Network and Telecommunications Management Assessment Plan School of Information Technology

Program Educational Objectives:

The program educational objectives (PEO) of the network and telecommunications management program are as follows:

1. Continue their professional development and lifelong learning through membership in professional organizations, continuing education, research and other means.
2. Demonstrate independent thinking and an ability to function and communicate effectively in team-oriented settings.
3. Apply general and discipline-specific concepts and methodologies to problem solving in the telecommunications discipline.

Student Outcomes:

At the time of graduation, a student in our information systems program must attain the following outcomes:

a. An ability to analyze a problem, and identify and define the technological requirements appropriate to its solution.
b. An ability to design, verify, and evaluate telecommunications systems to meet desired standards.
c. An ability to function effectively on teams to accomplish a common goal.
d. An ability to communicate effectively with an audience in their profession.
e. Recognition of the need for and an ability to engage in lifelong learning.

Relationship of Student Outcomes to Program Educational Objectives

The table below summarizes the relationship between student outcomes and program educational objectives:

Student Outcomes	Program Educational Objectives		
	1.Be successfully employed in an Information Systems related field or accepted into a graduate program	2.Engage in professional development through continuing education, certifications, professional organizations, or experience	3.Live and work as contributing, well-rounded members of society
(a) An ability to apply knowledge of computing and mathematics appropriate to the discipline.	▪	▪	
(b) An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.	▪	▪	
(c) An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired standards.	▪	▪	
(d) An ability to function effectively on teams to accomplish a common goal.	▪		▪
(e) An understanding of professional, ethical, legal, security and social issues and responsibilities.	▪		▪

(a) An ability to analyze a problem, and identify and define the technological requirements appropriate to its solution.							
Performance Indicators	**Delivery Methods**	**Courses used for Assessment**	**Assessment methods**	**Data Needed**	**Assessed Groups**	**Expected Level of Attainment**	**Timeline**
1. Separates a high-level problem statement into its components. 2. Proposes a solution that addresses the most critical components. 3. Addresses other constraints not specified in problem statement.	Lecture/Assignments/ Group and Individual Projects from the following courses: IT 178 IT 254 IT 261 IT 375 IT 373/379/381	Use rubric to analyze assignments from IT 381.	Use rubric for a	Example assignment illustrating the analysis of a problem	Students in IT 381	70%	Odd spring semesters beginning Spring 2013

Outcome (a): **An ability to analyze a problem, and identify and define the technological requirements appropriate to its solution**				
	Poor or Non-Existent	Developing	Developed	Exemplary
(i) Separates a high-level problem statement into its components.	Does not know how to identify components of a problem	Identifies components of a problem, and performs very limited analysis	Able to identify the majority of necessary components	Able to deconstruct the problem and identify all necessary components
(ii) Proposes a solution that addresses the most critical components.	Solution does not solve any critical components	Solution solves few of the critical components	Solution solves most of the critical components	Solution solves all of the critical components
(iii) Addresses other constraints not specified in problem statement	Does not address any constraints	Does not address any constraints outside direct scope of problem statement	Addresses some constraints outside the direct scope of the problem statement	Addresses many constraints outside the direct scope of the problem statement

(b) An ability to design, verify, and evaluate telecommunications systems to meet desired standards.							
Performance Indicators	**Delivery Methods**	**Courses used for Assessment**	**Assessment methods**	**Data Needed**	**Assessed Groups**	**Expected Level of Attainment**	**Timeline**
1. Uses one or more appropriate network models to design a network. 2. Creates proper documentation of the network design. 3. Demonstrates that the implemented network operates according to requirements. 4. Analyzes and tests different network models to choose the best fit for a set of requirements.	IT 377 IT 381 IT 379	Rubric emphasizing design and implementation	Use rubric for b	Assignments from IT 381.	IT 381	70%	Even spring semesters beginning Spring 2014

