

Degree Program Student Learning Report

Revised November 2019

Department of Technology and Justice Studies

AS in Computer Science

For 2020-2021 Academic Year

PART 1

Degree Program Mission and Student Learning Outcomes

A. State the school, department, and degree program missions.

University Mission	School Mission	Department Mission	Degree Program Mission
Our mission is to ensure students develop the skills and knowledge required to achieve professional and personal goals in dynamic local and global communities.	<p>The mission of the School of Professional Studies (SPS) to develop students' skills and knowledge so they can successfully perform in their professional career of choice, and to prepare them to be lifelong learners in a diverse society. This is accomplished in a positive academic climate which is supported by academic and intellectual freedom, and faculty who are dedicated to a quality educational experience.</p> <p>Curricula for the associate, bachelors and graduate degrees are developed by expert faculty who are dedicated to an excellence in teaching, research and university service. The programs in the SPS are dynamic,</p>	The mission of the Department of Technology and Justice Studies is to support the SPS and RSU in their mission to prepare students to achieve professional and personal goals in dynamic local and global communities.	To provide students with the necessary skills required to become competent in computer programming at the entry level, as well as to understand the significant issues of how technology is changing the workplace; and to provide students with the academic background to seek a baccalaureate degree in Computer Science, Computer Information Systems, or Information Technology.

University Mission	School Mission	Department Mission	Degree Program Mission
	and foster student achievement of their personal and professional goals reflective of their field of study. Innovative teaching strategies are used across diverse educational platforms to facilitate student learning outcomes.		

B. Align school purposes, department purposes, and program student learning outcomes with their appropriate University commitments.

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
To provide quality associate, baccalaureate, and graduate degree opportunities and educational experiences which foster student excellence in oral and written communications, scientific reasoning and critical and creative thinking.	<p>The SPS provides this support by providing two-year and four-year educational opportunities in business, sport management, technology, justice studies, nursing, and emergency medical services. The SPS accomplishes its mission through traditional and innovative learning opportunities including one graduate program, nine bachelor's programs and seven associate degrees.</p> <p>The baccalaureate degrees are taught using a large array of innovative methods.</p>	<p>The Department of Technology and Justice Studies provides the technology course support for the Associate in Science and Associate in Applied Science degrees, as well as the Bachelor of Science in Business Information Technology, the Bachelor of Science in Game Development, and the Bachelor of Technology in Applied Technology. The department also offers a Bachelor of Science in Justice Administration and an Associate in Arts degree in Criminal Justice with options in Law/Justice and the Collegiate Officer Program (COP). As indicated, many of the programs offered by the Department of Technology and Justice Studies are available online.</p>	<ol style="list-style-type: none"> 1. Students will demonstrate competence in analyzing problems, designing, and implementing programs to solve the problems using computer programming languages. 2. Students will integrate the design, implementation and administration of computer networks. 3. Students will demonstrate proficiency in the use of currently standard computing tools such as internet browsers, email, word processors, spreadsheet, and presentation software.
To promote an atmosphere of academic and intellectual freedom			

University Commitments	School Purposes	Department Purposes	Student Learning Outcomes
and respect for diverse expression in an environment of physical safety that is supportive of teaching and learning.			
To provide a general liberal arts education that supports specialized academic program sand prepares students for lifelong learning and service in a diverse society.			
To provide students with a diverse, innovative faculty dedicated to excellence in teaching, scholarly pursuits and continuous improvement of programs.			
To provide university-wide student services, activities and resources that complement academic programs.			
To support and strengthen student, faculty and administrative structures that promote shared governance of the institution.			
To promote and encourage student, faculty, staff and community interaction in a positive academic climate that creates opportunities for cultural, intellectual and personal enrichment for the University and the communities it serves.			

PART 2

Revisit Proposed Changes Made in Previous Assessment Cycle

Revisit each instructional/assessment change proposed in Part 5 of the degree program SLR for the preceding year. Indicate whether the proposed change was implemented and comment accordingly. Any changes the department implemented for this academic year, but which were not specifically proposed in the preceding report, should also be reported and discussed here. Please note if no changes were either proposed or implemented or this academic year.

Proposed Change	Implemented? (Y/N)	Comments
Adapted a new textbook for CS 2223 Programming I and CS 2323 Programming II	Y	Faculty decided to change the textbook as we had been using the current one for several years and found a more suitable textbook.

