

- ‘*’ – Availed of the provision of withdrawal.

The guidelines and criteria adopted by the NBA lend themselves to a substantially quantitative evaluation of major and core academic parameters in respect of faculty, students and teaching-learning processes.

The Institution of Engineers (India) accredits all professional courses and Institutions based on the following criteria:

- Academic education, which is already accredited by the Universities and the AICTE;
- Training in industries/professions at the desired level;
- Practical experience in the concerned engineering discipline, particularly at the responsible position.

The accreditation by the Institution thus will take at least six years after obtaining engineering degrees, which leads to make the engineers become members of the Institution and then Professional Engineers.

The Institution offers engineers corporate membership of Associate Member, Member and Fellow, according to their experience, qualifications and professional achievements.

It is in this context, every professional society has an important role to play in maintaining the standard and quality of the profession through its membership. The present 2(c) of the Charter, therefore, underlined ‘accreditation’ as one of the objects of the Institution:

‘To establish, acquire, carry on, control or advise with regard to colleges, the schools of other educational establishments where students and apprentices may obtain a sound education and training in engineering on such terms as may be prescribed by the Institution.’

Further, the Bye-law 101 of the Institution stresses the purpose of accreditation:

“The Council shall, on the recommendation of the Education, Examinations and Accreditation Committee, have the power to recognize such university degrees and collegiate or other diplomas or certificates as after scrutiny they deem to prove a sufficient standard of attainment in the subjects referred to, and may exempt graduate or holders of such diplomas or certificates from passing in whole or in part the aforesaid examinations appointed and directed by the Council.”

In conformity with the Charter and the Bye-Law, and partially modifying the policy in existence since 1964, the Institution evaluates undergraduate professional engineering courses in India and awards recognition to courses meeting the requirements for its various classes of membership, viz, Studentship, Technician, Senior Technician, Associate, Associate Member, Member, Fellow and Professional Engineer. In case of foreign

qualifications and courses in the frontier areas of engineering or courses not formally recognized, such cases are considered on an individual merit for equivalence. Wherever necessary, advice of the respective national society of engineers is solicited. Qualifications accredited by Accreditation Board for Engineering and Technology (ABET), USA; Engineering Council, UK; and constituents of FEISCA are normally accepted.

The Institution currently accredits:

- Undergraduate engineering courses (Bachelor of Engineering) – an acceptable course by the All India Council for Technical Education;
- Diploma courses in engineering being conducted by State Boards of Technical Education/other establishments, viz, defence, railways and various other training institutes;
- Advance level courses in science and engineering as exempting from Section A examination only; and
- School level courses as exempting from Studentship examination.

This paper primarily deals with the processes relating to the accreditation of the undergraduate engineering courses as exempting from Sections A and B of Institution examinations and other science and engineering courses as exempting from Section A of Institution examination.

Why Accredit Courses ?

The engineering course accreditation system was established as early as 1964, and is well known within India to government, universities and their affiliate Colleges/Faculties of Engineering, Industry, States Board of Technical Education and to other educational institutions.

Accreditation serves a useful function in raising tertiary education standards based on a peer review process. Universities, colleges and the faculty members benefit from exposure to new ideas and suggestions. Students also benefit from accreditation because the course of study which they are about to embark on has credibility in the profession. Many employers require that applicants for professional engineering positions be able to prove that they are eligible for membership of the Institution. Many overseas professional engineering societies give due credit to the accredited courses and membership of the Institution.

The Institution's accreditation system is also recognized internationally through the mutual agreement between IEI, the Indonesian Institute of Engineers, Jakarta (Indonesia); The All-Union Council of Scientific and Engineering Societies (VSNTSO), Moscow (USSR); The American Society of Mechanical Engineers (ASME), USA; The American Society of Civil Engineers (ASCE), USA; The Hungarian Federation of Technical And Scientific Societies (MTESZ), Budapest (Hungary); Union of Engineers and Technicians of

Yugoslavia (SITJ), Belgrade (Yugoslavia); The Scientific and Technical Unions of Bulgaria (CCNTS), Sofia (Bulgaria); and Verein Deutscher Ingenieure (VDI), Dusseldorf (West Germany), and have become a signatory.

