

# Let's Dive Into Math Opportunities Abroad #6

Academics, Scholarships, and... Else?

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Presented with: Komunitas Matematika "Buka Meja"

17 January 2026

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# Agenda

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# Introduction

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## Why Italy?

- Super strong tradition in Mathematics (Algebra, Analysis, Geometry).
- Campuses provides at least two curriculum (Regular, ALGANT). In UNIPD case, MAPPA (I'm here).
- Money money money: Italy = max value to performance!

## Some Culture Shocks

- Most courses have no homework!
- However, get ready to be overwhelmed by lectures!
- Exam is really flexible in here!



*Inilah mY Departemen, Brok*

# Specific Opportunity: The MAPPA Program

## What is it?

- A **Double Degree** Master's programme focused on Mathematical Analysis and Probability.
- **Partners:** University of Padua (Italy) & University Paris Sciences & Lettres (France).

## The Structure (2 Years / 120 ECTS)

- **Year 1:** Padua (60 ECTS)
- **Year 2:** Paris (60 ECTS) + Thesis
- **Language:** Entirely in English.

## Why apply?

- **Double Degree:** Get a *Laurea Magistrale* (UNIPD) AND a *Master en Mathématiques* (PSL).
- **Funding:** Specific scholarships available for the mobility year.
- **Future:** Strong pathway to PhDs or high-level jobs.

<https://mappa.math.unipd.it/>

## **The "Canon Event"**

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# The "Canon Event" of Studying Abroad

## The Universal Truth

Most Indonesian math students abroad experience a "shock" in their first year.

### The Reality Check:

- **Grades:** Getting bad grades (or even failing exams) in the first semester is common.
- **The Gap:** The transition from S1 to S2 in Europe is steep.
- **Rigor:** European math tends to be highly theoretical and abstract compared to the more "primitive" approach often found in S1 (sorry to say).

*"Iya kita bodoh. Belajar sana!"*

# Reality Check: We Are "Cooked"

Core courses in the Indonesian Master's (S2) often correspond to **Bachelor's (Triennale)** courses in Italy.

## UGM Master's (S2)

*(Standard Core/Electives)*

- **Analisis Real**  
(Measure Theory, Lebesgue Integration)
- **Aljabar Lanjut**  
(Field Extensions, Galois Theory)
- **Topologi**  
(General Topology, Fundamental Groups)

→ *Often considered "Advanced" material.*

## UNIPD Bachelor's (Triennale)

*(Official Course Catalogue)*

- **Analisi Reale**  
(Year 3 - Compulsory/Elective Track)
- **Algebra 2**  
(Year 2 - Compulsory)
- **Topologia**  
(Year 3 - General Track)

→ *Expected **prerequisites** for Master's.*

**The Consequence:** If you haven't mastered *Lebesgue Integration* or *Galois Theory* in your S1, you are effectively starting the race 20km behind.

## 1. Stochastic Analysis

- Rigorous probability theory tailored for analysis targeting to Ito's Calculus and Stochastic Differential Equations.

## 2. Functional Analysis

- Covered topological vector spaces, mainly on locally convex space, and linear analysis mixed with some classical functional analysis. This course is not your first Functional Analysis course!

## 3. Functions Theory

- **Focus:** Modern analysis and "Generalized" functions such as Theory of Distributions, Sobolev Spaces ( $W^{k,p}$ ), Geometric Measure Theory (Hausdorff measures), Functions of Bounded Variation (BV).

## 4. Differential Geometry

- Smooth Manifolds, Immersion & Submersion, Tangent Bundles, Vector Fields & Flows, Differential Forms, Lie Derivatives, Integration on Manifolds, Connection Forms.

# How to Survive & Thrive

*After Graduating My S1 (February 2025), I continued grinding using the following resources until September 2025:*

- **ICTP Postgraduate Diploma Programme's YouTube Channel:**
  - My go-to resource. I watched their Real Analysis (full) and Functional Analysis (partially) course. Covers our gap of knowledge to thrive in graduate school. You can apply to their programme as well right now!
- **MIT OpenCourseWare or Similar Platform:**
  - Great for revisiting prerequisites you might have missed in S1 and to find high-quality lecture notes (and also lecture videos)!
- **Other Stuffs:** Look for lecture series from major universities, not just 5-minute tutorials. And also... find a way to find good literatures on your own!

## **A Glimpse of Scholarships in Italy**

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## Examples of Financial Opportunities: Gacor, kang

### 1. MAECI (Ministry of Foreign Affairs) [mY Beasiswa]:

- Covers tuition + monthly stipend + health insurance. Competitive, in 2025 only awards 3 new recipients.

### 2. IYT (Invest Your Talent in Italy):

- Same as MAECI, but additional flavour of vocational training (internships).

### 3. University Merit Scholarship:

- Every campus should have one, they usually cover tuition + monthly stipend + health insurance as well!

### 4. Regional Scholarships (e.g., DSU, ESU):

- Need-based (based on family income/ISEE Parificato).
- **Pro tip:** Almost all Indonesian students qualify for the maximum bracket.

## **Maritime & Catfish**

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# The Side Quest: Maritime & Lele?

## The Maritime Industry in Italy

- Italy is a peninsula with a massive maritime economy, actually.
- From my experience, Italian really love cod, tuna, and salmon!

## Prospek Ternak Ikan Patin in Italy?

- *Is there a market?* Yes, but it's niche!
- *Pangasius* (Patin) is often imported as a cheaper fileted fish option in Europe.
- **Opportunity:** Sustainable aquaculture is growing. If you apply math optimization to fish farming... maybe you've found a gold mine?



Ketemu tempat jual lele coy

## Conclusion

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# Questions?

## Let's Connect:

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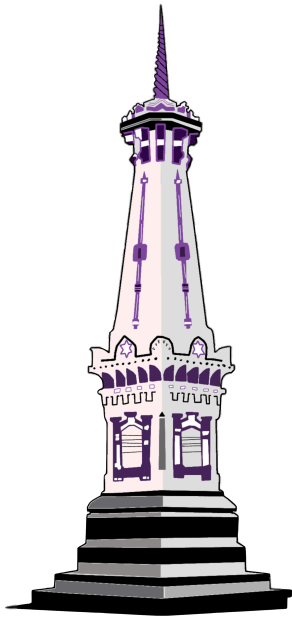
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*We just finished Functional Analysis exam two days ago*



*Terima Kasih*