Engineering Program Objectives

The Department of Engineering provides a quality engineering education which, produces graduates who
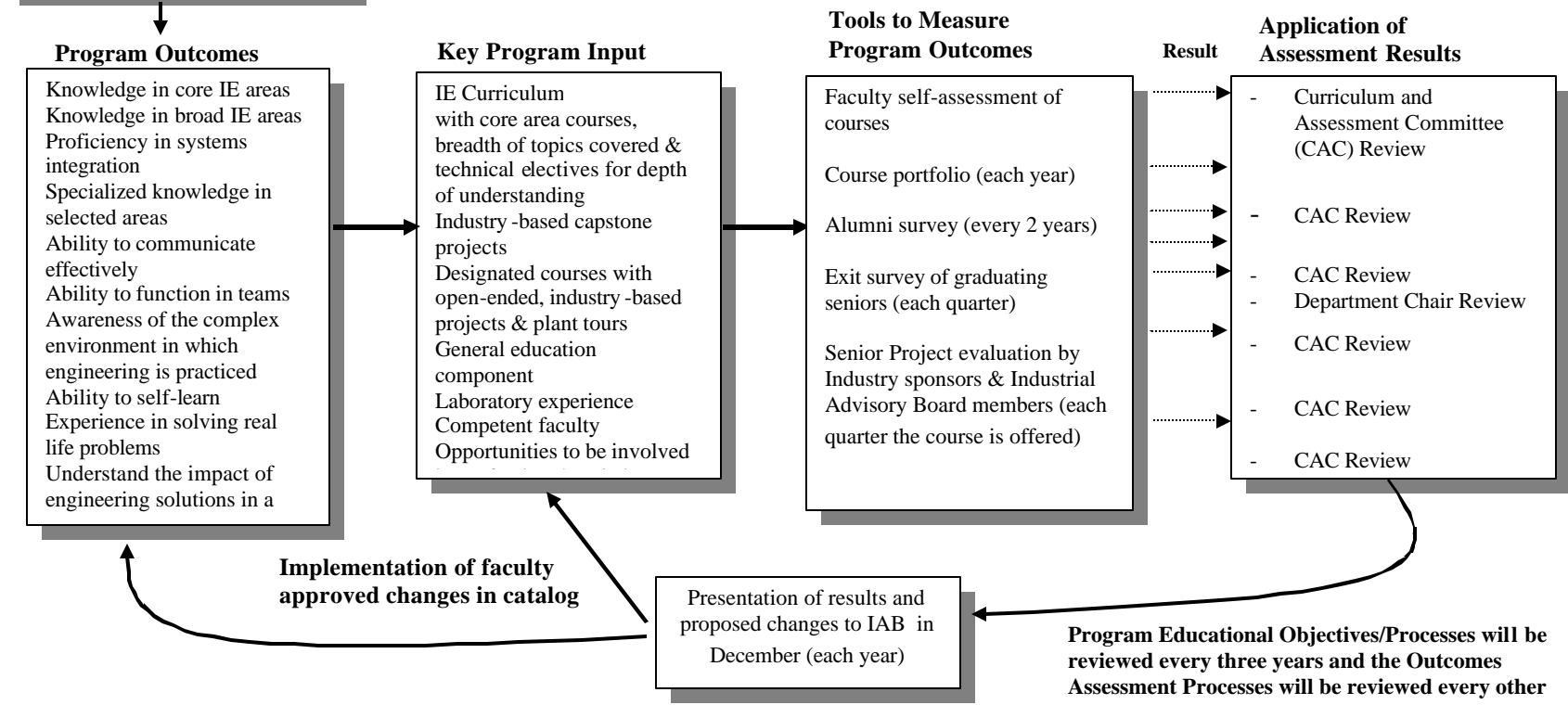
- Exhibit evidence of successfully applying their learned skills throughout their professional pursuits
- Have the enthusiasm and aptitude to continuously pursue learning
- Have the ability to communicate and work well on teams that include engineers and colleagues from other disciplines
- Are recognized as qualified engineers with high ethical standards

