Information Technology – Business/Systems Analysis Option
OIT Assessment Report
2011-2012

I. Program History

History

The Information Technology degree was first offered at OIT in 1999. In addition, the Management Department offered degrees in Management Information Systems and Management Information Systems, Management Accounting Option. Because of similarities across these degrees, and in response to student and employer requests, the Department restructured the Information Technology degree in 2006. Today the Information Technology degree allows students to choose from four specialty areas: Accounting, Applications Development, Business/Systems Analysis, and Health Informatics. The Business/Systems Analysis Option integrates technical, business, and interpersonal skills to prepare students for successful careers as business/systems analysts. This degree option is offered in Klamath Falls and in Portland. Current enrollment is 52 students with 15 students at the Klamath Falls campus and 37 students at the Portland campus. Twelve students graduated with an Information Technology – Business/Systems Analysis degree in June 2011. Employers of our 2011 graduates include Jeld-Wen, Asante Health System, and Wells Fargo. Reported starting salaries ranged from $42,000 to $50,000.

II. Program Purpose

The Management faculty reviewed the program purpose, objectives, and learning outcomes during the fall faculty meeting in September 2011. The faculty reaffirmed the statements below:

Information Technology – Business/Systems Analysis Option Mission Statement:

The Information Technology – Business Systems/Analysis Option degree provides students with the technology foundation necessary to enable them to plan and analyze business information systems in information technologies in a business management setting.

Educational Objectives:

(1) The Information Technology – Business/Systems Analysis degree program prepares students to apply critical thinking skills to the ever changing Information Technology industry.
(2) The Information Technology – Business/Systems Analysis degree program prepares students to succeed in broad industry applications such as mid-level managers or as IT professionals.

Student Learning Outcomes:

The Information Technology – Business/Systems Analysis option consists of the eight core Management Department student learning outcomes as well as four student learning outcomes specific to this program. Upon completion of this program, Information-Technology-Business/Systems Analysis graduates will be able to:

1. Demonstrate an understanding of the functional areas of accounting, marketing, finance, management, and economics.
2. Demonstrate an understanding of the legal and social environment of business.
3. Demonstrate an understanding of the global environment of business.
4. Demonstrate an understanding of the ethical obligations and responsibilities of business.
5. Demonstrate the ability to use business tools.
6. Demonstrate the ability to communicate effectively.
7. Demonstrate the ability to apply knowledge of business concepts and functions in an integrated manner.
8. Demonstrate the ability to work effectively in teams and/or groups.
9. Demonstrate the ability to analyze, design, implement, and support Relational Database Management Systems (RDMS)
10. Analyze business needs with the view to design and implement data networks.
11. Perform the general planning and analysis of business systems that will support the development of modern business information systems (IS).
12. Develop fundamental programming skills and apply those skills to solving business information system problems.

III. Assessment Cycle

Assessment schedule
IACBE requires all accredited institutions to complete a full assessment cycle for all IACBE core student learning outcomes (SLOs 1-8) on an annual basis. Program-specific learning outcomes (PSLOs 9-12) will be assessed as follows:

Program-Specific Learning Outcomes	2011-2012	2012-2013	2013-2014	2014-2015
9. Demonstrate ability to analyze, design, implement, and support RDMS.	X			X
10. Analyze business needs with the view to design and implement data networks.			X	
11. Perform the planning and analysis of business systems to support IS.		X		
12. Develop fundamental programming skills and apply those skills to solving business information system problems.		X		

Table 1: Assessment Cycle for Information Technology – Business/Systems Analysis PSLOs

I. 2011-2012 Assessment Activities

Assessment results for the eight core student learning outcomes are reported separately and can be found on the OIT website under IACBE Public Disclosure of Student Learning. This report covers PSLO #9 only per the assessment cycle above.

PSLO #9: Demonstrate ability to analyze, design, implement, and support RDMS.

