

Program: Bachelor of Science – Computer Information Systems

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Completed by: Yuan (Yoanna) Long

Assessment contributors (other faculty involved in this program’s assessment): Joey Cho, Rick Huff, Roberto Mejias, Wayne Martinez, Yoanna Long

Please complete this form for each undergraduate, minor, certificate, and graduate program (e.g., B.A., B.S., M.S.) in your department. Please copy any addenda (e.g., rubrics) and paste them in this document, and submit it to the dean of your college/school as per the deadline established. You’ll also find the form at the assessment website at <http://www.colostate-pueblo.edu/Assessment/ResultsAndReports/Pages/default.aspx>.

Please describe the 2016-2017 assessment activities for the program in Part I. Use Column H to describe improvements planned for 2017-2018 based on the assessment process. In Part II, please describe activities engaged in during 2016-2017 designed to close-the-loop (improve the program) based on assessment activities and the information gathered in 2015-2016. Thank you.

I. Program student learning outcomes (SLOs) assessed in this cycle, processes, results, and recommendations.

A. Which of the program SLOs were assessed during this cycle? Please include the outcome(s) verbatim from the assessment plan.	B. When was this SLO last assessed? Please indicate the semester and year.	C. What method was used for assessing the SLO? Please include a copy of any rubrics used in the assessment process.	D. Who was assessed? Please fully describe the student group(s) and the number of students or artifacts involved.	E. What is the expected achievement level and how many or what proportion of students should be at it?	F. What were the results of the assessment?	G. What were the department’s conclusions about student performance?	H. What changes/improvements to the <u>program</u> are planned based on this assessment?
CIS learning objective 2 – Communication	Fall 2016 (CIS289 Network	Term project presentations were assessed	14 students in 6 groups were	We expect that at least 80% of the	82% of the students exceed	Overall student’s performance in oral	Overall the students’ performance in oral communication exceeds

(Oral communication)	Concepts	in terms of oral communication by two faculties and the students in class. The assessment is based on the learning objective rubrics (see appendix) with minor modifications (see attached rubric).	assessed in CIS289 for Oral communication. Each presentation takes about 20 min. The two faculties and the students in class assessed the other student's oral communication skills in terms of the rubric. The assessment sheets were collected and analyzed (see the results as attached table)	students either meet or exceed expectation (Need improvement, meet expectation, exceed expectation, the level from low to high).	expectations , 16% meet expectation, and 2% need improvement. In other words, 98% of the students either meet or exceed expectation. Overall, the assessment result exceeds the expectation (above 80% either meet or exceed expectation).	communication exceeds the expectation (98% meet or exceed expectation over 80% as expected). In detail, the scores among the three sub-items are very close, organization receives the highest score, follows by knowledge, and articulation receives the lowest score though slightly.	expectation at the development stage (CIS289 junior/sophomore level class). We plan to improve students performance and assessment rubrics in oral communication in two-folds: 1. Address body language and delivery in presentation (i.e., articulation). 2. Re-visit the AoL rubric on communication, specifically oral communication, to make it more concise and practical for assessment.
CIS learning objective 4 – Identify ethical issues and provide solutions (including three	Spring 2017 (CIS432 Senior Project)	Case study on the final exams. Rubric follows the exact items in CIS AoL. Two faculty	20 students in total completed the case study and answered the questions.	We expect that at least 80% of the students either meet or exceed expectation	Overall, above 90% of the students either meet or exceed expectation.	Students overall performance on Ethical issues is exceed expectation (90% as the results over 80% as expected).	Overall the student's performance in ethical issues exceeds expectation at the mastery stage (CIS432 senior-level class). However improvement

