



# INSTITUTION OF ENGINEERS (MAURITIUS)

*“Patron : H.E. The President of the Republic of Mauritius”*

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10<sup>th</sup> January 2017

Dear Colleagues

## **Major Initiatives taken by the Institution of Engineers (Mauritius)**

*Building Engineering Capacity through the Accreditation of Engineering programmes.*

I wish, on this day, which is the contractual date for the commencement of a Pilot Project undertaken by IEM, with the support of the Royal Academy of Engineering (UK), to share with you my thoughts about the engineering profession. I will split this communication in two parts: (i) Efforts at introducing accreditation of engineering programmes, and (ii) IEM’s own initiatives in this regard.

### **A. Efforts at Introducing Accreditation in Engineering Programmes**

1. As you are aware, in many countries, the engineering profession has, since long, taken control over its destiny, starting with students pursuing engineering studies, and taking a great leap from “*what is taught*” to “*what is learnt*” to ensure that engineering programmes deliver both the broad and specific objectives considered necessary for entry into professional engineering practice. This has been achieved through the accreditation of engineering degree programmes which are benchmarked against internationally agreed academic standards. These are sometimes referred to as Output Standards, Graduates Attributes, Programme Educational Objectives, or Learning Outcomes by different organisations. These prescribe the sum total of knowledge, understanding, skills and abilities, including abilities to deal with unfamiliar and complex engineering problems (graduates attributes as Washington Accord puts it) that students graduating from an accredited programme must possess and be capable of demonstrating upon graduation.

2. Accreditation of engineering degree programmes has been around for many years, ever since professional engineering institutions came into existence and started prescribing their own standards for admission to membership. The Society of Civil Engineers in 1771 could have been created as an elitist society by John Smeaton, but the founders of other professional engineering societies such as the Institution of Civil Engineers (UK) in 1818 (the oldest) or the IEM itself in 1948 were motivated by the need to promote the study and advancement of science and engineering, while assuring the health, welfare, and protection of society. The enactment of the Commission des Titres D’Ingenieurs Act (CTI) in France in 1934 and the establishment of the Accreditation Board of Engineering and Technology (ABET)



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around the same time in the USA are examples of how, in the former case, the law stepped in to regulate the profession through ensuring that people being awarded the degree of Diplome D’Ingenieurs indeed completed a programme that was accredited to the standard set by the CTI; in the case of ABET, it was the profession which took a responsibility for ensuring that engineering degree programmes conform to a recognised standard.

3. In recent times, initiatives towards reaching consensus on an approved standard started around 1989 with the active participation of the engineering bodies of the UK, Ireland, Canada, USA, Australia, and New Zealand, and resulted in the creation of the global forum known as the Washington Accord, while within Europe a similar move led to the establishment of the European Network for the Accreditation of Engineering Education (the ENAEE). The Washington Accord and the ENAEE standards are equivalent and represent a universal consensus; they have the support of the World Federation of Engineering organisations (the WFEO).

4. Many of you would be aware that it was through an initiative of IEM that the Council of Registered Professional Engineers (CRPE) was established in 1966, following the enactment of the Registered Professional Engineers Ordinance in 1965. In 2008, IEM, through CRPE, initiated a move to establish an institutional regime for the accreditation of engineering degree programmes, through the replacement of the current CRPE Act by an Engineering Council Bill of Mauritius. The Bill, if it had followed on its course, without resistance from some corners, would have established a Board of Engineering Accreditation, and provided for that Board to undertake accreditation to a standard such as that of the Engineering Council (UK), a member of the Washington Accord.

5. I am informing you, therefore, that Council of IEM has decided to take the lead in matters of accreditation of engineering degree programmes in Mauritius and to establish, under its Constitution, an autonomous body for undertaking, upon request from any University or other Tertiary Educational Establishment (TEE) registered with the Tertiary Education Commission, the accreditation of any of its engineering degree programmes intended for entry into professional service. The intention is to implement an accreditation process benchmarked on an international standard, more specifically the Washington Accord standard. This initiative will pave the way to a major change in the way engineering is taught in Mauritius and bring international recognition to the door step of the engineering degrees awarded by the TEEs of Mauritius.

6. I am sure you appreciate that such a development can only take place ***if and when IEM is admitted as a full member (or a signatory, as such members are called) of the Washington Accord.*** We do not wish to sound over-optimistic about this outcome, which may very well take some 4 or 5 years, and some very hard and sustained effort is required on the part of



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everyone who will wish to become involved in the delivery of such a vision or ambition. You will agree that if we are to reach there, then we must take some steps in that direction **now**.