PART 3

Response to University Assessment Committee Peer Review

The University Assessment Committee provides written feedback on departmental assessment plans through a regular peer review process. This faculty-led oversight is integral to RSU's commitment to the continuous improvement of student learning and institutional effectiveness. UAC recommendations are not compulsory and departments may implement them at their discretion. Nevertheless, respond below to each UAC recommendations from last year's peer review report. Indicate whether the recommendation was implemented and comment accordingly. Please indicate either if the UAC had no recommendations or if the program was not subject to review in the previous cycle.

Peer Review Feedback	Implemented (Y/N)	Comments
		We did not have a peer-review this year.

PART 4
Evidence of Student Learning

Evidence and analyze student progress for each of the student learning outcomes (same as listed in Part I B above) for the degree program. See the *Appendix* for a detailed description of each component. Note: The table below is for the first program learning outcome. Copy the table and insert it below for each additional outcome. SLO numbers should be updated accordingly.

A. Student Learning Outcome								
SLO #1: Students will demonstrate competence in analyzing problems, designing, and implementing programs to solve the problems using computer programming languages.								
B. Assessment Measure	C. Performance Standard	D. Sampling Method	E. Sample Size (n)	F. Results			G. Standard Met (Y/N)	
Program Assessment Test (PAT) in CS 2323	60% of the students who took the exam score higher than 60%.	All AS in CS majors in AS in CS 2323.	Fall: 2/2 Online Fall :2/3 In Cass Spring: 3/3 Online	2021 online	2020 online	2020 in class	Y	
				Range	Spring	Fall		Fall
				9-10	1	0		0
				8.0-8.9	0	0		0
				7.0-7.9	0	0		1
				6.0-6.9	2	0		1
				5.0-5.9	0	2		0
				0-5.0	0	0		0
				Mean	7.20	5.50		6.75
				Median	6.60	5.50		6.75
STDEV	1.30	0.00	0.25					

**A.
Student Learning Outcome**

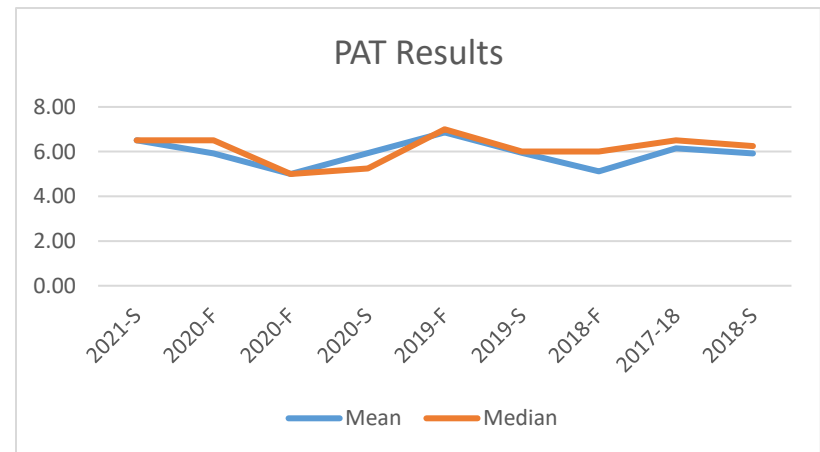
SLO #1: Students will demonstrate competence in analyzing problems, designing, and implementing programs to solve the problems using computer programming languages.

B. Assessment Measure	C. Performance Standard	D. Sampling Method	E. Sample Size (n)	F. Results	G. Standard Met (Y/N)

**H.
Conclusions**

Previous Data

	2020 online Spring	2019 online Fall	2019 online Spring	2018 online Fall	2017-8 Both	2018 in class Spring
Range						
9-10	0	1	1	0	0	0
8.0-8.9	0	0	0	0	1	1
7.0-7.9	1	0	1	1	15	1
6.0-6.9	1	2	3	4	11	2
5.0-5.9	0	1	3	1	14	2
0-5.0	1	0	1	3	0	0
Mean	5.5	6.75	5.94	5.11	6.15	5.92
Median	6	6	6.00	6.00	6.5	6.25
STDEV	1.47	1.6	1.74	2.01	1.25	1.25



