**What is OBE?**

Outcome-based education (OBE) is a learner-centered learning philosophy that focuses on measuring students’ performance (the outcomes). OBE itself is not a teaching style or method, it is a principle for designing your teaching in an effective way that enables learning happen and helps students to achieve the intended learning outcomes. **Therefore, what matters most in OBE is “what is learnt” rather than “what is taught”**.

**Key concepts of OBE**

An OBE curriculum means starting with a clear picture of what is important for students to be able to do, then organizing the curriculum, instruction and assessment to make sure this learning ultimately happens. The key concepts are:

- **Clarity of focus** - This means that everything teachers do must be clearly focused on what they want students to know, understand and be able to do. In other words, teachers should focus on helping students to develop the knowledge, skills and personalities that will enable them to achieve the intended outcomes that have been clearly articulated.

- **Backwards curriculum design** - as the starting point define clearly what students should be able to do on completing their course of study. Once this has been done, all instructional decisions are then made to ensure achieve this desired end result

- **Create learning opportunities** - Teachers must strive to provide expanded opportunities for all students. This principle is based on the idea that not all learners can learn the same thing in the same way and in the same time. However, most students can achieve high standards if they are given appropriate opportunities.

- **Constructive alignment** - design the curriculum, teaching, learning and assessment to enable students to achieve the intended learning outcomes.

- **Outcomes assessment and continuous improvement** - collect data on students’ achievement of learning outcomes and use outcome assessment data to inform further development and enhancement of the program/subject.

**The "Essence" of OBE**

1. In OBE, what matters ultimately is not what is taught, but what is learned;
2. Teachers must set appropriate course intended learning outcomes, instead of teaching objectives;
3. Constructive alignment: What we teach, how we teach and how we assess ought to be aligned with the intended learning outcomes, such that they are fully consistent with each other;
4. The quality of teaching is to be judged by the quality of learning that takes place;
5. All OBE approaches take a criterion-based view of assessment and focus on what students can do with knowledge after a period of learning.

**Source:**
- http://celt.ust.hk/learner-centered-course-design
- Guide to OBE. The Hong Kong Polytechnic University. available at https://www.polyu.edu.hk/obe/07_1_What_is_OBE.php
- Outcome-Based Learning Project. The Education University of Hong Kong. available at https://www.ied.edu.hk/facebiview.php?secid=784
The OBE approach is a continuous process of education wherein the curriculum, teaching and learning strategies, and assessment tools are improved continuously. The OBE learning process can be stated into four steps:

(a) **Plan (Syllabus Writing/Review)** – The Course Learning Outcomes are aligned with the KMUTT QF, Program objectives and Program-level Learning Outcomes (PLOs). The syllabi reflect strategies (learning plan) for achieving the outcomes, as well as for measuring the outcomes (assessment).

(b) **Implement (Course Delivery)** - Carry out the learning plan and strategies planned for producing the outcomes.

(c) **Measure/Assess (Assessment)** - Carry out the strategies planned for measuring the learning outcomes and objectives. Collect this data and analyze it to determine the results. (Assessment Phase). This phase is where feedback is obtained.

(d) **Respond/Improve (Continuous Quality Improvement)** - Determine what needs to be changed to make improvements. These changes are the basis of new or revised outcomes and objectives for the next cycle of the process. This process can be looked at on a program or course level.

Source: Adapted from http://www.dlsu.edu.ph/academics/colleges/coe/framework.asp
Backwards Design

Traditional models of teaching and instruction start with course activities and moved towards assessment and the identification of learning outcomes. Following this model instructors choose to teach topics and skills they find most essential or interesting, or that align with directed curriculums or learning plans.

Developed by Wiggins & McTighe (2005) the “backwards design” educational model starts with the identification of desired learning goals, objectives and outcomes. A curriculum is then developed to meet those specific goals, objectives, and outcomes.

Plan for designing and delivering learning outcomes:

In designing course outcomes:
- Start first with the broad outcomes expected of all students
- Then work backward to design academic program outcomes
- Finally design course outcomes that will lead to the achievement of both program and institutional outcomes.

When the program is delivered, students experience the system in reverse:
- Student first participate in experiences that address lesson outcomes.
- The learning that results from these experiences accumulates as students proceed through the courses and other experiences in the program.
- The curriculum is designed so that it provides a coherent set of experiences leading to the development of desired knowledge and skills - students show increasing levels of sophistication and integration of skills as they progress through the program.