Recently, the Institution has held discussions and conducted visits with counterparts of other nations to globally maintain the best practice in accreditation systems.

In essence, the Institution sets the standards for engineering courses and training schemes in India and is in active collaboration with the educational planning and re-orientation programmes of the government. This is the reason that the Institution is represented on the governing bodies of almost all universities, educational institutions, national laboratories and several government and industrial organization.

Features of the IEI Accreditation System

Diploma Level Courses

A State Board of Technical Education seeking IEI recognition of a diploma course in engineering provides the (a) course outline and break-up analysis, (b) Prospects and syllabus of such courses; (c) Break-up analysis (hourly basis) both for teaching and examination scheme; (d) Question papers leading to final examination; and (e) Specimen copy of the Certificate awarded, with the condition that Physics, Chemistry, Mathematics, English and Drawing are included in the course syllabi. On receipt of such a proposal, the same is being assessed at the Headquarters of the Institution and thereafter sent to three expert members for their considered opinion, who in turn forward the same, with their recommendation, to the Institution.

Degree Level Courses

The courses conducted at any college/institute approved by the All India Council for Technical Education, a statutory requirement to start a specific engineering course in any college, seeking IEI recognition provides the following:

- 'Rules and Syllabi' of the course;
- Question papers leading to final examinations;
- Academic Staff with their qualifications;
- List of equipment in the workshop and in the laboratory of the department; and
- Plans and layout of various buildings, workshops, laboratories of the department with their approximate floor areas.

Preliminary Assessment

On receipt of the material from the college, a preliminary assessment is being made as to whether or not the fully developed course is likely to meet its requirements. Accreditation at this stage is requested only after the first batch passes out from the college. Preliminary assessment does not constitute formal recognition, but it does meet the Council's recognition requirements for the grade of 'Associate', pending formal recognition of the course.

Appointment of Expert to Visit the College

On satisfactory preliminary assessment, a sub-committee is formed, consisting of an expert, the Chairman and the Convener, from the panel being maintained discipline-wise, by the President, from outside the State in which the college is located.

Assessment by the Sub-committee

The sub-committee so nominated is expected to evaluate the course against the following prescribed criteria before submitting its report:

- Admission: Minimum qualification required, generally 10 + 2, admission procedure, and mode of admission—on the basis of merit or donation or both;
- Course content and duration of the course: The course should cover all essential subjects and examination of the syllabus of each subject;
- Teaching scheme: There are adequate teaching hours devoted to each subject, methods of teaching, experiment carried out and workshop practice followed by the students;
- Examination scheme: Standard of examination question papers is as high as that of the Institution Examination;
- Academic staff: Qualification of teaching staff of the Department, vacancies, if any, and student/staff ratio. Student/staff ratio is considered to be satisfactory if it is around 15:1;
- Laboratories and workshops: Well-equipped laboratories and workshops are maintained with modern equipment and there is enough scope for students to understand practical problems;
- Lecture halls, auditorium, library, etc: Adequacy of accommodation in lecture halls, auditoriums, etc. Each department has a library of its own, providing reading room and having adequate number of books and journals; and

- Administration: Governing body consists of adequate representation of educationists and philanthropists. Annual report and audited accounts should also be seen for development work and overall activities with reference to expenses.

On the basis of aforementioned points, an individual member in the sub-committee prepares an accreditor's report and submit to the Convener, who in turn send to the Chairman for forwarding to the Headquarters with his recommendations.

On receipt of the recommendations, in respect of diploma and degree courses, from the chairman/experts/sub-committee, the recommendations are placed before the Equivalence Committee followed by Education, Examinations and Accreditation Committee and the Council. The Council of the Institution is, however, the final recommending authority for any course.

Provisional Recognition

In case of a developing course/inadequate infrastructural facilities, the course is assessed for provisional recognition, which is usually for a period of three years. Graduates of courses with provisional recognition are admitted as 'Associates'.

Full Recognition

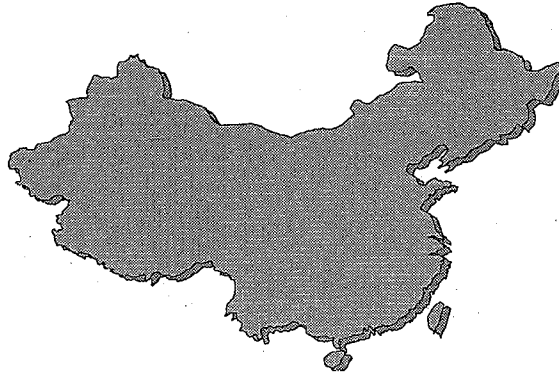
A fully developed course is assessed for full recognition.

