MA4K8-30 Project (Maths in Action)

22/23

Department
Warwick Mathematics Institute
Level
Undergraduate Level 4
Module leader
Tobias Grafke
Credit value
30
Module duration
20 weeks
Assessment
Multiple
Study location
University of Warwick main campus, Coventry

Description

Introductory description

N/A

Module web page

Module aims

The broad aims are: to develop student's ability to communicate mathematics to diverse audiences and to give a deeper appreciation of how mathematics underpins the modern world.

Outline syllabus

This is an indicative module outline only to give an indication of the sort of topics that may be covered. Actual sessions held may differ.

The Maths-in-Action Projects will show how some of the mathematics learnt at Warwick affects contemporary life and technology. Examples of themes that have been used in the past include:
Theme 1: Quantum Computing
Theme 2: Tomography - Imaging our Insides
Theme 3: Evolution

Theme 4: Space Travel
Theme 5: Weather Forecasting
Theme 6: The Human Cell
Theme 7: Virtual Reality
Each theme will be restricted to at a limited number of takers, students state a preference when registering and the department makes allocations based on these preferences and timeliness of registrations.
Students taking a Maths-in-Action project are encouraged, though not obliged, to work in pairs on their Public Presentations.
Support: The main support for the Maths-in-Action projects are:

- The Maths-in-Action Resources page describing how to get started and what to do next. It also is the main source of news and valuable information for the Maths-in-Action projects.
- A Project Guide containing advice on how to make good presentations and explaining the criteria that will be used in assessing your work.

Learning outcomes

By the end of the module, students should be able to:

- Have developed the ability to communicate mathematics to diverse audiences and have a deeper appreciation of how mathematics underpins the modern world.
- Carry out independent research into existing results, access and extract relevant information from suitable publications and other sources, organise time effectively.
- Doing a Maths-in-Action project will teach the art of scholarship; it will help to acquire a variety of presentation skills and improve scientific word-processing and typesetting.
- Fruitful collaboration is a valuable experience and they will have the chance to work cooperatively on a public presentation.

Subject specific skills

See learning outcomes.

Transferable skills

Students will acquire key reasoning and problem solving skills which will empower them to address new problems with confidence.

Study

Study time

Type	Required
Project supervision	10 sessions of 1 hour (3%)
Private study	288 hours (97%)
Total	298 hours

Private study description

288 hours private study

Costs

No further costs have been identified for this module.

Assessment

You do not need to pass all assessment components to pass the module.

Assessment group A2

	Weighting	Study time	Eligible for self-certification
Scholarly Report and Viva 30 pages max dissertation. 25 minutes	60%		No
Presentation/Poster Presentation and poster	15%		No
Popular Article 3000 words	20%		No
Progress Report Form+Draft Poster. 3 Pages	5%		No

Assessment group R

	Weighting	Study time	Eligible for self-certification
Summary	100%		No

Feedback on assessment

Presentation feedback and exam feedback.

Availability

Courses

This module is Core for:

- Year 5 of UMAA-G105 Undergraduate Master of Mathematics (with Intercalated Year)
- Year 4 of UMAA-G103 Undergraduate Mathematics (MMath)
- Year 4 of UMAA-G106 Undergraduate Mathematics (MMath) with Study in Europe

This module is Core optional for:

- Year 5 of UMAA-G105 Undergraduate Master of Mathematics (with Intercalated Year)
- Year 4 of UMAA-G103 Undergraduate Mathematics (MMath)
- Year 4 of UMAA-G106 Undergraduate Mathematics (MMath) with Study in Europe

This module is Option list A for:

- Year 1 of TMAA-G1P0 Postgraduate Taught Mathematics