UNIVERSITY COLLEGE LONDON

DEPARTMENT OF SPACE AND CLIMATE PHYSICS

DEPARTMENTAL LEARNING AND TEACHING STRATEGY

1. INTRODUCTION

This document describes our Departmental Learning and Teaching Strategy. It is written in the context of UCL's Strategy for Learning and Teaching, and is designed to reflect where possible the vision of that document. Section 2 first outlines the Department's background and overall policy as regards learning and teaching, and then Section 3 discusses each of our policy objectives and our strategy for achieving them.

2. DEPARTMENTAL BACKGROUND AND OVERALL POLICY REGARDING LEARNING AND TEACHING

2.1 How the Department's research informs and enhances its learning and teaching programme

UCL's Department of Space and Climate Physics, based since 1965 at the Mullard Space Science Laboratory (MSSL) in Surrey, is the largest university-based space research organisation in the UK. MSSL has a world-wide reputation for research excellence in all the major space science disciplines, and its various space research groups have been highly successful in carrying out observation programmes involving most of the major space science spacecraft since the early 1960s. This research activity also involves the provision of state-of-the-art instruments for the spacecraft. These are designed and built by specialist engineering groups at MSSL, within an industrial-style culture involving professional project management and organisation.

The Department's learning and teaching programme is strongly based on its research. However, as space science is a largely physics-based specialisation, it has not been appropriate for the Department to develop an independent undergraduate programme in this area. We have therefore concentrated on developing taught postgraduate programmes and modules as well as undergraduate programmes and modules in collaboration with other departments. We also maintain a strong programme of research-based teaching (PhDs and MSc projects). Moreover, because of MSSL's unusual nature in having expertise not only in a wide range of space science, but also in space technology, systems engineering and project management, the Department has been able to develop successful taught programmes and modules in all these areas, including many that are directly relevant to industry.

2.2 Departmental strengths and challenges regarding learning and teaching

In further developing and enhancing its learning and teaching programme, MSSL's main strengths are:

- its reputation as one of the foremost space science organisations in the world;

- its expertise and resources in space technology, systems engineering and project management, as well as in space science research;
- its existing successful taught programmes and modules, mainly in collaboration with other departments;
- its strong programme of research-based teaching;
- its links with many other UCL departments, universities and organisations, through both research and teaching;
- its experience and success with distance learning, including electronically supported/blended learning and, for example, past practice of synchronous remote teaching (involving closed-circuit TV and computer links between MSSL and the main UCL site), developed as a result of its off-campus location;
- the popularity of 'space' with the general public, and with young people in particular.

MSSL's main challenges lie in making the most of its special teaching strengths while exploiting to best advantage its off-campus location (paying particular attention to staffing efficiency for its taught modules), and in further developing and enhancing its teaching programme whilst maintaining (and indeed enhancing) its world-class research activity. In meeting these challenges, the further development of distance learning is seen as an important area to consider, and this is also a major thrust of UCL's Strategy for Learning and Teaching (e.g. item 74 of UCL Learning and Teaching Strategy 2005-2010).

2.3 Departmental learning and teaching: overall policy objectives

As a department of UCL, MSSL aims for excellence in both teaching and research, with research and teaching programmes that enhance rather than detract from each other. Our goal for teaching and learning is therefore to optimise all aspects of our teaching programme, and it follows that our overall policy objectives for learning and teaching are:

- *to optimise our curriculum content & teaching methodology*
- *to optimise our student intake*
- *to optimise the experience of learning and teaching for our students and staff*
- *to optimise the efficiency and cost-effectiveness of our teaching programmes*
- *to optimise our teaching management structure and procedures*
- *to optimise our teaching review procedures.*

3. STRATEGY FOR ACHIEVING AND MAINTAINING OUR LEARNING AND TEACHING POLICY OBJECTIVES

3.1 Optimising our curriculum content and teaching methodology

Our aim here is to ensure that the Department continues to offer a successful range of programmes and modules, and to ensure that appropriate teaching, learning and assessment methods are employed, including the use of new technology as necessary, and for example value–adding guest lecturers, as appropriate.

Our strategy here is to undertake a process of continuing review and planning of our teaching programme, focussing mainly on a new annual strategic review (see Section

3.6). In addition, the Departmental Teaching Committee (DTC) will continue to review individual programmes and modules annually, taking into account student feedback, and will submit individual programmes to the periodic formal review procedure as required by UCL.

