

Summary Information

Module Code	6112MATHS
Formal Module Title	Advanced Calculus
Owning School	Computer Science and Mathematics
Career	Undergraduate
Credits	10
Academic level	FHEQ Level 6
Grading Schema	40

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Elon Correa	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Robert Wilkinson	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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Teaching Responsibility

LJMU Schools involved in Delivery
Computer Science and Mathematics

Learning Methods

Learning Method Type	Hours
Lecture	28

Module Offering(s)

Offering Code	Location	Start Month	Duration
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	Extend students' mastery of calculus in application areas such as vectors and complex variables.
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Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Use complex analysis to solve problems in calculus.
MLO2	Determine the gradient, divergence and curl of scalar and vector quantities as appropriate.
MLO3	State the theorems of Gauss, Green and Stokes and apply them in a selection of case studies from physics and engineering.

Module Content

Outline Syllabus
Complex analysis, continuity, analytic functions, integration, Cauchy's Theorem. Vector calculus, grad, div and curl, integration, and the theorems of Green, Stokes and Gauss.

Module Overview

Additional Information
This module gives students the opportunity to apply mathematics to scientific problems.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Centralised Exam	Examination	100	2	MLO2, MLO3, MLO1

