

Goal #3: Quantitative Modeling and Analysis of Business and Engineering Processes

Learning Goal: The Business and Engineering curriculum enables students to acquire a set of quantitative skills through the required math, statistics, and operations research courses. Together with engineering courses, students are provided with a broad perspective of the modeling and analysis of business and engineering processes. Thus, one of the learning goals for the Business and Engineering Degree Program is for students to demonstrate their ability to quantitatively model and analyze a business or engineering process.

Measurement of Goal: Business and Engineering students are required to complete OPR 320 (Linear Modeling for Decision Making), OPM 321 (Planning and Control of Operations), STAT 205 (Statistical Inference I), and STAT 206 (Statistical Inference II). In addition, these students must then complete one of the following: OPR 330 (Advanced Decision Making and Simulation), STAT 301 (Statistical Analysis for the Decision Sciences), or STAT 325 (Six Sigma Quality Implementation). Assessment will be completed through the course chosen from the latter three, OPR 330, STAT 301, or STAT 325. Typically, a term paper or extensive modeling and analysis assignment is required in these courses. Through this submitted work, assessment of the application of quantitative modeling techniques to business and engineering processes will be completed.

Procedure: The assessment of this student learning goal is based on guidelines created by the faculty of the Department of Decision Sciences and completed independently of the grading by the instructor for the student's regular performance for the course.

Frequency and Collection: The above-mentioned work from all Business and Engineering students completing the courses listed above will be selected.

In general, the topics used in the assessment will include (but not limited to) the following:

- A. Adequate definition of the business or engineering process to be modeled and analyzed
- B. Adequate explanation and understanding of the modeling technique
- C. Proper use of the modeling technique
- D. Ability to explain the modeling results
- E. Ability to explain the business benefits of the modeling results