

# Manuel Alejandro Reyes Jiménez

Mathematics · Teaching · Research

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## RESEARCH

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2026 – present      **PhD student in Applied Mathematics**  
*Universitat Politècnica de Catalunya (UPC) — FME*  
Collatz conjecture and symbolic dynamics. Advisor: Dr. Jaume Franch.

## TEACHING EXPERIENCE

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2018 – present      **Mathematics teacher**  
*Col·legi Maristes Sants—Les Corts (Barcelona)*  
IB Mathematics AI HL and SL, Bachillerato Mathematics, Mathematics 2nd ESO. Cangur preparation. ICT Coordinator (2019–2024).

2011 – 2018      **Mathematics teacher · Head of Studies (Bachillerato)**  
*Escola Meritxell (Mataró)*  
ESO and Bachillerato mathematics. Last two years as Head of Studies for Bachillerato.

## PUBLICATIONS

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2026      **A Fibonacci theorem for Collatz trajectories via modular graph structure**  
*A. Reyes — preprint, arXiv:2606.02621 [math.NT]*

2014      **New conditions to keep static feedback linearizability under addition of new inputs**  
*J. Franch, A. Reyes — 53rd IEEE Conference on Decision and Control (CDC), pp. 5624–5629*

2013      **Differential flatness of a class of n-DOF planar manipulators driven by an arbitrary number of actuators**  
*J. Franch, A. Reyes, S. K. Agrawal — European Control Conference (ECC), pp. 161–166*

## EDUCATION

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2010 – 2012      **MSc in Applied Mathematics**  
*Universitat Politècnica de Catalunya — FME*

2010 – 2011      **MSc in Teacher Training (Mathematics)**  
*Universitat Politècnica de Catalunya — FME*

2004 – 2010      **BSc in Mathematics (Licenciatura)**  
*Facultat de Matemàtiques i Estadística (FME) — UPC*

## LANGUAGES

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Native      **Spanish · Catalan**

Intermediate      **English**  
*B2 level. 9-month Erasmus exchange at the University of Sheffield.*

## TOOLS & SOFTWARE

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Moodle · ClickEdu · Alexia · LaTeX · GeoGebra · Maple · Matlab · C++ · Office 365 · Notion · Generative AI (LLMs)