Benefits of Backwards Design:
- Improved program organization: Knowing what the end result should be can provide a guiding structure to program components
- Ease of assessment: Thinking about and planning for assessment at the start of a course or program ensures the appropriate data will be available for use
- Increased student engagement: When program activities have a known objective or purpose, students perceive those activities as have more value to them

Source:
Constructive Alignment

**Constructive alignment** – กระบวนการออกแบบ การเรียนการสอนและการประเมินผล เพื่อพัฒนา ผู้เรียนไปสู่การเรียนรู้ที่คาดหวังไว้ ซึ่งประกอบด้วย 3 ส่วนสำคัญที่ต้องมีความสอดคล้องกัน ดังนี้

- **วัตถุประสงค์และผลการเรียนรู้ที่คาดหวังให้เกิดกับผู้เรียน** (Objective and Learning outcomes)
- **การประเมินผู้เรียนว่าเป็นไปตามผลการเรียนรู้ที่คาดหวังไว้** (Assessment method)
- **การจัดกิจกรรมการเรียนการสอนและสภาพแวดล้อมที่นำผู้เรียนไปสู่การเรียนรู้ที่คาดหวังไว้** (Teaching & Learning approaches)

บริบท นูร์ออกแบบการเรียนการสอนสามารถนำหลักของ Constructive alignment ไปใช้ได้ทุกระดับ ตั้งแต่การออกแบบหลักสูตร ชุดวิชา รายวิชา หรือกิจกรรม

**What is constructive alignment?**

Biggs (2003) defines constructive alignment as: The “constructive” aspect refers to what the learner does, which is to construct meaning through relevant learning activities. The “alignment” aspect refers to what the teacher does, which is to set up a learning environment that supports the learning activities appropriate to achieving the desired learning outcomes. The key is that the components in the teaching system, especially the teaching methods used and the assessment tasks are aligned to the learning activities assumed in the intended outcomes. The learner is ‘trapped’, and cannot escape without learning what is intended. In simple terms, constructive alignment means that all assessment tasks, and learning and teaching experiences (and therefore content and methods) must be linked to the desired unit of study learning outcomes.

In order to ensure that your learning design is sound, your learning outcomes should be in line with the assessment that you are using to test for the achievement of learning outcomes. In addition, both learning outcomes and assessment should be aligned with the teaching method. We can imagine the relationship between these three concepts forms a triangle; consequently it is often referred to as the “Triangle of effective learning”.

1. **Objective and Learning Outcomes**
   Statement on what students should know, understand and can do upon completion of a period of study.

2. **Assessment Method**
   An on-going process aims at improving students’ learning by measuring the learning outcomes they achieved. Feedback will be given so that students know what they need to do in order to get better grades.

3. **Teaching / Learning Approaches**
   The teaching and learning methods which the teachers use to achieve each of the learning outcomes. Students will know exactly why they are being asked to engage in certain teaching and learning activities in their courses.
**Generic format of Learning Outcome**

รูปแบบการเขียนผลลัพธ์การเรียนรู้

<table>
<thead>
<tr>
<th>Action Verb</th>
<th>Object</th>
<th>Qualifying Phrase</th>
</tr>
</thead>
<tbody>
<tr>
<td>(คำกรายยุทธ์ที่สะท้อนพฤติกรรม)</td>
<td>(กรรม)</td>
<td>(ส่วนขยาย)</td>
</tr>
</tbody>
</table>

**Example**

On successful completion of this course students will be able to **design, create and use** a mechanical device which can perform a routine, specified function and that meets Australian and New Zealand standards.

On successful completion of this course students will be able to **prepare and present** a legal argument to support a defence based on available and valid evidence, with reference to contemporary common law precedents for a specified case study.

By the end of this course, students will be able to **review and critique** a performance art work, with reference to contemporary theory of artistic criticism.

Graduates will demonstrate an ability to **design a system, component, or process** to meet desired needs within realistic constrains such as economic, environment, social, political, ethical, health and safety, manufacturability, and sustainability.

**Learning outcomes should be SMART (TT)**

- **SPEAK TO THE LEARNER**: learning outcomes should address what the learner will know or be able to do at the completion of the course.
- **MEASURABLE**: learning outcomes must indicate how learning will be assessed.
- **APPLICABLE**: learning outcomes should emphasize ways in which the learner is likely to use the knowledge or skills gained.
- **REALISTIC**: all learners who complete the activity or course satisfactorily should be able to demonstrate the knowledge or skills addressed in the outcome.
- **TIME-BOUND**: the learning outcome should set a deadline by which the knowledge or skills should be acquired.
- **TRANSPARENT**: should be easily understood by the learner; and
- **TRANSFERABLE**: should address knowledge and skills that will be used by the learner in a wide variety of contexts.

