

Program-Level Assessment: Annual Report

Program: Computer Information Systems	Department:
Degree or Certificate Level: CIS B.S and CIS UG Certificate	College/School: School for Professional Studies
Date (Month/Year):	Primary Assessment Contact: John Buerck
In what year was the data upon which this report is based collected? 19/20	
In what year was the program's assessment plan most recently reviewed/updated?	

1. Student Learning Outcomes

Which of the program's student learning outcomes were assessed in this annual assessment cycle?

An ability to analyze a problem, and to identify and define the computing requirements appropriate to its solution. (ABET-1)

An ability to design, implement, and evaluate a computer-based solution to meet a given set of computing requirements in the context of the discipline. (ABET-2)

An ability to function effectively on teams to establish goals, plan tasks, meet deadlines, manage risk, and produce deliverables. (ABET-5)

2. Assessment Methods: Student Artifacts

Which student artifacts were used to determine if students achieved this outcome? Please identify the course(s) in which these artifacts were collected. Clarify if any such courses were offered a) online, b) at the Madrid campus, or c) at any other off-campus location.

All courses were offered online.

Course Name & Artifact Used

- CIS 3150: Workplace Ethics – Final Case Analysis
- CIS 1600: Introduction to Programming - A final programming project
- CIS 4750: Data Mining - Multiple RapidMiner exercises
- CIS 2850: Principles of Data Analysis - StatCrunch activity on correlation
- CIS 1300: Information Systems & Technology - Access database
- CIS 1150: Concepts & Applications of Technology - Discussion Board on Cybercrime
- CIS 1600: Introduction to Programming - A final project program
- CIS 4600: Information Assurance and Security - Lab assignment requiring them to troubleshoot and evaluate networking issues to deliver a service
- CIS 1150: Concepts & Applications of Technology - Final Project-What is the future of technology video presentation
- CIS 3250: Principles of Cybersecurity - Final Project, discussions base in case scenarios, assignments, lab deliverables
- CIS 4720: Enterprise Application Development - Development Project, Spec doc, project, enhancement doc, and enhancement response
- CIS 2850: Principles of Data Analysis - StatCrunch activity on correlation

3. Assessment Methods: Evaluation Process

What process was used to evaluate the student artifacts, and by whom? Please identify the tools(s) (e.g., a rubric) used in the process and include them in/with this report.

Instructors were sent a Qualtrics survey at the end of their courses to collect data about student performance and artifacts used to assess learning outcomes. Data was then pulled from Qualtrics to analyze and make changes as needed to assessment of learning outcomes.

4. Data/Results

What were the results of the assessment of the learning outcomes? Please be specific. Does achievement differ by teaching modality (e.g., online vs. face-to-face) or on-ground location (e.g., STL campus, Madrid campus, other off-campus site)?

Instructors reported that many of the artifacts had properly assessed student learning outcomes for their specific courses, but some minor adjustments might be needed; which will be explained further in section 5 of this report.

Most instructors used programming software and final projects as their assessment tool and felt it was appropriate for the type of students in these classes. Findings showed:

1) Students could identify several different types of cyber-crimes (hacking, credit card skimmers, phishing emails), and they cited specific steps they could take to avoid becoming a victim (reducing online profile, changing passwords). Research of emerging technologies.

2) Students were able to successfully give video demonstration in PowerPoint of research.

3) Case study/real-life scenarios in discussions and assignments were helpful. Students expressed in their reflections how these artifacts help them strengthen their knowledge and theory. During the discussions, students who don't have the IT background benefit from their peers' input in their postings.

4) Students benefitted from virtual labs with the latest cutting edge cybersecurity tools used by ethical and non-ethical hackers. The virtual labs formulated issues or had specific goals for each lab and students had the opportunity to complete different sections of the lab depending on their level of expertise, section 1 & 2 were composed of step-to-step instructions to identify and obtain the data needed to resolve the issue. This approach helped students to boost their confidence and learn by doing. Students could successfully compile all the knowledge learned and produce a well-documented final project.

5) For programming classes, the production of a final program using most of the concepts learned during the semester very strongly demonstrates the learning outcome. The students are given a set of requirements which they must decipher and use to design their program. The implementation uses many of the concepts discussed during the semester.

6) Most students followed the requirements of final projects and produced programs that output the required data in the requested format.

5. Findings: Interpretations & Conclusions

What have you learned from these results? What does the data tell you?

As discussed in section 4, the data has largely supported that the learning outcomes have been supported by the artifacts chosen. However, there is always room for improvement. Some suggestions made by instructors about possible ways to strengthen learning outcomes are as follows:

1) Continue focus on teaching concepts and less about syntax on a particular programming language.

- 2) The requirements of an assignment should always be evaluated to ensure there are few or no opportunities to misunderstand them. Rubrics should be reviewed and updated to reflect the objectives desired.
- 3) Having the coaches be more pro-active with students who do not participate in the course.

6. Closing the Loop: Dissemination and Use of Current Assessment Findings

A. When and how did your program faculty share and discuss these results and findings from this cycle of assessment?

Faculty provided quantitative and qualitative feedback at the end of the term (eight week terms) they taught the course.

B. How specifically have you decided to use findings to improve teaching and learning in your program? For example, perhaps you've initiated one or more of the following:

Changes to the Curriculum or Pedagogies

- Course content
- Teaching techniques
- Improvements in technology
- Prerequisites

- Course sequence
- New courses
- Deletion of courses
- Changes in frequency or scheduling of course offerings

Changes to the Assessment Plan

- Student learning outcomes
- Student artifacts collected
- Evaluation process

- Evaluation tools (e.g., rubrics)
- Data collection methods
- Frequency of data collection

Please describe the actions you are taking as a result of the findings.

- 1 – Development of a plan to systematically review and refine rubrics across the CIS degree program.
- 2 – Coaches are developing a student communication and retention plan.

If no changes are being made, please explain why.

N/A

7. Closing the Loop: Review of Previous Assessment Findings and Changes

A. What is at least one change your program has implemented in recent years as a result of assessment data?

The Computer Information Systems program was redesigned and implemented in the 2018-2019 academic year. This is the first cycle for evaluation since the redesign was implemented.

B. How has this change/have these changes been assessed?

Please see A.

C. What were the findings of the assessment?

Please see A.

D. How do you plan to (continue to) use this information moving forward?

Please see A.

IMPORTANT: Please submit any assessment tools and/or revised/updated assessment plans along with this report.