Direct Assessment #1: The faculty assessed this outcome in MIS 275, Introduction to Relational Databases, spring 2012 in Klamath Falls and online winter 2012.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
1. Analyze business problem/opp-ortunities to determine system requirements of a RDMS application.	Rating of final project	1-4 Proficiency Scale	80% achieve 3 or 4 rating	DE: 71% (n=7) KF: 75% (n=16)
2. Create logical and physical design specifications given system requirements.	Rating of final project	1-4 Proficiency Scale	80% achieve 3 or 4 rating	DE: 73% (n=11) KF: 82% (n=11)
3. Demonstrate skills in Structured Query Language (SQL) to operate the RDMS.	Rating of final project	1-4 Proficiency Scale	80% achieve 3 or 4 rating	DE: 85% (n=13) KF: 85% (n=13)
4. Create a user interface for the RDMS to allow target users to manipulate data within the RDMS.	Rating of final project	1-4 Proficiency Scale	80% achieve 3 or 4 rating	DE: 83% (n=18) KF: 92% (n=24)

Table 2: Assessment Results for PSLO #9 in MIS 275

Strengths: MIS 275 was redesigned to better prepare students for the remainder of the database sequence (MIS 34X). The redesign increased the level of rigor to provide the students with a better understanding of database concepts and a necessary skill set required for their success in more advanced database courses. Exposure to other database technologies was introduced. Microsoft SQL was given increased emphasis and Microsoft Access less emphasis in the course.

Weaknesses: Currently this course includes a mix of IT majors (that will go on to take the database sequence, MIS 34X) and non-IT majors (who do not take the database sequence). It is challenging to present the depth of course content needed by the IT majors to successfully move on in their majors, while also presenting content at a more basic level for non-IT majors. The mix of students in the course limited the depth of coverage and impacted student interest and involvement.

Actions: The IT faculty will re-introduce MIS 113, Introduction to Relational Databases, for non-IT majors.

Direct Assessment #2: The faculty assessed this outcome in MIS 341, Relational Database Design I, fall 2011 in Klamath Falls and Portland, and online winter 2012, using the final project.

Performance Criteria	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
1. Analyze business problem/opp-ortunities to determine system requirements of a RDMS application.	Labs and exam questions	1-4 Proficiency Scale	80% of students answer the targeted questions correctly.	DE: 90% (n=10) KF: 85% (n=16) PDX: 85% (n=13)
2. Create logical and physical design specifications given system requirements.	Exam questions	1-4 Proficiency Scale	80% of students answer the targeted questions correctly.	DE: 80% (n=10) KF: 91% (n=16) PDX: 31% (n=13)
3. Demonstrate skills in Structured Query Language (SQL) to operate the RDMS.	Exam questions	1-4 Proficiency Scale	80% of students answer the targeted questions correctly.	DE: 75% (n=10) KF: 87% (n=16) PDX: 79% (n=13)

Table 3: Assessment Results for PSLO #9 in MIS 341

Strengths: Overall, across all modalities, students in MIS 341 demonstrated sufficient understanding of PSLO #9. On average, students placed at or above the minimum acceptable performance level of 80% in all 3 of the performance criteria. MIS 341 provided students with an in-depth understanding of SQL which translates into a broad understanding of database systems and programming which can be universally applied to all DBMSs. Additionally, students demonstrated an ability to move on to MIS 342, Relational Database Design II, which further reinforces MIS 341's learning outcomes.

Weaknesses: In the on-ground, Klamath Falls section, faculty felt that there was inadequate time to cover the basics of SQL. The instructor's initial intent was to present each topic in great detail. As time became an issue, it became necessary to shorten the amount of time per topic discussed. Furthermore, the slides provided by the publisher did not clearly present the most salient points.

In addition to the time constraint, the students also appeared to have issues with understanding what was expected of their lab assignments and how to go about implementing the solutions with PL/SQL code. This was most evident in the beginning of the class. Some of the labs required inordinate amounts of lab time to complete exercises simply due to the very difficult syntax needed to solve it. The ERD lab used a structure that was meaningless to the students.

Overall, students entering MIS 341 were less prepared with regards to performance criteria #3 than with the other two criteria. It was necessary for faculty to review material that students should have learned while in MIS 275, a pre-requisite for the course. All management students are currently required to take MIS 275. As such, it is challenging for IT faculty to provide IT content needed for the IT majors while at the same time ensuring that non-IT students receive the help they need to be successful in the course.

The Portland campus version of MIS 341 does not appear to be equivalent to the Klamath Falls and online sections with regards to learning outcomes.

Actions: Proposed changes that need to be made:

- Identify common course objectives across all modalities. Generate materials, syllabi, and readings to ensure that learning outcomes are consistent.
- Reintroduce MIS 113, Introduction to Relational Databases. To ensure that IT majors receive the depth of knowledge needed to move through their curriculum it is necessary to focus MIS 275 on IT-specific content. To ensure that all management majors are introduced to Relational Databases and their role in management MIS 113 will be offered to those students in place of MIS 275.

