

Time Series and M-V Analysis

This module provides methods to develop and critically evaluate multivariate regression models and time series models.

Among the many topics covered are:

- Assumptions underlying multivariate regression and time series models;
- Residual analysis and tests of fit of linear and non-linear models;
- Regression and time series models for prediction;
- Use of SPSS to generate and analyse models.

Module code: STAT8008

CRN: 24521

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Are you a Maths Enthusiast?

Enjoy Maths and like to explore more ?

Love music and curious about how Maths is linked to it?

Interested in advanced Calculus with applications in Engineering?

Want to learn advanced data analysis and forecasting models?

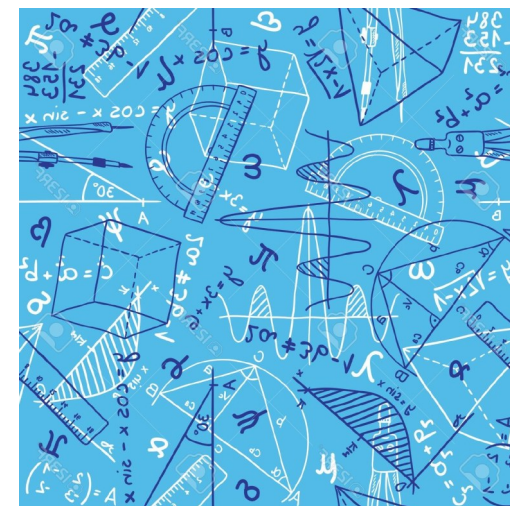
Some of these free choice electives are for you!

Limited places. Register early to avoid disappointment.

<http://mathematics.cit.ie/electives>



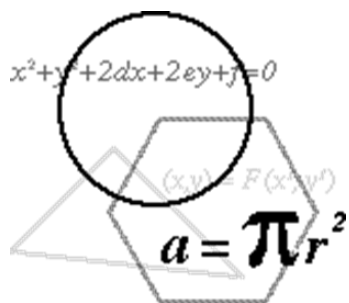
MATHEMATICS



Free Choice

MATHS ELECTIVES

Semester 2



Mathematical Explorations

This module explores how Mathematics is intrinsically linked to the world around us.

Among the many topics covered are:

- Construction of Ratios, Circles and Numbers
- Problem Solving involving Logical thinking
- Study of Famous numbers like π and e
- Maths in Games and Puzzles
- Use of Maple and Geogebra to explore Mathematical things

The module is fun and hopes to take advantage of the participant's innate passion for things mathematical. The student must be willing to actively engage and participate through the weekly labs to make the most of the module.



Module code: MATH6028

CRN: 13968

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Mathematics and Music

What is it that determines musical pitch?

What properties influence how loud music sounds?

What is it that makes the various musical instruments sound so different from one another?



This module is an exploration of some of the many links between Mathematics and Music.

Among the many topics covered are:

- Horizontal and vertical structures in music;
- Mathematical waveforms and their relationship to musical sound;
- Tuning methodologies including the placement of guitar frets;
- The relationship between analogue sounds and their digital counterparts;
- Algorithmic methods of composition.

You'll need a good knowledge of basic mathematics and a basic knowledge of music theory.

Module code: MATH6050

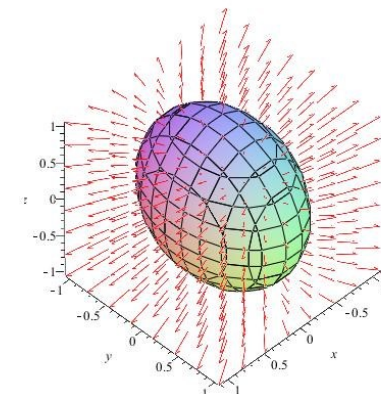
CRN: 24564

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Multivariable Calculus

This module intends to answer the following questions.

- What are the functions of multiple variables geometrically?
- What physical entities do these functions represent?
- What is the mathematics of operations on these entities and how is it applied in engineering?
- Second order partial differential equations: where they arise and how we solve them analytically.
- What is the use of all this in engineering? Plenty of interesting and useful engineering applications will be discussed along the way!



This is an advanced mathematics module. Students should have prior learning of the following topics: basic differentiation and integration; basic partial differentiation; ordinary differential equations.

Module code: MATH8010

CRN: 24255

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