Notes of a New Lecturers Meeting held on 16/2/2000

Present:

Rodi Herzberg, Dave Milstead, John Goff and Tim Greenshaw.

The Week's Events

Tim sat in on one of Rodi's lectures last week. The lecture was excellent, but eliciting response from the students was a little handicapped by the location; 60 students tend to vanish in the large lecture theatre, capacity over 250. Rodi agreed he would prefer a smaller theatre. Investigations continue as to how this may be organised. The above comment was passed on to BoSiP. Dominic Dickson remarked that similar comments had been made by people monitoring his lectures on two separate occasions. Modifying the large lecture theatre to satisfy the requirements of both large and small groups, with a maximum "transition time" of around 5 minutes, is difficult.

John also lectures in the large lecture theatre, but is happy with the location.

Dave's lectures are in the medium lecture theatre.

Computing Provision for the B.Sc.

The provision of computing for B.Sc. students was discussed. It was agreed that students aiming to do research (i.e. those taking the M.Phys) were very well catered for in Mike Houlden's course. After some discussion it was decided that such a course, teaching a modern language like c++ or Java, would be out of place in the B.Sc. programme. There are several reasons for this:

1) Employers generally only require programming skills of their research staff (M.Phys or Ph.D. level entry). The ability to use standard packages to analyse and present data (Excel, Word, MathCad and similar) is more important for those working in other positions, such as administration and management. (Evidence, 5..10% of graduates in years 1996...1998 inclusive leaving further education entered jobs in which programming skills would be useful according to Tim's analysis of first destinations. Of course, maybe more graduates would be in such jobs if they had programming skills! Discussion in meeting of the Physics Advisory Panel for Taught Courses, in 1997 I think.)

2) Teaching the basics of Java to our best undergraduates takes two afternoons a week for a semester and they find tasks like debugging programmes extremely difficult. The problems associated with teaching this course to the entire third year would be significant. Finding enough people to supervise practical sessions would be very difficult, for example. (Source, conversations with Mike Houlden.) It was pointed out that this is not in itself sufficient justification for not teaching computing to B.Sc. students!

3) Teaching a simpler language, such as Fortran or Basic, has the advantage that students learn how to convert a problem into a form that can be solved using a computer, but such languages are now almost never required by employers. (Job adverts.)

After some discussion it was agreed that we should try and ensure that our students are better trained in the use of packages to solve problems. They are given an excellent introduction to Excel, Word and MathCad by Robert Page (who will soon be adding Powerpoint to the list of packages he covers in his course), but this is perhaps not built on sufficiently in years 2 and 3.

Two proposals were made:

a) Tutorial, Homework, and perhaps also Problems Classes, should contain exercises which are to be solved using numerical methods; problems could be chosen which have no algebraic solution. This would obviously have some consequences for most second and third year modules, but would not alter the overall course structure.

b) In addition to a), a module could be offered in which students are taught techniques useful for the solution of physics and other problems using a computer. Various numerical and graphical techniques could be discussed, the elements of algorithm development introduced - point 3) above - as well as some simple Monte Carlo methods. This could be done using MathCad, for example, though it would be sensible to first determine what sort of packages are prevalent in industry. This would have more impact than proposal a). It was felt, however, that this module may be more relevant for the majority of our students than one on electronics.

It was agreed that a proposal to the above effect be submitted to a future meeting of BoSiP. Various questions were raised including: What do other physics departments teach? Which packages are preferred by potential employers? The members of the group agreed to quiz acquaintances, surf the web etc. in an attempt to find answers to the above!