



**CIMAT**

**STUDY ABROAD IN  
GUANAJUATO - GTO., MEXICO**

**MATHEMATICAL  
SCIENCES SEMESTERS  
IN GUANAJUATO MÉXICO**





## THANK YOU FOR JOINING US TODAY!

- More about CIMAT
  - Overview of MSSG program
  - MSSG Coursework
  - Electives & Cultural Learning Opportunities
  - Student life & Services
  - General requirements & costs
  - Q & A
- 





## CIMAT: CENTRO DE INVESTIGACIÓN EN MATEMÁTICAS

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





## WHO IS CIMAT?

- 270 Doctoral & Masters Students
- 150 Undergraduate Students (collab. with UGto)
- 20% International Students
- 120+ Researchers



## CIMAT CAMPUS IS HOME TO A WIDE VARIETY OF DIVERSE ACADEMIC EVENTS



## 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 areas such as data science, modeling, mathematical finance or differential equations from a comprehensive, forward-looking, and cutting-edge perspective while acquiring a solid theoretical foundation.



# MATHEMATICAL SCIENCES SEMESTERS IN GUANAJUATO



## INTERNATIONAL EXPERIENCE AND RIGOROUS ACADEMICS

- **Cutting-edge**, applications-oriented curriculum *taught in English*
- Credits transferable with CIMAT transcript
- **Small study groups** of highly-motivated students from diverse backgrounds
- **Cultural Exchange:** Join a cohort of national & international students.
- **Academic Immersion:** Rich academic environment with opportunities to encounter mathematics applied across many areas of research.



# MATHEMATICAL SCIENCES SEMESTERS IN GUANAJUATO

## SEMESTER-BASED PROGRAMMING: 14 WEEKS

**FALL:** Mathematical Tools for Modeling

**SPRING:** Mathematical Tools for Data Science



## SHORT-COURSES: 3 WEEKS

**SUMMER:** Ordinary Differential Equations, Modeling & Computing Simulations

**WINTER:** J-TERM: TBD



# LEARNING OBJECTIVES

SUMMER: ORDINARY DIFFERENTIAL EQUATIONS, MODELING & COMPUTING SIMULATION (3 WEEKS)

The course is on **modeling physical phenomena with ordinary differential equations**. The mathematics of each model is presented. The computational tools for simulation are developed, and models are tested with data.

OVERALL REQUIREMENTS: CALCULUS AND MATRIX ALGEBRA

**Deadline to apply:  
April 7, 2023**



# LEARNING OBJECTIVES

## FALL: MATHEMATICAL TOOLS FOR MODELING (15 WEEKS)

During this semester, we focus on six areas of Mathematics which have had a huge impact on applications: **Algebra, Linear Algebra, Differential Equations, Differential Geometry, Complex Variables, and Probability**. By combining mathematical techniques and computational power, we can tackle problems that were unthinkable a few years ago.

Courseload can be selected from the following titles subject to applicant's makeup:

**Discrete Probability and Simulation**

**Tools for Modeling Dynamics**

**Algebra and its applications**

**Independent Research Project**

**Modeling with Differential Geometry**

**Modeling with Linear Algebra**

**Functions of a Complex Variable**

**Deadline to apply:  
May 15, 2023**

# LEARNING OBJECTIVES

## SPRING: MATHEMATICAL TOOLS FOR DATA SCIENCE (15 WEEKS)

The goal of this semester is to provide students with a solid and rigorous understanding of the subject's core. The study of data science with a truly **multi-disciplinary and sound approach** necessarily involves strong interaction between **statistics, mathematical modeling, pure mathematics and computer science**.

Design of Algorithms

Discrete Mathematics

Probability and Statistics

Numerical Optimization &  
Machine Learning

Geometric & Graphing Tools

+ Leveling course in Python



**Deadline to apply:  
November 1, 2023**

# NON MATHEMATICAL COURSES

- Spanish Language Classes
- Mexican History & Culture

Both of these courses offer a blend of in-classroom learning and experiential learning through activities, tours and excursions to nearby museums, monuments and historical sites.





