

YE/FL FOUR YEAR PLAN (2015 -2019)

Proposed International Strategic Forum “Stakeholder Collaboration for Global Integration of Youth in Industry”

The power of youth is the strongest force driving global markets, businesses and technologies! Every year, there seem to be an increase in the pace of growth in development and application of innovation to solving both well-established problems and also problems people never knew existed. The brainbox behind these giant strides are young engineers who are daily extending the limits of existing technologies and to whom ‘Impossible is nothing!’ We are the young engineers! We enjoy the beauty of standard education curricula in our colleges and universities, and these fairly developed structures provide us the indispensable foundation and building blocks for venturing into newer ways of thinking.

In the last few decades, we have changed the course of our world and shifted the limits of possibilities by applying our minds to develop systems that would have been described as wishful thinking. Our innovative tendencies and energetic disposition makes us see opportunities in what the society calls challenges. The pace of technological development in our generation has been unprecedented, and we are yet unsatisfied as we desire more opportunities for self-expression. The availability of these opportunities is the lever we require, as we strive daily to unpack the huge potentials that lie latent in our hearts and minds. If our world is serious about solving the problems of sustainable energy and power, cyber-security, climate change, sustainable infrastructure development, healthcare and other global burning issues, the solution is here; in the unexpressed ingenious minds of young engineers around the world!

At the Young Engineers Future Leaders (YEFL) Committee of the World Federation of Engineering Organizations (WFEO), we have taken up the responsibility to use our platform to bridge the gap between the solutions in young engineers’ minds and the world’s pressing needs, by facilitating communication among all stakeholders involved in young engineer’s development globally for the benefit of humanity. We realize that the stories of young engineers are different, split across very diverse regional situations and national young engineers’ development frameworks and educational curricula. As a committee, comprising young engineers’ leaders around the world, we have developed a high level position paper incorporating our four year (2015 -2019) strategic development plan that we believe will be effective in bridging the gap between young engineers’ ingenuity, and industry and societal challenges, and hopefully help in developing the solutions to pressing global issues.

The YEFL Position and four-year young engineers’ draft strategic development plan includes:

1. **Technical and Professional Competence Development:** We are displeased by the terrible gap in the number of engineers required by industries, and those available and competent to fill the resourced positions. Young engineers are graduated from colleges and universities in droves yearly, and expectedly should be filling such industry positions but this is not the case hence the gap. It is clear ironically that there seems to be a large number of engineering graduates that are yet unable to fill the large number of advertised industry engineering graduate positions. There are many possible causes of this lacuna, but we prefer to look at solutions. We have started to bring stakeholders (governments, industries, universities, and young engineers) together to agree the best approaches to bridge this gap. We see this platform for open discussions as an opportunity for stakeholders to voice their needs and concerns and more importantly to better synergize. We also plan to start a social media campaign to encourage more youth and women to pursue engineering careers, thus increasing the number of engineers available to solve engineering problems globally.
2. **Soft skills Development:** As young engineers, we interact with colleagues, the industry, the public, policy makers and the government daily. Cultivating the skills to relay important engineering concepts across all sectors' traditional "terminology" barriers is critical to meeting the expectations across these divides. We posit that our programs, at all levels, will continue to include discussions on how to improve young engineers' presentation skills, networking abilities, technical writing skills, appreciation of financial tools, awareness of marketing, ethics, and managerial skills etc.
3. **Coaching and Mentorship Programs:** To better appreciate the enormity of global challenges and realize the opportunities for development, young engineers need to be introduced to the industry early in their educational and professional careers through active internships, and also be provided the platform to participate intensively in the organizations. At the individual levels, we plan to encourage and support the development of working structures within member countries, which will give individual young engineers the coaching and exposure required to settle seamlessly into industry roles. Below is a high level plan we proposed for individual national engineering society represented in WFEO
 - a. Get a database of interested coaches and mentors from within national society and Industry;
 - b. Create an online coaching and mentorship portal for your young engineers requiring mentorship to upload their data and requirements;
 - c. Appoint data administrators (preferably young engineers) to match young engineers and students with industry professionals;
 - d. Ensure continuous tracking and feedback from both mentors and mentees,
 - e. Start with a 2 year mentorship agreement and keep mentorship flexible (mentor/mentee can request for a change at any time).

4. ***Entrepreneurship and Start-up Programs:*** Young engineers often come up with solutions to industry and societal problems. These young engineers require support to translate these innovative solutions to working systems for the benefit of humanity and their nations' economies. The value of establishing a private enterprise is not only fulfilling personal ambition, creating jobs for oneself and others, and improving their nations' economies but also has the added benefit of expanding the limits of innovation & creativity that will usher our world into the future. Young engineers will also be taught how to start businesses, register companies, prepare proposals, access available financing partnership schemes, develop client relationships, explore the huge benefits of social networking and professional memberships etc. Going forward, we strongly recommend that all national and international young engineers' projects and competitions be implemented as group projects. This approach will allow young engineers to use the power of group networks to deliver people-sized technologies and also start businesses with much higher potentials to thrive.
5. ***Sensitization on Burning Global Issues:*** Young engineers need to be sensitized and consistently reminded of the burning issues affecting our world today! This will better guide the choice of how best to apply novelty for the benefit of humanity. Every program organized for young engineers globally shall incorporate discussions on the global issues affecting our continuous existence on this planet; sustainable energy and power, environment, climate change, sustainable infrastructure development, healthcare, diversity and inclusiveness, cyber-security, water and sewage, population and urbanization, and other global burning issues.

YE/FL will be issuing a white paper for presentation among the wider WFEO body during WEC 2015. This white paper will be the first formal communication of outcomes of the on-going stakeholders' engagements and strategic planning workshop on young engineers' development held for the Arab region in Kuwait City, March 2015. We hope to carry on the discussion across the other regions of the world, with the next session planned for the Asia-Pacific region at the WEC 2015 in Japan. We aim to create metrics for monitoring the resolutions and outcomes, and track changes which may be brought about as a result of these discussions at the global level.

This plan will be driven and continuously reviewed by the YE/FL committee leadership and national delegates with the aim of realizing the huge opportunities for growth, and untapped potentials in young engineers that is yet to be explored at the national, regional and global levels. We anticipate a wider use of web conferences on our social media platforms to ensure wider participation among members, greatly reducing the recurrent challenge of travel costs on members. In the long term, we believe that the cross-pollination of ideas from every part of the world, available at our meeting and web conferences, will help to reduce the current imbalance in technology and living standards between

developed and developing countries. We end this position paper with a clarion call on all stakeholders and policy makers in industry, corporate organizations, governments and NGOs to partner with us to give young engineers all over the world the support and enabling environment to translate their ingenuity into working systems for tackling the burning issues currently threatening our humanity and our world!

Proposed UEI- YEFL Project UNESCO Engineering (UE) and World Federation of Engineering Organizations Young Engineers Future Leaders Committee - Engineering for Youth in Action (EYA) Initiative

OVERVIEW

- Development of an innovative interactive educational module that demonstrate quantitative change in youth awareness of engineering as a key driver for sustainable development.
- The team of young engineers with the most effective module will have the opportunity to work with engineering education experts from UNESCO network.

OBJECTIVES

- Advocate the importance of engineering and more engineers for sustainable development.
- To develop hands on educational activities that elevate the visibility of engineering as a career.
- Allows YE with ideas and projects related to sustainable development, to submit their projects. These should be projects related to sustainable development Goals(SDGs) and demonstrate ways in which those projects help the local communities improve.

ENGINEERING YOUTH IN ACTION INITIATIVE PROJECT PLAN

- The Engineering Youth in Action initiative is an excellent platform for young engineers to connect with students and their communities and share their innovative educational ideas and their enthusiasm for engineering.
- The initial competition will focus on the 26 member countries of WFEO YEFL with a lead country in each UN region: Africa, the Arab States, Asia and the Pacific, Europe and North America, and Latin America and the Caribbean.
- Any young engineer between the ages of 18 and 30, who is studying or practicing an engineering discipline, may participate in this competition.
- The written report/models/projects should describe the educational activity/implementation strategy in communities and summarize the effect on the young engineers.

- These submissions will be reviewed by panel of experts, including UNESCO, WFEO and any other partners.
- The finalists will be invited to present their educational module for the panel. These presentations will likely include media showing the young engineers guiding primary.
- Selected finalists will have the opportunity to participate in engineering curriculum development projects with UNESCO, WFEO, and its partners.

TARGET COUNTRIES (Suggested)

Lead by: UNESCO and YEFL (Kuwait)

AFRICA	Nigeria, South Africa and Kenya
ARAB STATES	Kuwait, Lebanon and Tunisia
ASIA and PACIFIC	Australia, Malaysia and China
EUROPE and NORTH AMERICA	Germany, USA and UK
LATIN AMERICA and CARIBBEAN	Brazil, Costa Rica and Argentina

YEFL Presence in WFEO Annual Conference

YEFL aims to be involved in each WFEO annual conference by organizing forums in line with the theme of the conference which includes workshops, seminars and networking events.

YEFL involvement in WFEO Standing Technical Committees

YEFL goal is to involve young engineers in other STC committees such that, upon aging out of the YEFL STC, they are ready to seamlessly integrate into another STC alongside its senior members. Some YEFL members have volunteered to participate in other committees of WFEO as corresponding members in order to engage youth perspectives in their projects.

WFEO Website Updates

The arrangements and updates of the YEFL section in WFEO website is being coordinated with the WFEO headquarters and YEFL leadership intends to maintain the YEFL section.

YEFL Structure

Chair- Eng. Zainab Garashi- Kuwait

Vice Chair- Kathryn Johnson- USA

Secretary- Felix Firsbach- Germany (Felix is former secretary, we are in process of assigning a secretary during the WECC2015 in Japan).

Other active Members:

Christopher Chukwunta- Nigeria

Tafadzwa Mukwena- South Africa

Giesel- Costa Rica

YEFL BUDGET

Kuwait the host country is providing the necessary staff when needed to complete any necessary administration tasks also the host country supports the chair to attend the WFEO meetings. KSE also takes care of any publication when needed for the committee.