The Institution receives no subsidies from the Government or other sources to meet the cost of accreditation, except the reimbursement of travel and daily expenses of sub-committee members by the respective college. Other costs are met by the Institution and its members— the panel members—give their time free of charge.

Challenges of Change

The accreditation system followed by the Institution has been in place for many years. The Institution is mindful of the challenges of change that are occurring in engineering education due to a large number of private engineering colleges in the country and the requirements of engineering standards and the delivery systems for engineering courses.

CHINA



THE ACCREDITATION/EVALUATION SYSTEM OF CHINA'S HIGHER ENGINEERING EDUCATION

Institutional Paper

1. Accreditation system

The Evaluation Committee for Higher Education and the Academic Committee of the State Council are co-responsible for the accreditation of China's higher engineering education.

The Evaluation Committee for Higher Education is a consultative committee to the State Education Commission. Entrusted by the State Education Commission, it is to give appraisal of higher institutions both for general education and for adult education, applied for by governments at the level of province, autonomous region and municipality directly under the central government. It is also to provide consultation for the State Education Commission in decision-making. Its members are appointed by the State Education Commission, and the term of office is 3 years.

The Academic Committee of the State Council is responsible for ratifying and announcing the list of educational and research institutions which it authorizes to grant Bachelor, Master and Doctor degrees. The qualifications for the grantors of different degrees are specified by the State. Institutions can apply to the authority concerned for qualification. The Academic Committee will call for assessment by experts and, upon approval by the State Council, publish the accreditation.

