



Myanmar Engineering Council

‘To hold paramount the safety, health and welfare of the public’

No. (5/A), Kha Ya Pin Street, Lannmataw Township, Yangon, Myanmar.

General Secretary-01 250930, Registrar- 01 250987, Office-01 251213, Fax: 01 250035

Email: headquarters@myanmarengc.org Website: <http://www.myanmarengc.org>

WFEO- WORLD FEDERATION OF ENGINEERING ORGANIZATIONS

PROPOSAL TO HOST STANDING COMMITTEE ON ENGINEERING EDUCATION

July 2020

Myanmar Engineering Council, national member for Myanmar, would like to submit a proposal to host Committee for Engineering Education from 2019 to 2023 with a strategic plan as presented below.

1. BACKGROUND

The World Federation of Engineering Organizations (WFEO) is the peak body for engineering globally, representing nearly 100 nations and more than 30 million engineers. The members of WFEO are the main national and regional professional engineering institutions of the world.

WFEO has a Memorandum of Understanding (MoU) with IEA and other international engineering organizations involved in engineering education.

The engineering institutions of the world recognize the critical need for more engineers with the skills that are required for modern industry and to advance the UN Sustainable Development Goals. Engineers are needed in increased numbers for the growth and development of essential infrastructure such as roads, railways bridges, dams, and for improved outcomes on water, energy, environment, sustainable cities, natural disaster resilience and other areas.

WFEO and IEA are bringing together their members and partner organizations to:

- a. Discuss and develop a global engineering education standard that reflects the development of new technologies and engineering disciplines and includes contemporary values such as sustainable development and ethics.
- b. Extend the global reach of the IEA Agreements and Accords through efforts that support the development of a range of engineering education systems, appropriate to each country, to comply with agreed standards and the development of strong institutions for accreditation of engineering education and the development of professional engineering institutions to support engineers' education and recognition of professional credentials.

2. VISION AND MISSION

The World Federation of Engineering Organizations has a key strategy to advance the UN Sustainable Development Goals through engineering.

The **Vision** of the Committee for Engineering Education is to ensure that there are more engineers with quality engineering education that will provide the engineering skills that are needed sustainable development. This is a key strategic objective of WFEO.

The **Mission** of the Committee for Engineering Education is to

- a. support the review of engineering education benchmarks that will provide the required engineering skill for engineering graduates attributes and professional competencies today and tomorrow and
- b. support engineering education by mentoring and developing the standards of engineering education institutions and accreditation bodies to international standards to ensure that member nations have more engineers with the right engineering skills.
- c. Encourage the development of professional engineering institutions that are the members of WFEO to have sound governance and training programs to support the individual engineers that are their members with professional development and lifelong learning opportunities.
- d. Work in collaboration with the the members, standing committees, working groups and partners of WFEO to share training and learning resources and develop programs that are mutually beneficial to engineers everywhere.

In this work, the Committee for Engineering Education will activate the MoU with the International Alliance and work with the IEA to achieve the mission of the Committee and to deliver training and development programs in collaboration with the other international partners of WFEO.

3. FOCUS ON THE UN SUSTAINABLE DEVELOPMENT GOALS

The key focus of the Committee for Engineering Education will be the **UN Sustainable Development Goals 4** as shown below:



- To address the need for more engineers with the right skills through Engineering Education and Professional Development,
- To develop strong engineering education and professional engineering institutions and accreditation bodies and

- to work with the the members, standing committees, working groups and partners of WFEO including the International Engineering Alliance (IEA) to achieve the international engineering education standards and the International Federation of Engineering Education Societies (IFEES) and the Federation of International Consulting Organizations (FIDIC) to share best practices and training materials for the benefit of individual engineers that are the members of the professional engineering institutions of the world that are the members of WFEO.

