NEW HORIZONS: EXPLORING THE POSSIBILITIES OF STUDY ABROAD IN THE CONTEXT OF A "NEW NORMAL"

AIT-BUDAPEST

BSM
BUDAPEST SEMESTERS IN MATHEMATICS

MSSG
MATHEMATICAL SCIENCES SEMESTERS
IN GUANAJUATO MÉXICO

MATH IN MOSCOW

BSME
BUDAPEST SEMESTERS IN MATHEMATICS EDUCATION

AIT-BUDAPEST

AQUINCUM INSTITUTE OF TECHNOLOGY

Creativity in Computer Science & Software Engineering

Design - Entrepreneurship - Foundations - Computational Biology

Program Overview

- Foundations of CS, Applications, Design, Entrepreneurship, Humanities, Hungarian language
- Approximately 70 students/semester
- World-class faculty (Erno Rubik, Peter Szeredi, …)
- Classes sizes: 10-15 students
- Program under academic auspices of BME, world's oldest institute of technology

AIT-BUDAPEST

AQUINCUM INSTITUTE OF TECHNOLOGY

Academic Program (sample)

- Foundations
  - Algorithms, theory of computation, combinatorial optimization, logic programming, quantum probability and logic
- Applications
  - Deep learning, cryptography, computational biology
- Creative design
  - Design workshop, leadership and entrepreneurship
- Humanities
  - Budapest studies, Hungarian music, Hungarian cinema

- Most students from liberal arts colleges
  - Grinnell, Bryn Mawr, Dartmouth, Carleton, Smith, Pomona, Harvey Mudd, Davidson, Middlebury, Williams, Wesleyan, Mt. Holyoke, Whitman
- Some large universities
  - U. Washington, U. Rochester, Arizona State, Cornell
- Background
  - Proof-based math course
  - Programming course

AIT-BUDAPEST

AQUINCUM INSTITUTE OF TECHNOLOGY

Student Life

- Students live in apartments in the heart of the city
- Dedicated AIT staff
- Organized excursions

AIT-BUDAPEST

AQUINCUM INSTITUTE OF TECHNOLOGY

Web search: AIT Budapest

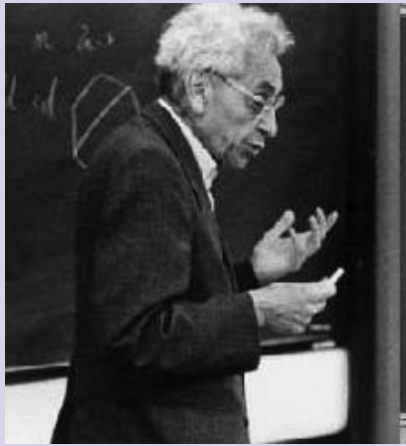
Budapest Semesters in Mathematics Education

Ryota Matsuura
BSME North American Director

bsmeducation.com

BSME

Mathematics Education in Hungary



Paul Erdős

Vera Sós

George Pólya

(How do they do it? Glad you asked!)

Hungarian Mathematics Pedagogy

1. Problem solving and excitement of discovery.
2. Freedom to argue and to make (and learn from) mistakes.
3. Viewing math as a whole discipline, stressing connections.
4. Teacher's role: motivator and facilitator.

Budapest Semesters in Mathematics Education

- Semester-long (or summer) program in Budapest, for undergrads and recent grads interested in teaching secondary mathematics.
- **Goal:** To experience and study the *Hungarian pedagogy*.

bsmeducation.com

BSME

BSME Approach

- Learn mathematics through the Hungarian pedagogy.
- Observe Hungarian mathematics classrooms.
- Teach their own lessons to Hungarian students.

BSME Courses

- Practicum: Experiencing the Hungarian Approach through Observation and Teaching
- Discovery Learning: The Pósa Method
- Teaching Geometry through Problem Solving
- Gamification and Playfulness in Teaching Mathematics
- Directed Research: Discovery Learning in Secondary Schools

Budapest!

bsmeducation.com

BSME

BSME welcomes students who are:

- Pursuing mathematics teaching license.
- Planning to pursue other paths to licensure.
- Simply curious about learning and teaching.