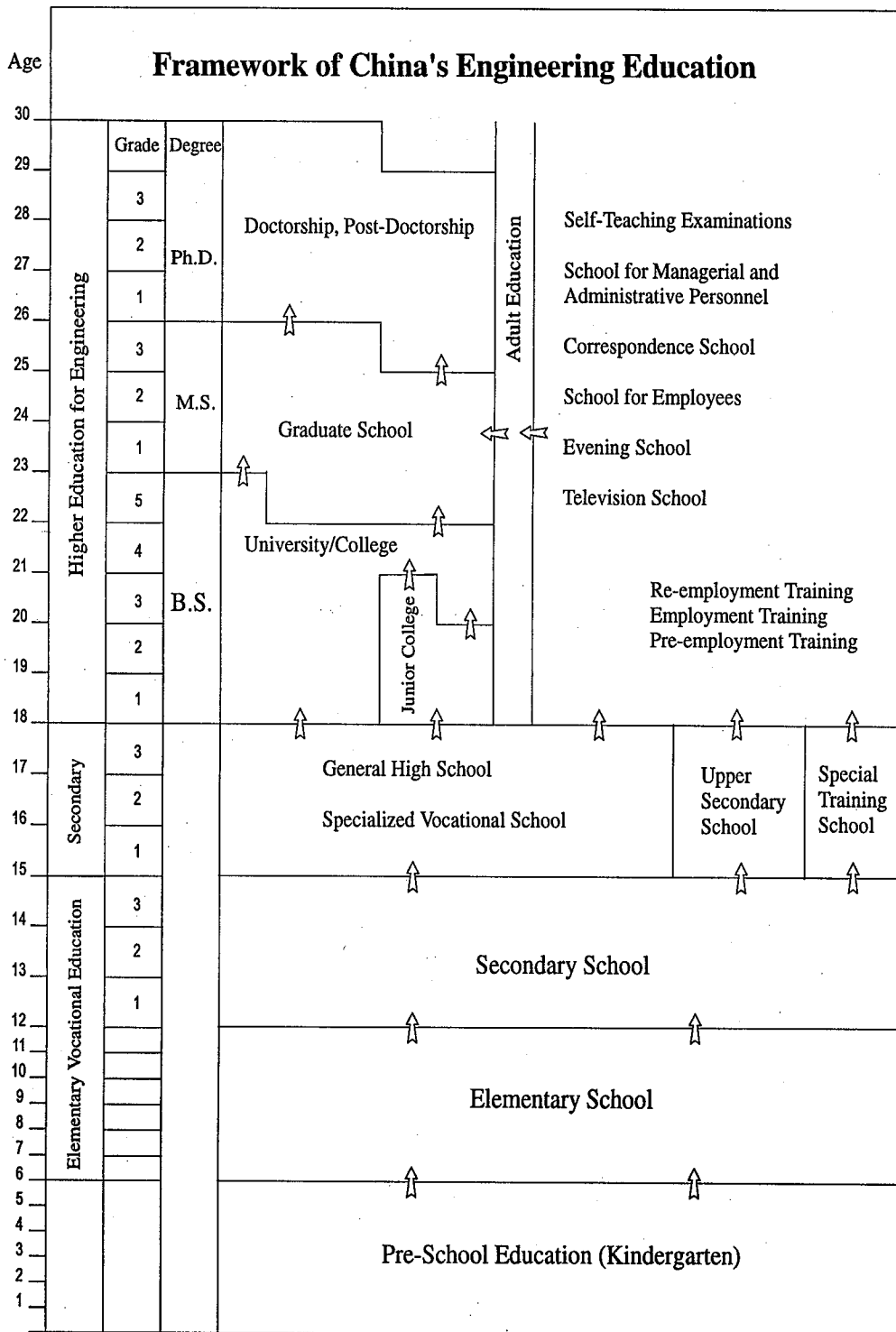
2. Evaluation

The evaluation of undergraduate education is directed by the Evaluation Office of Higher Education Dept. of State Education Commission, and is carried out by the Engineering Division of the same dept. In accordance with the evaluation program for higher engineering education, evaluation is carried out in terms of teaching

facilities, teaching conditions and teaching effectiveness so as to guarantee good quality and level of teaching.

The evaluation of post-graduate education is directed by the Quality Control Office of the Academic Committee of the State Council. It aims to re-assess the qualifications of the institutions authorized to award Master and Doctor degrees in accordance with the criteria set up by the State. The Quality Control Office will select MS. and Ph.D. dissertations for assessment and receive feedback from employers of graduates on a regular basis.

The Quality Control Office is also responsible for the overall evaluation of the graduate schools of 33 universities across the country. Evaluation is carried out with respect to the set-up of graduate schools, the achievement of discipline development and the qualities of their graduates, etc.



UNITED KINGDOM



ACCREDITATION OF TRAINING AS PREPARATION FOR PROFESSIONAL PRACTICE IN THE UK

Jack C. Levy

REGISTRATION OF ENGINEERS IN THE UK

In the UK the registration of engineers is the responsibility of The Engineering Council. There are three Sections of the register: Charter of Engineers (CEng), Incorporated Engineers (IEng) and Engineering Technicians (EngTech).

For each of the Sections registration is in three stages:

- Stage 1 - An accredited education qualification (See IDEAS 2)
- Stage 2 - Training, preferably by an accredited training course
- Stage 3 - Experience, including some of a responsible nature

In addition, for CEng and IEng the candidate must pass the Professional Review which includes an interview.

After gaining the academic qualification (Stage 1) the Training and Experience stages require a minimum of four years total.

Training Requirements for Chartered Engineers (Stage 2)

The Engineering Council specifies that trainees should reach standards that will enable them to:

- a. apply the code of professional conduct of a Chartered Engineer;
- b. make appropriate provision in engineering projects to ensure safety and the required standards of quality and reliability;

- c. fulfill responsibilities to their employers, colleagues, customers, other engineers and the community at large;
- d. apply theoretical knowledge to the design, manufacture, construction, marketing, operation and maintenance of the particular products or services with which their employing organisations are concerned;
- e. have a working knowledge of the general factors affecting an industrial organization such as:
 - the financial, economic, environmental and commercial constraints;
 - limitations imposed by the qualities of the manpower and materials available;
 - the operational and maintenance requirements that may affect engineering decisions;
- f. understand the vital importance of good industrial relations, safety, health and welfare not only to employees but in the general public interest;
- g. understand the point of view of others and the promotion of good personal relationships within an organization;
- h. cultivate sound judgement and to accept responsibility for decisions.

