

Presentation pattern: October to June

Module description

Structural Integrity is the study of the safe design and assessment of components and structures under load and has become increasingly important in engineering design. It integrates aspects of mechanical engineering, stress analysis, materials behaviour and the mechanics of failure into the engineering design process.

The module will be well-illustrated with case studies and will be of interest to anyone associated with the design of components or structures that undergo loading and will benefit in developing skills in the analysis and assessment of product design and forensic analysis of failed components.

T367 will be in 3 parts. The first two weeks of the module will cover an online revision of the material required for the study of the rest of the module. Majority of the material in this revision would have been covered in previous modules, but it is included here for any students who, for some reason, do not study them.

Part 1 will cover theory of structural integrity, failure analysis and fracture mechanics.

Part 2 will introduce measurement and testing of the concepts developed in part 1.

Part 3 will introduce the concepts in forensic engineering and will include several case studies.

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 must have:

- Either an engineering degree *or* experience teaching engineering at HE level or equivalent
- Interest in teaching engineering
- Ability to help students develop engineering skills through distance learning
- Knowledge of the theory and application of stress analysis, fracture mechanics and forensics engineering
- Experience of using mathematical and IT tools in solving engineering problems
- Experience in Finite Element Analysis, or a willingness to learn it

It would be an advantage to have:

- Recent experience of working in an engineering environment
- Experience of supporting students in analysis and modelling techniques for application to engineering practice

Additional information

Students will study around 10 hours per week of which 5.5 will be directed study and 4.5 hours will be student led self-directed study.

There will be 2 summative TMAs (one for block 1 and one for block 2), 1 formative iCMA (iCMA51), 3 summative iCMAs (iCMAs 41-43) and an EMA; which will take the form of a heavily prescribed forensic engineering report, drawing on both mathematical and conceptual aspects of the module. Tuition will include both online and face to face tutorials.

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:	5
Method of submission for assignments:	2
Level of ICT requirements:	3
Number of students likely to be in a standard group:	20
Salary band:	3
Estimated number of hours per teaching week:	3.30