## **B. How to work our way into the Washington Accord community of professional bodies.**

7. Washington Accord has its rules. They are stated in its Rules of Governance published on the International Engineering Alliance website. Are we in a position to put in an application for membership now? The answer is certainly no. IEM has just decided that it will establish an autonomous body, of the nature of an Engineering Accreditation Board that will be the engine for enabling IEM to apply for membership. IEM has taken the following initial steps:

- (i). A **Working Group on Engineering Accreditation (WGEA)** has been constituted to draw the roadmap for IEM to apply for membership of Washington Accord;
- (ii). The WGEA had submitted a Pilot Project aimed at ***Building Engineering Capacity through the Accreditation of Engineering Education*** to the Royal Academy of Engineering (UK) for consideration of funding under the **GCRF Africa Catalyst** Scheme which the Academy launched in September 2016. The Academy has approved the project and awarded IEM a grant of £40,000 over the coming 6 months. IEM thanks the Royal Academy of Engineering UK for its support, and the WGEA for its efforts.
- (iii). IEM and the WGEA strategy to get admission into Washington Accord is, **firstly**, to ensure that all of us, as well as all stakeholders concerned with the education, training, professional development and employment of engineers are fully knowledgeable about accreditation of engineering degree programmes, and the associated benefits; and **secondly**, be equally knowledgeable about what accreditation involves, how it is done and who is authorised to do it, and what are the exigencies of the Washington Accord regarding any programme to be accredited, and **thirdly**, what are the assessment criteria to be applied to academic programmes and what competencies or abilities are required of anyone involved in conducting an accreditation assignment.

## **Components of IEM’s Strategy**

8. The timely support of the Royal Academy of Engineering under the GCRF Africa catalyst Scheme (16/17) enables us to put in place the following strategies, which should



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cumulatively ensure that, upon completion of the project, there shall be in Mauritius, and within IEM, a cohort of professionals with the knowledge, understanding and skills and abilities necessary to set up an institutional regime for engineering accreditation, and from there, build on that capacity such additional competence that we shall need and which will come from acquiring experience on accreditation assignments.

The following activities are planned:

- (i) A **Seminar/Conference** intended for all stakeholders concerned with the education, training, professional development and employment of engineers, as well as several meetings with Focus Groups on accreditation, its implications and benefits;  
**Planned for the second week of February 2017; attendance will be by invitation.**
- (ii) A series of work sessions on **Documentation Review** (the Manuals on Criteria and procedures, etc) relating to the Washington Accord and its Rules of Governance, including its standards. We propose to review the accreditation documents and manuals of selected organisations which are members of the Washington Accord to understand how they went about to ensure compliance with the Accord requirements. These Document Review sessions will be of interest to engineers and academics who would wish to be knowledgeable about or be involved with the implementation and operation of an engineering accreditation regime, that conforms to and complies fully with the Washington Accord exigencies. **It is planned to hold two evening sessions per week during the period 20 February 2017 and mid-April 2017, a total of around 14 sessions. The venue will be IEM House Quatre Bornes.**
- (iii) A series of training sessions (**Accreditation Evaluator Training**) intended to impart knowledge to a select group of engineers and engineering faculty staff, including the attendees at (ii) above, on the interpretation of the accreditation criteria that are applied to engineering degree programmes .  
**These training sessions will be conducted by one or more experts, deputed by IEM’s UK Partner in this venture, during working hours on weekdays, tentatively between 10<sup>th</sup> and 24<sup>th</sup> April 2017.**
- (iv) A series of work sessions (**brain storming**) with select group of stakeholders (**especially engineers, PEIs and Faculty members as well as representatives of the Industry and employers**) on the right Governance structure for an eventual engineering accreditation agency. We expect to achieve a consensus on an



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engineering accreditation framework, appropriate for Mauritius, but which must conform to all the guidelines of Washington Accord.

**It is expected that the WGEA will run 10 working sessions, which will be late afternoon or evening sessions at IEM House, Quatre Bornes.**

## **Our Request to you.**

**Firstly, I would wish to appeal to all of you receiving this mail , to inform us, by return mail, that you support IEM’s initiative,**

**Secondly,** considering the nature of the responsibility falling on IEM and the shoulders of its Working Group volunteers, and the need to build additional capacity among other professional engineers, I make a formal request to those Registered Professional Engineers, who hold at least an **Upper Second class undergraduate degree and reckon more than 10 years post registration experience**, or hold at least a **Master’s Degree, with 5 years post registration experience** to show their interest for attending:

- (a) The Document Review Sessions, scheduled between 20 Feb and Mid-April 2017 to be held at IEM House Quatre Bornes during evening sessions;**

**AND/OR**

- (b) The Accreditation Evaluator Training, scheduled to be held during week days during working hours between 10<sup>th</sup> and 24<sup>th</sup> April 2017.**

**Note for Engineering Faculty members: IEM will accept interest shown by members of Engineering Faculties whose responsibility include programme design, and who teach post graduate programmes, irrespective of their being registered as Professional Engineers or not.**

We would appreciate receiving your responses by e-mail to [iem@intnet.mu](mailto:iem@intnet.mu) and [aboopier@intnet.mu](mailto:aboopier@intnet.mu) by Monday the 16<sup>th</sup> January 2017, please

**Thank You**

**Yours Sincerely**

**Raj H Prayag PDSM, B.Sc. M.Sc. MICE. C.Eng. MIWEM, FIEM, RPEM**  
*President of the Institution of Engineers Mauritius*