

OPEN AND DISTANCE LEARNING (ODL) FOR THE WORLD OF WORK AND ECONOMIC DEVELOPMENT : THE FIRST M.Sc. PROGRAMME OF THE SCIENCE FACULTY AT THE OPEN UNIVERSITY OF SRI LANKA.

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Introduction

The Science Faculty of the Open University of Sri Lanka (OUSL) pioneered one of the earliest Science Degree Programmes through Open and Distance Learning when it commenced in 1984 a very successful and popular B.Sc. programme. This programme which has received regular support, encouragement and assistance from the United Nations Development Programme and The Commonwealth of Learning has enabled over 1500 B.Sc. Graduates to be produced in a very flexible manner to meet the needs and demands of Sri Lanka and the aspirations of Sri Lankans.

The Open Learning philosophy adopted at the Open University of Sri Lanka has enabled persons without any basic qualifications in Science to first acquire such qualifications through the Foundation Programme offered by the OUSL and then proceed to obtain a B.Sc. degree. In a Sri Lankan environment, which does not permit mobility of students within conventional universities and inter lateral student transfers, the Open University of Sri Lanka, through its B.Sc. degree programme in particular, has for a long time set the pace by permitting students to claim credit for qualifications obtained in other recognized institutions.

The Distance Learning methodology, adopted even in a Science Degree Programme, that inevitably requires students to follow compulsory face to face practical sessions, has enabled a number of mature and adult students to study at their own pace and undertake degree level tertiary education in Science without serious interruption of their employment requirements. The Open University of Sri Lanka has thus adopted very novel and innovative methods and schemes to provide face to face practical sessions in such a manner that students are not required to stay away from their employment for too long periods. All these have indeed been welcome relief mechanisms and have enabled the provision of alternate opportunities for tertiary education in the Sri Lankan situation which unfortunately permits only 2% of the relevant student cohort to pursue university education in state universities completely free of charge.

Post Graduate Programmes by Open and Distance Learning

However, the Faculty of Science has in its two decades of existence been unable to provide a taught post graduate degree programme in any area of study. Lack of adequate funds and emphasis on developing, restructuring and revising the existing B.Sc. degree programme had so far prevented adequate planning and development of any such programme within any department in the faculty. Unlike in conventional universities, where many such programmes are presently offered, the necessity and need to provide such programmes through Open Learning and Distance Education in the Open University of Sri Lanka have unfortunately proved to be a barrier and stumbling block.

The Department of Chemistry at the Open University of Sri Lanka was however well alive to the need, desirability and urgency to provide such a post-graduate programme to enable OUSL B.Sc. graduates as well as B.Sc. graduates from other Sri Lankan (conventional) universities to acquire post graduate specialization leading to degrees in selected areas of chemistry through Open Learning and Distance Education, and thereby prepare themselves for the wider world of work without seriously interrupting their respective vocations and employment.

M.Sc. in Industrial Chemistry through Open and Distance Learning

The Department of Chemistry also realized and recognized that even those OUSL graduates (who have been able to offer more Chemistry Courses due to the flexible nature of the B.Sc. degree programme through Open Learning and Distance Education at the Open University of Sri Lanka) and are looking for employment and/or career redirection in industry, desperately need more hands on approach and re-orientation towards an industrial career. The Department also recognized that this deficiency and need was also common to B.Sc. graduates produced by the conventional Sri Lankan Universities as well. Also, Sri Lankan industry has not advanced that much quantitatively to have an unlimitedly large number of graduate level industrial positions; however, Sri Lankan industry has been known to often prefer post secondary school leavers since they have found that many Sri Lankan B.Sc. graduates are not equipped adequately to meet Sri Lankan industry's demands and aspirations. The Department of Chemistry at the OUSL therefore recognized that it has a significant role to play by filling this lacuna since recruitment for the limited number of available industrial positions is facilitated by the acquisition of a wider knowledge of industrial processes, the possession of appropriate work – experience and familiarity with an industrial environment. The Department of Chemistry also recognized that the average Sri

Lankan B.Sc. graduate has unfortunately very little general knowledge about industry and industrial processes; therefore it becomes highly necessary and desirable for the Department to provide a M.Sc. Course in a field such as Industrial Chemistry largely through the Open and Distance Learning methodology.

