quality Improvement of Teachers  
and Education Personnel (QITEP) in Mathematics**

Jl. Kaliurang Km. 6, Sambisari, Condongcatur, Depok, Sleman, Yogyakarta, Indonesia.  
Phone: +62274 889955, Email: [secretariat@qitepinmath.org](mailto:secretariat@qitepinmath.org), Website: [www.qitepinmath.org](http://www.qitepinmath.org)



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**General Information  
Online Regular  
Course 2023**

The general information of SEAQiM Regular Courses 2022 are as follows:

**A. Mode**

SEAQiM 2023's Regular Courses for international participants will be conducted virtually via Zoom and learning management systems (LMS) platforms such as Moodle and Google Classroom.

**B. Detailed Information**

Will be informed detailed information of the courses to all candidates approximately one-week before the beginning of each regular course.

**C. Language Delivery**

All regular courses will use English as the formal language.

**D. Facilitator**

The participants will be facilitated by the SEAQiM Academic Team and some invited experts in mathematics education from some reputable institutions worldwide.

**E. Certificate**

The participants will be awarded a Certificate of Participation in accordance with the rules and conditions applied by SEAQiM.

**F. Cost**

SEAQiM's Regular Course is free of charge.



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## **Course Description**

### **SEAMEO Regional Centre for QITEP in Mathematics (SEAQiM)**

#### **1. Southeast Asia Realistic Mathematics Education (SEA-RME)**

Realistic Mathematics Education (RME) was introduced and developed by Freudenthal Institute in the Netherlands. There are two important points in RME: (1) mathematics must be connected to real life, and (2) the idea of mathematics as human activity is emphasised.

SEAQiM has designed a Southeast Asia Realistic Mathematics Education (SEA-RME) Course which is based on the regional culture, nature, and characteristics of Southeast Asia. This course allows teachers to work collaboratively, celebrate diversity, and bring these experiences to their mathematics classrooms.

At the end of the course, participants should be able to:

1. Explain the characteristics of realistic mathematics education,
2. Design RME model for mathematics teaching and learning,
3. Produce mathematics teaching materials for RME-based instruction.

The contents of the course are as follow.

1. Current Issues and Trends in Mathematics Education
2. Introduction to RME
3. Concepts and Principles of RME
4. Mathematics in Contexts
5. Mathematical Modelling
6. Practical Mathematics
7. Hypothetical Learning Trajectory
8. Assessment in RME
9. Socio-Mathematical Norms
10. Mathematical Literacy
11. Computational Thinking
12. STEM Education
13. Joyful and Meaningful Learning
14. Problem Solving
15. Digital Mathematics Environment
16. Developing and Implementing Lesson Plans at School
17. Publishing reports and Designing Follow up Programme

## **2. Integrating ICT in Mathematics Education**

The ability of Information, Communication, and Technology (ICT) to display texts, pictures, sounds, graphics, animations, and videos has opened up vast opportunities for teachers to create interactive and joyful learning experiences. However, many teachers need more skills to use ICT effectively in their classrooms.

To support teachers, SEAQiM has created this course which aims to develop the skills required to integrate ICT into their classrooms. With this knowledge, teachers can support students to develop the 21st Century skills required for their future workplaces.

At the end of the course, participants should be able to:

1. Explain the importance of IT in supporting mathematics teaching and learning in schools,
2. Select, use, and create IT-based mathematics teaching and learning materials,
3. Implement mathematics teaching and learning using the developed IT-based learning materials.

The course contents are as follows.

