

Guide Book

REGULAR COURSE ON

Integrating ICT in Mathematics Education for Senior High School Mathematics Teachers

Yogyakarta, 6-19 Agustus 2026

FOREWORD

SEAMEO Regional Centre for Quality Improvement of Teachers and Education Personnel (QITEP) in Mathematics is a centre under the Southeast Asian Ministers of Education Organization (SEAMEO) launched on July 13, 2009. SEAMEO QITEP in Mathematics deals with developing capacity building for mathematics teachers and education personnel (supervisors, headmasters, and administration staff).

In line with its commitment to enhance the quality improvement of mathematics teachers and education personnel in Southeast Asia, the Centre will carry out a Regular Course On Integrating ICT in Mathematics Education for Senior High School Mathematics Teachers on 6 - 26 Agustus 2026.

This guidebook provides brief information on the objectives, program structures, course syllabus, schedule, participants, committee, and facilitators of the training. We hope you enjoy the course and be actively involved in all course programmes.

Yogyakarta, July 2026
Director

Dr. Sri Wulandari Danoebroto
NIP. 197310082002122001

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SEAMEO Regional Centre for QITEP in Mathematics

Vision

To be a centre of professional leadership in mathematics education for teachers and education personnel within the framework of sustainability.

Mission

To provide quality professional mathematics education and services for teachers and education personnel in SEAMEO Member Countries.

Values

1. Innovation
2. Professionalism
3. Service Quality
4. Global thinking
5. Inspirational Leadership

Motto

“Learning Mathematics Joyfully and Meaningfully”

Goals

1. To provide high quality education relevant to 21st century skill teaching capability
2. To establish extensive networks and collaboration, information exchange and best practice sharing in mathematics education among SEAMEO Member Countries
3. To conduct research and development in mathematics education
4. To provide intellectual forums on mathematics education innovation
5. To provide policy maker with up-to-date data and information on mathematics education

Regular Course On Integrating ICT In Mathematics Education for Senior High School Mathematics Teachers

Introduction

Technology is essential to teaching and learning mathematics; it shapes the mathematics taught and significantly enhances students' learning when used prudently. As the educational landscape evolves into an era increasingly driven by artificial intelligence and advanced computational tools, technology continues to transform the classroom. However, it cannot replace the mathematics teacher, nor can it substitute for basic mathematical understandings and intuitions. Educators now have the opportunity to leverage dynamic applications, programming elements, and data-driven platforms not merely to replace traditional methods, but to make complex abstract concepts more accessible and to foster essential computational thinking.

Effective integration, however, requires a robust pedagogical foundation. It is crucial for educators to understand how students construct mathematical knowledge and to align digital tools seamlessly with those learning trajectories. While modern technology empowers teachers by streamlining lesson preparation and enabling personalized, automated feedback, the human element remains irreplaceable. Teachers must strike a delicate balance, using technology purposefully while continuing to act as facilitators and mentors who connect digital activities to meaningful, real-world applications and collaborative, logical reasoning.

In response to these evolving educational demands, the SEAMEO Regional Centre for QITEP in Mathematics designs the Course on Integrating ICT in Mathematics Education. This programme is strategically designed to equip Southeast Asian mathematics teachers with the essential skills to seamlessly integrate modern digital tools, coding principles, and AI capabilities into their instructional strategies. Through this course, teachers are introduced to joyful, meaningful approaches to technology integration, empowering them to nurture the next generation of problem solvers equipped with the 21st-century skills needed for future workplaces.

Regulation Base for Conducting the Training

The course is a budget-sharing activity funded by the Government of Indonesia through DIPA-138.01.1.693186/2026, 1 December 2025. It is carried out based on the Director of SEAMEO QITEP in Mathematics Decree about the Regular Course on STEM for Mathematics Learning for Primary School Teachers No. 230/QIM.1.1/SK.1/2026, 10 July 2026.

