**Quantitative Modelling and Analysis of Business and Engineering Processes**  
**Department of Decision Sciences**  
**BS - Commerce and Engineering**  
**Assessment Plan**

**Learning Goal:** Application of quantitative modelling techniques to business and engineering processes.

The Commerce and Engineering curriculum enables the 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 wide perspective the modelling and analysis of business and engineering processes. Thus one of the learning goals for the Commerce and Engineering degree program is for students to demonstrate their ability to quantitatively model and analyze a business or engineering process.

**Measurement:** Commerce and Engineering students are required to complete OPR 320, OPM 321, STAT 205, and STAT 206. 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, 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 modelling and analysis assignment is required in these courses. Through this submitted work, assessment of the application of quantitative modelling techniques to business and engineering processes will be completed.

**Procedure:** When designing a course assessment tool (term paper or assignment), the instructor should have this overall learning goal and assessment plan in mind. However, the grading of the tool for the course will be completed by the instructor according to the course requirements. The assessment of this student learning goal will be 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.

The whole learning assessment cycle will be initiated in the academic year of 2006-2007. At the beginning of each academic year, the faculty of the Department of Decision Sciences will (1) approve the assessment guidelines, (2) plan for the assessment to insure the assessments will be completed in a timely manner, and (3) plan for the report to be submitted to the college’s Academic Program Committee. The APC will insure the results are communicated to the faculty across the College.

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

In general, the topics used in the assessment will include (but will not be limited to) the following:
(i) Adequate definition of the business or engineering process to be modelled and analyzed,
(ii) Adequate explanation and understanding of the modelling technique,
(iii) Proper use of the modelling technique,
(iv) Ability to explain the modelling results,
(v) Ability to explain the business benefits of the modelling results.

**Action Plans:** After the results are communicated to the LeBow College community, an action plan will be developed each year so that continuing improvement of the students’ learning may be obtained. With the consultation of the instructors involved, the action plan will consist of, but not be limited to, changes in course content and delivery and other steps deemed necessary by the involved parties to improve the learning of our students.