At the conclusion of the period, trainees must be able to accept increasing responsibility in their particular branch of engineering.

Experience Requirements (Stage 3)

Those intending to become Chartered Engineers will be considered to be gaining responsible experience when their employment requires them to develop and prove fully their technical competence and to demonstrate a satisfactory range of functions and characteristics which may include:

- a. The exercise of independent technical judgement requiring both practical experience and the application of engineering principles;
- b. direct responsibility for the management or guidance of technical staff and other resources;
- c. innovation in technical matters through such activities as design, development, research and manufacturing technology;
- d. professional and personal integrity and a responsible attitude to engineering and changes in the field of technology;

- e. understanding and taking account of financial, economic, commercial, statutory and national considerations;
- f. creation of systems and procedures and proving their cost-effectiveness;
- g. design, development and manufacture of products, equipment and processes to a competitive level of cost, safety, quality, reliability and appearance;
- h. involvement in human and industrial relations.

The Professional Review

Having successfully fulfilled the requirements for Stage 3 the final hurdle for the aspiring Chartered Engineer is the Professional Review.

The Professional Review is an occasion when a candidate is assessed by senior engineers. The Review normally includes an interview and a written report which contains a description of the types of work on which the candidate has been engaged and indicates his or her responsibility. The occasion acts as a final check on competence and, if successful, the candidate is then eligible to become a Charter Engineer.

AN EXAMPLE: THE INSTITUTION OF ELECTRICAL ENGINEERS (IEE)

The Engineering Council approves various Engineering Institutions to accredit on its behalf educational courses and also training programmes. The largest of these institutions is the IEE which has 133.000 members of whom 53.000 are Chartered Engineers. The IEE has developed a schedule of training for its own branch of engineering which fulfills The Engineering Councils' Stage 2 requirements.

The preferred method by which engineers meet the training standards is by their employers running a training scheme which is accredited by the IEE. In 1995 there were more than 200 such schemes.

Procedure for Accreditation

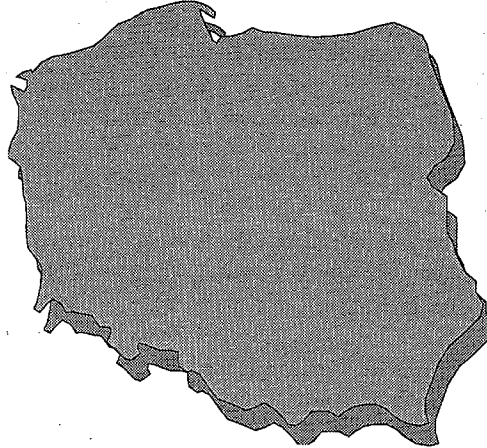
Organisations wishing to have their training scheme accredited must apply to the IEE and be able to demonstrate that the following components are evident:

- a. support for the training scheme from Board level;
- b. evidence that the scheme contributes to the formation of professional engineers;
- c. detailed programmes of activities, each of which has an identifiable training objective and which contains the elements set out in the Institution's training publications;

- d- an environment in which a potential Chartered Engineer can undergo professional training. This means that the scheme must be suitable for entrants who are studying to fulfil or have fulfilled the Institution's educational requirements. It must also provide contact with technology and working practices which will be relevant both to immediate employment and to a lifetime career in the profession;
- e. a training record compiled by the trainee, preferably in the format recommended by the Institution. It should be supported by an engineering note book (log book) giving details of work done together with sketches, observations, calculations, etc.
- f. involvement and approval of professional engineers in the design of the scheme, its development and monitoring. In large companies this is achieved ideally through a training review committee, chaired by a senior Chartered Engineer;
- g. a monitoring (tutoring and advisory) system in which trainees are guided and supported by snior Chartered Engineers;
- h. a programme of training mentors and a system of monitoring standards;
- i. a system to assess the progress of trainees and the fulfillment of the training objectives which will ensure that only those with the potential to become Chartered Engineers complete the training successfully;
- j. adequate staff and resources to support the scheme.

Normally it is not possible to assess whether a scheme will meet the requirements without a visit to the site where the training will take place. The visit is undertaken by three people on the IEE's accreditation panel plus a staff member from the IEE Training Secretariat. Regular meetings are held at the IEE of the Mentors who are the firm's employees responsible for ensuring that the training is effectively carried out.