1. Current Issues and Trends in Mathematics Education
2. Technological Pedagogical Content Knowledge
2. Concepts and Principles of Integrating ICT in Mathematics Classroom
3. Calculator for Mathematics Exploration
4. Building Manipulative-Interactive Media with Application: Geogebra
5. Exploring Three-Dimensional Space with Application: Cabri 3D
6. Building Digital Activity with Application: Desmos
7. Game for Mathematics Teaching
8. Digital Math Environment
9. Robot Programming & Coding
10. Learning Management System
11. Designing Learning Media Using ICT
12. Assessment in Mathematics Learning using ICT
13. Hypothetical Learning Trajectory
14. STEM Activities for Junior High School
15. Computational Thinking
16. Developing and Implementing Lesson Plans at School
17. Publishing Report and Designing Follow-up Programme

## **3. Teacher-Made Mathematics Teaching Aid**

Students, at times, struggle with mathematics due to the abstract concepts involved. To help address this issue, teachers can use physical objects, such as teaching aids, to make the concepts more relatable and understandable. However, many teachers have limited resources and access to such teaching aids due to financial and geographical constraints. Realising this concern,

SEAQiM has developed this course to harness the creativity and innovation of teachers to produce their own teaching aids.

This course is structured, so participants learn and work collaboratively to design and develop teaching aids from readily available materials.

At the end of the course, participants should be able to:

1. Explain the current issues, psychology, strategies and approaches, and the roles of teaching aid in mathematics teaching and learning,
2. Produce mathematics teaching aids and their manuals,
3. Design mathematics learning model applying teaching aids to support students
4. activities.

The contents of the course are as follow:

1. Current Issues in Mathematics Teaching and Learning
2. Strategies and Approaches of Mathematics Teaching and Learning
3. The Use of Manipulative Teaching Aids
4. Analysing Mathematics Curriculum and Its Media
5. Designing and Developing Mathematics Teaching Aids
6. Developing and Implementing Lesson Plan at School
7. Publishing Report and Designing Follow up Programme

#### **4. Joyful Learning in Mathematics Education**

Learning should be joyful because it is a perpetual growth process and self-reflection. Mathematics teachers are expected to develop ideas to motivate students through joyful activities, such as discovering, exploring, constructing, designing, setting strategy, and solving problems wrapped in mathematics games, puzzles, and hands-on activities.

Course on Joyful Learning in Mathematics Education provides mathematics teachers with a different perspective on teaching mathematics. Teachers are introduced to various joyful activities to promote meaningful learning. These activities will help students to achieve higher-order thinking skills (HOTS).

At the end of the course, participants should be able to:

1. Explain the characteristics of joyful learning in mathematics education,
2. Produce mathematics teaching materials for joyful learning, and
3. Create a mathematics learning model applying joyful learning.

The contents of the course are as follow:

1. Current Issues in Mathematics Teaching and Learning
2. The Concept and Principle of Joyful Learning
3. Instructional Strategies and Approaches for Joyful Learning
4. Outdoor Mathematics
5. Mathematics and Art
6. Mathematics and Games
7. Virtual Manipulatives for Math Teaching and Learning

8. Physical Manipulatives for Math Teaching and Learning
9. Alternative Assessment in Joyful Learning
10. History of Mathematics
11. Mathematical Literacy
12. Computational Thinking
13. STEM Education
14. Hypothetical Learning Trajectory
15. Problem Solving
16. Practical Mathematics
17. Implementation of Joyful Mathematics Learning at School
18. Publishing Report and Designing Follow up Programme

## 5. STEM for Mathematics Learning

Science, Technology, Engineering, and Mathematics (STEM) has been a major topic of discussion in the field of education because it is the most esteemed field to respond to the demand of the 21st century. STEM education will be important for teachers to educate the future high-quality workforce. However, there need to be more STEM programs offered by educational institutions in Indonesia.

We propose using this course to address this shortage, especially for a mathematics teachers. In this course, the topic concern STEM for mathematics learning perspective; how teachers can implement STEM approach in their mathematics classroom despite the content and assessment suggested by the curriculum, which often still compartmentalise each subject. The STEM approach is an innovative and novel way of teaching mathematics, which is important to keep mathematics learning meaningful and joyful.

At the end of the course, participants should be able to:

1. Explain the characteristics of STEM education,
2. Design STEM activities for mathematics teaching and learning,
3. Produce STEM teaching materials

During the course, the participant will develop (1) a STEM model for teaching and learning, (2) a lesson plan, (3) learning materials for STEM, (3) an action plan (what they will do after returning to their institution or country), and (4) final report.

The contents of the course are as follow.