Objectives

At the end of the course, participants are expected to:

1. provide participants with comprehensive knowledge and hands-on experience in integrating modern ICT and advanced digital tools into mathematics lessons;

2. equip participants with the necessary pedagogical frameworks to effectively design, structure, and evaluate technology-enhanced instruction;
3. enhance the competencies of participants in curating, customizing, and developing interactive digital learning media for the mathematics classroom;
4. provide participants the opportunity to collaboratively design comprehensive, technology-integrated mathematics lesson plans tailored for the senior high school level; and
5. provide participants with the opportunity to implement and reflect on their developed ICT-based lessons through structured peer teaching and real classroom teaching.

Expected Outputs

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

1. demonstrate enhanced professional competence through a comprehensive understanding of pedagogical frameworks and the practical ability to integrate modern ICT and advanced digital tools into mathematics education;
2. curate and develop functional and interactive digital instructional materials specifically designed to support meaningful mathematics learning;
3. collaboratively design well-structured, technology-integrated mathematics lesson plans tailored for the senior high school level; and
4. implement, evaluate, and reflect on their developed ICT-based lessons through structured peer teaching and real classroom teaching sessions.

Date and Time

Date : 6 – 19 August 2026

Time : 07.30 – 17.00 (GMT + 7)*

Venue : SEAQiM Conference Room, 2nd Floor, Yogyakarta, Indonesia

Programme Structure

TOPICS		HOURS
GENERAL COMPONENTS		
1	Introduction to SEAMEO	1
2	Current Issues and Trends in Mathematics Education	3
CORE COMPONENTS		
Integrating ICT in Mathematics Education		
3	Technological Pedagogical Content Knowledge	4
4	How to Teach and Learn Algebra and Geometry with Mathematics Application	6

5	How to Teach and Learn Statistics and Probability with Mathematics Application	6
6	Applying Mathematical Concepts through Coding and AI	6
7	Utilizing AI and the Art of Prompting for Effective Mathematics Teaching	6
8	Simple programming and Coding in Mathematics Classroom	6
9	Assessment in Mathematics Learning using ICT	6
10	Designing Learning Media Using ICT	6
Enrichment		
11	Hypothetical Learning Trajectory	4
12	Computational Thinking for Robot Programming	6
13	Game for Mathematics Teaching	6
Mathematics Lesson in Schools		
15	Developing Lesson Plan	9
16	Peer-teaching	5
17	Real-teaching	5
18	Reflection	4
19	Writing Group Report	4
SUPPORTING COMPONENTS		
20	Pre-test and Post-test	2
21	Designing Individual Action Plan	3
22	Understanding SEAMEO Culture	2
TOTAL		100

Learning Methods

The course employs various methods, including exposition, discussion, inquiry, presentation, and practical work.

Rights

All participants are given course materials under conditions applied by the facilitators and the Centre.

Obligation

All participants are expected to:

1. be properly dressed;
2. attend all classes and be present 10 minutes before the session start;
3. fill in the form of attendance list in every day;
4. actively participate in the session;

Certificate Eligibility

All participants will be assessed based on progress gained from pre-test to posttest, engagement during the learning process, practical work, and completion of assignments. Only participants with completion of all the assignments will be eligible to receive the certificate.

Personal List**Participants**

The participants consist of 31 Primary School teachers from Southeast Asia as follows:

No	Name	Institution	Province/Country
1	Mrs. Kong Dary	Hun Sen Chhouk High School	Cambodia
2	Mr. Salongsay SAYYASA	National Gifted Secondary School of Laos	Lao PDR
3	Ms. Salbiah binti Rafie	Sekolah Menengah Kebangsaan Pusat Penyelidikan Pertanian Tun Razak	Malaysia
4	U Kyaw Thiha Swe	BEHS (Branch) - Aung Zan Kwin	Myanmar
5	Mr. Rommel Antonio	Biñan Integrated National High School – Senior High School Department	Philippines
6	Ms. Lattaporn Hatthasin	Bangkok College of Business Administration and Tourism	Thailand
7	Anisa Rara Tyaningsih	SMAN 57 Jakarta	DKI Jakarta
8	Cici Dwi Saputri	SMAN 2 Kota Blitar	Jawa Timur
9	Dewi Ranti	SMKN 5 Kota Bekasi	Jawa Barat
10	Evie Dwy Wahyu Arista	SMAIT Baitul Muslim Lampung Timur	Lampung
11	Furi Asfiatul Ain	SMA Negeri 1 Sidayu	Jawa Timur