POLAND



QUANTITATIVE ANALYSIS OF PRACTICAL EDUCATION IN EUROPE AS A PREMISE FOR ACCREDITATION on the example of FIG - Federation Internationale des Geometres

Z. Adamczewski

President APS Commission for Education and Professional Development
Polish Federation of Engineering Associations (N.O.T.)
Committee on Professional Development

Origin of the Problem

In 1990 FIG published a report by Dr. A. L. Allan of University College, London, entitled: "The education and practice of the surveyor in the private sector within the European Economic Community". Dr. Allan, former president of FIG Commission on Professional Education, carried out his research in cooperation with institutions training surveyors in various countries and national associations of surveyors within the framework of the Geometres Liaison Committee established by the EEC in 1972. The ultimate goal of this group was to provide analytical data for European integration in the field of geodesy.

In 1991 the author, who was Pas President of the Association of Polish Surveyors, familiarised the Polish surveying community with the above mentioned report on education, and recently proposed a new numerical approach to the results obtained by Dr. Allan, which was realised in his work entitled: "Usefulness of foreign models in redesigning the educational profile of land surveyors in Poland". The work presents results of quantitative analysis of the educational coherence of professional training of engineers in 12 European countries and its implications for accreditation.

Numerical approach to Allan's concept.

Dr. A. L. Allan distinguished three levels in the professional training of surveying engineers. These levels may be identified with the successive years of engineering studies: level 1 - year I, level 2 - year I, II, level 3 - year I, II, III of studies. In his original study Allan used a graphical representation of the share of individual specialist subjects in the practical education programme. Following digitalisation of Allan's diagrams we obtain the enclosed table, (Table 1) of the 12 European countries and 25 practical subjects.

Rows of the table correspond to individual subjects, for which original English names have been provided. Columns correspond to countries marked by international letter symbols, e.g.: B for Belgium; I for Italy, etc.

Numbers in the table designate the first (1), second (2) and third (3) level of education. If the training is carried out on an incomplete level this is marked by half points e.g. 1.5; 2.5.

The total of a given row represents the intensity of studies of a particular practical subject, while the total of a column expresses the general professional training burden assumed by a student in a given country. Thus we can immediately see that, for example subject N° 3, topographical surveying, shows the greatest intensity, while students in Belgium and then France carry the heaviest training load.

The enclosed Table 2 is a correlation table of practical education of surveyors in the European countries. It provides coefficients of correlation for column vectors, that is, it illustrates the educational correlation between individual pairs of countries.

The last column of Table 2 shows the average coefficient of correlation between a given country and other listed countries, the average of a row. This may be regarded as an index of correlation between a particular country and the whole European system of education.

An attempt at a conclusion

The average coefficient of correlation for the whole European system of surveyors education is 0.502.

It may be regarded as a certain index of coherence of the European system of practical education for surveying engineers. It is difficult to say objectively whether it is high or low. We believe that it is an expression of important coherence of the system. We are not attempting to delimit the importance of multiple correlations, because we are merely suggesting a methodology of the quantitative study of education.

Table 2 shows both certain similarities in the correlation of education between Great Britain and Spain, as well as differences signalled by a high negative correlation in the case of Greece and Italy.

Initial analysis of the Polish system of practical education of surveyors.

The results of this analysis that are not presented here, showed considerable similarities with the German system. The quantitative study of the correlation between the Polish system and the European system may be carried out for academic studies, however it would be very difficult to conduct for professional training. In Poland, practical education of land surveying engineers is partly in the form of practical training at professional land surveyors or geodetic enterprises. The proportion of these two forms is 1:1.