sub-goals)		members assess the results and the average rating was calculated.	The answer sheets were collected as the artifact. The results were calculated as the average of two raters.	(Need improvement, meet expectation, exceed expectation, the level from low to high).	However there are obvious differences between three sub-objectives that are worth noting. In detail, for sub-object 1 (Identify ethical issues), 65% , 35% , and 0% of the students are exceed, meet expectation, and need improvement. For sub-object 2 (Provide alternatives), 15% , 80% , and 5% of the students are exceed, meet expectation, and need	However, the students performed differently in three sub-learning goals. Obviously, students need to improve in both sub-goal 2(provide alternative) and sub-goal 3 (provide recommendations)	needs to make on provide alternatives and recommendations to ethical issues. We plan to improve students performance in ethics in three-folds: <ol style="list-style-type: none"> 1. Address ethical issues in both introductory classes (100-level) and development classes (200-level) in order for the students to have sufficient knowledge to make right decision at the mastery classes (300/400-level). 2. Emphasize and practice the two sub-goals: provide alternatives and recommendations. 3. Assess ethics in development and mastery stage (200 and 300 level class).
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					improvement. For sub-object 3 (recommendations), 25% , 65% , and 10% of the students are exceed, meet expectation, and need improvement.		
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II. Follow-up (closing the loop) on results and activities from previous assessment cycles. In this section, please describe actions taken during this cycle that were based on, or implemented to address, the results of assessment from previous cycles.

A. What SLO(s) did you address? Please include the outcome(s) verbatim from the assessment plan.	B. When was this SLO last assessed? Please indicate the semester and year.	C. What were the recommendations for change from the previous assessment?	D. Were the recommendations for change acted upon? If not, why?	E. What were the results of the changes? If the changes were not effective, what are the next steps or the new recommendations?
Learning objective 2: Communication (oral communication)	Fall 2015, Spring 2016	We decided to continue assessing oral communication at the development level classes. At the same time, address oral communication in class. Specifically, give students at least two opportunities each semester to present in class. It could be case presentation, discussion, and/or project presentation.	Yes.	The result shows that the student's performance in terms of oral communication improves since last time. We assessed oral communication again at the 200-level class. The result (98% meet or exceed expectation) improves from the past two semesters (75%-80% meet or exceed expectation).
Learning objective 4: Identify ethical issues and provide solutions	Fall 2015, Spring 2016	We decided to assess ethics at the development and/or mastery-level classes. At the same time, we would address ethical issues in IT in class.	Yes.	The result shows that the student's performance in terms of ethics improves since last time. We assessed all the three sub goals in ethics this time. Sub-goal no.1 (identify ethical issues) keeps the same as last time (100% of the students meet or exceed expectation). Sub-goal no.2 and no.3 , which are never assessed before, shows that 90% of the students either meet or exceed expectation.

Summary and comments:

In the year 2016-2017, we focused on assessing two primary learning objectives:

1. Objective 2: Communication (specifically sub-objective 2.2. Oral communication). CIS 289 (Network Concepts, a development-stage CIS core class) in fall 2016 with a total of 17 students was assessed based on the Aol rubrics. The artifacts were collected from the student's term project presentation.
2. Objective 4: Ethics (specifically sub-objective 4.1.-Identify ethical issues, sub-objective 4.2.-provide alternative, and sub-objective 4.3.- provide recommendations). CIS 432 (Senior Project, a mastery-stage CIS core class) in spring 2017 with a total of 20 students was assessed based on the Aol rubrics. A case study was used to collect artifact.

The assessment results show:

1. **98%** of the students either meet or exceed the expectations in oral communication.
2. **90%** of the students either meet or exceed the expectations in identifying ethical issues, providing alternative solutions, and providing recommendations.

The results indicate:

1. Overall students exceed the expectations on learning objective 2 and objective 4.
2. Student's performance in Ethical issues especially providing alternative solutions and recommendations needs to be improved further.

Future assessment plan:

1. To assess ethics in development (junior or sophomore classes) and/or mastery stage (upper-division classes)
2. To assess team skills in introductory and/or development classes.

Future improvement:

1. We need to adjust or modify the rubrics. For example, there are five items under oral communication. There are some overlaps therefore we may need to combine them into three items to be consistent with the rubrics for other learning goals.
2. We need to address ethics in IT through out the curriculum.

