

What is OBE?

OBE at AUST

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*The Role of the
Alumni*

Bibliography

The Role of the Alumni in the Outcome-Based BAETE Accreditation of the Mechanical Engineering Program at AUST

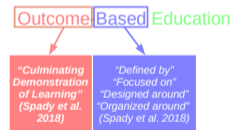
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What is OBE?

"Outcome-based Education (OBE) is an educational theory that bases each part of an educational system on goals (outcomes)" [2]

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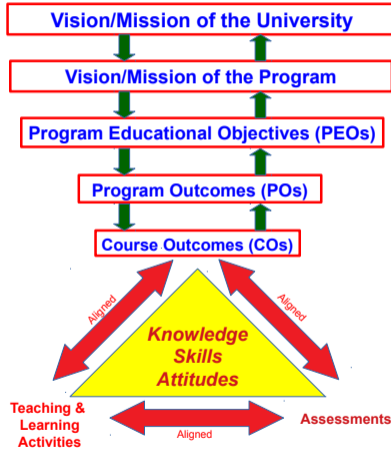
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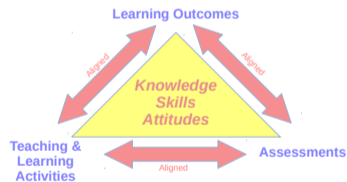
OBE Implementation at AUST: The Big Picture



Prepared by: Professor Dr. Matherul Islam, Director, Institutional Quality Assurance Cell (IQAC), AUST
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Program Educational Objectives (PEOs)

"broad statements that describe
the career and professional
accomplishments that the program
is preparing graduates to
achieve"
[1, Section 4.7]

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The Three PEOs for the ME Program at AUST

PEO1 - Professionalism

Graduates will demonstrate sound professionalism in mechanical engineering or related fields.

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The Three PEOs for the ME Program at AUST

PEO1 - Professionalism

Graduates will demonstrate sound professionalism in mechanical engineering or related fields.

PEO2 - Continuous Personal Development

Graduates will engage in life-long learning in multi-disciplinary fields for industrial and academic careers.

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The Three PEOs for the ME Program at AUST

PEO1 - Professionalism

Graduates will demonstrate sound professionalism in mechanical engineering or related fields.

PEO2 - Continuous Personal Development

Graduates will engage in life-long learning in multi-disciplinary fields for industrial and academic careers.

PEO3 - Sustainable Development

Graduates will promote sustainable development at local and international levels.

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Program Outcomes (POs) or Graduate Attributes

"describe what students are expected to know and be able to do by the time of graduation"
[1, Section 4.8]

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POs related to "Analysis of Problems & Synthesis of Solutions" [4, Slide 18]

- 1 P01 - Engineering Knowledge
- 2 P02 - Problem Analysis
- 3 P03 - Design/development of Solutions
- 4 P04 – Investigation
- 5 P05 - Modern Tool Usage

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POs related to "Analysis of Problems & Synthesis of Solutions" [4, Slide 18]

- 1 P01 - Engineering Knowledge
- 2 P02 - Problem Analysis
- 3 P03 - Design/development of Solutions
- 4 P04 – Investigation
- 5 P05 - Modern Tool Usage

CORE ENGINEERING SCIENCE

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POs related to "RESPONSIBILITIES" [4, Slide 18]

- 1 PO6 - The Engineer and Society
- 2 PO7 - Environment and Sustainability
- 3 PO8 – Ethics

PROFESSIONAL DUE DILIGENCE

POs related to "Required in Workplace" [4, Slide 18]

- 1 PO9 - Individual Work and Teamwork
- 2 PO10 - Communication
- 3 PO11 - Project Management and Finance
- 4 PO12 - Life-long Learning

PROFESSIONAL ENGINEERING
PRACTICES

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"Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems"

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"Identify, formulate, research and analyze complex engineering problems and reach substantiated conclusions using the principles of mathematics, the natural sciences and the engineering sciences"

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"Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for public health and safety as well as cultural, societal and environmental concerns"

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"Conduct investigations of complex problems, considering design of experiments, analysis and interpretation of data and synthesis of information to provide valid conclusions"

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"Create, select and apply appropriate techniques, resources and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations"

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"Apply reasoning informed by contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to professional engineering practice"

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"Understand the impact of professional engineering solutions in societal and environmental contexts and demonstrate the knowledge of, and need for sustainable development"

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*"Apply ethical principles and
commit to professional ethics,
responsibilities and the norms of
engineering practice"*

