Agenda I

Progress of Agricultural Engineering Accreditation System in Taiwan

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Agricultural engineering education in universities

Agricultural engineering education in Taiwan has had significant changes and remarkable progresses since 2001. The Agricultural Engineering Department at the National Taiwan University was renamed as the Department of Bioenvironmental Systems Engineering (DBSE-NTU) in 2001 in order to adequately reflect the teaching and research programs and activities of the department. In fact, prior to the name change in 2001, many faculty members have expanded their teaching subjects and research topics from traditional irrigation and drainage, soil and water resources engineering to remediation of environmental contamination, eco-hydraulics, eco-hydrology, environmental informatics, etc. The name change results in significant improvement in recruiting new students and the department is now taking the lead in several new research arenas including (1) ecological engineering in paddy filed, slope-land, riverine, and estuary, (2) bioenvironmental risk assessment and (3) application of remote sensing and GIS to watershed management and water resources planning and management, opening a new horizon for agricultural engineering education in Taiwan. In addition, a new ecological engineering curricular program in the College of Bio-resources and Agriculture went into effect in 2003, aiming to offer engineering students essential knowledge about the ecological aspects of our living environment. Planning for establishment of an Ecological Engineering Research Center in the College of Bio-resources and Agriculture is also in progress and it is expected to become a reality in 2005.

In additional to the National Taiwan University, there are other universities offering agricultural engineering education through departments of water resources engineering and hydraulic engineering. Notably, a new department of bioenvironmental engineering was established at the Chung-Yuan University in 2004, following the successful experience of DBSE-NTU. Overall, there are approximately 300 new undergraduate students enroll in departments offering agricultural engineering education annually.

Educational accreditation system for engineer programs

At this stage the educational accreditation system has not been fully established in Taiwan. Unlike ABET, the most recognized accreditor in US, which is a federation of 30 professional and technical societies, quality assurance in higher education in Taiwan is done through program evaluation by a special task force under the authority of the Ministry of Education (MOE). Such evaluations are conducted on irregular basis for the university/college as a whole and for special programs; and evaluation results do not serve to accredit programs in universities and colleges. Nor do the evaluation results be completely disseminated to public. Until now, program-specific evaluations have been conducted for electric and information engineering, mechanical engineering and business administration programs only. Universities having low scores in evaluation are asked to make improvements. In addition to MOE's

evaluation, some universities, for example the National Taiwan University, also implement their own internal program-specific evaluations in order to stay competitive. Installation of ABET-like institute to provide educational quality assurance is currently under discussion and may be realized in near future.

Movements acceding to international mutual accreditation system

The Ministry of Education has planned to allocate 1.5 million US dollars in five years starting from 2005 to establish an independent and nonprofit institute to provide educational credentials evaluation services. In February, 2004, the Ministry of Education held an international conference on comparison of educational accreditation systems among five countries including Australia, Japan, Korea, United Kingdom and United States. Some recommendations and consensuses are:

(1) The institute should be funded, however not interfered, by the government.
(2) Experts from foreign countries should be invited to participate in educational credentials evaluation.
(3) The institute should only conduct professional evaluation. It will not be responsible for educational program planning.

The planned accreditation system is similar to procedures adopted by US-ABET "substantial equivalency" evaluation. Generally speaking, the evaluation is composed of the following steps:

(1) a self-evaluation report by the host institution covering adequate advance information on its faculty, students, curriculum, facilities, administration, etc.;
(2) on-site visit to the host institution by a evaluation team;
(3) an interview of students of the host institution; and
(4) a written report to the institution.

In order to accommodate to international mutual accreditation, the Ministry of Education also encourages universities to offer courses taught in English. The Department of Bioenvironmental Systems Engineering at the National Taiwan University is also building an English teaching and learning environment by establishing English version of web homepage, publishing English annual report, holding international conferences, exchanging students with institutions in foreign countries, etc.