

April 1, 2017

1. Student Learning Goals Addressed This Year

- a. Goal 1:
Apply technical competencies in business applications development.
- b. Goal 2:
Leverage information technology for business solutions at the strategic, tactical, and operational levels in a global environment.

2. Learning Outcomes/Objectives for These Goals

- a. 1.2: Demonstrate data manipulation language skills.
- b. 2.1: Leverage the use of emerging technologies to solve a business problem or capitalize on an opportunity.

3. Courses and Activities Where Assessed

- a. SLO 1.2 was assessed in Business Information Systems 7305 (Advanced Database Management Systems) using an exam measuring knowledge of the relational model and SQL for data manipulation.
- b. SLO 2.1 was assessed in Business Information Systems 7350 (Information Systems Management) using the course term project which involved a complex analysis of an emerging technology that would provide competitive advantage/value.

4. Methods Used

- a. SLO 1.2: The exam measured knowledge of (1) key concepts of the relational model relating to data integrity; (2) ability to use SQL for data definition; and (3) ability to use SQL for data manipulation.
- b. SLO 2.1: The project required analysis of the corporate market relating to industry positioning, information systems architecture/infrastructure, cultural impact, projected financial value, business process improvement, and implementation implications (security, scalability, standardization, time frame). The project is completed in a team environment to provide collaboration of students with experience in different industry types. Team decision making is used in the analytics environment.

A team of Business Information Systems faculty evaluated the exam and artifacts using the rubrics shown in this report.

5. Assessment Findings; Analysis

- a. SLO 1.2: The metric of $\geq 75\%$ achieving Acceptable or Exemplary was met on all four factors of evaluation. In the area of relational model (concepts), 80.8% of the students were exemplary or acceptable (38.5% and 42.3% respectively). In the area of data definition, all students were exemplary or acceptable (84.6% and 15.4% respectively). In the area of data manipulation, 92.3% of the students were exemplary or acceptable (53.8% and 38.50% respectively).
- b. SLO 2.1: The metric of $\geq 75\%$ achieving Acceptable or Exemplary was met on all four factors of evaluation. Improvement in performance from 2014 was achieved.

6. Conclusions Drawn and Decisions Made

- a. SLO 1.2: Students performed well. Increased experiential exercises had been integrated into the course over the past three years. The intervention was successful, as shown in assessment scores in 2014/2016. Problem-solving cases will continue to be used in the course.
- b. SLO 2.1: Differences in scores related to student effort/depth of analysis and possible misunderstanding of project requirements. A detailed project completion process had been implemented to control student-faculty interaction. Students were first required to submit a one-page proposal for approval prior to beginning the project and to submit progress reports periodically. The revised process has resulted in meeting the performance metric for each factor.

7. Stakeholder Involvement

Assessment results were shared with the BIS advisory board on April 17 in the context of curriculum evolution/redesign.

Assessment of SLO 1.2

Data Manipulation Evaluation

	Unacceptable (0–1 pt.)	Acceptable (2–3 pts.)	Exemplary (4-5 pts)
<p>Relational model</p> <p>Able to explain the key concepts of relational data structure (e.g., relation, PK, FK, tuple, attribute, cardinality, degree)</p> <p>Results Sp2014 Sp2016</p>	<p>2/14 = 14%</p> <p>5/26 = 19%</p>	<p>Able to explain</p> <ul style="list-style-type: none"> • Level I + • More relational concepts (e.g., CK, AK, domain etc.) • Entity and referential integrity <p>3/14 = 22%</p> <p>11/26 = 42%</p>	<p>Able to explain</p> <ul style="list-style-type: none"> • Level II + • Various semantic integrity constraints <p>9/14 = 64%</p> <p>10/26 = 39%</p>
<p>SQL for Data Definition.</p> <p>Able to write SQL DDL for creating basic table structure</p> <p>(Write DDL statement to define table structure)</p> <p>Results Sp2014 Sp 2016</p>	<p>3/14 = 22%</p> <p>0/26 = 0%</p>	<p>Able to write SQL DDL for</p> <ul style="list-style-type: none"> • Level I + • Implementing various integrity constraints (e.g., entity integrity and referential integrity) <p>2/14 = 14%</p> <p>4/26 = 15%</p>	<p>Able to write SQL DDL for</p> <ul style="list-style-type: none"> • Level II + • Various semantic integrity • Improving performance (e.g., index design) <p>9/14 = 64%</p> <p>22/26 = 85%</p>
<p>SQL for Data Manipulation.</p> <p>Able to create SQL DML for simple data retrieval from a singlet table; limited capability in handling SQL statement involving multiple tables or complex queries (e.g., subqueries, aggregate functions)</p> <p>(Write DML statement to support data retrieval)</p> <p>Results Sp2014 Sp2016</p>	<p>1/14 = 7%</p> <p>2/26 = 8%</p>	<p>Able to write SQL DML for most cases without errors; may show difficulty in solving very complex cases</p> <p>7/14 = 50%</p> <p>10/26 = 38%</p>	<p>Able to write SQL DML for all cases without any errors or with a few minor errors, if any.</p> <p>6/14 = 43%</p> <p>14/26 = 54%</p>

Assessment of SLO 2.1

Assessment: IT Decision Making

TRAIT	Unacceptable (0-1 pt.)	Acceptable (2-3 pts.)	Exemplary (4-5 pts.)
Identifies emerging technologies related to identified process improvements and competitive advantage Results Sp2014 Sp2016	Demonstrates limited understanding of emerging technologies that can improve identified process(es) and competitive advantage 2/6 = 33% 0/7 = 0%	Demonstrates a basic understanding of the technologies that can improve identified process(es) and competitive advantage including identification of impact 0/6 = 0% 1/7 = 14%	Demonstrates in-depth understanding of the technologies that can improve identified process(es) and competitive advantage and provides a detailed description of the impact on identified technology on processes and competitive advantage 4/6 = 67% 6/7 = 86%
Identifies managerial considerations for assessing technologies Results Sp2014 Sp2016	Identifies only some important managerial considerations 1/6 = 17% 0/7 = 0%	Identifies important managerial considerations for assessing technologies 1/6 = 17% 3/7 = 43%	Identifies important and less obvious managerial considerations reflecting a thorough understanding of the options 4/6 = 67% 4/7 = 57%
Justifies the potential value of recommended technology to identified stakeholders Results Sp2014 Sp2016	Has difficulty identifying stakeholders and analyzing impact of technologies on stakeholders 1/6 = 17% 0/7 = 0%	Identifies major stakeholders and provides limited analysis of value of technology to those stakeholders 1/6 = 17% 4/7 = 57%	Identifies all stakeholders impacted and provides an in-depth evaluation of technology with detailed value analysis to stakeholders 4/6 = 67% 3/7 = 43%
Applies appropriate frameworks and theories, such as Resource Based View of the firm and Business-IT Maturity Model Results Sp2014 Sp2016	Demonstrates limited understanding of applicable theories and frameworks 1/6 = 17% 0/7 = 0 %	Demonstrates basic understanding of applicable theories and frameworks and how they can be used to select appropriate technologies 1/6 = 17% 4/7 = 57%	Demonstrates in-depth understanding of applicable theories and frameworks by providing a detailed analysis of how they demonstrate value of the selected technologies 4/6 = 67% 3/7= 43%

