

# Outcome Based Education (OBE)

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Time: 2 pm

Venue: DK 1

# Why OBE?

- Concerns that the education system may not adequately prepare students for life and work have prompted a review of education.
- Is Traditional Education (TE) adequate?

# Traditional Education

- **It is pre-2004.**
- **It is content oriented.**
- **Different degrees have their associated syllabi.**
- **Relevant contents are taught and examined.**

# Deficiencies of TE

- Graduates are not completely prepared for the workforce.
- **Lack of emphasis on** soft skills needed in jobs e.g.  
communication skills, office skills,  
human relationships skills.

# Birth of OBE

- In 1989, 5 countries signed the Washington Accord. They are: Australia, New Zealand, the UK, Canada, Ireland & the USA.
- Other full signatories are Hong Kong (1995), South Africa (1999), Japan (2005), Singapore (2006), Taiwan (2007), Korea (2007)
- Provisional members include Malaysia, Germany, India, Russia and Sri Lanka.

# Birth of OBE

**Signatories** have full rights of participation in the Accord; qualifications accredited or recognised by other signatories are recognised by each signatory as being substantially equivalent to accredited or recognised qualifications within its own jurisdiction.

**Organisations holding provisional status** have been identified as having qualification accreditation or recognition procedures that are potentially suitable for the purposes of the Accord; those organisations are further developing those procedures with the goal of achieving signatory status in due course; qualifications accredited or recognised by organisations holding provisional status are not recognised by the signatories

# The Washington Accord

- The Accord recognises the substantial equivalency of accreditation systems of member states, & graduates from member states **may** work in other member states.
- The Public Service Department (PSD), Board of Engineers Malaysia (BEM), Malaysian Qualifications Agency (MQA) & Institute of Engineers (IEM) together form the Engineering Accreditation Council (EAC).
- EAC signed for Malaysia.

# What is OBE?

- It is a method of curriculum design and teaching that focuses on what students can actually do after they are taught.

These questions are asked:

- What do you want the students to learn?
- Why do you want them to learn it?
- How can you best help students to learn it?
- How will you know what they have learnt?



# OBE vs Traditional Education (TE)

- OBE's instructional planning process is a reverse of that associated with TE planning.
- The desired outcome is selected first and the curriculum, instructional materials and assessments are created to support the intended outcome.
- All educational decisions are made based on how best to facilitate the desired outcomes.

## What are expected of students under OBE?

- Students are expected to be able to do more challenging tasks other than memorise and reproduce what was taught.
- Students should be able to: write project proposals, complete projects, analyse case studies, give case presentations, show their abilities to think, question, research, and make decisions based on the findings.

## OBE expectations (cont.)

Students are also expected to be

- creative,
- able to analyse and synthesise information.
- able to plan and organise tasks,
- able to work in a team as a community or in entrepreneurial service teams to propose solutions to problems and market their solutions

# Assessments in OBE

- The learning outcomes are set out sequentially on a gradation of increasing complexity that students are expected to master.
- OBE focuses on how much and how well the students have learnt.
- Weaker students may have to follow a different learning path & finish later.

# The need to implement OBE

- Undergraduate curriculum needs to be transformed into OBE in accordance with requirements from:
  1. **Engineering Accreditation Council, Malaysia** and
  2. Malaysian Qualification Framework introduced by the Ministry of Higher Education, Malaysia.

# Implementing OBE

There are 3 prongs involved in implementing OBE.

1. Listing and achieving Unit Learning Outcomes (ULO).
2. Listing and achieving Programme Outcomes (PO).
3. Listing and achieving Programme Education Objectives. (PEO).

## Example of Unit Learning Outcomes (for the course on Electromagnetism)

- a. Student can apply the Maxwell's Equations in the studies on electromagnetic fields.
- b. Student can describe the propagation of wave in a medium, and understands the effect of wave reflection and transmission.
- c. Student can find the main characteristics of transmission line and waveguide

## ULO (cont. 1)

- d. Student can illustrate radiation patterns from antenna in the far-field.
- e. Student understands the effect of electromagnetic interference and ways to ensure electromagnetic compatibility (EMC).



# Programme Outcomes (PO)

PO are outcomes the students should have achieved by graduation time.

For the Electrical Engineering Department at UTAR, the chosen PO are:

- 1. Ability to apply acquired fundamental knowledge of science and engineering.
- 2. Possess the relevant technical skills in electrical and electronic engineering.

## PO (cont. 1)

- 3. Ability to identify, formulate and solve problems of high- and low-power circuits and systems.
- 4. Ability to design & evaluate an electrical or electronic system based on systems approach.
- 5. Ability to communicate effectively.

## PO (cont. 2)

- 6. Ability to function effectively as an individual and in a group.
- 7. Ability to understand and commit to prevailing professional and ethical responsibilities.
- 8. Be aware of the current good practices in electrical & electronic engineering for sustainable development.

## PO (cont. 3)

- 9. Recognize the importance of and be able to engage in life-long learning.
- 10 Be aware that a professional engineer's work have social, cultural, global and environmental ramifications.

# Programme Educational Objectives (PEO)

These are objectives that have to be achieved by a graduate several years after graduation.

Examples of PEO are:

- Has basic mastery of knowledge and skills needed to be an efficient engineer.
- Has professional attitude and ethics in fulfilling his role.

## PEO (cont. 1)

- Capable of adapting to the global work environment.
- Be capable of providing leadership in the organisation he works in.
- Capable of conducting research for his organisation.

# OBE & Quality Management

- OBE is implemented to ensure that our academic programmes, delivery system, assessment methods and our graduates are of high quality.
- The paradigm shift to OBE is driven by the the Quality Assurance Department at the Ministry of Higher Education, Malaysia currently known as Malaysia Quality Agency (MQA).

## Quality Management (cont.)

- MQA is responsible for developing and implementing a national framework, the “Malaysian Qualifications Framework”.
- These consists of qualifications offered by higher education providers based on a set of criteria including the learning outcomes achieved and credits based on students’ academic workload.



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2008-05-31

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