CURSOS BREVES_ IIFA

The Importance of Polynomials in Numerical Algorithms
Marília Pires
17, 18 e 20 de junho 2025

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Polynomials play a fundamental role in various numerical algorithms, serving as a key tool for

approximating and solving complex problems across multiple areas of mathematics and engineering.

This course explores how polynomials are used to model functions, solve non-linear equations, and improve computational accuracy in numerical methods. We will discuss techniques such as polynomial interpolation and approximation methods. Additionally, we will address the relevance of polynomials in solving systems of linear equations and developing iterative methods. Numerical analysis also benefits from the use of polynomials to minimize errors in mathematical operations and optimize the performance of computational algorithms. These lectures will highlight the versatility and importance of polynomials as a foundation for implementing robust and efficient algorithms, essential for solving real-world problems across various fields of science and technology.

Datas e horário:

Sessão presencial 17, 18 e 20 de junho de 2025 (das 16 h às 18h), sala 155 CLAV

Inscrição:

https://sge.uevora.pt/eventos/ver/1198

Valor da inscrição: 25 euros (os alunos de doutoramento da Universidade de Évora poderão solicitar apoio à respetiva Comissão de Curso do programa de doutoramento para pagamento da inscrição)

Limite máximo de participantes: 40

PROGRAMA DETALHADO DO CURSO

1.Overview

2.The Role of Polynomials in Numerical Methods

3.Approximating Functions by Polinomial

4.Polynomials in Interpolation

5.Polynomials in Numerical Integration and Differentiantion

6.Polynomials in Root-Finding Algorithms

7.Polynomials in Approximation Theory

8.Polynomials in Higher Dimensions

9.The Role of Polynomials in Ordinary Differential Equations

10.The Role of Polynomials in Partial Differential Equations

11.Conclusion

Organização: IIFA

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