Indirect Assessment: The faculty indirectly assessed the Information Technology – Business/Systems Analysis PSLOs spring 2012. Seniors completed an exit survey that asked students to rate how well the IT – Business/Systems Analysis program prepared them with regards to the program-specific student learning outcomes and corresponding competencies.

Five Information Technology – Business/Systems Analysis graduates completed the senior survey.

Program-specific learning outcomes	Assessment Method	Measurement Scale	Minimum Acceptable Performance	Results
The ability to analyze, design, implement, and support Relational Database Management Systems	Student rating	1-4 Scale	80% of graduates indicate a 3 or 4 rating	KF: 100% (4/4) PDX: 100% (1/1)
The ability to analyze business needs with the view to design and implement data networks	Student rating	1-4 Scale	80% of graduates indicate a 3 or 4 rating	KF: 100% (4/4) PDX: 100% (1/1)
The ability to plan and analyze business systems that will support the development of modern business information systems	Student rating	1-4 Scale	80% of graduates indicate a 3 or 4 rating	KF: 75% (3/4) PDX: 100% (1/1)

Table 4: Assessment Results for IT-Applications Development PSLOs from Senior Survey

In general students rated their preparedness high in regards to the Information Technology – Business/Systems Analysis PSLOs.

IV. Summary of student learning

MIS 275, Introduction to Relational Databases, teaches the essential fundamental concepts necessary to understand and utilize Database Management Systems in today's business environment. These essential concepts include: Fundamentals of the Relational Model, Structured Query Language (SQL), Data Modeling, Database Design, and Database Administration. These concepts are essential for information technology majors and are the foundation for more advanced database courses. Overall, Information Technology students are not attaining the proficiency levels needed to succeed in MIS 341, Relational Database Design I. To improve student learning future introductory database courses will be offered according to major.

MIS 113, Introduction to Relational Databases, will be offered for non-majors, while MIS 275 will provide the more technical background needed by Information Technology majors.

V. Changes resulting from assessment

PSLO #10: Upon review of the 2010-2011 assessment results, the IT faculty concluded that MIS 272, Introduction to Networking, was not providing the technical knowledge necessary for students to succeed in later classes as evidenced by the remedial work required by students entering MIS 351, Enterprise Network Design I. While it appeared that students understood the concepts of top-down network design, they failed to understand the hands-on technical knowledge of networking building blocks. With insufficient knowledge of these key concepts, students struggled through the network design series (MIS 351, MIS 352). The addition of MIS 273, Introduction to Networking II, to the IT curriculum will help reinforce these concepts and provide students with the knowledge base needed to succeed in MIS 351 and 352. PSLO #10 will be reassessed during the 2013-2014 academic year.

Information Technology – Business/Systems Analysis
SLO-Curriculum Map

SLO #1: The student will demonstrate ability to analyze, design, implement, and support Relational Database Management Systems (RDMS).

Courses that are shaded below indicate that the SLO above is taught in the course, students demonstrate skills or knowledge in the SLO, and students receive feedback on their performance on the SLO.

I = Introduced R = Reinforced E = Emphasized

	Fr.		Soph.		Jr.		Sr.	
Fall	WRI 121		ACC 201		MIS 273		MGT 461	
	MATH 111		MATH 361		MIS 312	R	MIS 351	
	MIS 115		MIS 311		MIS 341	E	MIS 496	R
	MIS 275	I	WRI 227		ACC 325		BUS 457	
							Tech Elective	
Win	MIS 215	E	MATH 371		BUS 226		ANTH 452 or PSCI 326	
	ECO 201N		MIS 102		MIS 322	R	MIS 497	R
	SPE 111		MIS 256		WRI 350		MSSS Elective	
	Lab Sci Elective		SPE 321		Hum Elective		MSSS Elective	
			MSSS Elective		MSSS Elective		Tech Elective	
Spr	BUS 215		ACC 203		PSY 347		BUS 478	
	ECO 202N		BUS 356		Hum Elective		MIS 479	
	BUS 223		MIS 272		Tech Elective		MIS 498	R
	PSY 201		MSSS Elective		WRI 327		Hum Elective	
	WRI 122				MIS 375		Tech Elective	

Information Technology – Business/Systems Analysis
SLO-Curriculum Map

SLO #2: The student will analyze business needs with the view to design and implement data networks.