**Source:**
Rubric for evaluating and revising learning outcomes:

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Excellent</th>
<th>Common Errors</th>
<th>Need Revision</th>
<th>Missed the point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outcomes are observable, assessable, and measurable.</td>
<td>Outcomes are assessable and measurable. The instructor can observe (usually see or hear) and evaluate each learner’s performance by clear standards—for example, how well, how many, to what degree.</td>
<td>Some outcomes use verbs that refer to a learner’s internal state of mind, such as know, understand, or appreciate, which an instructor cannot observe and assess. Or some outcomes are too general to specify standards for evaluation.</td>
<td>Outcomes do not describe (1) observable performances that are assessable and measurable and/or (2) what the learners will be able to do.</td>
<td>Outcomes list the topics the course will cover or what the instructor will do. Or outcomes use verbs that refer to a learner’s internal state of mind, which an instructor cannot observe and assess.</td>
</tr>
<tr>
<td>Most outcomes require high levels of cognition.</td>
<td>Most outcomes reflect high levels of cognition (application, analysis, synthesis, and evaluation).</td>
<td>All or almost all the outcomes require low levels of cognition (knowledge and comprehension), such as recognize, identify, define, or describe.</td>
<td>Not enough outcomes address higher levels of cognition, given the level of the course and the learners.</td>
<td>Some outcomes consistently use verbs that refer to a learner’s low-level internal state of mind, such as know, understand, or appreciate.</td>
</tr>
<tr>
<td>Outcomes are achievable.</td>
<td>Outcomes are realistic for the course length and credit hours and the level of the learners.</td>
<td>Outcomes are too numerous for the instructor to assess or the learners to achieve.</td>
<td>Outcomes are too advanced for the course length or credit hours for the learners.</td>
<td>Outcomes don’t use action verbs to describe what the learners will be able to do.</td>
</tr>
<tr>
<td>Outcomes are relevant and meaningful to the learners.</td>
<td>Outcomes are relevant to the learners and their personal or career goals.</td>
<td>Not all the outcomes and their benefits are clear to the learners.</td>
<td>The learners can’t make sense out of the outcomes.</td>
<td>Outcomes don’t indicate what the learners will be able to do.</td>
</tr>
</tbody>
</table>

คีโนมัลเจ้าหน้าที่และพฤติกรรมของกระบวนการทางปัญญา

ประยุกต์ใช้ (Applying)

นักเรียนที่จะต้องใช้ข้อมูลในแผนกต่างๆ ผลิตภัณฑ์อย่างไร
คำสำคัญ
- ทำงานสื่อสาร (Carry out)
- ใช้ (Use)

จับคู่ (Matching)

เชื่อมโยงผลิตภัณฑ์ที่กำหนด ผลิตภัณฑ์ที่เรียนรู้
คำสำคัญ
- จับคู่ (Match)
- เชื่อมโยง (Mapping)

สรุป (Summarizing)

การสรุปผลหรือการเรียนรู้ที่ได้
คำสำคัญ
- สรุป (Conclude)
- เทียบ (Extrapolate, Interpolate)
- ทำนาย (Predict)

การสรุปจากย่อ (Inferring)

การสรุปผลหรือสรุปจากย่อ
คำสำคัญ
- สรุป (Conclude)
- เชิงลึก (Inferring)
- จดจำ (Remember)
- รับรู้ (Receive)

จัดประเภท (Classifying)

การจัดประเภทผลิตภัณฑ์
คำสำคัญ
- จัดกลุ่ม (Categorize)
- จัดหมวดหมู่ (Subsum)

สรุป (Summarizing)

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คำสำคัญ
- สรุป (Conclude)
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- รับรู้ (Receive)
What you want them to learn

Egg-shaped model

To help prioritize your proposed content, we ask you to consider how your content fits in this egg-shaped model. At the heart of your model are your Big Ideas and Enduring Understandings, from which you can determine what it is Important to Know and Do, and finally things that it is Worth Being Familiar With.
What are the specific things students will know at the end of the course?

Knowledge (content)

What are specific things students should be able to do at the end of the course?

Skill (be able to do)

What are specific attitudes students should have at the end of the course?

Attitude (feel)

*do not put in what you want to teach. Try to think what students should learn from this course.

K1

S1

A1

KSA

KMUTT C4ED  ----- 10
Writing Your Learning Outcomes

Example

Course: ________________________________________________

Learning Outcome

Action Verb + Object + Qualifying Phrase

Learning Outcome

- Action Verb
- Object
- Qualifying Phrase

Learning Outcome

- Action Verb
- Object
- Qualifying Phrase

Learning Outcome

- Action Verb
- Object
- Qualifying Phrase

Learning Outcome

- Action Verb
- Object
- Qualifying Phrase

Learning Outcome

- Action Verb
- Object
- Qualifying Phrase
Writing Your Learning Outcomes

Course: