



Università
degli Studi
di Palermo

d.m.i
dipartimento di matematica e informatica



COMUNE DI
BISACQUINO

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**Dipartimento
di Matematica
UNIVERSITÀ DEGLI STUDI
DI PALERMO**

Organizzatore:
Prof. Francesco Tulone

WORKSHOP MATH IN MAY

SPEAKERS CHE TERRANNO I CORSI
(ORARIO POMERIDIANO)



FRANCISZEK PRUS-WISNIEWSKI

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Titolo del corso:

Achievement set

Durata: 15 ore

Achievement sets (that is, sets of all subsums of a sequence or a series) are deeply rooted in real analysis, but they keep growing beyond the classic theory interconnecting with other topics like dynamical systems, fractal theory or number theory. The core facts on achievement sets will be presented. Among others, we will cover the Guthrie-Nymann Classification Theorem, the special role of multigeometric series, the quite new and very useful metric invariant which is the center of distances, and also algebraic operations on achievement sets.

PIOTR SWOROWSKI

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Titolo del corso:

Rudiments of Ramsey Theory

Durata: 10 ore

We will explore all the classical pre-Graham book theorems — Schur, van der Waerden, Ramsey, and Erdos-Szekeres — which serve as foundational results in the field. Additionally, we will examine more contemporary breakthroughs, such as Szemerédi's theorem and the Green-Tao theorem on arithmetic progressions, as well as the Hales-Jewett and Hindman theorems, which reveal deeper geometric and set-theoretic structures underlying arithmetic and graph Ramsey-theoretic results. Alongside these existence results, we will also discuss the computational aspects of the theory, including various bounds that address the question of how large a set must be to ensure the presence of specific structures.