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## Distance Learning Mode of Study in Construction Management

Mode d'enseignement à distance en gestion des constructions

Fernstudium für Baumanagement

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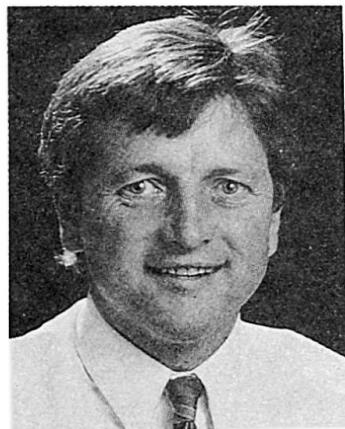
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### SUMMARY

This paper discusses the development of a distance learning mode of study to supplement an existing full time and part time course in Construction Management. Academic issues, organisational issues, institutional issues and personal issues are addressed. Reasons for developing distance learning are explained and the mechanisms adopted are noted. Many lessons have been learned by all concerned. The course is an academic success and is projected to be a significant financial success too. As for any novel venture, the difficulties were considerable but so was the excitement, commitment and potential rewards.

### RÉSUMÉ

Cet article examine le développement d'un mode d'enseignement à distance, venant compléter un cours existant à temps plein et partiel dans le domaine de la gestion des constructions. L'auteur y examine des problèmes d'ordre académique, organisationnel, institutionnel et personnel. Il fournit les raisons de la mise au point d'un tel mode d'enseignement à distance et des mécanismes à adopter dans ce sens. Tous les intéressés (professeurs, étudiants etc.) de ce cours ont su en tirer des leçons et ont participé à la maîtrise de nombreuses difficultés. Ce cours s'avère être un succès au niveau de l'enseignement et il semble voué à être également un succès financier.

### ZUSAMMENFASSUNG

Bereits existierende Voll- und Teilzeitstudiengänge zum Master of Science im Baumanagement sollen durch einen Fernstudiengang erweitert werden. Akademische, organisatorische, institutionelle und personelle Belange werden ausgesprochen. Erklärt werden die Gründe und die Mechanismen, die zur Entwicklung des Studiengangs führten, wobei alle Beteiligten manches zu lernen hatten. Der Studiengang ist nicht nur ein akademischer Erfolg, sondern verspricht auch finanziell einer zu werden. Die Schwierigkeiten waren beträchtlich — wie bei allen neuen Unternehmungen — aber ebenso die Herausforderung, die Hingabe an die Sache und das mögliche Erfolgserlebnis.



## 1. INTRODUCTION

Whilst working at Brunel University in West London, the three academics who now comprise the Construction Study Unit (CSU) developed an MSc course in Construction Management. The course has attracted some 20 full time students and around 8 part-time students per year.

Following financial pressures on British Universities during the early 1980s, the University Grants Committee (now University Funding Committee - UFC) agreed to effect the transfer of the academic staff of the CSU to the University of Bath; this transfer took place in October 1987.

However, the market for conventional full time and part-time MSc courses was becoming increasingly competitive and the normal sources of funding for major research activities were subject to quite severe financial cutbacks.

Discussions and analyses of education needs, opportunities and available programmes at postgraduate level in the construction industry showed that MBAs were popular and major competitors of Construction Management MScs. Fortunately, the nature of the Bath MSc was similar to an MBA course but within the contextual requirements of the construction industry; several graduates had labelled the course, "The MBA for the construction industry".

As the industry has a tradition of day-release and short block-release, so that people can maintain full time productive employment whilst undertaking education to obtain higher qualifications, it seemed clear that extension of the existing MSc course into the distance learning mode of study was appropriate and desirable. That members of the Centre for Continuing Education (CCE) at the University of Bath had experience of preparing distance learning study materials, through working with the Open University, was a real bonus.

## 2. INITIAL DEVELOPMENTS

As an initial market investigation, a "corner-flash" was added to the advertisements placed in January 1988 for the MSc by full time and part-time study indicating that distance learning was to be launched. Within a few weeks some 425 enquiries had been made of, which one third were from overseas. Clearly, there was a large potential market.

Fortunately, the UFC was seeking to promote new developments in the field of continuing education. An application for financial support to develop the distance learning version of the course was successful; £20,000 was obtained for the year 1988/89 and a further £30,000 for the year 1989/90. Part of that funding was earmarked for the training of staff, both academic and administrative; to enable academics to investigate and acquire skills to produce materials suitable for the special learning needs of distance learning students and to aid the administrative staff in setting up and operating the extensive and complex systems needed to ensure the proper operation of the course.

