



NORTHERN ILLINOIS UNIVERSITY

College of Engineering and Engineering Technology

Department of Technology

CONTINUOUS IMPROVEMENT PLAN B.S. IN TECHNOLOGY (2012)

INTRODUCTION

As technology in industry undergoes rapid changes and advances, all aspects of the education within the Department of Technology must also undergo a continual improvement process. As we have seen in industry, new advances in process and implementation must find their way to the manufacturing floor in order to produce goods in a more cost effective manner, using as little of our resources as possible. If this does not occur, regional industry will find themselves far behind the rest of the world. Technology education must align itself with the industry that hires its students. In order to produce students that are desirable in industry, and who can make an impact at their companies from day one, we, as educators, must make sure that our program reflects current industrial trends. In addition, we, as educators, need to ensure that our students are graduating with the best possible skills to get them into industry and to succeed and grow once they are in industry. To accomplish this task, the NIU Department of Technology maintains a rigorous improvement plan. The cornerstone of this plan is the assessment tools used and the mode in which the faculty is involved in completing the assessment loop, and ensuring that proper alterations to the programs, courses, and laboratories are made. The assessment loop which is used by the Department of Technology is relatively straight forward; however, multiple forms of assessment, both direct and indirect are employed at the 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 all of 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.

1). Student Learning Objectives

The following student learning objectives are used by the undergraduate programs in the Department. Graduates of the program will,

1. Acquire a well-balanced knowledge in the theory and practice within the areas of technology.
2. Utilize laboratory based skills and modern engineering equipment used in industry.
3. Provide effective, responsible, and articulate leadership in our complex society.



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4. Understand the need for obtaining new knowledge, including technological advances, and be capable of self-renewal, and life-long learning.
5. Seek and apply creative and analytical insight in the solution of engineering-type problems.
6. Provide technical communications in both oral and written forms, using many presentation styles.
7. Function as part of an interdisciplinary team and manage projects effectively.

The above objectives and outcomes are the core abilities that we want our students to achieve, and the department has developed a full assessment profile to determine, from the various constituent groups, if they have been, or to what extent they are met.

2). Methods

According to ABET, the Engineering and Technology accrediting body, assessment is one or more processes that identify, collect, and prepare data to evaluate the achievement of program outcomes and program educational objectives. In order to collect the needed data to appropriately assess and analyze the programs in the Department of Technology, we utilize many different tools.

The department uses many different types of direct and indirect assessment tools, including

Indirect Assessment Tools

Tool	Usage	Time line	Responsibility
Industry Input	Quantitative and qualitative analysis done in conjunction with industry and alums in formal discussions. Department faculty and chair meet with members of industry on a regular basis. Through these encounters, information relayed concerning programmatic and course-level issues.	fall, spring, and summer semesters	Department Faculty and Chair
Instruction quality and improvement	Students provide input on the overall quality of instruction and improvements which can be made to instructional quality.	End of each semester	Department Faculty and Assessment Coordinator
Alumni Survey	Assessment of the departmental alumni in all of the undergraduate emphases. Each year, the university conducts an alumni survey for all of the graduates that 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.	End of Summer	Assessment Coordinator
Compliance	Each semester, the department faculty determine which of the A-Q ABET outcomes that each class	End of	Assessment



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with ABET learning outcomes.	will cover. Students are questioned as to the level of coverage of the outcomes in each class.	Summer	Coordinator
Employer Survey	The department requests information based upon the skill sets that the employees bring to the company and those that are needed by the company. Based upon the responses that the department receives from the one-year-after-graduation skills survey, courses are modified and areas of needed are added.	End of Summer	Assessment Coordinator
Internship Survey	Departmental students completing the Internship (TECH 409) course are required to complete an internship survey. This tool examines skills that the student brings to the company, and how the student is able to assimilate into the company setting. Two surveys are used, one for students and one for the student's company manager at the company.	End of each semester	Internship Instructor
Exit interviews	The Department administers exit interviews to graduates through an independent source. The instrument examines aspects of the student's time at NIU and specifically in the department, while questioning the general emphasis, advising, financial aid, and many other aspects. This instrument is important due to face-to-face presentation between a neutral party and the student (alone). The facilitator prompts students to expand on various issues and seek examples	End of each semester	Assessment Coordinator
Placement Information	Based upon university contacts, the department receives detailed information on the placement of the students.	End of Summer	Assessment Coordinator

Direct Assessment Tools

Tool	Usage	Time line	Responsibility
Industry Input Advisory Boards	Quantitative and qualitative analysis done in conjunction with industry and alums in formal discussions. Department faculty and chair meet with members of industry on the advisory boards in two different areas within department	Spring semester	Department Faculty and Chair
Capstone (Senior Projects) Experience	During each semester, faculty work with the student teams, and thus, gain understanding into their knowledge and abilities during a year-long capstone experience. At the end of each semester, the faculty and industry representatives attend presentations of the project reports. During the presentations, faculty and industry representatives have a first-hand observation of how the students	End of each semester	Faculty coordinator of capstone projects course



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	are meeting the objectives in the culminating course in their discipline.		
Institutional Writing Assessment	Administered by the writing center to assess junior level students. The Department of Technology is involved in this assessment of student writing, and, typically, 2-3 of our courses are used in assessment	Each year	NIU Writing Center
Internship Assessment	At the end of each semester, the internship coordinator conducts an on-site visit of each student enrolled in the Internship (TECH 409) course. The on-site meetings are conducted between the faculty member, intern, and supervisor/employer. As part of the internship, the intern assembles a portfolio of work completed and daily tasks. The portfolio is assessed, as well as tasks that the intern has completed.	End of each semester	Internship Instructor
Exit interviews	The Department administers exit interviews to graduates through an independent source. The instrument examines aspects of the student's time at NIU and specifically in the department, while questioning the general emphasis, advising, financial aid, and many other aspects. This instrument is important due to face-to-face presentation between a neutral party and the student (alone). The facilitator will prompt students to expand on various issues and seek examples	End of each semester	Assessment Coordinator
Placement Information	Based upon university contacts, the department receives detailed information on the placement of the students who respond to the university surveys, and from contacts that the Alumni Office receives.	End of Summer	Assessment Coordinator