

Quality and Academic Review Committee

Review of Undergraduate Teaching

Department of Computing, Imperial College

Assessor's Report

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Report on Specific Questions

Are the educational objectives of the programme appropriate and are they achieved?

The Computing Degree courses at Imperial are intended to provide an education in the applied science and engineering of Computing. This covers both theoretical and practical aspects of the subject. The courses have been designed to provide both breadth and depth in order to equip students to cope with the rapidly changing aspects of the subject which they will encounter in their professional lives.

The Computing department at Imperial employs staff who conduct a wide range of research at an international level and therefore are able to cover a wide range of topics at a very high level. The quality of student intake is amongst the highest in the country and this enables the department to achieve a very high quality standard of output.

Given the student quality, the objectives are entirely appropriate and there is every reason to believe that they are being achieved with a high degree of success.

Are the learning outcomes appropriate to the educational objectives and are they achieved?

In order to progress through the early stages of the degree programme, a student must demonstrate competence in a wide range of programming styles and languages. These skills are tested rigorously and provide a very sound basis for the later stages. This wide coverage of the basics is a particular strength and is to be commended. In addition to programming the students are also required to learn the basics of Mathematics, Logic, Computer Hardware and Professional Issues.

Later in the course, a wide range of topics are covered by traditional lecture and examination. The examination papers are particularly challenging and ensure that the

students have a sound grasp of advanced topics in the subject. A practical project is an essential part of both BSc and MEng. degrees and requires that students demonstrate the ability to conduct a substantial piece of practical work. In addition, MEng. students are required to complete an industrial placement which ensures that they learn first hand the practicalities of a working environment.

In summary, the learning outcomes cover all the objectives.

Do the curricula allow the learning outcomes to be achieved? What are the strengths and weaknesses?

There is plenty of evidence that the curricula have been designed carefully to ensure that the theoretical, practical and professional aspects of the subject are covered from introductory to advanced level. As previously stated, the research expertise of the department allows a wide coverage of advanced material and this must be regarded as a particular strength.

It is difficult to identify weaknesses in either the range or level of the material covered. One possible problem might result if the standard of intake were to drop due to a further decrease in interest in Computing degrees. In that case, lesser students would struggle to cope and retention rates would suffer.

Are the assessment methods appropriate to the achievement of the learning outcomes? What are the strengths and weaknesses?

As stated previously, the examination standard is high providing a thorough assessment of lecture based material. The process for major project assessment seems to be particularly thorough, involving a team who maintain contact with progress throughout the project period and are responsible for a number of projects thus providing consistent overall moderation. This is a strength.

Are the students adequately supported by the learning resources, study skills help, personal tutoring etc? What are the strengths and weaknesses?

There is a high level of provision of equipment to support practical work. Space provision seems to be good and the College library facilities are readily accessible.

Core subjects are supported by two small group tutorials each week. Later in the programme, this is replaced by course-related tutorials. One strength of the system is the use of research staff, postgraduates and senior undergraduates for all aspects of tutoring and laboratory support.

The strength of overall support for students in all aspects of their study was very evident from the opinions expressed by students.

Are the procedures for maintaining and enhancing the quality of provision and the academic standards effective? What are the strengths and weaknesses?

There is a well developed committee structure with responsibility, at various levels, for strategic and operational aspects of the degree programmes. This ensures that the overall programmes and their content is monitored and developed.

Students are involved in the process of monitoring quality via a departmental staff-student committee and a college wide questionnaire system.

The programmes are accredited by both major UK professional societies (BCS & IET) in the subject area and have received full accreditation for many years.

External examiners reports testify to the high standard of the provision.

The overall process of assigning teaching responsibilities, and thereby ensuring that courses are supported by appropriate expertise, lies in the hands of the Director of Studies. There is much evidence that the academic staff support the decisions and that the process is working well.

If there is a weakness, it is possibly that a very large amount of the responsibility for teaching organisation and quality lies in the hands of a small number of individuals and is dependent on their enthusiasm and personality. While this works very successfully and is therefore difficult to criticise, the Department and the College need to be aware of this reliance on individuals to ensure continuing success in the long term.

Summary

The programmes offered by the Department of Computing at Imperial College are at the highest level compared to others in the UK. They provide both a breadth and depth of education which is hard to match elsewhere.

Student assessment is very challenging, ensuring that graduates possess a wide variety of theoretical and practical skills.

The organisation and content of teaching is of a high standard ensuring that the objectives of the programmes are achieved in practice.

The overall impression is one of significant strength. Minor weaknesses identified above are only concerned with the possible effects on the Department of major perturbations to their current situation.