

## ASSESSMENT METHODS IN ENGINEERING DEGREE COURSES

A Discussion Document Prepared by the EPC Working Party on assessment

This discussion document suggests ways in which engineering departments can achieve productivity gains in their methods of student assessment. That is, it shows how students' capabilities can be more accurately described and 'profiled' without increase in staff time and effort than that demanded by the widely used conventional assessment methods. It has been well said that "assessment draws learning through a course", implying that improvements in teaching methods, such as those suggested in EPC3, The Future Pattern of 1st Degree Courses in Engineering or by the 'Education for Capability' movement, are likely to be ineffective if corresponding changes in assessment methods are not first introduced and explained to students.

### **Assessment Methods in Engineering Degree Courses**

#### **Summary**

The distinctions made in EPC3 between knowledge, skills and understanding as regards the learning and teaching of engineering, are applied in this discussion document to the design of assessment methods. It is assumed that engineering departments have established and specified clear educational goals for their courses, expressed in terms of these parameters. The importance of ensuring that both students and staff understand these goals and what is expected of them as regards learning, teaching and assessment, is frequently emphasised in the document.

The meanings of some of the educational term's used in the text are explained in a Glossary of Terms at the end of the document.

The following recommendations for action are derived from other published work on assessment methods as well as from the above kind of analysis.

- (i) It is best not to assess students' knowledge, skills and understanding in one examination and especially not to give a single mark embracing all these three kinds of learning. It is suggested that essential knowledge and measurable skills might be assessed together in one exam and 'criterion referenced' with a high pass mark, whilst understanding and complex skills are assessed separately and 'norm referenced'. Some of the tests of essential knowledge and measurable skills can be computer-marked with much saving of staff time and energy.
- (ii) Examinations as described above, especially in the first year or two of a degree course, might cover several subjects or topics at a time, rather than be topic specific as is common at present. This would reduce the number of exams as well as give a clearer picture of students' various capabilities. Exams which are more subject specific might be more appropriate in the final year if options are offered. However, savings in staff time and effort can be achieved by reducing the range of undergraduate options. Many such specialist subjects can instead be offered









































