New Curricula and Syllabi of NDES Programs of the IET, Katunayake
Final remarks by the IESL Mentor – Prof. J. P. Karunadasa

The new Curricula and Syllabi have now been developed in line with IESL requirements for recognized Engineering Technology Degree programs in the fields of Electrical and Electronic Engineering, Mechanical Engineering, Civil Engineering and Marine Engineering. This is a major but one requirement for obtaining IESL recognition.

Along with sound curricula and syllabi, the IET needs to ensure that it possesses other requirements for the recognition, which are given below.

1. Laboratories
2. Academic staff and students
3. Teaching facilities
4. Quality management system.

Laboratories:

Adequately and properly equipped set of laboratories should be made available to deliver the content of the syllabi effectively. Key requirements in this context are:

- There should be separate labs to cover each core area
- Equipment should be representative of the modern engineering practices, including modern computerized equipment software
- Each lab should be spacious to accommodate the expected no. of students in a lab session, approximately 10 m^2 per student
- Lab facilities should be for hands on experience, not for demonstrations only
- Lab experiments should be set for understanding of principles, operations, designs and practical procedures
- Each lab session should be of 2 hour duration on the minimum
- Each lab should preferably be supported by separate Technical Officer and a Lab-attendant for continuous maintenance and vigilance
- Health and safety should be given high prominence in each lab, both visually and operationally

Quality of Academic staff:

Academic staff plays a significant and vital role on the success of an academic program. The quality and composition of academic staff is very important in this context. For a recognized degree program, its academic staff should be of the following caliber.

- Have a postgraduate degree, preferably at doctoral level

- Good first degree, having wide industrial experience with professional qualifications, may be considered to give an industrial flavor to the program but they need to obtain research experience afterwards
- Have diversity of backgrounds, experience in teaching and research, and ability to communicate effectively
- Have high level of scholarship as shown by scientific and professional publications, degree of participation in professional, scientific and learned societies
- Have a high level of competence, and dedicated to the aims of engineering education
- Have obtained industrial experience and professional qualifications

The ratio between the number of fulltime academic staff members and the number of students in a given program should be 1:12, or better. The number of fulltime academic staff members is computed according to the criteria given in the Table, below.

Type of Staff	**Equivalent Full time count**	**Description**
A full time active academic staff member, teaching in the programme	1	
A full time academic staff member on leave	(1- 0.2*n*)	*n* is the number of years absent on leave in the last 5 years
A full time academic staff member from other institutions serving on sabbatical or contract basis	0.2*n*	*n* is the number of years served during last 5 years
A full time academic staff member from other programmes serving the programme	0.1*m* (1 max)	*m* is the total no. of modules taught by the staff member during the last 5 years
A part time academic staff serving the programme	0.1*m* (1 max)	*m* is the total no. of modules taught by the staff member during the last 5 years (Claim from this category is limited to 10% of the total fulltime equivalent staff)
When the academic department offers more than 1 degree program, and when the staff cannot be uniquely identified to individual degree programs, the number of staff must be computed for the Department.		

Students entering to the academic program should meet entry qualifications as prescribed by the IESL, so that they can proceed through the program with proper understanding and assimilating of engineering principles. IESL recognizes the following entry qualifications for an Engineering Technology program.

Category of entering students	**Minimum entry requirement**
GCE (A/L) Physical Science stream	Simple passes for Combined Mathematics, Physics and Chemistry, each, in one and the same sitting
GCE (A/L) Technology stream	Simple passes in Engineering Technology, Science for Technology and one other subject, each, in one and the same sitting
SLQF	Level 2 or above in the field of the program discipline
NVQ	Level 5 or above in the field of the program discipline

Teaching Facilities:

Physical facilities available for teaching in the program should be at a level acceptable to the IESL. In particular, teaching facilities should have the followings on the minimum.

- Classrooms in adequate numbers and adequate spaces, and with proper audio-visual and projection facilities
- Study areas for students
- Information resources (library), computing and information technology systems for students to use modern engineering and organizational tools, and explore beyond formal dictates of specific program of study
- General infrastructure to meet the program's objectives.
- Communication facilities

Quality Management:

A very important other aspect for a recognized degree program is Quality Management. A proper system must be in place to ensure quality in all processes involved in the program. In particular, the following systems must be in place.

- Examination regulations
- System of assessment and criteria for Grades, GPA and Classes
- Preparation and moderation of examination papers
- Assurance of standard of examination papers
- Assessment for final year projects
- Assessment of industrial training
- External examiners for each study-program to independently scrutinize and report on examinations and assessment, each academic year
- Collecting feedback from students, graduates, employers and representatives of the wider community.
- Applying of feedbacks for continuing improvement of program and communicating back to stakeholders
- Benchmarking of program standards with those of other universities, nationally and preferably internationally
- Record management that enables audit of the above processes at any time
- Involving of practicing professional engineers, and leading employers of engineering graduates in the Faculty's forward planning
- Maintaining of a database for graduate employment, achievements, and employer remarks

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