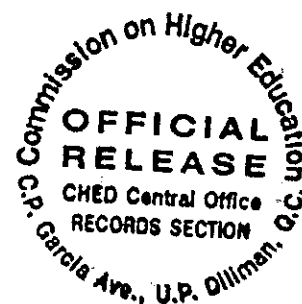




Republic of the Philippines  
OFFICE OF THE PRESIDENT  
**COMMISSION ON HIGHER EDUCATION**



**CHED MEMORANDUM ORDER (CMO)**  
No. 37, Series of 2012

**SUBJECT: POLICIES, STANDARDS AND GUIDELINES IN THE ESTABLISHMENT OF AN OUTCOMES-BASED EDUCATION (OBE) SYSTEM IN HIGHER EDUCATION INSTITUTIONS OFFERING ENGINEERING PROGRAMS**

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In accordance with the pertinent provisions of Republic Act (RA) No. 7722, otherwise known as the "Higher Education Act of 1994," by virtue of Resolution No. 198-2012 of the Commission *en banc* dated July 25, 2012, for the purpose of transforming engineering education into an outcomes-based system to meet the demands of global equivalency of quality standards in engineering programs as well as to promote continuous quality improvement in higher education institutions (HEIs) offering said programs, the following policies, standards and guidelines are hereby adopted and promulgated by the Commission, thus:

#### **ARTICLE I – INTRODUCTION**

##### **Section 1. Background and Rationale**

Quality education today is measured not only by effectiveness, efficiency, sustainability, but also by relevance. Relevance in education would mean addressing the needs of the students and the employers of today and providing the future graduates a curriculum of global comparability. In the case of engineering education, six countries represented by their engineering professional societies signed the Washington Accord (WA) in 1989 defining common standards for equivalency among their graduates of engineering programs. Full member signatories of the WA agree that graduates from their accredited engineering programs shall be mutually recognized across their countries as having met the academic requirements for entry to the practice of engineering, thus promoting mobility of professional engineers practicing across their borders.

More importantly, since 2000, accreditation standards among the full members of the WA have shifted from an Input-Based to an Outcomes-Based Education (OBE) system, where the focus is for the institutions with accredited programs to demonstrate that their engineering graduates have met an acceptable level of knowledge, skills, and attitude demanded by their different fields of practice. Furthermore, accreditation demands that program outcomes must be aligned with the mission and educational objectives and the OBE system is supported by a continuous quality improvement program.

All signatories of the WA are represented by nationwide professional engineering organizations that are non-governmental and independent of academic institutions or societies. The Philippine Technological Council (PTC) is the only umbrella organization of all professional engineering organizations in the country and since 2009 has led the preparation of the application for the Philippines to be a provisional member of the WA. The immediate goal of the PTC is to represent the Philippines in applying and getting admitted as a provisional member of the WA by February of 2013. In this regard, it has created the Accrediting and Certification Board for Engineering and Technology (ACBET), the Engineering Accreditation Commission (EAC), and has completed its Certification and Accreditation System for Engineering Education (CASEE). As would be expected, the PTC-CASEE is based on prospective school applicants for accreditation implementing an OBE system and being able to meet a set of criteria.

In 2007 and 2008, the Commission on Higher Education, through the efforts and recommendation of the Technical Panel for Engineering and Technology (TPET), has released a series of memoranda for compliance by all HEIs offering engineering program/s. The CMOs mandated HEIs to follow a new set of policies, and standards for all baccalaureate engineering programs that defined the needed competencies for the practice of each engineering field, and a set of program outcomes that engineering students in the different fields are expected to possess by the time they graduate. The first batch of students covered by these CMOs is expected to graduate in 2013.

This CMO is therefore a reinforcement of the previously CHED-issued memoranda now currently in effect among HEIs offering engineering program/s as a means to establish an OBE system to prepare the concerned HEIs in meeting the accreditation criteria of the PTC-CASEE.

## **Section 2. Objective and Purpose**

This CMO aims to provide the policies, standards and guidelines for all HEIs offering engineering programs to work towards establishing an OBE system. The purpose of this CMO is to promote the capacity building of concerned HEIs to plan for the needed infrastructure and continuing quality improvement program in support of the OBE system.

## **ARTICLE II – GENERAL POLICIES AND STANDARDS**

### **Section 3. General Policies**

It shall now be the policy of the Commission to require, support, and monitor the establishment of an OBE System in all HEIs offering engineering programs.



All HEIs offering engineering programs shall shift to an OBE system with its full implementation by the end of Academic Year 2016-2017.

The Commission, through the TPET shall issue further a series of CMOs to realize the full implementation of OBE system in all HEIs offering engineering programs. In this regard, all existing CMOs affecting engineering programs shall be subjected to review and revision by the OPS in order to conform to the requirements of OBE system implementation.

The General Standards on OBE System Implementation shall be continuously aligned with the accreditation criteria set by the PTC-CASEE as well as any additional general criteria that shall be set by the Commission.

The Commission, through the TPET, shall design and conduct a series of seminar-workshops in order to orient and train the officials and staff of all concerned HEIs on the shift to OBE system.

An OBE monitoring system shall be developed and instituted periodically by the CHED in coordination with the Technical Committees of the TPET in order to ensure the compliance of the concerned HEIs to this CMO.

#### **Section 4. General Standards on the Establishment of an OBE System**

In order to ensure the sustainable delivery of an OBE system in the concerned HEIs, an institutional framework with the following components shall be in place for each engineering program offering:

- 4.1 Mission and Vision
- 4.2 Program Educational Objectives
- 4.3 Program Outcomes
- 4.4 Matrix of Courses with Program Outcomes (Curriculum Map)
- 4.5 Outcome-Based Teaching and Learning Delivery Process
- 4.6 Program Assessment and Evaluation Process
- 4.7 Continuing Quality Improvement Program

A definition of each OBE system component is given in Section 7.