## 3. ACADEMIC ACCEPTANCE

As this course was the first of its kind at the University of Bath, it set many precedents and constituted an academic "trail blazer". Consequently, it was

subject to much scrutiny by academic boards.

An early problem was convincing members of the School's Board of Studies that it was not merely a "correspondence" course but was an extension of existing academic activities, at a proper postgraduate level. Resistance was exacerbated by the view of certain staff that the School was a design School, that Construction Management was peripheral and that major developments of this nature would dilute the School's main activities. Fortunately, a leading professor lent strong support to the proposal.

An essential element in securing approval by the academic boards was that the proposal comprised the development of a new mode of study for an existing, successful Masters course. That the Scheme of Studies (Syllabus) was in place, that all assessments of students and criteria for passing were to be common across all three modes of study, that entry requirements would be common across the course and that the distance learning mode would incorporate compulsory residential schools at which there would be intensive study through more conventional techniques and close personal contact between the students and staff allayed many fears.

#### 4. ADMINISTRATION ACCEPTANCE

This occurred in tandem with obtaining academic acceptance. The application to develop the distance learning mode revolved around the business plan, produced jointly by CSU and CCE. Analysis of the Scheme of Studies yielded a schedule of the study materials to be produced (see Figure 1). Then, production costs were calculated. A major issue involved the video tapes for the course. Employment of commercial producers of video tapes was costed at £1000-£2000 per minute of video tape - this option was far too expensive! All the workbooks, video tapes and audio tapes were produced in-house.

It was established early that the provision of the distance learning mode was extra to the normal workload for academic staff; in consequence, a schedule of payments was drawn up to reimburse authors, tutors etc for the activities necessary to develop and operate the course.

The business plan was sensitive to student numbers. It was assumed that recruitment would build over 5 years to a steady state, that the normal period of study for each of the 4 taught modules would be 6 months, that the drop out rate would average at 10% per module and that students would produce dissertations in the third year. The business plan was prepared on marginal costs. It indicated that the course would be in deficit for the first 3 years. Taking the UFC grants into account, it would be necessary for the University to underwrite approximately £24,000 for two years. The business plan predicted that the course would break even in its fourth year.

The business plan was presented to the high level planning boards of the University and was accepted by them as the basis on which development of the distance learning mode of study for the MSc could proceed.

#### 5. PRE-REQUISITES

By the time approval for the development of the distance learning mode had been obtained, it was clear that four elements, all fundamental to success, had come together. Those elements were an enthusiastic and highly committed academic staff in CSU, a distance learning expertise and course administration skills in



CCE, a sizeable market and pump-priming money to help fund the initial development. If any of those elements had not been present, it is highly likely that development would have foundered early.

## 6. PROJECT MANAGEMENT

To develop the materials speedily, efficiently and effectively, a Course Team of 5 was established comprising the three academic staff of CSU, the Director and Assistant Director of CCE. Each member assumed responsibility for several functions: CSU 1 - Author, academic course director, chairperson of course team; CSU 2 - Author, admissions, residential schools; CSU 3 - Author, examinations and assessments; CCE 1 - Project Manager, Production Manager, Editor; CCE 2 - Marketing, administration, student support.

Many other issues had to be dealt with by course team meetings, by individuals or by engaging an outside expert. Generally the arrangements worked very well.

Although many facets of the course were modelled on the Open University (OU) there were and fundamental differences. All members of the course team were involved in the distance learning project in addition to their normal responsibilities. Such part-time involvement put people under great pressure; especially to meet deadlines. As none of the authors had experience in preparing distance learning materials, it was necessary for them to undertake training; use of experienced editors, and the phasing of production eased the problem considerably. Further expertise had to be mastered in other media - video tapes and audio tapes. Early recruitment of students and commencement of the course was essential to provide cash flow for development of further course materials as well as securing a leading place in the market. The lack of any distance learning courses within the University, meant that every aspect of the project set a precedent.

## 7. PRINCIPLES

From the inception, the course team adopted principles which it held paramount. Adherence to those principles has been very difficult on occasions due to numerous changes which have taken place.