A needs survey conducted by the Department amongst industrial clients was overwhelmingly positive and encouraging. There was also a very marked note of appreciation that the programme is to be conducted through Open and Distance Learning thereby minimizing the need for employees to be to be given too much leave and interrupt their employment schedule.

The M.Sc. programme and curriculum in Industrial Chemistry, that was thus formulated to be offered through Open Learning and Distance Education by the OUSL at an early date, was meant to be pragmatic and highly relevant regards practical skills of persons for process and quality control. It was recognized that such a philosophy would tailor make the programme in the direction of catering to those hoping to engage in industrial research and development and those wishing to upgrade their basics and widen their knowledge in Industrial Chemistry. Despite all the problems associated in conducting a post graduate chemistry programme involving the acquisition of a fair amount of practical skills through Open and Distance Learning, the Department of Chemistry recognized that all temptation to follow the easier path of offering a largely face to face post graduate course in Industrial Chemistry should be avoided at all costs since the compensatory benefits to the working clientele will clearly offset all such practical difficulties.

Draft Curriculum

The draft M.Sc. programme and curriculum was also kept open for discussion, comment and analysis by personnel from chemical & allied industries as well as those in industry related research at a two day workshop held in Colombo March 2001 under the aegis of the Asian Development Bank. There was a healthy exchange of views and interactions between them and University academics resulting in the finalisation of a relevant curriculum for a two year M.Sc. programme in Industrial Chemistry.

The approved Curriculum

The four credit (effectively two year) programme includes a compulsory one Credit Module in Basics of Industrial Chemistry comprising Engineering and cost aspects in industry (1/6 credit), Industrial and Quality Systems Management (1/3 credit), Introduction to Industrial Chemistry and Marketing (1/3 credit) and Industrial Pollution and Environmental Management (1/6 credit). 1 1/3 credits are also available to the student in a

host of optional units such as Metallurgy, Cement, Ceramics & Glass, Natural and Man-made Fibres and Products, Minerals, Agro-Industry, Agro-Chemicals, Bio conversions, Principles & Techniques of Food Preservation, Food Composition & Analysis, Processing of Foods,

Non-Alcoholic Beverages, Chemistry of Polymers, Rubber Industry, Latex Industries, Plastic Industries & Testing and Characterization of Polymers. All these Modules will be provided through Distance Learning methodologies subject to attendance at some compulsory practical classes that are inevitably essential for a science degree programme. As far as possible, practicals will be held in recognized industrial quality control laboratories where students will follow in house quality control procedures. Any lacunae will be filled by the conduct of practical classes at research institutes and at the Open University of Sri Lanka. Nevertheless, the all pervading use of Open and Distant Learning will be always kept uppermost.

Special assignments, case studies and in plant training will comprise 2/3 credit of the programme while the equivalent of six months full time project work will comprise the balance one credit. The programme will be conducted in a flexible manner to accommodate individual student needs and difficulties while being open enough to recognize previous work experience and practical work at an equivalent standard. Recognition of such equivalent experience will further consolidate the Open and Distant Learning characteristics of the programme.

Conclusion

The Asian Development Bank through its Post Secondary Modernisation Project that is about to be finalized will provide a large quantity of funds that will enable the infrastructure and the initial running costs needed for the successful launch of this Programme to be met. The Department of Chemistry and the Faculty of Natural Sciences at the Open University of Sri Lanka are optimistic and firmly convinced that within the next two years it will be possible to offer this programme in an effective and useful manner that will enable the University to make a distinct and unique contribution for the World of Work and Economic Development in Sri Lanka through Open Learning and Distance Education.

References

1. M.Sc. Programme in Industrial Chemistry – Final Report and Curriculum of a Workshop held by the Open University of Sri Lanka, March 29 – 30, 2001, Colombo, Sri Lanka.

(Extracts will be available as a hand-out to permit better understanding and facilitate discussion)