



**Northern Illinois
University**

College of Engineering and Engineering Technology

Department of Engineering Technology

M.S. in Industrial Management

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Submitted to University Assessment Panel

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Academic Degree Programs Assessment

Part I: Assessment Plan

1. Introduction

The Masters Degree in Industrial Management offered within the Department of Engineering Technology has been designed to provide advanced instruction and practice in the area of manufacturing processes and systems. As such, the department must ensure that all of the coursework that is provided in this program must be appropriate to provide the students with current and appropriate coverage of the subject matter. New advances in process and operations constantly find their way to the manufacturing industry, and thus, our educational product must reflect these alterations as well. To accomplish this task, the NIU Department of Engineering Technology maintains a rigorous continuous improvement plan. The cornerstone of this plan is the assessment tools used, the mode in which the faculty is involved in completing the assessment loop and ensuring proper alterations to the programs, courses, and laboratories are made. The assessment loop used by the Department of Engineering Technology is relatively straight forward; however, multiple forms of assessment, both direct and indirect are employed at various stages during the academic year. To complete the continuous assessment loop, the Department follows the following steps:

- Assess current objectives and outcomes for program and courses in a number of different modes
- Compile all of the results from all constituencies of the Department
- Share results with all faculty members in all emphases
- Close the loop – faculty and chair use assessment materials to update objectives and outcomes for emphasis and courses (Where needed)

The following section details the assessment tools that are used in the Departmental assessment process. It should be noted that the faculty utilize additional assessment means to modify and update their courses, however, the following modes are used by the department and shared with the entire faculty.

2. Student Learning Outcomes (SLOs)

The following student learning objectives are used by the graduate program in the Department. Graduates of the program have the

1. Ability to research technology concepts and obtain data sources
2. Ability to use advanced statistics and data analysis in developing research and industrial reports
3. Ability to manage, work in teams, and develop goals for a given industrial process
4. Ability to develop advanced industrial application skills

The above SLOs are the core abilities that the department would like our students to achieve at graduation. The department has developed a full assessment profile to determine, from the various constituent groups, if they have been met and to what extent.

3. Curriculum Map

Table P-1 is a curriculum map that illustrates core required courses that cover our four program SLOs at beginning (B), development (D), and proficient (P) levels. TECH 500 (Research in Industry and Technology) is the cornerstone course. TECH 694 (Industrial Project Management) is the capstone course. We cover four program SLOs with at least one core required course.

Table P-1: Curriculum map

Course		Program Student Learning Outcomes			
		1. Ability to research technology concepts and obtain data sources.	2. Ability to use advanced statistics and data analysis in developing research and industrial reports.	3. Ability to manage, work in teams, and develop goals for a given industrial process.	4. Ability to develop advanced industrial application skills.
TECH 500 (Cornerstone)	Research in Industry and Technology	B/D	B/D		
TECH 694 (Capstone)	Industrial Project Management	P	P	P	P
<i>Note.</i> Course supports the outcome at the B=beginning, D=developing, or P=proficient level.					

4. Assessment Methods

Table P-2 explains the methods used in direct and indirect assessments. We used course quizzes and project reports to evaluate student performance in the four SLOs. We set a

- **Student-level target** of “a student achieves Advanced (A), Proficient (B), or Satisfactory (C) levels in each of the assessments” and a
- **Program-level target** of “70% of students meet or exceed desired performance levels” in the core required courses.

For the indirect assessment, we used surveys given to our graduate alumni. We set a

- **Program-level target** of “average responses meets or exceeds 80%” which is 4.0 as five-point scales were used in the survey.

Table P-2: Explanations of assessment methods

Assessment Method	Explanation					
	Description	Student-Level Achievement ^a	Program-Level Target ^b	When Data Will be Collected	Person Responsible	SLOs Covered
Direct assessment						
Assignments, projects, quizzes, and exams	Each semester, the department faculty determine which of the SLOs each class will cover. Students are questioned as to the level of coverage of the outcomes in each class.	70% or above	70% of above	End of each semester	Department faculty	1,2,3,4,5
Indirect assessment						
Alumni survey	Assessment of the departmental alumni in all of the graduate SLOs. Each year the university conducts an alumni survey for all of the graduates who have been out for one year; additional surveys are conducted on a rotating basis at five years and nine years after graduation. This survey looks at both programmatic objectives and alumni oriented questions such as employment and postgraduate education.	-	Average 80% or above	End of summer	Assessment coordinator	1,2,3,4,5
<i>Note.</i> ^a Student-level target is the score or performance an individual student must demonstrate to say the student met the student learning outcome. ^b Program-level target is the percent of all students that must demonstrate they meet the student learning outcome.						

Table P-3 maps the assessment methods to the SLOs. We used both formative and summative direct assessments. The alumni surveys are summative indirect assessment.

Table P-3: Assessment methods-by-outcomes matrix

Assessment Methods		Program Student Learning Outcomes			
		1. Ability to research technology concepts and obtain data sources.	2. Ability to use advanced statistics and data analysis in developing research and industrial reports.	3. Ability to manage, work in teams, and develop goals for a given industrial process.	4. Ability to develop advanced industrial application skills.
Direct assessment					
Assignments, projects, quizzes, and exams					
Beginning/ developing	TECH 500 (Cornerstone)	F, D	F, D		
Proficient	TECH 694 (Capstone)	S, D	S, D	S, D	S, D
Indirect assessment					
Alumni skill survey		S, I	S, I	S, I	S, I
<i>Note.</i> F=formative assessment, S=summative assessment, D=direct assessment, and I=indirect assessment. See the paragraph above for an explanation of each type of assessment.					