- Quality is paramount - both academic and presentational
- Entry requirements for the course are common across all modes of study
- All assessments and criteria for passing are common - assignments, . case studies and examinations
- Attendance at the residential components is compulsory
- All students taking the course by whatever mode of study and in whatever country should be afforded the same opportunities and have equivalent support mechanisms available
- The course fee must be at a competitive level but the major factor to distinguish the course from others is quality

## 8. COURSE STRUCTURE

The course structure is shown in Figure 1. Students are required to study and pass the 4 taught modules (Management Principles - MT, Management Science - MS, Construction Economics - CE and Management Practice - MP) and the module

comprising 4 case studies (one of which relates to each taught module) before being permitted to proceed to the dissertation stage. The University requires also that the residential requirement be met prior to the award of the degree.

\* **4 CASE STUDIES:** One associated with each taught module

**MANAGEMENT SCIENCE**

MS1 Operations Research  
MS2 Statistics  
MS3 Information Management

3 Videos  
1 Audio Package

**ENTRY (Video)****MANAGEMENT PRINCIPLES**

MT1 Macro  
MT2 Advanced Techniques  
MT3 Micro  
MT4 Corporate Techniques

2 Videos

**CONSTRUCTION ECONOMICS**

CE1 Economic Environment  
CE2 Construction Economics  
CE3 Investment and Finance

3 Videos

**MANAGEMENT PRACTICE**

MP1 Human Resources Management  
MP2 Legal Aspects  
MP3 Construction Practice  
MP4 Design Management

2 Audio Tapes

**DISSERTATION (VIDEO)****MSc DEGREE**

\* **RESIDENTIAL SCHOOLS:** 1 week for each taught module

Fig. 1 Course Structure and Study Materials

Each taught module contains the following study materials:

- Workbooks (1 per unit, hence 3 or 4 per module)
- Textbooks (supplied to supplement, and referenced from, the workbooks)
- Supplementary readings (specialist papers etc, referenced in the workbooks)
- Video tapes
- Audio tapes

Usually, students take the modules consecutively (the order noted above is recommended). Performance in each taught module is considered by the Board of Examiners sequentially therefore, successful students accumulate pass credits for the modules studied as they progress through the course. Having secured a pass credit in each of the 4 taught modules and the case studies module, students are permitted to progress to the dissertation stage; satisfactory completion of which is the final stage in their earning an MSc.

## 9. LOGISTICS AND ADMINISTRATION

All administrative support has been located in CCE in order to focus control and facilitate monitoring.



Amongst the issues requiring particular, continuous attention are:

- Entry twice early - May and November
- Normally students study each taught module consecutively but may change their pace of study or defer for a period provided they complete the course within the 5 year limit
- Dispatching the multitude of course materials
- Ensuring efficient delivery of materials to overseas students, including customs clearance - especially for video tapes
- Organization of residential schools at Bath and overseas (20 per year)
- Establishing, maintaining and monitoring an extensive network of academic tutors
- Receipt of students work for assessment, distribution to academic tutors, receiving marked scripts and returning those to the students with associated distributions of performance records
- A network of personal tutors and provision of counselling-type support
- Securing the production and delivery of all materials on time
- Organizing examinations both at Bath and at overseas centres

#### 10. IMPACT ON THE ORGANIZATION

The production of a distance learning course of the size and scope of the MSc in Construction Management is a major learning process for all concerned:

- Academically it is contributed to a reassessment of the content and structure of the full time and part-time modes of study for the MSc.
- Organizationally it has required the University to amend some of its structures and systems to accommodate study by distance learning.
- Financially it has necessitated reappraisal of what are the implications of a major self-financing degree course.
- Contractually it has required clarification and amendment of the roles of various staff, notably academics (especially copyright issues).
- Professionally it has provided new skills and enhanced the standing of the people concerned.
- Opportunistically it has opened new markets world wide.
- Accessibility it represents a major opportunity for many people to gain a higher degree who, without such a course, would be denied access.

#### 11. CURRENT POSITION

To-date (July 1991) there have been several thousand enquiries about the distance learning mode, several hundred applications and registration of some 120 students. The average drop out rate (people who have ceased to take the course apparently permanently) is around the 10% predicted. Most students taking the course are UK based, around 20% are overseas. The pattern of entry is that around 50 students join in November (both UK and overseas and approaching 20 students (UK only) in May. Thus, the course should achieve "steady state" student numbers in November 1991. Academic success is high - so far no student has failed any module. The external examiner has commented officially to the Vice-Chancellor of the high standards achieved by students taking the course by the distance learning mode of study.

Students from the first intake of the course (November 1989) are completing their final (MP) module and will be embarking on their dissertations in November 1991. Hence, the first distance learning graduates should receive their degrees in 1992.