Outcome **(b) An ability to design, verify, and evaluate telecommunications systems to meet desired standards.**				
	Poor or Non-Existent	Developing	Developed	Exemplary
(i) Uses one or more appropriate network models to design a network.	Unable to create a working network design	Creates ad-hoc network designs with no thought to accepted models	Uses accepted models in network design, may not apply them correctly or completely	Applies all facets of accepted models to a network design
(ii) Creates proper documentation of the network design.	No documentation provided	Documentation is incomplete	Documentation addresses only a few critical components of the network design	Documentation addresses all critical components of the network design
(iii) Demonstrates that the implemented network operates according to requirements.	Testing not used	Incorrect testing methodology applied	Appropriate testing methodologies are used to evaluate part of a network system	Appropriate testing methodologies are effectively used to evaluate the whole network system
(iv) Analyzes and tests different network models to choose the best fit for a set of requirements.	Performs no testing to demonstrate that model is the best fit	Performs little testing to demonstrate that model is best fit	Performs testing of models, but not repeated testing	Tests models under many operating conditions and with different criteria

(c) An ability to function effectively on teams to accomplish a common goal.							
Performance Indicators	**Delivery Methods**	**Courses used for Assessment**	**Assessment Methods**	**Data Needed**	**Assessed Groups**	**Expected Level of Attainment**	**Timeline**
1. Participates in team activities. 2. Completes team assignments on time. 3. Leads team activities.	IT 373 IT 377 IT 379 IT 380	IT 377	Use rubric for c.	Summary project results Peer evaluation summary	IT 377	70%	Odd fall semesters beginning Fall 2013

Outcome (c): **An ability to function effectively on teams to accomplish a common goal**				
	Poor or Non-Existent	Developing	Developed	Exemplary
Participates in team activities	Does not contribute to discussions, does not let others express opinions	Contributes occasionally to team activities	Contributes equally in team activities	Contributes a higher share to team activities without taking over the team
Completes team assignments on time	Does not contribute to final deliverable	Completes assigned tasks only partially	Satisfactorily completes assigned parts	Completes assigned parts and helps other team members with their assigned work, initiates and participates in team meetings
Leads team activities	Does not know what any other team member is doing	Knows only what some team members are doing, and not others	Describes clearly the role and responsibility of each team member	Motivates others to fulfill their responsibilities

(d) An ability to communicate effectively with a range of audiences							
Performance Indicator	**Delivery Methods**	**Courses used for Assessment**	**Assessment Methods**	**Data Needed**	**Assessed Groups**	**Expected level of attainment***	**Timeline**
An ability to communicate effectively with an audience in their profession orally.	ENG 249, COM 202, COM 227, IT 191, IT 373, IT 375, IT 377, IT 379	IT 373	Use rubric (d)(i)	IT 373: Oral Presentation	IT 373 students	70%	Even fall semesters beginning Fall 2012
An ability to communicate effectively with an audience in their profession in writing.	ENG 249, COM 202, COM 227, IT 191, IT 373, IT 375, IT 377, IT 379	IT 379	Use rubric (d)(ii)	IT 379: Written paper	IT 379 students	70%	Even fall semesters beginning Fall 2012

* - The expected level of attainment is measured by the minimum percentage of the assessed sample that is scored in the two maximum (Developed/Exemplary) categories of the relevant rubric.

Rubric (d)(i)				
	Poor or Non-Existent	Developing	Developed	Exemplary
Clarity	Not assertive or clear overall	Assertive but inconsistent, occasionally trying to sound too technical or intentionally vague	Mostly clear and easy to understand	Clear and assertive, very easy to understand
Organization	Not well organized, no logical flow	Inconsistent flow, lacking macro or micro organization	Logically organized at micro and macro level	Entire communication has logical flow, flow is reinforced throughout
Audience	Not aimed at the intended audience	Reflects own knowledge rather than targeting audience, could have taken more efforts to direct talk at audience	Directed at appropriate audience	Targeting audience well enough to enhance communication
Engaging the audience	Not captivating, could not engage audience, little to no interaction with audience	Good beginning and end but not as engaging in between, not enough interaction with audience	Keeps the audience interested and facilitates some interaction	Keeps the audience awake and involved, occasionally adapting to audience's feedback
Delivery	Two or more of: Spoke too fast/too slow, did not address intended questions, inappropriate attire, took significantly longer or shorter than allotted time	One of: Spoke too fast/too slow, too many pauses, awkward body language	Spoke at appropriate pace, comfortable and appropriate body language	Calm. Clear diction. Good tone. Good pacing. Appropriate attire and personal grooming.