## CULTURAL & LANGUAGE OPPORTUNITIES

- City Tours
- Hikes & nature activities
- Mexican cooking classes, art & dancing
- Spanish language workshops



## STUDENT LIFE & EXPERIENCE

**A Student's Perspective : *"Fulfilling, novel, diverse"***

**Interview with John Svoboda, a student from the University of Arizona**

***Why did you choose to study abroad with us?***

Perfect combination of my studies in math and economics offered by the MF course. Opportunity to immerse myself in Spanish language. Small group size. Personal investment and connections from staff.

***What do perceive as the greatest benefit(s) gained from this study abroad experience?***

Connections with faculty at CIMAT who are extremely knowledgeable in their work. Friends throughout North and Central America that I could count on to help me if I needed it when visiting their hometowns, and vice versa. I also received a great introduction to MF, an area of coursework I can now see myself pursuing further.

***Would you recommend this program to other students?***

Yes! However, I would warn that some background in Spanish language is extremely helpful given the group dynamics and setting. Definitely not necessary for success in the courses, but will allow you to gain much much more in a cultural sense.



## 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

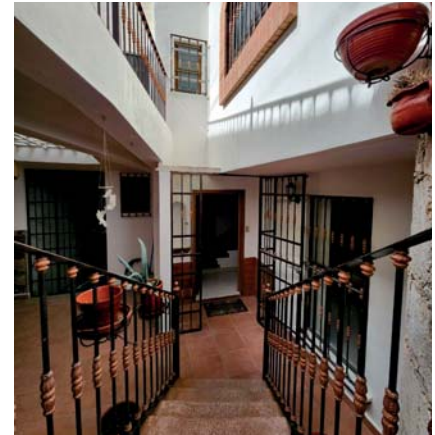




# SEMESTER STUDENT HOUSING

## Independent Student housing

- Proximity.
- Great neighborhood
- Student & Faculty community
- Safe & Comfortable amenities
- Independent room assignments



# SHORT-TERM PROGRAMS

- Students stay at greatly located hotel
- Individual rooms: WIFI and workspace, TV, private bathroom
- Beautiful rooftop garden and patio space for visiting, studying and relaxing
- On-site restaurant with extensive menu



# GENERAL REQUIREMENTS & EXPECTATIONS

**INTENDED MAJOR SHOULD INCLUDE COMPONENTS INVOLVING MATHEMATICS, STATISTICS, DATA SCIENCE OR COMPUTER SCIENCE.**

## **HAVE SUCCESSFULLY COMPLETED:**

- Linear Algebra
- Differential, Integral and Multivariate Calculus
- Programming experience
- Experience with proof writing (fall)
- TOEFL or Cambridge (Equivalent for students whose first language is not English and are not currently enrolled at an English-speaking country higher education institution)

## **TO APPLY:**

- Apply online on our website at <https://mathsciencesgto.cimat.mx>
- Submit current transcript
- 2 letters of recommendation
- Interview

## **EXPECTATIONS:**

- Complete full application and registration process
- Complete virtual orientation
- Enroll & complete a course load of a minimum of three mathematics sciences courses (semesters)



# COSTS & DATES

## 2023 SUMMER PROGRAM:

Program duration: **3 weeks** (June 16th - July 7th, 2023)

- Early bird deadline: March 24th, 2023.<sup>1</sup>
- Final application deadline: April 7th, 2023.
- Tuition fee: \$3100 (plus \$100 paid directly to the healthcare agency, required).

### TUITION INCLUDES

- Lodging (June 15th - July 8th)
- Lunch on campus (Monday - Friday)
- Ground transportation to and from the airport (BJX)
- Ground transportation to and from campus and to activities
- One-to-one 24/7 support from healthcare agency in the city
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## 2023 FALL SEMESTER:

Program duration: **15 weeks** (August 14th - December 1st, 2023)

- Early bird deadline: May 1th, 2023.<sup>1</sup>
- Final application deadline: May 15th, 2023.
- Tuition fee: \$7500 (plus \$250 paid directly to the healthcare agency, required).

### TUITION INCLUDES

- One-to-one 24/7 support from healthcare agency in the city
- Safe & Smart: Orientation and guided tour of the city & local transportation
- Individualized support system (peer mentors, academic mentors)
- Ground transportation to and from the airport (BJX)

<sup>1</sup> There will be a discount of \$100 on the tuition fee to all applications received by this date.

¡Gracias! Thank you for joining us!

CONTACT US:

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