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Title: STRUCTURAL ANALYSIS 2  
Status: Definitive  
Code: **5024BEUG** (102770)  
Version Start Date: 01-08-2016

Owning School/Faculty: Astrophysics Research Institute  
Teaching School/Faculty: Astrophysics Research Institute

Team	Leader
Nick Eden	Y

**Academic Level:** FHEQ5      **Credit Value:** 12      **Total Delivered Hours:** 51  
**Total Learning Hours:** 120      **Private Study:** 69

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Practical	12
Tutorial	12

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	unseen	70	3
Report	AS2	assignment and practical report	30	

### Aims

*To introduce the analysis of statically indeterminate structures and the analysis of the plastic behaviour of steel structures.*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Analyse indeterminate beams and rectangular portal frames using moment distribution.
- 2 Evaluate deflection in beams and frames.
- 3 Analyse steel beams and frames behaving plastically.
- 4 Analyse columns subjected to axial load, transverse load and moments.

## Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

EXAM	1	2	3	4
PRACTICAL	1	2		

## Outline Syllabus

*Analysis of beams:*

*Statically indeterminate beams, deflection, composite (fitch) beams.*

*Analysis of frames:*

*Moment distribution, plastic analysis, virtual work.*

*Analysis of columns:*

*Polar plot.*

## Learning Activities

Lectures, tutorials, problem solving sessions, laboratory practical work, use of specialist computer software.

## Notes

The module builds on the understanding of structural analysis gained at level one, with the introduction of indeterminate structures and plastic analysis.