Rubric (d)(ii)				
Written Communication				
	Poor or Non-Existent	Developing	Developed	Exemplary
Clarity/ Precision	Too vague or too detailed, significant amount of information may be inaccurate.	Detailed but losing overall picture, or clear at a high level but missing details, attention to length rather than substance. Some information may be inaccurate.	Appropriately detailed and focused at a higher level. Writing is precise and concise.	Completely clear and precise
Organization	Not well-organized, no consistent flow	Micro-structure well defined but lacking macro-structure, or vice versa	Good and appropriate organization	Logically organized
Audience	Not catered to intended audience (wrong assumptions about audience, trying to target all types of audiences)	Not consistently aiming at the audience, occasionally too detailed or too vague	Most aiming at the appropriate audience	Aimed exactly at the appropriate audience
Mechanics and Style	Many spelling and grammar errors, no logical flow or document structure	Logical flow but with many spelling and grammar errors, or vice versa, crude document structure	No spelling or grammar errors. Reasonably good logical flow and appropriate document structure	No spelling or grammar errors. Good use of language and good logical flow
Visual aids	No visual aids/too many visual aids. Very poor visual aids.	Few visual aids, some incompletely made, not referred in the text. Some visual aids poorly designed	Appropriate number and kind of visual aids referred by the text at the proper places parts	Appropriate number of well-chosen visual aids that enhance communication

(e) Recognition of the need for and an ability to engage in lifelong learning.						
Performance Indicators	**Delivery Methods**	**Courses used for Assessment**	**Data Needed**	**Assessed Groups**	**Expected Level of Attainment**	**Timeline**
1. Keep skills current by researching new developments in telecommunications field .	IT 191 IT 378 IT 379 IT 398	IT 398	IT 398 internship supervisor surveys	IT 398 students	70%	Fall semesters
2. Independently applies state-of-the-art knowledge to a real-world problem.		IT 398	IT 398 internship supervisor surveys	IT 398 students	70%	Fall semesters

2-year assessment cycle (Quick overview for implementation)			
Semester	Course to be Assessed	What is assessed	Complete Assessment By
Even Fall	IT 373	(d)	Week 5 of Odd Spring semester
	Internship Survey (from summer just before)	(e)	Week 8 of Even Fall semester
Odd Spring	IT 381	(a)	Week 5 of Odd Fall semester
	IT 379	(d)	Week 5 of Odd Fall semester
Odd Fall	IT 377	(c)	Week 5 of Even Spring semester
	Internship Survey (from summer just before)	(e)	Week 8 of Odd Fall semester
Even Spring	IT 381	(b)	Week 5 of Even Fall semester

Review of Program Educational Objectives	
When	Procedure
Odd spring semesters	1. Assessment committee reviews and makes suggestions if any. 2. Updates are presented and discussed in faculty meeting in April of the year. 3. Approved PEOs are presented to TAB in October meeting of the year. 4. Approved PEOs are made available to other stakeholders such as selected student groups for feedback.

Review of Student Outcomes	
When	Procedure
Odd spring semesters	1. Assessment committee reviews and makes suggestions if any. 2. Assessment committee sends report to curriculum committee and Director by end of March of the year. 3. At Director's discretion, the updated student outcomes are tabled in faculty meeting. 4. Updated student outcomes are made available to other stakeholders such as selected student groups for feedback.