Module description

This module develops the theory of functions of a complex variable, emphasising their geometric properties and indicating some applications. Introduction covers complex numbers; complex functions; sequences and continuity; and differentiation of complex functions. Representation formulas covers integration of complex functions; Cauchy's theorem and Cauchy's integral formula; Taylor series; and Laurent series. Calculus of residues covers residue calculus; winding number and the location of zeros of complex functions; analytic continuation; Euler's gamma function and Riemann's zeta function. Finally, Applications covers conformal mappings; fluid flows; complex analytic dynamics; Julia sets; and the Mandelbrot set. Students need a sound knowledge of differentiation and integration of real functions for this module.

Person specification

The person specification for this module should be read in conjunction with the generic person specification for an associate lecturer at The Open University.

As well as meeting all the requirements set out in the generic person specification, you should:

- have a good honours degree in mathematics or a related subject
- be able to provide evidence of a complete understanding of the majority of material covered in the module (by, for example, successfully completing a pre-interview marking exercise) and demonstrate the ability and willingness to quickly develop an understanding of the remainder of the material
- have experience of successfully teaching mathematics at second year/level 2 or higher) in complex analysis or a related subject
- be able to give face to face and online tutorials, using materials that you may need to produce, that are appropriate for the module and students
- be willing to use elearning facilities (training will be given), such as:
  - the module website, and other University websites
  - the University systems for the purposes of monitoring students' progress
  - email and University forums
  - OULive, the university's online tutorial software (training provided)
  - on-screen marking of electronically submitted (in pdf format) student assignments
    (see additional information below)

Additional information

From October 2016, students on this module will have the choice to submit their TMAs electronically via the University's online TMA/EMA service. Therefore anyone appointed to tutor on this module then will be required to mark and provide feedback on TMAs submitted electronically as pdfs and to return the marked pdf, to the online TMA/EMA service. If you are invited for an interview and the latter involves an electronic marking exercise, some guidance will be given for this. Further information and advice will be available should you be appointed to the role.
It would be an advantage to have:
- A higher degree in mathematics or to be studying for one
- experience of teaching third year/level 3 pure mathematics to mature students and/or to students from a broad range of educational backgrounds

*Module related details - a full explanation can be found on the website*

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<th>Credits awarded to the student for the successful completion of a module:</th>
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<tbody>
<tr>
<td>Number of assignments submitted by the student:</td>
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<td>Method of submission for assignments:</td>
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<td>Level of ICT requirements:</td>
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<td>Number of students likely to be in a standard group:</td>
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<td>Salary band:</td>
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<td>Estimated number of hours per teaching week:</td>
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