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3. We need to improve the assessment method to make it more accurately and rigorously. Assessment normally takes place towards the end of the semester during the final week. The students may not pay sufficient attention if they never heard about the assessment before and had no expectation to take the extra work during the final week.

Appendix I. CIS289 Fall2016 Assessment Rubrics and Results

CIS289 Spring2016 Learning objective 2.2. Oral Communication Rubric (1-10 scale):

1. The Presenter demonstrated clear and in-depth subject matter **knowledge** of the NW topic
2. The Presenter “**articulated**” for students & engaged class in the presentation
3. Overall quality and **organization** of NW Topic was presented in LOGICAL SEQUENCES with defined Cortical Points and Take-Away Conclusions

Assessment results:

	Knowledge	Articulation	Organization	Avg
Exceed expectation (>=8	81.90%	80.00%	84.76%	82.22%
Meet expectation (6-8)	15.24%	19.05%	13.33%	15.87%
Need improvement (<6)	2.86%	0.95%	1.90%	1.90%

Appendix II. CIS432 Spring2017 Assessment Rubrics and Results

CIS432 Fall2017 Learning objective 4. Ethics Rubric (1-3 scale):

1. **Identify** ethical issues
2. Identify **alternative** solutions
3. Supply appropriate **solutions**

Assessment results:

	Identify ethical issues	Provide alternatives	Provide solutions
Exceed Expectation (>=2.5)	65.00%	15.00%	25.00%
Meet Expectation (1.5-2.5)	35.00%	80.00%	65.00%
Need improvement (<1.5)	0.00%	5.00%	10.00%

Appendix III. CIS Learning Objectives

At the conclusion of the CIS program, students will demonstrate the ability to:

Objective 1. Analyze, design, implement, and maintain an information system.

Objective 2. Communicate clearly in writing and speaking.

Objective 3. Work effectively as a team member for a common purpose.

Objective 4. Identify ethical issues and provide alternatives or solutions.

CIS Learning Objectives 1: Analyze, design, and implement and maintain an information system

Evaluation Criteria	Exceeds Expectations	Meets Expectations	Needs Improvement	Score
Analysis	Shows strong ability to identify what an Information System should do	Shows some ability to identify what an Information System should do	Often fails to identify what an Information System should do	
Design	Shows strong ability to identify how components of an Information System should be implemented and integrated	Shows some ability to identify how components of an Information System should be implemented	Often fails to identify how components of an Information System should be implemented	
Implementation and Maintenance	Shows strong ability to implement, test, debug, and deploy an error-free & completely functioning Information System	Shows some ability to implement, test, debug, and deploy implement an error-free & completely functioning Information System	Often fails to implement, test, debug, and deploy an error-free & completely functioning Information System	

CIS Learning Objectives 2: Communicate clearly in writing and speaking.

Oral Communication Rubric

Evaluation Criteria	Exceeds Expectations	Meets Expectations	Needs Improvement	Score
Kinetics (Body Language)	<p>Presenter's body language and voice tone demonstrates high confidence and comfort with the subject matter.</p> <p>Presenter demonstrates high confidence, empathy and comfortable interaction with the audience.</p> <p>Presenter gestures are confident, relaxed and natural and match the content and purpose of the presentation.</p> <p>Presenter makes an excellent delivery with a voice that</p>	<p>Body language and voice tone reflect the presenter's relative comfort and command of the subject matter in interacting with the audience.</p> <p>Presenter uses appropriate gestures and body language that are somewhat confident.</p> <p>Presenter makes a good delivery with some level of confidence in body language and voice modulation.</p>	<p>Body language and voice tone reveal presenter's discomfort and lack of confidence with the subject matter.</p> <p>Presenter reveals a reluctance to interact with the audience.</p> <p>Presenter's body movement is terse and stiff.</p> <p>Presenter may appear fearful or highly nervous of his/her audience.</p> <p>Presenter's body language lacks confidence, and voice projection is often</p>	