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"Function effectively as an individual and as a member or leader of diverse teams as well as in multidisciplinary settings"

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"Communicate effectively about complex engineering activities with the engineering community and with society at large. Be able to comprehend and write effective reports, design documentation, make effective presentations and give and receive clear instructions"

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"Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work as a member or a leader of a team to manage projects in multidisciplinary environments"

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"Recognize the need for and have the preparation and ability to engage in independent, life-long learning in the broadest context of technological change"

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Course Learning Outcomes (CLOs) / Course Outcomes (COs)

"statements of what students should be able to accomplish after completing the course" [3]

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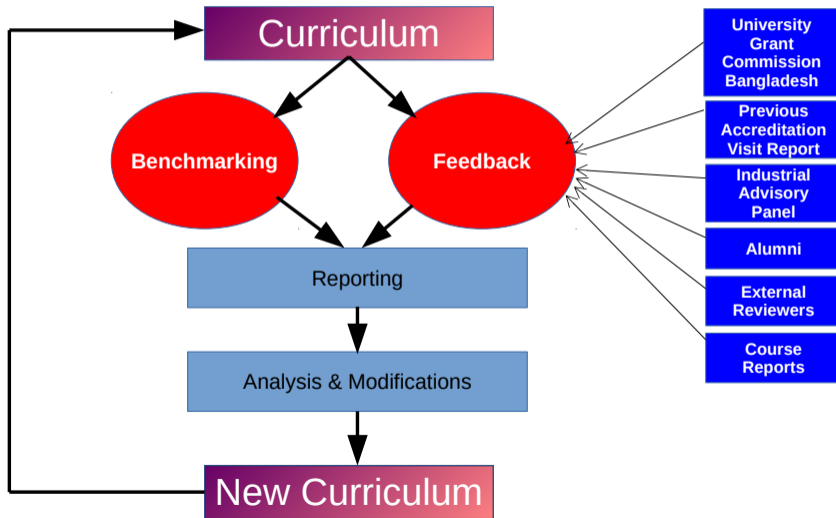
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CQI Loops for Curriculum



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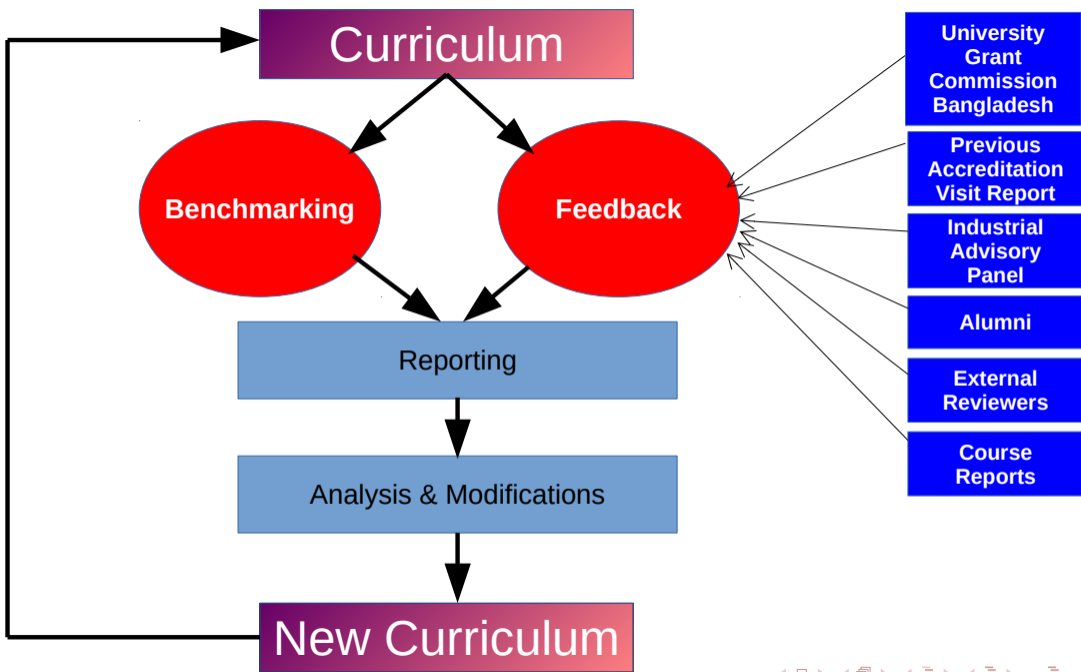
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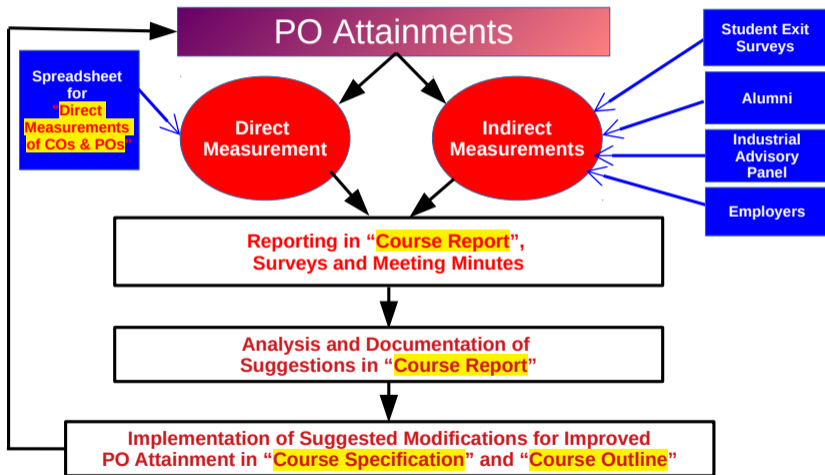
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CQI Loops for Program Outcomes (POs)