4 OBJECTIVES AND ACTIVITIES

The key objective and activities of the Committee for Engineering Education are:

- a. Bring together leaders in engineering education and professional development, for a recognized global standard for engineering education which will facilitate mutual recognition of qualifications and the mobility of engineers, under the auspices of WFEO, IEA and UNESCO

The *proposed activities* include the review of the engineering education and professional development standards in collaboration with national and international members of WFEO, IEA and other international partners to ensure that these:

- (i) meet the needs of industry and other employers of engineering in the future
 - (ii) address new and emerging disciplines in engineering
 - (iii) include the values of sustainability, ethics, diversity and inclusion, responsible use of data and other values
- a. The *proposed activities* to upgrade the standards of engineering education will require the Committee to work with the national members of WFEO in Asia, Africa and Latin America to achieve and increase in the numbers of engineers with the appropriate engineering skills to address critical needs for sustainable development.

This work will include mentoring the accreditation bodies and engineering institutions in countries that seek support and develop national engineering systems that are appropriate to local need, culture and systems but also meet the international engineering education benchmarks for graduate attributes and professional competencies that are governed by the International Engineering Alliance.

A specific work program will be developed with WFEO members that nominate for support and will consist of the following tasks:

- (i) Assessment of a country's current systems of engineering education and requirements to achieve IEA signatory status
- (ii) Agree mentors to support countries in the process of making a provisional application to the IEA

- (iii) Train engineering educators to develop the skills and resources for the outcomes required by the IEA standards and train assessors to enable peer review and support for engineering education.
- a. Additional ***proposed activities*** are to provide training and development to support the work of the professional engineering institutions that are the members of WFEO to support lifelong learning of their members and to enable them to achieve signatory status of the international Agreements that are governed by the International Engineering Alliance.

These activities will have worldwide benefit to the economies of nations as well as to individual engineers and engineering institutions.

5. Operations

a. Committee structure

The Committee will consist of representatives of WFEO members representing all the regions of the world. Committee members will guide and support the specific work that is done with the International Engineering Alliance and will also develop and deliver training programs for improved standards in engineering education.

The Committee will develop the following work groups to cover the major areas of work. Each work group will consist of volunteer resources from WFEO members and international partners.

Working Group 1: Review of Engineering Education benchmarks for Graduate Attributes and Professional Competencies

Membership: Representatives of WFEO members and partners and signatories of International Engineering Alliance.

Working Group 2: Support for WFEO members who nominate to be mentored to achieve international engineering education standards and IEA Signatory Status at the Accords and Agreements.

Membership: Representatives of WFEO members from around the world including the main regions that require support to improve the standard of engineering education and to eventually become signatories at the International Engineering Alliance.

Working Group 3: Develop training programs and materials and guidance documents to support WFEO members around the world to improve their standards of engineering education and ongoing professional development and to support professional engineering institutions to provide lifelong learning of their members. This will enable them to achieve signatory status of the International Agreements that are governed by the International Engineering Alliance. This will provide international recognition of the professional

credentials for engineers and ensure international recognition of these professional competencies.

Membership: Representatives of WFEO members from Asia, Africa, Europe, Americas and Middle East will work together to develop this important resource which will be used worldwide.

Each working group will be led by a Committee Vice-Chair.

b. Membership

The Committee for Engineering Education will welcome membership from all WFEO members to support its important work. The Committee Secretariat will maintain a current list of members and their contact information.

c. Meetings

The Committee will hold one face-to-face meeting each year, normally at the same time as the WFEO annual meeting – Executive Council or General Assembly.

The working groups will meet virtually during the year and review progress on projects and specific mentoring activities at the annual face to face meetings.

d. Communications

The activities of the committee will be communicated to WFEO members by:

- (i) **Newsletter** – The Committee will produce a newsletter for WFEO members at least twice per year.
- (ii) **WFEO Website** - The Committee Secretariat will provide updates to the WFEO webmaster so that the Committee web pages are up to date.

e. Reporting

The Chair and Secretariat will prepare and submit an annual report to the WFEO meetings and for the WFEO biennial report.

6. OUTCOMES

A preliminary proposed schedule of outcomes is provided in the tables below. This will be developed further for specific members that are being mentored.

These outcomes will be worldwide and will have a positive impact on the standards on engineering education and ongoing professional development and competencies, globally.

It is expected that at least two WFEO members will achieve IEA provisional signatory/signatory status of the Accords or Agreements in by Dec 2023 and others will be in progress.

These outcomes will be reported to the Board, Executive Council and members of WFEO and to the signatories of the IEA.