	projects enthusiasm, interest and confidence.		hard to understand.	
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<p>Organization</p>	<p>Presenter follows a very clear and logical sequence in their presentation that the audience can follow.</p> <p>Presenter focuses on the defined and critical points of the presentation and provides clear explanations for each point.</p> <p>Presenter provides clear and concise “takeaways” and conclusions for the audience.</p>	<p>Presenter follows a logical sequence in their presentation but does not provide any additional information.</p> <p>Presenter uses a “checklist” approach to the presentation material.</p> <p>Presentation structure is adequate and mechanical but lacks strong definition and emphasis.</p>	<p>Presenter offers no logical sequence of information.</p> <p>Presenter does not provide clear explanations and elaborations of the subject matter.</p> <p>Presenter fails to focus on the critical points of the presentation.</p> <p>Presenter does not provide clear and concise conclusions for the audience.</p>	
<p>Subject Matter Knowledge</p>	<p>Presenter clearly demonstrates excellent and in-depth knowledge and confidence with the subject matter.</p> <p>Presenter demonstrates a clear</p>	<p>Presenter reflects a relative comfort with the subject matter.</p> <p>Presenter demonstrates a good understanding of the details and interaction of the elements of the subject</p>	<p>Presenter is unclear and not well informed with the subject matter.</p> <p>The presenter appears to be unsure and disorganized in their presentation of the</p>	

	<p>understanding of the details and interconnection links of the elements of the subject matter.</p> <p>Presenter clearly and thoroughly addresses questions from the audience regarding the subject matter.</p> <p>Presenter makes a professional and thorough analysis and presentation to the audience.</p>	<p>matter.</p> <p>Presenter addresses and replies to most questions regarding the subject matter.</p>	<p>subject material.</p> <p>Presenter may just be repeating facts without understanding details or interaction with other elements of the subject matter.</p> <p>Presenter cannot address basic questions regarding the subject matter.</p>	
Articulation (Delivery)	<p>Presenter speaks clearly and loudly enough and for all in audience to hear, at a comfortable rate, makes no grammatical errors, and pronounces all terms correctly and precisely.</p> <p>Presenter is</p>	<p>Presenter speaks clearly and loudly enough to be heard by most in audience, at an appropriate rate, (some/rare awkward pauses or halting delivery), makes few grammatical errors, and pronounces most terms correctly with fluid</p>	<p>Presenter mumbles, speaks too quietly to be heard by many in audience, mispronounces words, and makes serious and persistent grammatical errors throughout the presentation.</p> <p>Presenter loses train of thought and is</p>	

	<p>enthusiastic and engaging.</p> <p>Presenter is extemporaneous and natural.</p>	<p>delivery overall.</p>	<p>tentative.</p>	
<p>Content Clarity and Completeness</p>	<p>Presenter handles all elements professionally.</p> <p>Presenter develops and supports ideas using well- chosen examples and creative details.</p>	<p>Presenter handles material competently and includes essential information which is factually correct.</p>	<p>Presenter misses two or more essential elements.</p> <p>Presentation contains major factual errors and mis- representations.</p>	

Written Communication Rubric

Evaluation Criteria	Exceeds Expectations	Meets Expectations	Needs Improvement	Score
Subject Matter Knowledge	Clearly demonstrates excellent and in-depth knowledge of the subject matter. Demonstrates an excellent understanding of the details and interconnection links of the elements of the subject matter.	Demonstrates fair knowledge of the subject matter. Demonstrates a fair understanding of the details and interconnection links of the elements of the subject matter.	Demonstrates poor/inadequate knowledge of the subject matter. Demonstrates a poor understanding of the details and fails to show interconnection links of the elements of the subject matter.	
Literacy (grammar, spelling, punctuation)	No grammar, spelling, punctuation errors and excellent word usage. Writing at expected grade level or above.	Has some grammatical errors, spelling and punctuation errors. Writing at one or two levels below current grade level.	Has many grammatical errors, spelling and punctuation errors. Writing at more than two levels below current grade level.	
Logical Flow	Demonstrates ability to produce professional quality documents (fully footnoted and referenced, with proper cover pages, headings, footings, and table of contents)	Produces documents with minimal professional elements (footnotes, references, cover pages, headings, footings, table of contents)	Produced documents are lacking significant professional elements (footnotes, references, cover pages, headings, footings, table of contents)	
Proper References	Expertly integrates relevant articles, uses correct citations, and references based on certain academic writing styles.	Fairly integrates relevant articles, has some correct citations and references.	Fails to integrate relevant articles, citations, or references.	

