

Computer Networking Assessment Plan School of Information Technology

Program Educational Objectives:

The program educational objectives (PEO) of the Computer Networking program are as follows:

1. Be a successful practitioner in a computer networking related field or accepted into a graduate program.
2. Demonstrate independent thinking and an ability to function and communicate effectively in team-oriented settings.
3. Live and work as contributing, well-rounded members of society.

Student Outcomes:

At the time of graduation, a student in our information systems program will be able to:

1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate networking systems to meet a given set of requirements.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team to accomplish a common goal.

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		
	Be a successful practitioner in a computer networking related field or accepted into a graduate program.	Demonstrate independent thinking and an ability to function and communicate effectively in team-oriented settings	Live and work as contributing, well-rounded members of society
1. Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.	▪	▪	
2. Design, implement, and evaluate networking systems to meet a given set of requirements.	▪	▪	
3. Communicate effectively in a variety of professional contexts.	▪	▪	
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.	▪		▪
5. Function effectively as a member or leader of a team to accomplish a common goal.	▪	▪	▪

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.							
Performance Indicators	Delivery Methods	Courses used for Assessment	Assessment methods	Data Needed	Assessed Groups	Expected Level of Attainment	Timeline
(a) Gather the requirements for a given problem and use the appropriate techniques or modeling to analyze the problem	Lecture/Assignments/ Group and Individual Projects from the following courses: IT 381, IT 373, IT 377	IT 381	Use rubric 1 (a)	Example assignment illustrating the analysis of a problem	Students in IT 381	70%	Odd spring semesters
(b) Identify technical procedure and Propose solutions for given requirements	Lecture/Assignments/ Group and Individual Projects from the following courses: IT 381, IT 373, and IT 377	IT 381	Use rubric 1 (b)	Example assignment illustrating the analysis of a problem	Students in IT 381	70%	Odd spring semesters

Rubric 1				
	Poor or Non-Existent	Developing	Developed	Exemplary
(a) Gather the requirements and for a given problem and use the appropriate techniques or modeling to analyze the problem	Unable to produce recognizable model	Can create visual model, but model does not fit problem	Creates visual model that reasonably fits problem description	Creates a well-formatted and efficient visual model that represents a good fit for the problem
(b) Identify technical procedure and Propose solutions for given requirements critical components.	Records very few requirement and Solution does not solve any critical components	Records some requirement and Solution solves few of the critical components	Records all appropriate requirement and Solution solves most of the critical components	Records all appropriate requirements in a well-formatted and logical manner and Solution solves all of the critical components

2. Design, implement, and evaluate networking systems to meet a given set of requirements.							
Performance Indicators	Delivery Methods	Courses used for Assessment	Assessment methods	Data Needed	Assessed Groups	Expected Level of Attainment	Timeline
(a) Uses one or more appropriate network models to design a network	Lecture/Assignments/ Group Projects through IT 381	IT 381	Use rubric 2 (a)	Assignments from IT 381.	IT 381	70%	Even spring semesters
(b) Implements or simulates the network according to the design	Assignments/ Group Projects through IT 381	IT 381	Use rubric 2 (b)	Assignments from IT 381.	IT 381	70%	Even spring semesters
(c) Evaluates network system	Assignments/ Group Projects through IT 381	IT 381	Use rubric 2 (c)	Assignments from IT 381.	IT 381	70%	Even spring semesters

Rubric 2-				
	Poor or Non-Existent	Developing	Developed	Exemplary
(a) Use 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
(b) Implements or simulates the network according to the design	Network Simulation is not working or program has major syntactical errors or test is not used	Simulation or Program produces correct results in only some cases	Simulation or Program works correctly for all sample data and typical cases, solves the correct problem	Simulation or Program works correctly for all relevant cases, and addresses at least one unspecified case or implements an extra feature
(c) Evaluates network system	Student does not correctly identify at least two correct solutions for the given problem, does not use correct methods to evaluate them	Student identifies correct alternatives but evaluates them incorrectly	Student identifies correct alternatives, uses correct evaluation methods and reaches correct conclusions	Student goes beyond requirements, presents detailed and correct evaluation of each alternative solution