	B	DK	F	D	GR	IRL	I	L	NL	P	E	GB	
1	.33	.38	.38	.31	.10	.38	.53	.23	.29	.25	.21	0.31	B
	1	.68	.78	.76	.37	.07	.53	.81	.65	.69	.68	0.58	DK
		1	.66	.68	.16	.10	.68	.65	.48	.53	.48	0.50	F
			1	.90	.34	.05	.71	.90	.75	.79	.73	0.64	D
				1	.37	-.08	.56	.86	.68	.78	.70	0.59	GR
					1	.04	.32	.35	.41	.69	.82	0.36	IRL
						1	.32	-.04	.14	-.03	.05	0.09	I
							1	.63	.54	.59	.60	0.55	L
								1	.77	.82	.76	0.61	NL
									1	.78	.73	0.57	P
										1	.95	0.62	E
											1	0.61	GB

TABLE 2

SCHEDULE
THE SCOPE OF PROFESSIONAL TRAINING OF SURVEYORS IN THE PRIVATE SECTOR
 according to Dr. A. L. Allan (original English names)

	B	DK	F	D	GR	IRL	I	L	NL	P	E	GB
1. Geodetic Surveying	2	3	3	3	3	1	1	3	3	3	2.5	3
2. Hydrographic Surveying	1	1	1	1	2	3	0	0	1	1	1.5	2
3. Topographical Surveying	2	3	2.5	3	3	3	2	3	3	3	3	3
4. Cadastre & Remembrement	3	3	3	3	3	1	2	3	3	2	2	2
5. Engineering Surveying	1	3	3	3	3	2	1	3	3	0	2.5	3
6. Mine Surveying	2	0	1	0	1	3	0	1	0	0	2	2
7. Mineral Management Valuation	0	0	0	0	0	0	0	0	0	0	0	0
8. Mineral Planning and Development	0	0	0	0	0	0	0	0	0	0	0	0
9. Rural and recreational Land Management	2	2	3	0	0	0	1	1	0	0	0	0
10. Agricultural Valuations	2	0	2	1	1	0	2	1	0	0	0	0
11. Forestry and Woodland Management	0	0	2	0	0	0	1	1	0	0	0	0
12. Farm Buildings and Equipment	0	0	1	0	0	0	2	0	0	0	0	0
13. Building Design	1	0	0	0	0	0	2	0	0	0	0	0
14. Construction Economics	2	0	0	0	0	0	2	0	0	0	0	0
15. Tender and Contract Documentation	2	2	0	0	0	2	2	0	0	0	0	1
16. Contract Administration	0	0	1	0	0	2	2	2	0	0	0	1
17. Project Management	1.5	0	1	0	0	2	2	2	0	0	0	1
18. Building Maintenance and Construction	2	0	0	0	0	0	2	2	0	0	0	0
19. Urban Property Management	3	0	2	0	0	0	1	2	1	0	0	0
20. Property Marketing and Investment	2	0	0	0	0	0	1	1	0	0	0	0
21. Property Valuation	3	0	2	1	2	0	2	2	0	0	0	0
22. Urban Development	2	2	2	2	2	0	0	2	1	0	0	0
23. Physical Planning	1	2	2	0	2	0	1	0	1	0	0	0
24. Economics of Planning and Development	0	0	1	0	1	0	0	0	1	0	0	0
25. Planning Control Administration	0	0	0	1	1	0	0	0	1	0	0	0
	34.5	21	32.5	18	24	19	29	29	18	9	13.5	18

TABLE 1

READERS CORNER

Each edition of this Journal IDEAS, will have a Readers Corner, with the purpose of receiving comments from people or persons responsible in WFEO National Member Associations and other Institutions that have received the previous issue free of charge. The ideas and proposals contained in the letters received plus the information they may provide to enrich our knowledge, will be valued. That is why we wish to publish them so that all readers can update their information with background from different countries in the world, and exchange ideas between themselves.



Dear Sir,

30th, May, 1995

Re: RESOLUTION ON ACCREDITATION

Our attention has been brought to the resolution on accreditation which was announced as a major output of the November 1994 Third World Congress on Education and Training, sponsored by WFEO and held in Cairo, Egypt.

The Institution of Engineers of Kenya has a keen interest in implementing this resolution and would be grateful if you could provide us with additional information. We especially would like to express our interest in any assistance we can receive from the WFEO Committee on Education and Training in setting up a national accreditation system.

We look forward to hearing from you about this important resolution.

Yours faithfully,

Eng Prof. A. V. Otieno
Honorary Secretary
The Institution of Engineers of Kenya

November 17, 1995

Dear Prof. Yadarola:

Thank you very much for sending us the second issue of IDEAS.

For your information, this University has started up an institutional self-evaluation process and our Faculty of Engineering is a unit for analysis in this program.