CIS Learning Objectives 3: Work effectively as a team member for a common purpose

Evaluation Criteria	Exceeds Expectations	Meets Expectations	Needs Improvement	Score
Attending team meetings	Attends all team meetings without being late	Attends most team meetings. If likely to be absent or late, informs others ahead of time	Rarely attends team meetings Attendance record is haphazard and inconsistent; may be absent or late without notice	
Participating meeting discussions	Actively participates in discussion and asks questions	Participates in discussions, letting others provide the direction	Observes passively and says little or nothing	
Participating non-meeting discussions, i.e. emails, online chatting, or phone calls	Actively participates in or initiates discussions and project related communication	Participates in discussions, letting others provide the direction	Rarely responds to team project related discussions	
Leadership	Takes a large part in setting group goals and agendas	Takes some part in setting group goals and agendas	Let others set and pursue the agenda	

Understanding of project concepts	Listens actively and shows understanding by paraphrasing or by acknowledging and building on others' ideas	Occasionally introduces the information or asks questions	Has limited understanding of the project concepts	
Contributing to the final deliverables. i.e. report, PowerPoint, etc.	Carries own share of the group's responsibilities, and organizes or helps organize final deliverables	Carries own share of the group's responsibilities	Does not fulfill own share	

CIS Learning Objectives 4: Identify ethical issues and provide alternatives or solutions

Evaluation Criteria	Exceeds Expectations	Meets Expectations	Needs Improvement	Score
Identify ethical issues	Identifies critical and any additional ethical issues	Identifies the critical ethical issues	Identifies no critical ethical issues	
Identify alternative solutions	Identifies multiple alternative solutions	Identifies an alternative solution	Identifies no alternative solutions	
Supply appropriate solutions	Provides multiple appropriate solutions	Provides an appropriate solution	Provides no appropriate solutions	

Appendix IV. CIS Curriculum Map

	1 - Analyze, Design ¹	2 - Written/Oral Communication	3 - Team Skills	4 - Ethics
CIS 150 Computer Information Systems		x (I) ² Research Paper	x(I) Team Project	x (I) Case Study
CIS 171 Intro to Java Programming	c,d (I) homework			
CIS 185 PC Architecture	a,d (I) in-class lab exercise	x (I) Oral Presentation		
CIS 240 Object-Oriented Analysis and Design	a,b (I) Homework, Exam			
CIS 271 Adv. Program Design with Java	b,c,d (D) Project		x (D) Team Project	
CIS 289 Network Concepts	a,b (D) Case Projects	x (D) Paper, Presentation		x (D) Exam
CIS 311 Introduction to Web Development	a,b,c,d (D) Individual Project, Group Project		x (D) Group Project	
CIS 315 UNIX Operating System	c,d (D) Homework, Exam, quiz			x (D) No artifact
CIS 350 Database Systems	a,b,c (D) Quiz, Homework, Exam, Project	x (D) Project Report, Presentation	x (D) Term project	x (D) Case study

¹ a-analysis, b-design, c-implement, and d-maintenance.

² I-Introductory, D-development, and M-mastery.

CIS 432 Senior Project	a,b,c,d (M) Team Semester Project	x - written (M) Oral(M) Team Project Document & Presentation	x (M) Semester Project	x (M) Case Study
CIS 493 Senior Seminar		x (M) Case Study		x (M) Case Study