

## **Engineering Tripos Part IA, Drawing, 2017-18**

### **Lecturer**

[Mr A Johnson](#) [1]

### **Timing and Structure**

Five 2-hour sessions in the Michaelmas Term, seven 2-hour sessions in the Lent Term, and four 2-hour sessions in the Easter Term. A short lecture will introduce each of the 16 sessions.

### **Aims**

The aims of the course are to:

- Understand the role of drawing and CAD in the design process.
- Learn how to make and interpret mechanical drawings.
- Solve simple geometric problems using graphical techniques.

### **Objectives**

As specific objectives, by the end of the course students should be able to:

- Understand projection theory and its use to make required views of lines and planes.
- Understand orthographic projections of solid objects.
- Make orthographic projections of engineering objects, using the conventions of BS 8888: 2008.
- Make isometric sketches and auxiliary projections
- Interpret existing orthographic drawings
- Use a professional CAD package to create models of engineering components and assemblies.

### **Content**

#### **Projection Theory**

- Projection of points, lines and planes.
- Perpendicular distance between lines.
- True and edge views of planes.
- Application to simple vector mechanics

#### **Mechanical Drawing**

- 3-D visualisation and interpretation.
- Intersection of simple surfaces.
- Isometric projection; Sketching.
- Introduction to dimensioning.
- Orthographic projection.
- Basic drawing conventions, including sections, to BS 8888: 2008.
- Representation of simple components.
- Representation of assemblies.
- Introduction to a professional CAD package.

## **Booklists**

Please see the [Booklist for Part IA Courses](#) [2] for references for this module.

## **Examination Guidelines**

Please refer to [Form & conduct of the examinations](#) [3].

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## **Links**

[1] <mailto:alj3@cam.ac.uk>

[2] <https://www.vle.cam.ac.uk/mod/book/view.php?id=364071&chapterid=42071>

[3] <https://teaching.eng.cam.ac.uk/content/form-conduct-examinations>