1. Current Issues and Trends in Mathematics Education
2. Rationale of STEM Education
3. Engineering Design Process
4. STEM Activities
5. STEM for Global Citizenship
6. Mathematics in Context
7. Problem-Solving in STEM Education
8. Mathematical Modelling
9. Assessment in STEM
10. Hypothetical Learning Trajectory

11. Computational Thinking
12. Mathematical Literacy
13. Digital Mathematics Environment
14. Practical Mathematics
15. Developing and Implementing Lesson Plans at School
16. Publishing report and Designing Follow up Programme

## 6. Differentiated Instruction in Mathematics Education

Differentiated instruction is a teaching theory based on the premise that instructional approaches should vary and be adapted to individual and diverse students in classrooms. Many classes of students with various learning abilities require a teacher capable of designing teaching strategies that accommodate all learning styles.

This course is designed to assist mathematics teachers in designing differentiated mathematics instruction that can improve students' mathematical thinking skills. Furthermore, this course will also facilitate mathematics teachers to improve their ability to design mathematics teaching and learning materials that can nurture the students' positive attitudes toward mathematics.

At the end of the course, participants should be able to:

1. Explain the importance and principles of different teaching approaches in heterogeneous classes,
2. Explain the connection between mathematics problem solving and the development of habits of mind,
4. Produce mathematics teaching and learning materials for differentiated instruction,
5. Select and design appropriate assessment instructions, and
6. Demonstrate the capability to design, implement, and evaluate differentiated instruction.

The contents of the course are as follow.

1. Current Issues in Mathematics Teaching and Learning
2. Concept of Differentiated Instruction
3. Learner Differences in Mathematics Classrooms
4. Designing Differentiated Instruction Activities
5. Assessment in Differentiated Instruction
6. Utilization of Technology in Mathematics Teaching and Learning
7. Problem-Solving in Mathematics Classrooms
8. Implementation of Differentiated Instruction at School
9. Publishing Report and Designing Follow up Programme

## 7. Developing Lesson Study in Mathematics Education

Lesson Study is a well-known approach that originated in Japan for action research in the classroom by teachers. It is an effective model for teachers to join their activities to improve their teaching. This approach emphasises improving students' mathematical thinking, which involves three steps, **Plan-Do-See**.

In this course, participants can conduct lesson study in school collaboratively by practising the **plan-do-see** steps.

1. **Plan:** Participants and facilitators work collaboratively to develop lesson plan;
2. **Do:** A model teacher implements the lesson plan in a real classroom while others (teachers, headmaster, and facilitators) observe the lesson; and
3. **See:** The teacher and observers conduct lesson evaluation and reflection.

At the end of the course, participants should be able to:

1. explain the concept of lesson study,
2. implement lesson study,
3. establish a system for the proposed lesson study activities, and
4. monitor and evaluate lesson study activities.

The contents of the course are as follow.

1. Current Issues and Trends in Mathematics Education
2. Concepts and Principles of Lesson Study
3. Enhancing Mathematics Teaching and Learning through Lesson Study
4. Learning and Observation Perspectives in Lesson Study
5. Hypothetical Learning Trajectory
6. Post-Lesson Discussion in Lesson Study
7. Establishing and Sustaining Lesson Study Processes
8. Exemplary Lesson Plan, Teaching Material, Worksheet, and Evaluation Sheet
9. Redesigning Lesson in Lesson Study
10. Problem Solving Approach
11. Mathematical Thinking
12. Computational Thinking
13. STEM Education
14. Research-proven Pedagogy
15. Integrating Technology in Mathematics Teaching and Learning
16. Designing Instructions based on Cognitive Load Theory
17. Preparing lesson study activity (**Plan**)
18. Implementation of lesson study at school (**Do & See**)
19. Publishing reports and designing follow up programme

## 8. Clinical Supervision in Mathematics Education

Having strong educational leadership is known to be a major factor in improving student learning. By providing vision and development opportunities, educational leaders can help facilitate the conditions necessary for teachers to perform at their best.