Engineering Program Outcomes

Following is the list of engineering department *program outcomes* selected as attributes of our graduates:

1. Graduates will have knowledge in the core industrial engineering areas (probability and statistics, work design and measurement, human factors, operations research and manufacturing systems).
2. Graduates will have knowledge in broad areas of industrial engineering beyond the core areas.
3. Graduates will have proficiency in developing solutions to problems involving systems integration.
4. Graduates will have the ability to communicate effectively.
5. Graduates will have the ability to function in teams.
6. Graduates will have an awareness of the complex environment (involving professional and ethical responsibilities) in which they will practice their profession.
7. Graduates will have the ability to educate themselves and be prepared for lifelong learning and professional development.
8. Graduates will have experience in solving real life problems.
9. Graduates will have a broad education necessary to understand the impact of engineering solutions in a societal context.

Program Educational Objectives, Criterion 3(a-k), IE Requirements

Program Outcomes

Knowledge in core IE areas
Knowledge in broad IE areas
Proficiency in systems integration
Specialized knowledge in selected areas
Ability to communicate effectively
Ability to function in teams
Awareness of the complex environment in which engineering is practiced
Ability to self-learn
Experience in solving real life problems
Understand the impact of engineering solutions in a

Key Program Input

IE Curriculum
with core area courses, breadth of topics covered & technical electives for depth of understanding
Industry -based capstone projects
Designated courses with open-ended, industry -based projects & plant tours
General education component
Laboratory experience
Competent faculty
Opportunities to be involved

Tools to Measure Program Outcomes

Faculty self-assessment of courses

Course portfolio (each year)

Alumni survey (every 2 years)

Exit survey of graduating seniors (each quarter)

Senior Project evaluation by Industry sponsors & Industrial Advisory Board members (each quarter the course is offered)

Result

Application of Assessment Results

- Curriculum and Assessment Committee (CAC) Review

- CAC Review

- CAC Review
- Department Chair Review

- CAC Review

- CAC Review

- CAC Review

Implementation of faculty approved changes in catalog

Presentation of results and proposed changes to IAB in December (each year)

Program Educational Objectives/Processes will be reviewed every three years and the Outcomes Assessment Processes will be reviewed every other year

Process for Input, Evaluation, and Revision of Program Outcomes

Assessment Process

The flow diagram below summarizes the assessment and evaluation process for program outcomes.

We have decided to use the following assessment tools for the evaluation of outcomes achievement:

1. Course portfolio (each quarter).
2. Survey and interview with graduating seniors (every quarter).
3. Alumni survey (every other Fall).
4. Senior project evaluation by Faculty/Sponsors/IAB (each Winter/Spring).
5. Mock program evaluation by IAB (every year).
6. Faculty self-assessment of courses (every year).

Mapping of Program Outcomes and Assessment Tools.

Assessment Tool	1. Core Knowledge	2. Broad Knowledge	3. Processes/System Design, Problem Solving	4. Effective Communication	5. Teaming	6. Awareness of Complex Environment	7. Ability to Self Educate	8. Real Life Problem Solving Experience	9. Impact of Engr. Solution
Course Portfolios	√	√	√	√	√			√	
Alumni Survey				√	√	√	√	√	√
Survey/ Interview of			√	√	√	√		√	√

Assessment Tool	1. Core Knowledge	2. Broad Knowledge	3. Processes/System Design, Problem Solving	4. Effective Communication	5. Teaming	6. Awareness of Complex Environment	7. Ability to Self Educate	8. Real Life Problem Solving Experience	9. Impact of Engr. Solution
Graduating seniors									
Senior Project Evaluation by Faculty, Industry Sponsors & IAB			√	√	√	√	√		√
Mock Program Evaluation by IAB			√	√	√			√	
Faculty course self assessment	√	√	√	√	√			√	√