This activity is performed prompted by an agreement that the University of Patagonia "San Juan Bosco" reached with the Secretariat of University Policies belonging to the State Ministry of Culture and Education.

The self-evaluation process will be finally achieved with an external evaluation, performed by outstanding personalities of renowned experience from the higher education institutions environment and an agreement has been reached between both parties to carry out this task.

I would be grateful if you could send me IDEAS N° 3 that will deal with "Accreditation and Professional Practice".

Sincerely,

(Signed) Eng. Roberto Aguirre - Dean of the Faculty of Engineering
National University of the Patagonia "San Juan Bosco"
Comodoro Rivadavia - Argentina

November 22, 1995

Dear Sir:

Thank you very much for sending us the publication IDEAS N° 2, which has been received with great interest by our organization.

As regards the general comment requested in the last paragraph of your letter, this University is in fact carrying out a pilot project on the use of Norm ISO 9000 in education for the implementation of a Quality System as part of the programs presently in force on internal and external evolution.

I would be grateful if you could send me a copy of IDEAS N° 3, and at the same time wish to express that we are at your disposal for any consultation on the main theme of your letter or on any other matter you may consider pertinent.

I take this opportunity to send you a copy of the paper submitted at the Seminar "Search for Methodologies for quality programs on the basis of dialogues Enterprise-University", organized by the Argentine Industrial Union that took place on November 15.

We commit ourselves to cooperate with this initiative of WFEO and remain, sincerely yours.

(Signed) Miguel Guerrero - Director
Centre of Technological Application
El Salvador University - Buenos Aires - Argentina

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1. The first part of the document discusses the importance of maintaining accurate records of all transactions and activities. It emphasizes that proper record-keeping is essential for transparency and accountability, particularly in financial matters. This section also touches upon the legal implications of failing to maintain such records, which can lead to severe consequences, including fines and legal action.

2. The second part of the document focuses on the role of technology in modern record-keeping. It highlights how digital tools and software solutions have revolutionized the way data is stored, accessed, and managed. This section discusses the benefits of cloud storage, data encryption, and automated backup systems, as well as the potential risks associated with digital data, such as cyberattacks and data loss.

3. The third part of the document addresses the challenges of data security and privacy. It explores various threats, including phishing, malware, and insider threats, and provides practical advice on how to mitigate these risks. This section also discusses the importance of regular security audits and the implementation of robust access control policies to protect sensitive information.

4. The fourth part of the document discusses the importance of data backup and recovery. It explains how regular backups can ensure that data is preserved in the event of a disaster or system failure. This section also covers the different types of backup strategies, such as full, incremental, and differential backups, and provides guidance on how to test and restore data from backups.

5. The fifth part of the document focuses on the legal and regulatory aspects of record-keeping. It discusses the requirements of various laws and regulations, such as the General Data Protection Regulation (GDPR) and the Health Insurance Portability and Accountability Act (HIPAA). This section also provides information on how to ensure compliance with these regulations and the consequences of non-compliance.

6. The sixth part of the document discusses the importance of data retention and archiving. It explains how to determine the appropriate retention period for different types of data and how to properly archive data for long-term storage. This section also covers the importance of regularly reviewing and purging data to maintain compliance and optimize storage resources.

7. The seventh part of the document discusses the importance of data integrity and accuracy. It explains how to ensure that data is not corrupted or altered during storage and transmission. This section also covers the importance of regular data audits and the implementation of data validation checks to ensure the reliability of the information.

8. The eighth part of the document discusses the importance of data backup and recovery. It explains how regular backups can ensure that data is preserved in the event of a disaster or system failure. This section also covers the different types of backup strategies, such as full, incremental, and differential backups, and provides guidance on how to test and restore data from backups.

9. The ninth part of the document discusses the importance of data security and privacy. It explores various threats, including phishing, malware, and insider threats, and provides practical advice on how to mitigate these risks. This section also discusses the importance of regular security audits and the implementation of robust access control policies to protect sensitive information.

10. The tenth part of the document discusses the importance of data retention and archiving. It explains how to determine the appropriate retention period for different types of data and how to properly archive data for long-term storage. This section also covers the importance of regularly reviewing and purging data to maintain compliance and optimize storage resources.