

*Presentation pattern*    *October to June*

### *Programme information*

Whilst most of the MSc modules are based on guided reading of an individual set textbook and wrap around notes, M820 does not have a set book. The students are provided with complete module material. Students need to successfully complete six modules worth 180 points to be awarded the degree. M820 is one of two introductory modules.

### *Module description*

The module is intended as an entry level introduction to the MSc in Mathematics programme; and will be the initial module of most students new to the programme. Therefore students on M820 may be new to distance learning and may require additional support because of this. The pay band on this module includes payment to reflect the fact that proactive contact from the tutor is necessary to ensure that students become and remain engaged with the material and the TMAs.

M820 develops the theory of Calculus of Variations which is an area of study that includes problems of significance in both pure and applied mathematics. The module also provides an introduction to various other topics, a working knowledge of which is required both in this module and in other modules in the MSc programme. These include the calculus of functions of several real variables, ideas of convergence, particularly of sequences of functions and normed vector spaces. The main topic will be the Calculus of Variations but supporting material needed in other MSc modules will also be included. These topics will include the calculus of functions of many variables, convergence of sequences of functions, problems associated with nonlinear boundary value problems, properties of Sturm-Liouville systems and eigenfunction expansions. In addition, the module aims to provide students with an understanding of the need for mathematical rigour and an elementary knowledge of the historical significance and development of the subject.

### *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:

- have a good honours degree in mathematics or subject directly relevant to the module contents, together with evidence of successful postgraduate study in mathematics such as a higher degree in mathematics
- have evidence of having worked in an area directly relevant to the module content
- be able to provide evidence of a complete understanding of the majority of the 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 the ability to present mathematics electronically and mark pdfs
- be willing to use elearning facilities, such as:
  - the module website, and other University websites, to download essential material and to retrieve other information
  - the University systems for the purposes of monitoring students' progress
  - email and University forums for asynchronous communication with students, tutors, and other staff
  - OULive, the University's online tutorial software (training provided) to communicate with students where applicable
  - on-screen marking of electronically submitted (in pdf format) student assignments (eTMAs).

It would be an advantage to have:

- a PhD in a relevant area
- experience of teaching and examining, particularly in distance education at postgraduate level
- teaching experience in the relevant specialist subject area at postgraduate or third year level.

*Additional information*

- You will be required to mark assignments electronically. These will be in pdf format.

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

Credits awarded to the student for the successful completion of a module:	30
Number of assignments submitted by the student:	4
Method of submission for assignments:	1a
Level of ICT requirements:	2
Number of students likely to be in a standard group:	15
Salary band:	3
Estimated number of hours per teaching week:	3

*The teaching and assessment strategy for this module has not yet been approved and therefore the information is subject to change.*