3. Communicate effectively in a variety of professional contexts							
Performance Indicator	Delivery Methods	Courses used for Assessment	Assessment Methods	Data Needed	Assessed Groups	Expected level of attainment*	Timeline
(a) Communicates effectively in a variety of professional contexts orally	ENG 249, IT 191, IT 373, IT 377, IT 379	IT 373	Use rubric 3 (a)	IT 373: Oral Presentation	IT 373 students	70%	Even fall
(b) Communicates effectively in a variety of professional contexts in writing	ENG 249, IT 191, IT 373, IT 377, IT 379	IT373	Use rubric 3 (b)	IT 373: Written paper	IT 373 students	70%	Even Fall

* - 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 3 (a)				
	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 3 (b)				
	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

4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.							
Performance Indicator	Delivery Methods	Courses used for Assessment	Assessment Methods	Data Needed	Assessed Groups	Target level of attainment*	Timeline
(a) Identify laws that affect Information Technology	IT 214	IT 214	Use rubric 4(a)	Exam: Question(s) relevant to identifying whether existing software programs can be used in a specific setting based on their licenses	IT 214 students	60%	Data collected odd Fall
(b) Identifies sections of a professional code of ethics that apply to a given situation	IT 214	IT 214	Use rubric 4(b)	Exam: Question(s) that relate sections of a professional code of ethics to a given situation	IT 214 students	60%	Data collected odd Fall

(c) Identify prevailing ethical principles	IT 214	IT 214	Use rubric 4(c)	Exam: Question(s) relevant to various prevailing ethical principles	IT 214 students	60%	Data collected odd Fall

* - The target 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 4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.				
	Poor or Non-Existent	Developing	Developed	Exemplary
(a) Identify laws that affect the IT industry and profession	Can't identify any laws that affect the IT industry	Identifies a few laws that affect the IT industry	Identifies laws that affect the IT industry	Identifies laws that affect the industry and can identify laws that will affect a particular system
(b) Identify elements from a professional code of ethics	Can't identify any elements from a professional code of ethics	Identify some elements from a professional code of ethics	Identify most of elements from a professional code of ethics	Identify all elements from a code of ethics
(c) Identify prevailing ethical principles	Cannot identify any prevailing ethical principles	Identifies some prevailing ethical principles	Identifies most prevailing ethical principles	Identifies all prevailing ethical principles

5. Function effectively as a member or leader of a team to accomplish a common goal.

Performance Indicators	Delivery Methods	Courses used for Assessment	Assessment Methods	Data Needed	Assessed Groups	Expected Level of Attainment	Timeline
(a) Actively participates in the team activities	IT 373 IT 377 IT 379 IT 380 Project guideline	IT 379	Use rubric 5 (a)	from Assignments or Projects	IT 379	70%	Odd Spring
(b) Completes team assignments on time.	IT 373 IT 377 IT 379 IT 380 Project Guideline	IT 379	Use rubric 5 (b)	Assignments and Projects	IT 379	70%	Odd Spring
(c) Submits quality deliverables	IT 373 IT 377 IT 379 IT 380 Project Guideline	IT 379	Use rubric 5 (c)	Assignments and Projects	IT 379	70%	Odd Spring

Rubric 5

	Poor or Non-Existent	Developing	Developed	Exemplary
(a) Actively participates in the 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
(b) 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
(c) Submits quality deliverables	Does not submit deliverables that meet the minimum requirements of the assignment(s) or project(s)	Submit deliverables that meet some requirements of the assignment(s) or project(s)	Submit deliverables that meet most requirements of	Submit deliverables that meet all requirements of the assignment(s) or project(s)

			the assignment(s) or project(s)	
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* 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.

NTM-2-year assessment cycle (Quick overview for implementation)		
Semester	Course to be Assessed	What is assessed
Even Fall	IT 373	3. (a), (b)
Odd Spring	IT 381	1. (a), (b)
	IT 379	5. (a), (b), (c)
Odd Fall		
	IT 214	4.(a), (b), (c)
Even Spring	IT 381	2. (a), (b), (c)

Review of Program Educational Objectives	
When	Procedure
Odd spring semesters	<ol style="list-style-type: none"> 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	<ol style="list-style-type: none"> 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.