

## Precision Engineering Laboratory – Test & Measurement

**CO-ORDINATOR** : Dr Paul Comley  
**STAFF** : Dr Paul Comley, Mr Alan Heaume  
**PRE-REQUISITES:** Basic engineering principles

### RATIONALE:

To provide the student with an insight into the assessment of high quality surfaces. A laboratory based session with a strong emphasis on practical aspects, students will participate in the measurement of optical surfaces. The session will cover the physical principles, instrument characteristics and measurement process.

### OBJECTIVES/LEARNING OUTCOMES/COMPETENCES: (Numbered list)

1. Introduction to surface measurement instrumentation.
2. Insight into parameters used to qualify surface texture.
3. Operation of instrumentation.

### SYLLABUS/RANGE:

- Surface Texture Instrumentation
  - Outline configuration and performance of instruments
  - Operation of optical based instruments
  - Operation of contact stylus instruments
- Surface Metrology
  - Surface texture assessment.
  - Parameter selection and use.

### Reference Material:

- (1) Metrology Module, UPT MSc Cranfield University 2012
- (2) Handbook of Surface Metrology, David J Whitehouse, IOP publishing, ISBN 0-7503-0039-6

### STUDENT WORKLOAD: Hours

Staff/Student Contact Time:	Laboratory	4
Independent Learning Time:	Private Study	2
Total		6