Courses that are shaded below indicate that the SLO above is taught in the course, students demonstrate skills or knowledge in the SLO, and students receive feedback on their performance on the SLO.

I = Introduced R = Reinforced E = Emphasized

	Fr.		Soph.		Jr.		Sr.	
Fall	WRI 121		ACC 201		MIS 273	E	MGT 461	
	MATH 111		MATH 361		MIS 312	R	MIS 351	E
	MIS 115		MIS 311	I	MIS 341		MIS 496	R
	MIS 275		WRI 227		ACC 325		BUS 457	
							Tech Elective	
Win	MIS 215	I	MATH 371		BUS 226		ANTH 452 or PSCI 326	
	ECO 201N		MIS 102		MIS 322	R	MIS 497	R
	SPE 111		MIS 256	I	WRI 350		MSSS Elective	
	Lab Sci Elective		SPE 321		Hum Elective		MSSS Elective	
			MSSS Elective		MSSS Elective		Tech Elective	
Spr	BUS 215		ACC 203		PSY 347		BUS 478	R
	ECO 202N		BUS 356		Hum Elective		MIS 479	
	BUS 223		MIS 272	E	Tech Elective		MIS 498	R
	PSY 201		MSSS Elective		WRI 327		Hum Elective	
	WRI 122				MIS 375		Tech Elective	

Information Technology – Business/Systems Analysis
SLO-Curriculum Map

SLO #3: The student will perform the general planning and analysis of business systems that will support the development of modern business information systems.

Courses that are shaded below indicate that the SLO above is taught in the course, students demonstrate skills or knowledge in the SLO, and students receive feedback on their performance on the SLO.

I = Introduced R = Reinforced E = Emphasized

	Fr.		Soph.		Jr.		Sr.	
Fall	WRI 121		ACC 201		MIS 273	R	MGT 461	
	MATH 111		MATH 361		MIS 312	E	MIS 351	E
	MIS 115		MIS 311	I	MIS 341		MIS 496	E
	MIS 275	R	WRI 227		ACC 325		BUS 457	
							Tech Elective	
Win	MIS 215	R	MATH 371		BUS 226		ANTH 452 or PSCI 326	
	ECO 201N		MIS 102		MIS 322	E	MIS 497	R
	SPE 111		MIS 256		WRI 350		MSSS Elective	
	Lab Sci Elective		SPE 321		Hum Elective		MSSS Elective	
			MSSS Elective		MSSS Elective		Tech Elective	
Spr	BUS 215		ACC 203		PSY 347		BUS 478	
	ECO 202N		BUS 356		Hum Elective		MIS 479	
	BUS 223		MIS 272		Tech Elective		MIS 498	R
	PSY 201		MSSS Elective		WRI 327		Hum Elective	
	WRI 122				MIS 375		Tech Elective	

Information Technology – Business/Systems Analysis
SLO-Curriculum Map

SLO #4: Develop fundamental programming skills and apply those skills to solving business information system problems.

Courses that are shaded below indicate that the SLO above is taught in the course, students demonstrate skills or knowledge in the SLO, and students receive feedback on their performance on the SLO.

I = Introduced R = Reinforced E = Emphasized

	Fr.		Soph.		Jr.		Sr.	
Fall	WRI 121		ACC 201		MIS 273		MGT 461	
	MATH 111		MATH 361		MIS 312	R	MIS 351	
	MIS 115	I	MIS 311	I	MIS 341	R	MIS 496	E
	MIS 275		WRI 227		ACC 325		BUS 457	
							Tech Elective	
Win	MIS 215	R	MATH 371		BUS 226		ANTH 452 or PSCI 326	
	ECO 201N		MIS 102		MIS 322	E	MIS 497	E
	SPE 111		MIS 256	I	WRI 350		MSSS Elective	
	Lab Sci Elective		SPE 321		Hum Elective		MSSS Elective	
			MSSS Elective		MSSS Elective		Tech Elective	
Spr	BUS 215		ACC 203		PSY 347		BUS 478	
	ECO 202N		BUS 356		Hum Elective		MIS 479	
	BUS 223		MIS 272		Tech Elective		MIS 498	E
	PSY 201		MSSS Elective		WRI 327		Hum Elective	
	WRI 122				MIS 375		Tech Elective	