Our goal is for this review process to produce new initiatives that are innovative, exploit our strengths, meet our challenges, enhance our research, are attractive and of value to students and to the wider community, and are appropriately resourced and staffed. An example of this is the re-development of our space-related MSc programmes which we are currently undertaking, for start in the next academic session (2010-11).

3.2 Optimising our student intake

Through our advertising and admissions procedures, our aim is to recruit onto our modules and programmes high quality students who will obtain the most benefit in terms of qualifications, skills and knowledge gained. We are also fully committed to UCL's policy of equal opportunities.

Our strategy for pursuing these policies is annually to monitor our student intake and results, and to review our advertising and admissions procedures.

3.3 Optimising the experience of learning and teaching for our students and staff

We want our students to obtain maximum learning benefit from attending our programmes, and to enjoy their time at UCL. To this end we aim to provide high quality teaching resources in terms of staff, accommodation and facilities (e.g. Communication and Information Technology, C&IT), as well as ensuring access to pastoral care and social facilities.

At the same time it is important that our staff find teaching a rewarding experience that is adequately resourced, avoids unduly overloading individual lecturers, and as far as possible benefits rather than detracts from their research activities. This is particularly important in view of MSSL's off-campus location, which results in a significant overhead in terms of both travel time and the ability to work effectively at the UCL site between lectures. The main factors involved here are timetabling, the provision of working resources in London, and the allocation of teaching duties. The use of synchronous remote teaching, and other forms of distance learning, is also important in this context.

Our strategy here is continually to monitor the concerns of students and staff (e.g. via student questionnaires, staff-student consultative committee meetings and staff meetings) and make improvements as necessary. However, it is also important that these issues are addressed within the context of the management and review of our teaching programme as a whole (see Sections 3.5 and 3.6).

3.4 Optimising the efficiency and cost-effectiveness of our teaching programme

The Department recognises the need for its teaching programme to be efficient and cost effective. In practice the two requirements are linked, with efficiency (i.e. optimising the use of staff time consistent with high quality teaching) being one of the main ways of improving cost-effectiveness. As noted earlier, a significant challenge to efficiency is MSSL's off-campus location, and we see the increased use of C&IT as

an important area to consider for the future, building on our successful use of synchronous remote teaching.

For cost-effectiveness, the other factors that need to be optimised are the levels of resources employed (e.g. accommodation and equipment), the numbers of students taking our modules and programmes, and, where possible, the fee levels. All these factors are in turn strongly influenced by the details of our curriculum and our teaching methodology, so they cannot be addressed independently.

Therefore our strategy in this area is to monitor and improve the efficiency and cost-effectiveness of our teaching programme within the context of an overall strategic review of that programme (see Section 3.6). This will ensure that the need for efficiency and cost-effectiveness is properly balanced with our other policy goals.

3.5 Optimising our teaching management structure and procedures

In managing MSSL's teaching programme our aim is to have optimal structures and procedures that not only accord with UCL's requirements, but also take into account the nature of MSSL's current teaching programme, and its own particular strengths and challenges, as outlined earlier.

Our strategy for optimising MSSL's teaching management is to include this item within our annual strategic review (see Section 3.6). This ensures that management issues are examined annually in case any changes to structures and procedures are needed, either as a result of Departmental-level problems and changes, or resulting from policy change or initiatives at UCL, national or supranational level.

3.6 Optimising our teaching review procedures

Regular review of MSSL's teaching activity in all its aspects is seen as the key to achieving the rest of our policy objectives. In line with UCL policy, the Departmental Teaching Committee (DTC) already has the remit of carrying out annual reviewing of all lecture modules and programmes, taking particular account of student feedback, and is also the body that oversees the submission of MSSL's programmes for formal review by UCL. It also considers and approves proposals for changes to programmes and modules, for forwarding to the Faculty.

Our strategy for improving our review procedures is for the DTC additionally to oversee an annual strategic review of all aspects of MSSL's teaching programme (including the review procedures themselves) within the context of an annual review of our Departmental Learning and Teaching Strategy, in accordance with UCL policy. An important issue within this broader review, which is now practice, is the relationship and balance between our teaching and our research.

In the longer term, specific learning and teaching initiatives and actions are expected to emerge from this review procedure, and these will be incorporated into future issues of this document.