Proposed Outcomes for the Committee for Engineering Education

<u>Proposed Outcomes</u>	<u>Timing</u>	
<u>Working Group 1</u>		
Review of IEA Graduate Attributes and Professional Competencies benchmarks		
Initial research on latest trends in engineering education	July-Aug 2020	
Meetings to discuss the changes proposed to the international benchmarks	Aug-Sep 2020	Key outcome is to include UN SDGs and new technologies in the benchmarks
Presentations to members and partners for feedback on proposed changes	Oct-Nov 2020	
Discussions at the IEA and WFEO annual meetings and with WFEO	July-Nov 2020	Key outcome is proposed benchmark for Graduate Attribute and Professional Competencies
Ongoing revision of proposed benchmarks	Jan-May 2021	
Discussions at the IEA and WFEO annual meetings and with WFEO	June - Oct 2021	Presentations and decisions at IEA and WFEO annual meetings
Approval of Benchmarks for Graduate Attributes and Professional Competencies	Dec 2021	Key outcome is approval of new Benchmark for Graduate Attribute and Professional Competencies which is used worldwide
Development of Guidelines for implementation	Jan-Dec 2022	Key outcome is development of Guidance documents to support the new benchmarks which is used worldwide
Discussions at the IEA and WFEO annual meetings and with WFEO	July-Nov 2022	Presentations and decisions at IEA and WFEO annual meetings
Development of exemplars and other supporting documents	Jan- Oct 2023	Key outcome is development of Exemplars to support the new benchmarks which is used worldwide
Discussions at the IEA and WFEO annual meetings and with WFEO	July-Nov 2023	Presentations and decisions at IEA and WFEO annual meetings

<u>Proposed Outcomes</u>	<u>Timing</u>	
<u>Working Group 2</u>		
Mentoring and support for Nominated WFEO Members to achieve the IEA Signatory Status of the Accords and/or Agreements		
Establish WFEO Members that request mentoring support	July-Aug 2020	
Agree mentors with IEA	Aug-Sep 2020	Key outcome is to establish at least two mentoring relationships in one or two geographic regions..
Monitor and support mentoring activities	Oct-Nov 2020	
Report on mentoring activities to IEA and WFEO	Nov-2020	Key outcome is progress with mentoring for at least two WFEO members
Ongoing mentoring and support activities	Jan-May 2021	
Discussions at the IEA and WFEO annual meetings and with WFEO	June - Oct 2021	Key outcome is progress with mentoring for at least two WFEO members for the IEA Accords
Establish two more mentoring relationships	June - Oct 2021	
Application for provisional signatory status by one WFEO supported member, ongoing mentoring of up to 3 other WFEO members	June 2022	Key outcome is for one member to achieve provision signatory status of an IEA Accord or Agreement and 3 others to be mentored, in two or more geographic regions

<u>Proposed Outcomes</u>	<u>Timing</u>	
<u>Working Group 3</u>		
Development and delivery of training to WFEO Members to improve the standards of engineering education in accreditation bodies and professional engineering institutions to attain international signatory status of Accords/ Agreements		Outline of work is provided below. Detailed program of training workshops and activities will be developed when the Committee is established
Training programs for engineering education assessors, engineering educators and development of professional engineering institutions	July 2020-Dec 2020	On line/on site at WFEO, IEA and MEngC meetings. Key outcome will be number of meetings held and numbers that are trained worldwide and training materials
Training programs for engineering education assessors, engineering educators and development of professional engineering institutions	Jan 2021-Dec 2022	On line/on site at WFEO, IEA and MEngC meetings. Key outcome will be number of meetings held and numbers that are trained worldwide and training materials
Training programs for engineering education assessors, engineering educators and development of professional engineering institutions	Jan 2022-Dec 2022	On line/on site at WFEO, IEA and MEngC meetings. Key outcome will be number of meetings held and numbers that are trained worldwide and training materials
Training programs for engineering education assessors, engineering educators and development of professional engineering institutions	Jan 2023-Dec 2023	On line/ on site at WFEO, IEA and MEngC meetings. Key outcome will be number of meetings held and numbers that are trained worldwide and training materials

7. BUDGET AND RESOURCES

The total Committee annual budget is estimated at USD 50,000 per year.