No	Name	Institution	Province/Country
12	I Made Subandiarta	SMA Negeri 3 Kotamobagu	Sulawesi Utara
13	Merlina Situmeang	SMA Negeri 3 Fatuleu Tengah	Nusa Tenggara Timur
14	Muhammad Nur Fariza	MAN 2 Magelang	Jawa Tengah
15	Ni Made Dewi Ermawati	SMK Negeri 2 Tabanan	Bali
16	Nisa Rachmi Istiqomah	SMA Negeri 3 Sidoarjo	Jawa Timur
17	Nunik Indayani	SMAN 1 Kraksaan	Jawa Timur
18	Nurul Audhifa Utami	SMA Negeri 1 Ampek Angkek	Sumatera Barat
19	Putri Maulina	SMA Negeri 1 Samalanga	Aceh
20	Ranti Widiastuti	SMKN 3 Kolaka Timur	Sulawesi Tenggara
21	Rizki Alam	MAN Barito Utara	Kalimantan Tengah
22	Seto Marsudi	SMAN 20 Jakarta	DKI Jakarta
23	Siti Maimunah	SMK NEGERI 4 Jember	Jawa Timur
24	Surya Wiranto Jati	SMAS Darul Hikam Internasional	Jawa Barat
25	Tita Ayu Kartika	SMA Negeri 1 Purwokerto	Jawa Tengah
26	Untung Supriyono	SMK Negeri 2 Pekalongan	Jawa Tengah
27	Viky Risnanda Arif	SMAN 1 Grati	Jawa Timur
28	Yuli Mulyana	SMA Negeri 1 Maos	Jawa Tengah
29	Yusdi Faruliansyah	SMA Negeri 1 Cianjur	Jawa Barat
30	Tuning Muliariati	SMKN 1 Tulung	Jawa Tengah

Facilitators

No	Name	Institution	Email
1	Mr. Artorn Nokkaew, Ph.D	Naresuan University, Thailand	artornn@nu.ac.th
2	Ms. Suparat Chuechote, M.Sc	Naresuan University, Thailand	chuechote@gmail.com
3	Dr. Lulu Choirun Nisa, S.Si., M.Pd.	UIN Walisongo Semarang	lulu.choirunnisa@walisongo.ac.id

No	Name	Institution	Email
4	Rizky, M.Kom.	AMIKOM, Yogyakarta	samrizky@amikom.ac.id
5	Dr Sri Wulandari Danoebroto	SEAQiM	danoebrosriwulandari@gmail.com
6	Jatnika Herwaman, Ph.D	SEAQiM	emailjatnika@gmail.com
7	Bungkus Dias Prasetyo	SEAQiM	bungkusdias@staff.qitepinmath.org
8	Gusnandar Yoga Utama	SEAQiM	gusnandaryogautama@gmail.com

Committee

No	Name	Email
1	Febriarto Cahyo Nugroho	febriart@gmail.com
2	Tika Setiawati	tika.qim@gmail.com
3	Tri Budi Wijayanto	trbdwijayanto@gmail.com
4	Rini Handayani	handayani_rinie@yahoo.co.id
5	Eko Nugroho	ekonugroho17@gmail.com

Tentative Schedule

**Tentative Schedule of
Regular Course on Integrating ICT in Mathematics Education for Senior High School Mathematics Teachers
SEAMEO Regional Centre for QITEP in Mathematics
Yogyakarta, 6- 19 August 2026 (100 hours @ 45 minutes)**