Realising that to improve the quality of mathematics education in Southeast Asia, there need to be strong leaders, SEAQiM developed the course on Clinical Supervision.

This course aims to advance the skills of educational leaders in clinical supervision. This includes skills in (1) developing professionalism, (2) monitoring teaching quality, and (3) developing motivation. The Clinical Supervision course requires participants to have knowledge of mathematics education and be in a leadership role (e.g. school principal, head of mathematics, etc.).

At the end of the course, participants should be able to:

1. Explain the current trends in mathematics teaching,
2. Explain methods suitable for teaching a particular mathematics topic,
3. Explain the importance of clinical supervision in mathematics education,
4. Design a supervision programme for clinical supervision in mathematics education,
5. Produce instruments required in the clinical supervision process,
6. Conduct clinical supervision to improve the quality of mathematics education.

The contents of the course are as follow.

1. Current Issues in Mathematics Teaching and Learning
2. Concept and Theory of Academic Supervision
3. Basic Concept of Clinical Supervision
4. Basic Knowledge of Mathematics Instructions
5. Implementation of Clinical Supervision in Mathematics Teaching and Learning
6. Implementation of Clinical Supervision in Schools (School Try Out)
7. ICT Utilisation in Improving Supervisor's Competences
8. School Action Research
9. Understanding SEAMEO Countries Cultures



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 Phone: +62274889955, Fax: +62274887222, Email: [secretariat@qitepinmath.org](mailto:secretariat@qitepinmath.org)  
 Website: [www.qitepinmath.org](http://www.qitepinmath.org)



**Application form**  
**(name of the Course)**

Photo 3x4 cm

Name	:	_____
Sex (male/female)	:	_____
Date and Place of Birth	:	_____
Designation	:	_____
Home Address	:	_____
Mobile / Whatsapp Number	:	_____
Email	:	_____
<b>Institution</b>	:	_____
Address	:	_____
Phone Number	:	_____
Email	:	_____
<b>Contact in case of emergency</b>	:	_____
Name	:	_____
Relationship	:	_____
Mobile / Whatsapp Number	:	_____
Email	:	_____

\_\_\_\_\_, \_\_\_\_\_ 2023

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แบบฟอร์มรายละเอียดผู้สมัครทุนฝึกอบรมของศูนย์ระดับภูมิภาคว่าด้วยการพัฒนาคุณภาพครู  
และบุคลากรทางการศึกษาด้านคณิตศาสตร์ของซีมีโอ ประจำปี ๒๕๖๖

๑. เหตุผลที่ประสงค์สมัครเข้าร่วมโครงการ \_\_\_\_\_  
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๒. ระยะเวลาในการปฏิบัติงาน \_\_\_\_\_ ระดับชั้นที่สอน \_\_\_\_\_

๓. ความสามารถพิเศษอื่นๆ

๓.๑ ภาษาอังกฤษ

การฟัง	<input type="checkbox"/> ดีมาก	<input type="checkbox"/> ดี	<input type="checkbox"/> ปานกลาง	<input type="checkbox"/> พื้นฐาน
การพูด	<input type="checkbox"/> ดีมาก	<input type="checkbox"/> ดี	<input type="checkbox"/> ปานกลาง	<input type="checkbox"/> พื้นฐาน
การอ่าน	<input type="checkbox"/> ดีมาก	<input type="checkbox"/> ดี	<input type="checkbox"/> ปานกลาง	<input type="checkbox"/> พื้นฐาน
การเขียน	<input type="checkbox"/> ดีมาก	<input type="checkbox"/> ดี	<input type="checkbox"/> ปานกลาง	<input type="checkbox"/> พื้นฐาน

ผลการสอบวัดระดับความรู้ภาษาอังกฤษ (หากมี) (โปรดแนบหลักฐานประกอบ) \_\_\_\_\_

๓.๒ คอมพิวเตอร์

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๓.๓ ทักษะหรือประสบการณ์อื่นๆ (โปรดระบุ)

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ผู้บังคับบัญชาลงนาม \_\_\_\_\_

ชื่อ \_\_\_\_\_

ตำแหน่ง \_\_\_\_\_