The host Myanmar Engineering Council will mobilize this budget from its own sources and engagement of strategic partners. The Myanmar Engineering Governing Council and Secretariat will coordinate and manage all activities and expenses for this budget.

This budget consists of the costs for:

- Office facilities for Committee Secretariat in the offices of Myanmar Engineering Council in Yangon
- Support staff salary, rentals, utilities and consumables
- Workshops, seminars and attending conferences that are organized locally or internationally and co-hosted by the Committee held outside the host member country, as this is an international committee
- Participation in WFEO major events such as the annual conference and Chairing of the meeting of the Committee (travel costs for the Chair to attend the meetings)
- Development of training materials and other documents in relation to the work of the Committee

Other sources of Funding

The Secretariat and Chair will support efforts towards securing funding from external sources such as Corporate sponsors and international funding agencies.

Budget

The proposed budget is summarized below:

RESOURCE	BUDGET (USD/year)	Comments
Secretariat staff cost	\$22,000.00	In kind contribution MEngC
Offices rent	\$2,000.00	In kind contribution MEngC
Computer, fax, phone	\$2,000.00	In kind contribution MEngC
Web maintenance (under WFEO web page)	\$3,000.00	The web page will include newsletters and other information.
Production of training materials and on-line webinars	\$15,000.00	Zoom and on line facilities are in kind contribution by MEngC
Travelling and meetings	\$6,000.00	Chair of Committee
Total expenditure	\$50,000.00	
Total 4 years	\$200,000.00	

8. EXPERIENCE AND CAPABILITIES

Myanmar Engineering Council is a provisional signatory of the International Engineering Alliance (IEA) Washington Accord for professional engineering education and has direct experience in the IEA accreditation system and the process of mentoring and support to obtain IEA Signatory status of the Accords and Agreements that are governed by this organization. **See Attachment 1.**

Myanmar Engineering Council has held workshops, seminars and meetings for thousands of educators and groups to improve the standards of engineering education. Some of the workshops and activities that have been held in the past few years are listed in **Attachment 2 and 3.**

Myanmar Engineering Council has the support of the Government of Myanmar, Ministry of Construction, to support the work of the Committee.

Myanmar Engineering Council has the facilities in its own building, to run training programs and workshops and experience with online training and webinars.

Thousands of engineering educators have attended the webinars held using Zoom in the past few months during the lockdown caused by COVID-19.

9. Confirmation of Compliance with WFEO Rules of procedures for Committees

This strategy document aligns with relevant clauses *WFEO Rules of Procedure* *Clauses 3.2, 3.3 and 3.4 and Annex C Clauses 2.1 to 2.4.* that were approved by the WFEO Executive Council in London in October 2018.

10. Proposed of Chair of the Committee and Confirmation of his Obligation

Myanmar Engineering Council proposes Prof. Dr. Charlie Than, President, Myanmar Engineering Council, retired rector of Myanmar Maritime University as the Chair of the Committee. Prof. Dr. Charlie Than is a recognized and experienced educator and leader of Technical Universities and Government Technical Institutions in Myanmar and has led the process and journey for Myanmar Engineering Council, Engineering Education Accreditation Committee to attain the provision signatory status of the Washington Accord at the IEA.

Prof. Dr. Charlie Than has the required skills and experience, the time and capability to serve as the Chair of the Committee for a 4-year term from 2019 to 2023. It is confirmed that the Chair will be available for attendance at WFEO meetings including the Executive Council and General Assembly meetings. Funding for travel will be provided by Myanmar Engineering Council as described under Section 4.

11. Confirmation of Good Standing

Myanmar Engineering Council is in good standing as it has paid all member dues by 31 March. It confirms that it would consistently be in good standing during the term as host of the Committee.

12. Attachments

Attachment 1: Overview of Myanmar Engineering Council.

Attachment 2: Myanmar Engineering Council Engineering Education Accreditation Committee: Workshops, Training, Seminars and Activities.

Attachment 3: Myanmar Engineering Council Engineering Education Accreditation Committee: Accreditation On-Site Visit Activities