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PO Attainments

Spreadsheet for
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of COs & POs"

Direct
Measurement

Indirect
Measurements

Student Exit
Surveys

Alumni

Industrial
Advisory
Panel

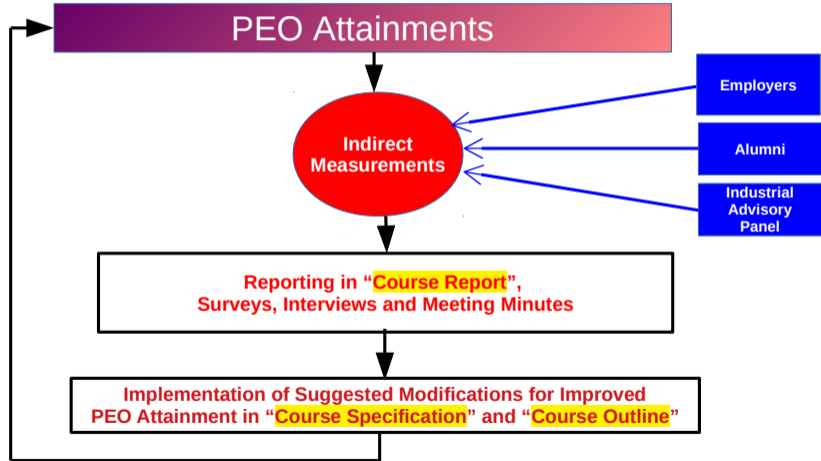
Employers

Reporting in "Course Report",
Surveys and Meeting Minutes

Analysis and Documentation of
Suggestions in "Course Report"

Implementation of Suggested Modifications for Improved
PO Attainment in "Course Specification" and "Course Outline"

CQI Loops for Program Educational Objectives (PEOs)



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*The Significance of Alumni Association [2, Section 4.10,
p. 4-8]*

***"An engineering program should have an
Industry Advisory Panel (IAP) and an alumni
association (AA)"***

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*The Significance of Alumni Association [2, Section 4.10,
p. 4-8]*

"An engineering program should have an Industry Advisory Panel (IAP) and an alumni association (AA)"

"The IAP or AA may meet at certain intervals with the department to provide feedback"

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The Main Role of the Alumni for BAETE Accreditation

Participation in the Surveys to improve [2, Criterion 9, pp. 7-25 to 7-26]

- 1 COs attainments [2, Criterion 9.4.3, p. 7-26]
- 2 POs attainments [2, Criterion 9.4.2, p. 7-25]
- 3 PEOs attainments [2, Criterion 9.4.1, p. 7-25]

Feedback for improving the existing curriculum [2, Criterion 9.4.3, p. 7-26]

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- 1 COs attainments [2, Criterion 9.4.3, p. 7-26]
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- 3 PEOs attainments [2, Criterion 9.4.1, p. 7-25]

Feedback for improving the existing curriculum [2, Criterion 9.4.3, p. 7-26]

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- [3] Dyjur, P., Kelly, P., Norman, D., Yu, L., and Pedersen, R. (2014). Course Design Program. url: https://live-taylor-institute.ucalgary.ca/sites/default/files/uploaded-documents/resources/course-design/course_design_program_manual_2014_12_18.pdf.

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Bibliography

THANK YOU

For further clarifications/feedback, contact:

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