



**COLLEGE OF ENGINEERING, DESIGN, ART  
AND TECHNOLOGY  
(CEDAT)**

**THE FIRST WORKSHOP ON HIGHER EDUCATION  
PARTNERSHIPS FOR SUB  
SAHARA AFRICA**

**Workshop on 19-20 August 2020**

**Eng. Vincent Ochwo**

**President**

**UIPE**

# Curriculum and Training needs for Engineers

## Definitions of key words

### Curriculum:

A comprehensive plan for an educational/training programme/course to offer new/improved manpower to fulfil the rising needs of a dynamic society

### Training:

Organized activity aimed at imparting information and/or instructions to improve the recipient's performance or to help him or her attain a required level of knowledge or skill

# Curriculum and training...

- Should be developed to meet the needs of the students in a way that ensures the material is understood, maintained, and applied in and out of the lecture room.
- The curriculum should prepare engineering graduates to demonstrate early in their careers an ability to:

# Curriculum and training...

- apply their general educational experience and specific knowledge of mathematics, science, and engineering to a wide variety of careers including industry, advanced engineering study, nontraditional engineering-related career paths, and graduate study.
- perform in a modern diverse working environment, working in multidisciplinary teams and communicating effectively with both professional colleagues and the public.

# Curriculum and training...

- lead design processes that include consideration of the impact designs have on people, societies and the environment.
- model, analyze and solve complex problems from a systems perspective.

# Curriculum and training...

- identify contemporary global issues and recognize their professional and ethical responsibility to contribute to solutions for the social, economic, and environmental challenges faced by humanity.
- engage in self-directed learning, including the pursuit of graduate study and professional development activities such as CPDS and becoming members of professional institution (UIPE) and registration (ERB).

# Curriculum and training...

- In general, curriculum and training needs for engineers should be developed in a way that the students should:
  - Have broad education, including liberal studies.
  - Be proficient in oral and written communication.

# Curriculum and training...

- Be proficient in information literacy, i.e. be able to locate, evaluate, and effectively interpret claims, theories, and assumptions in science and engineering.
- Have experience with teamwork.
- Be aware of professional and ethical responsibilities.



# Curriculum and training...

- Students must be well grounded in the mathematical, scientific, and engineering skills.
- More specifically, the graduates should have:
  - The ability to design experiments, analyze the data, and interpret the results.
  - The ability to design, model, and analyze engineering systems.
  - The ability to formulate and solve problems.
  - The ability to use the techniques and tools necessary for the practice of their discipline.

# Curriculum and training...

## Engineering Colleges and Faculties

- Should train engineers who are supposed to be the initiators, facilitators and implementers of the technological development of a nation.

# Accreditation of Engineering programmes

- The Universities and Other Tertiary Institutions (Amendment), Act 2006, mandates the NCHE to accredit academic and professional programmes of the institutions in consultation with Professional Associations (UIPE) and Regulatory Bodies (ERB).
- There is a Tripartite MoU (UIPE, ERB and NCHE) in this regard.

# Accreditation...

- Joint UIPE/ERB Accreditation Committee for ensuring quality education and training of engineers at Universities and other Tertiary Institutions in Uganda..

# Challenges of training Engineers in Uganda

In Uganda and Africa, the training of engineers has witnessed some challenges:

- Poor funding
- Inadequate facilities both quantitatively and qualitatively at the training institutions
- Inadequate and obsolete equipment,
- Non-availability of adequate human capacity,
- Adoption of traditional pedagogy,
- Brain drain and
- Poor staff training and retention profiles.

## Others challenges include:

- Weak university/industry partnership
- Curricula not well aligned to market needs
- Poor industrial attachment programme
- Non-availability of local codes and monitoring standards for the training of prospective engineers
- Inadequate ICT environment, and
- Weak linkages with international engineering community.

# BACKGROUND

## Historical Background of UIPE

- ▶ UIPE is a professional membership organization that is mandated to bring together the engineering fraternity in Uganda.
- ▶ Established as an Association of Professional Engineers of Uganda in 1972.
- ▶ UIPE succeeded the defunct East Africa Association of Engineers, which was established on January 19, 1945 and dissolved in 1972 into separate associations for the different East African Countries.

# UIPE ORGANISATION

## Organization

- Decisions of UIPE are made by the **General Assembly**. AGM delegates its powers to UIPE Council.
- The AGM entrusts the governance of the institution to the **UIPE Council**, (18 Members).
- **A Secretariat** assists the Council by doing the day-to-day running of Council Activities.



# UIPE ORGANISATION Cont..

17

- The affairs of the Institution are guided by its constitution and a number of other policy documents and guidelines.
- The Institution currently has Six functioning **Branches** (Kampala, Jinja, Lira, Soroti, West Nile and Mbarara).
- Every member is required to be a member of a branch accessible to him/her by workplace or residence.
- Universities are encouraged to have Engineering Students Associations.

# Engineers Registration Board (ERB)

## Historical Background of ERB

- The Engineers Registration Board (ERB) is established under the Engineers Registration Act, Cap 271 of 1969;
- ERB is a statutory body mandated to regulate and control engineering practice in Uganda, continuously improve engineering profession and advise Government accordingly.

# ENGINEERS REGISTRATION BOARD (ERB)

- The Board is composed of 7 members appointed by the Minister for Works - Three of which are nominated by UIPE.
- It has a Chairman and Registrar who are Government employees and appointed by the Minister.
- Engineers registered with ERB are the only ones permitted to use the prefix Eng. before their names and this prefix signifies that they are registered and are licensed to legally practice Engineering in Uganda.
- ERB only registers Engineers who have achieved corporate membership of UIPE.

# **Requirements for admission to UIPE and Registration with ERB**

# JOINING UIPE AS A MEMBER

- The desirable process is as follows:
  1. On graduation and upon getting employed, apply to become a Graduate Member.
  2. After working for 4 years, (First 2 as a pupil engineer; and next 2 years for Post Pupilage) apply for Corporate Member. **Must be supervised by a Registered Engineer.**
  3. Once a Corporate Member of UIPE then you are eligible to apply for registration with ERB and to practice as an Engineer in Uganda.

# JOINING UIPE AS A CORPORATE MEMBER

## Requirements:

1. Must have Bachelors Degree in Engineering.
2. Must be employed/engaged in an Engineering function.
3. Must have attained 4 years working experience from the date of graduation.
4. Non Ugandan Citizens must demonstrate 1 – 3 above and also clearance from immigration.

# The Process- Corporate Member Applicant

- The Applicant fills an application form available on UIPE website (can be downloaded from [www.uipe.co.ug](http://www.uipe.co.ug))
- The Applicant writes a Career report and a Technical report (see application form for guidelines), attach to application form.
- Two Proposers and two Seconders must sign the application form. They must be fully paid-up Corporate members of UIPE and they **should not** be Council or MET Committee Members.
- Submit three copies of all required documents in hard copy to the Secretariat.

# Necessary Attachments: Corporate Member

## Documents to Attach to Completed Application Form

1. Photocopies of all academic papers (degree Certificate, Transcripts, ' O ' and ' A ' level certificates) - *certified*
2. Photocopy of your appointment letter.
3. Photocopies of certificates received from engineering training, workshops or conferences.
4. Photocopy of registration certificate if already registered in a foreign country.



# Attachments...

5. Photocopy of membership certificate if member of another category.
6. Present evidence of payment of the mandatory Application fees

# The Corporate Member Process-UIPE

At UIPE the **application** process proceeds as follows:

1. The MET Committee reviews the submission and if it finds the application complete and qualifies for assessment then the applicant is recommended for **Provisional membership** and the application is allocated 2 approved **ERB/UIPE Assessors** to review the technical reports.
2. Assessment is estimated to take about 3 weeks.
3. Assessment results are submitted to a Joint Assessment Committee (JAC) (ERB/UIPE) for further scrutiny.

# Corporate member process...

4. JAC then makes a decision on the assessment. This may be **rejection, improvement** of technical report or **invitation for an oral interview**.
5. The applicant attends an interview which includes power point presentation.

# Corporate member process...

6. The JAC Committee recommends the successful applicant to the Council for election.
7. The Council makes the final decision and elects the Applicant as a Corporate Member and eligible to be Registered with ERB.
8. The name of the newly elected member is pinned up on the UIPE notice board and also circulated to the entire membership for comments, for a period of 30 days. If UIPE receives no objection, the applicant then receives his/her letter of election at the expiry of 30 days.

# After Election- Corporate Member Applicant

After election, the applicant is expected to pay the applicable dues before admission as a member and before preparation of the membership certificate:

## **Note**

- The assessment is done jointly Joint Assessment Committee JAC by UIPE and ERB
- Both UIPE and ERB are represented during interviews which are organized by JAC.

# Corporate Member Applicant cont...

- It is the candidate's responsibility to **apply for ERB registration** after admission as a Corporate Member of UIPE.
- On applying to ERB for registration, the applicant is normally exempted from submitting a Technical Report and attending a board interview.
- The applicant fills ERA Form 1 (can be downloaded from [www.erb.go.ug](http://www.erb.go.ug)) and payment of applicable fees.

# Requirements for ERB Registration for UIPE Corporate Members under JAC

- 3 Copies of a Career Report
- 1 Copy of a Technical Report
- 1 Soft copy of both Career and Technical Report on a CD.

# ARRANGEMENT OF THE CAREER REPORT

Download ERA 1 form from [www.erb.go.ug](http://www.erb.go.ug)

Fill it properly, major concern is no. 6 practical training and No.7 state the engineers you trained under, the period of that training – signed and stamped.

- On the Form, Sponsors should be in your Field of specialization i.e. if you are Civil, get Civil registered engineers to sign and stamp for you. They should be fully paid up with both UIPE and ERB
- Attach corporate membership letter scanned in coloured



# Career Report...

- Attach UIPE Corporate membership certificate
- Attach detailed career report
- Attach certified Academic certificates, Transcripts, UNEB Pink letters (copies scanned in coloured) and any other qualifications e.g. Masters. PHD, certificates etc.

# Career Report

- Attach letters of employment/service contracts etc
- Attach any other CPD's
- 3 Passport photographs
- Attach Organogram
- Spiral bind and submit Career report in Triplicate
- Pay application fees by Bank or MTN Mobile Money

## **Became a Corporate Member of UIPE before JAC started**

- All candidates who attained 'Member' of UIPE before the commencement of the UIPE/ERB Joint Assessment Committee (JAC) are required to submit a Technical Report and Career Report plus attending a Board Interview.
- In addition they apply for registration by filling ERB Form ERA 1, and attaching copies of certificates for the Board's processing of the documentation.

# Requirements for ERB Registration for Temporary Registration

- 3 COPIES OF A CAREER REPORT
- 1 SOFT COPY OF CAREER REPORT ON A CD
- MINIMUM – BACHELORS DEGREE HOLDER

## ARRANGEMENT OF THE CAREER REPORT

Download ERA 2 form from [www.erb.go.ug](http://www.erb.go.ug)

Fill it properly, major concern is no. 6 practical training and No.7– you state the engineers you trained under, the period of that training – signed and stamped

# Temporary Registration...

- On the Form, Sponsors should be in your Field of specialization i.e. if you are Mechanical, get Mechanical registered engineers to sign and stamp for you.
- They should be fully paid up with both UIPE and ERB
- Attach professional membership registration as an engineer in your home Country scanned in colored-

# Temporary Registration...

- Attach membership certificate from your home country
- Attach detailed career report (Pictorial preferably)
- Attach certified Academic certificates, Transcripts, (copies scanned in colored) and any other qualifications e.g. Masters. PhD, certificates etc.
- Attach letter of Recommendation from Employer-starting contract period, and duration of the project/employment.

# Temporary Registration...

- Attach letters of employment/service contracts etc
- Attach valid passport and Visa (scanned in colored)
- Attach any other CPD's
- 3 Passport photographs
- Spiral bind and submit Career report in Triplicate (3 copies)
- Applicant should hold a B.Sc. in an engineering field

# Why Register?

- **It is a legal requirement:** For one to practice Engineering in Uganda, one needs to register with ERB. ERB Registers only Members of UIPE.
- As a member of UIPE you belong to the Engineers' "Club". Clubs serve and protect their members.
- Professional registration is an important milestone for any profession. It is a mark of excellence.



# Why Register?

- Registration shows your peers and employers that you have demonstrated a commitment to professional standards, and to developing and enhancing professionalism.
- Being a Member demonstrates that you are internationally competitive.

# Why Register?

## Benefits of Membership

- As a Member you can be called upon to represent Engineers on Government Boards, Commissions, etc.
- Access to Continuous Professional Development (CDP).
- Access and Sharing of Information: periodicals, magazine, library facility and on-line resources.
- Career advice and employment opportunities (Career opportunities are posted on the UIPE & ERB websites and emailed to registered members).

# The End

**Thank you for listening to me**

**Eng. Vincent Ochwo Olie**

**PRESIDENT, UIPE**

**+256 772 454407**

**[vochwo@gmail.com](mailto:vochwo@gmail.com)**