### **ARTICLE III – IMPLEMENTING GUIDELINES**

#### **Section 5. Implementing Guidelines for Academic Year 2012-2013**

- 5.1 CHED shall provide copies of this CMO to all concerned HEIs upon its approval.
- 5.2 CHED, through TPET, shall prepare a 5-year Implementation and Monitoring plan related to this CMO for the approval of the Commission.



- 5.3 The TPET shall open a website ([www.ched-tpet.org](http://www.ched-tpet.org)) for the effective dissemination of OBE-related information, for initiating relevant discussion forums on OBE, and the downloading of OBE-related documents and OBE Implementation Monitoring Form 1 (OBE-MF-01) by the concerned HEIs.
- 5.4 CHED shall conduct a series of orientation and training workshops in order to prepare its technical and support staff and the concerned HEIs for compliance with this CMO and for the completion of OBE-MF-01.
- 5.5 All concerned HEIs are expected to upload their completed OBE-MF-01 online via the TPET website.
- 5.6 CHED, through the Technical Committees of the TPET shall conduct a review of all submitted OBE-MF-01 and shall act accordingly.

## **Section 6. Implementing Guidelines after Academic Year 2012-2013**

CHED, shall release additional Implementing Guidelines aligned with its implementation and monitoring plan for this CMO as needed. New CMOs may also be released to repeal previous CMOs which do not conform to OBE system.

## **Section 7. Definition of Acronyms and OBE-Related Terms**

### **7.1 Acronyms**

**ACBET** – Accreditation and Certification Board for Engineering and Technology  
**CASEE** – Certification and Accreditation System for Engineering Education  
**CHED** – Commission on Higher Education  
**CMO** – CHED Memorandum Order  
**EAC** – Engineering Accreditation Council  
**HEI** – Higher Education Institution  
**OBE** – Outcomes-Based Education  
**OBTL** – Outcomes-Based Teaching and Learning  
**OPS** – Office of Programs and Standards  
**PEO** – Professional Engineering Organization  
**PTC** – Philippine Technological Council  
**TPET** – Technical Panel for Engineering and Technology  
**WA** – Washington Accord

### **7.2 OBE-Related Terms**

**Assessment** – one or more processes that identify, collect, analyze, and report data that can be used to evaluate achievement of the program educational objectives and program outcomes. Effective assessment uses relevant direct, indirect, quantitative and qualitative measures as appropriate to the outcome or objective being measured.



Appropriate sampling methods may be used as part of an assessment process.

**Continuous Quality Improvement** – periodic feedback process for changing any aspect of a program whereby formal results from assessment and evaluation and other informal observations are utilized in the formulation of the changes, with expected higher degrees of attainment of program educational objectives and higher degrees of attainment of student outcomes.

**Curriculum Map** – matrix relating all the courses listed in the program curriculum with one or more of the declared program or student outcomes.

**Evaluation** – one or more processes for interpreting the data and evidence accumulated through assessment processes. Evaluation determines the extent to which program educational objectives and program or student outcomes are achieved. Evaluation results in decisions and actions regarding program continuous quality improvement.

**Institutional Mission and Vision** – statements on the long-term view of the institution of itself and of the world within which it operates, including the fundamental purpose of its existence, its long-term role and stature, and what it does to achieve this purpose and how it would like to play its role.

**Outcomes** – what learners are expected to know and be able to do at the desired level of competence.

**Outcomes-Based Education** – clearly focusing and organizing everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences.

**Outcomes-Based Teaching and Learning** – constructive alignment of intended, learning outcomes with appropriate outcome-based assessment methods and teaching and learning activities. This is OBE applied in the classroom level.

**Performance Criteria** – specific, measurable statements identifying the performance(s) required to meet the outcome; confirmable through evidence.

**Performance Level** – Assigning a performance level to a student is a product of professional expertise and personal knowledge of the student's ability. The performance levels do not correspond to grades. Assignment of performance levels



should be based upon the descriptions provided, not upon any expected score on the assessment.

**Program Educational Objectives** – broad statements that describe the career and professional accomplishments that the program is preparing graduates to achieve within 3-5 years of graduation. Program educational objectives are based on the needs of the program's constituencies.

**Program or Student Outcomes** – specify what students are expected to know and be able to do by the time of graduation. These relate to the skills, knowledge, and behaviors that the students acquire as they go through the program.

**Rubric** – set of categories developed from the performance that define and describe the progression towards meeting important components of the work being completed, critiqued, or assessed. Each category contains a gradation of levels of completion or competence with a score assigned to each level and a clear description of what criteria need to be met to attain the score at each level

#### ARTICLE IV – TRANSITORY PROVISION

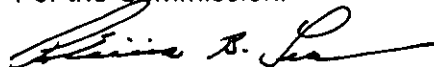
**Section 8.** HEIs that have been granted permit or recognition for any Bachelor of Science in Engineering degree program are required to fully comply with all the requirements in this CMO, within a non-extendable period of five (5) years after the date of its effectivity. State Universities and Colleges (SUCs) and Local Colleges and Universities (LCUs) shall also comply with the requirements herein set forth.

#### ARTICLE V – EFFECTIVITY CLAUSE

**Section 9.** This CMO shall take effect immediately upon approval by the Commission beginning Academic Year 2012-2013, after publication in an official gazette or in a newspaper of general circulation.

Pasig City, Philippines September 11, 2012

For the Commission:



**PATRICIA B. LICUANAN, Ph.D.**  
Chairperson