bsmeducation.com

BSME

Contact Information

- Email: bsme@bsmeducation.com
- For more information and online application:

bsmeducation.com

CIMAT

MATHEMATICAL SCIENCES SEMESTERS

IN GUANAJUATO MÉXICO

STUDY ABROAD IN APPLIED MATHEMATICS

GUANAJUATO CAPITAL - GTO, MEXICO

CIMAT: CENTRO DE INVESTIGACIÓN EN MATEMÁTICAS

- Research Center founded in 1980
- Pure & applied Mathematics, Probability & Statistics, Computer Sciences
- Undergraduate, Masters & Doctoral programs
- Rich academic atmosphere on campus

MATHEMATICAL
SCIENCES SEMESTERS
IN GUANAJUATO MÉXICO

MATHEMATICAL SCIENCES SEMESTERS IN GUANAJUATO

MSSG is an international study abroad program open to undergraduate students with a strong grounding in Mathematics who want to increase their knowledge of **data science, modeling, mathematical finance and partial differential equations** from a comprehensive, forward-looking, and cutting-edge perspective while acquiring a solid theoretical foundation.

MATHEMATICAL SCIENCES SEMESTERS IN GUANAJUATO

TOTAL IMMERSION: MATHEMATICS & MEXICAN CULTURE

- **Up-to-date,** applications-oriented curriculum taught in English
- **Credits transferable with CIMAT transcript**
- **Small study groups** of highly-motivated students
- **Individual attention** to every student (TA & Academic Tutor)
- **Peer Ambassadors** to support social & cultural integration
- **Cultural Immersion:** Spanish language and Mexican culture courses
- **Academic Immersion:** Rich academic environment with opportunities to encounter mathematics applied across many areas of research.

STUDENT SUPPORT & PREPARATION

- Pre-Departure support
- On-site Orientation (Health & Safety)
- 24/7 health professionals on call
- Mental Health Support available
- 24/7 support for emergencies
- Support in housing placement
- Peer Mentors & Student Community

STUDENT LIFE IN GUANAJUATO

- A great city to learn Spanish
- Walkable
- Friendly & warm
- Amazing climate!
- Traditions & Heritage
- Cosmopolitan & Diverse - Vibrant Art & Cultural scene
- University town: Opportunities for trying new things
- Close to San Miguel de Allende

MATHEMATICAL SCIENCES SEMESTERS IN GUANAJUATO

SEMESTER-BASED PROGRAMMING: 14 WEEKS

FALL: Mathematical Tools for Modeling
SPRING: Mathematical Tools for Data Science

SUMMER SHORT-COURSES: 3 WEEKS

Mathematical Finance
Differential Equations, Modeling & Computing Simulation
A Journey through Data Science

MSSG SUMMER 2022: SHORT-COURSE SERIES

Short-term, intensive study abroad programs designed for STEM majors

- **Join a small, diverse cohort** of students in a dynamic and collaborative learning atmosphere.
- **Engage with real-world applications of mathematical concepts**
- **Broaden your horizons** through mini language, culture and arts workshops throughout your visit in the beautiful colonial city of Guanajuato Capital.

COURSE OPTIONS

DIFFERENTIAL EQUATIONS, MODELING & COMPUTING SIMULATION

MATHEMATICAL FINANCE

A JOURNEY THROUGH DATA SCIENCE

MATHEMATICAL SCIENCES SEMESTERS IN GUANAJUATO MÉXICO

Centro de Investigación en Matemáticas, A.C.

CIMAT

LEARN MORE:

PROGRAM DATES

Session One: May 29th to June 19th
Session Two: June 26th to July 17th

DEADLINE TO APPLY

March 18, 2022

CONTACT US FOR MORE INFO: mathsciencesgto@cimat.mx

WHO ARE OUR STUDENTS?

UNDERGRADUATE STUDENTS WHOSE MAJORS/MINORS INVOLVE MATHEMATICS, STATISTICS, DATA SCIENCE OR COMPUTER SCIENCE. THOSE WHO ARE LOOKING TO LEARN ABOUT

HAVE SUCCESSFULLY COMPLETED:

- Linear Algebra
- Differential, Integral and Multivariate Calculus
- Programming experience
- Experience with proof writing (fall)

CONTACT US:

mathsciencesgto@cimat.mx

TO APPLY:

https://mathsciencesgto.cimat.mx

BSM

BUDAPEST SEMESTERS IN MATHEMATICS

The Program

- A program for undergraduate math majors to study mathematics in Budapest, Hungary.
- One semester (Fall or Spring) or a full year or Summer
- Classes in English
- Designed for juniors and seniors
- Classes are small (10-20)
- Average 65-75 students per semester

The Program, continued…

- Students come from roughly 40 different institutions each semester
- Instructors are members of Eötvös University or the Mathematical Institute of the Hungarian Academy of Sciences
- Most instructors have experience teaching North American students

Living in Budapest

- Students may live in furnished apartments (with other BSM students) throughout the city.
- Budapest is an easy city to navigate with excellent public transportation.
- The school where classes are held is centrally located in historic Budapest.