No	Week 1 (GMT + 7)	Thu, 06-Aug, 2026	Fri, 07-Aug, 2026	Sat, 08-Aug, 2026	Mon, 10-Aug, 2026	Tue, 11-Aug, 2026	Wed, 12-Aug, 2026
1	07:30 - 08:15	Pre Test Bungkus Dias	How to Teach and Learn Algebra and Geometry with Mathematics Application Dr. Artorn Nokkaew	Applying Mathematical Concepts through Coding and AI Dr. Suparat Chuechote	Game for Mathematics Teaching Rizky, M.Kom.	Utilizing AI and the Art of Prompting for Effective Mathematics Teaching Dr. Lulu Choirun Nisa	Assessment in Mathematics Learning using ICT Dr. Lulu Choirun Nisa
2	08:15 - 09:00	Opening Ceremony COM					
3	09:00 - 09:45	Introduction to SEAMEO Bungkus Dias					
	09:45 - 10:00						
4	10:00 - 10:45	Technological Pedagogical Content Knowledge	How to Teach and Learn Statistics and Probability with Mathematics Application	Applying Mathematical Concepts through Coding and AI	Game for Mathematics Teaching	Utilizing AI and the Art of Prompting for Effective Mathematics Teaching	Assessment in Mathematics Learning using ICT
5	10:45 - 11:30	Dr. Artorn Nokkaew	Dr. Suparat Chuechote	Dr. Suparat Chuechote	Rizky, M.Kom.	Dr. Lulu Choirun Nisa	Dr. Lulu Choirun Nisa
6	11:30 - 12:15		Friday Prayer				
	12:15 - 13:30						
7	13:30 - 14:15	Technological Pedagogical Content Knowledge Dr. Artorn Nokkaew	How to Teach and Learn Statistics and Probability with Mathematics Application	Designing Action Plan Bungkus Dias	Current Issues in Mathematics Education Dr Sri Wulandari Danoebroto	Simple programming and Coding in Mathematics Classroom Bungkus Dias	Simple programming and Coding in Mathematics Classroom Bungkus Dias
8	14:15 - 15:00	How to Teach and Learn Algebra and Geometry with Mathematics Application Dr. Artorn Nokkaew		Writing report Bungkus Dias			
	15:00 - 15:30						
9	15:30 - 16:15	How to Teach and Learn Algebra and Geometry with Mathematics Application	How to Teach and Learn Statistics and Probability with Mathematics Application		Current Issues in Mathematics Education Dr Sri Wulandari Danoebroto	Simple programming and Coding in Mathematics Classroom Bungkus Dias	Simple programming and Coding in Mathematics Classroom Bungkus Dias
10	16:15 - 17:00	Dr. Artorn Nokkaew	Dr. Suparat Chuechote				

No	Week 2 (GMT + 7)	Thu, 13-Aug, 2026	Fri, 14-Aug, 2026	Sat, 15-Aug, 2026	Mon, 17-Aug, 2026	Tue, 18-Aug, 2026	Wed, 19-Aug, 2026
1	07:30 - 08:15	Computational Thinking for Robot Programming Gusnandar Yoga	Developing Lesson Plan Academic Team	Developing Lesson Plan Academic Team	Independence Day Ceremony	Real-teaching Preperation Com	Writing Group Report Bungkus Dias
2	08:15 - 09:00			Designing Learning Media Using ICT		Real-teaching Academic Team	
3	09:00 - 09:45			Academic Team		Academic Team	
	09:45 - 10:00						
4	10:00 - 10:45	Computational Thinking for Robot Programming Gusnandar Yoga	Developing Lesson Plan	Designing Learning Media Using ICT Academic Team	Peer-teaching Academic Team	Real-teaching Academic Team	Understanding SEAMEO Culture
5	10:45 - 11:30		Academic Team				Bungkus Dias
6	11:30 - 12:15		Friday Prayer				Closing Ceremony
	12:15 - 13:30						
7	13:30 - 14:15	Hypothetical Learning Trajectory Dr Sri Wulandari Danoebroto	Developing Lesson Plan Academic Team	Designing Learning Media Using ICT Academic Team	Peer-teaching Academic Team	Reflection Academic Team	
8	14:15 - 15:00			Designing Individual Action Plan Academic Team	Reflection Academic Team		
	15:00 - 15:30						
9	15:30 - 16:15	Hypothetical Learning Trajectory Dr Sri Wulandari Danoebroto	Developing Lesson Plan Academic Team	Designing Individual Action Plan Academic Team	Reflection Academic Team	Post-Test Bungkus Dias	
10	16:15 - 17:00						



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