Academics

- 15 week semesters
- Courses meet 2 to 3 times per week and may be taken Graded or Audit
- Classes stress problem solving and fostering student creativity and group learning
- Hungarian language and culture classes satisfy many home school requirements
- Optional intensive Hungarian language course prior to the semester

Sample Courses

- Abstract Algebra
- Combinatorics
- Complex Functions
- Conjecture and Proof
- Differential Geometry
- Graph Theory
- Galois Theory
- Probability Theory
- Mathematical Problem Solving
- Number Theory
- Set Theory
- Introduction to Topology
- Real Functions and Measures
- Topics in Analysis

Applicant profile

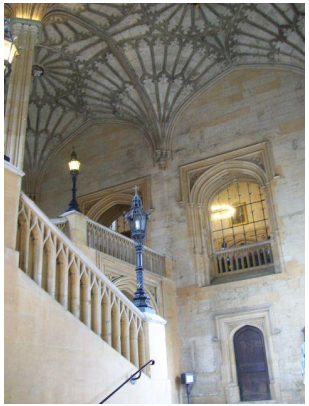
- Must have at least second year status
- Must have completed a first theory course in analysis or abstract algebra
- Should be highly motivated to study mathematics
- Independent and passionate about academics
- Average home school GPA is 3.7

Opportunities for students

- Students can take the Putnam Exam in December.
- Students can take the GRE while in Budapest.
- Opportunities to participate in research with Hungarian Scholars.
- Chance to meet Hungarian students through social activities.
- Travel (in and around Hungary)

Application process

- Fall semester deadline: April 1
- Spring semester deadline: October 15
- Summer Program: March 1



- Fill out an online application
- Provide an official transcript
- Provide two letters of recommendation

- Find application materials and contact information at www.budapestsemesters.com

„Math in Moscow“ Semester program

https://mathinmoscow.org/

Founded in 2001.

Over 400 students from 200 universities have participated in the program;

Over 100 of them have already got their PhD degrees.

Sping 2022 and Fall 2022 semesters – online instruction.

Classes

The courses are taught in English;

The groups are very small (2-8 students);

Proof-based courses;

A lot of students have valued the program as an excellent preparation for a graduate school.

Courses

Elementary courses	
Advanced Linear Algebra	Non-Euclidean geometry
Basic Algebra	Ordinary Differential Equations
Combinatorics	Programming: from an Art to a Science
Geometric Foundations of Analysis	Topology I

Intermediate courses	
Advanced Algebra	Computability and Complexity
Algebraic Geometry: start-up course	Differential Geometry
Algebraic Number Theory	Dynamical Systems
Basic Representation Theory	Knot Theory
Calculus on Manifolds	Topology II: Introduction to Homology and Cohomology Theory
Complex Analysis	

Advanced courses	
Equations of Mathematical Physics	Mathematical Catastrophe Theory
Introduction to Commutative and Homological Algebra	Riemann Surfaces

Non-mathematical courses	
Russian Language I	Russian Literature
Russian Language II	

Ask our alumni

ABOUT ▾ GENERAL INFORMATION ▾ APPLY ▾ CURRENT SEMESTER ▾ ALUMNI ▾ CONTACT US

Ask Our Alumni

Home / Ask Our Alumni

We are very grateful to our recent alumni who have agreed to answer to our prospective students individual questions about their MiM experience. Below you will find their contact data. Please email all other questions and requests at mim@mccme.ru.

	Name	E-mail address	Home university	MiM semester(s)
	William Ballard	willballard44@gmail.com	Pomona College	Fall 2020(online), Spring 2021(online)
	Yuanyuan Chen	yuanyuanchu0[illegible]@gmail.com	Beijing Normal University-Hong Kong Baptist University United International College	Spring 2020
	Malcolm Fack	malcolm.otto.fack@gmail.com	Lund University (Sweden)	Fall 2019, Spring 2020
	Caleb Ji	caleb.j@columbia.edu	Washington University in St. Louis	Fall 2019
	[illegible]			

Deadline for the Fall 2022 applications - May 15

Contact us: mim@mccme.ru

https://mathinmoscow.org/

https://www.facebook.com/MathMoscow