A. Student Learning Outcome					
SLO #1: Students will demonstrate competence in analyzing problems, designing, and implementing programs to solve the problems using computer programming languages.					
B. Assessment Measure	C. Performance Standard	D. Sampling Method	E. Sample Size (n)	F. Results	G. Standard Met (Y/N)
<p>Data prior to the Fall of 2019 did not distinguish by majors. 5/7 or 71% students successfully scored 60% or better which meets the performance standard. Both of the two students who did not achieve the 60% mark were in the Fall 2020 online class and each scored 55%. The results are flat given the relative few data points since reporting only AS in CS majors. Although the Fall 2020 in class was taught in class as well as online, the traditional in class course was also broadcast on Zoom for those students who preferred not to sit in class. Because of Covid, quite a few students opted for this approach. The exams were taken in class.</p> <p>The 2020 Spring class was the first to use a new textbook which required substantial modifications of the online course to synchronize it with the textbook. The material is substantially the same although the unit order and presentations were altered. Although the new textbook used the older Swing graphics library, the course covered the newer JavaFX graphics library. Although there is a substantial improvement in the Fall, it is too soon to read anything into the results. The PAT which does not cover graphics has not been altered to ensure consistent results.</p>					

A. Student Learning Outcome					
SLO #2: Students will integrate the design, implementation and administration of computer networks.					
B. Assessment Measure	C. Performance Standard	D. Sampling Method	E. Sample Size (n)	F. Results	G. Standard Met (Y/N)
In-depth hands-on labs (assessment) demonstrating ability to integrate the design, implement, and administer local area networks in	At least 70% percent of students will demonstrate their ability to configure networking with Windows Server 2016 via Post Course	All ASCS students taking IT 2153 spring/fall. Class is online.	4	Assignments Grades: 90-100% 4 80-89% 0 70-79% 0 60-69% 0 0-59% 0	Y

**A.
Student Learning Outcome**

SLO #2: Students will integrate the design, implementation and administration of computer networks.

B. Assessment Measure	C. Performance Standard	D. Sampling Method	E. Sample Size (n)	F. Results	G. Standard Met (Y/N)
accordance with the 70-741 networking certification exam.	Assessment (labs) by achieving a 70%.			4 out of 4 (100%) met the performance measure.	

**H.
Conclusions**

Students were able to design, implement, and administer local area networks successfully in accordance with the set standard. The sample size was too small to give any significant statistical conclusions.

Comparative Data for the past five years:

- 2016-2017
19 out of 21 (90.5%) met the performance measure.
- 2017-2018
11 out of 12 (91.7%) met the performance measure.
- 2018-2019
10 out of 14 (71.4%) met the performance measure.
- 2019-2020:
4 out of 5 (80%) met the performance measure.
- 2020-2021:
4 out of 4 (100%) met the performance measure.

**A.
Student Learning Outcome**

SLO #3: Students will demonstrate proficiency in the use of currently standard computing tools such as internet browsers, email, word processors, spreadsheet, and presentation software.

B. Assessment Measure	C. Performance Standard	D. Sampling Method	E. Sample Size (n)	F. Results	G. Standard Met (Y/N)
A standardized final exam developed by the MASH (Microcomputer Applications Stakeholders) to assess the skill level of Microsoft Office 2019.	At least seventy percent of the ASCS majors enrolled in CS 1113 Microcomputer Applications will successfully complete CS 1113 Microcomputer Applications with a score of 86% or better on the standardized final exam	All ASCS majors who took the Microcomputer Applications course in the fall 2020 and the spring 2021 semesters	4	Final test scores: 1 A's (90-100%) 0 B's (80-89%): 0 C (70-79%) 0 D (60-69%) 0 F's (Below 60%). 3 out of 4 were transfers from other schools. Their final grades were A, A, and B	Y

**H.
Conclusions**

ASCS students demonstrated the proficiency in the use of MS Office, thus meeting the RSU computer proficiency requirement.

Comparative Data for the past five years:

2016-2017
7 out of 7 (100%) scored 78% or higher

2017-2018
10 out of 10 (100%) scored 78% or higher

2018-2019
5 out of 5 (100%) scored 86% or higher

2019-2020
10 out of 11 students (91%) earned a grade of C or better,

2020-2021
4 out of 4 students (100%) earned a grade of B or better

A. Student Learning Outcome					
SLO #3: Students will demonstrate proficiency in the use of currently standard computing tools such as internet browsers, email, word processors, spreadsheet, and presentation software.					
B. Assessment Measure	C. Performance Standard	D. Sampling Method	E. Sample Size (n)	F. Results	G. Standard Met (Y/N)

**PART 5
Proposed Instructional or Assessment Changes**

Learning outcomes assessment can generate actionable evidence of student performance that can be used to improve student success and institutional effectiveness. Knowledge of student strengths and weakness gained through assessment can inform faculty efforts to improve course instruction and program curriculum. Below discuss potential changes the department is considering which are aimed at improving student learning or the assessment process. Indicate which student learning outcome(s) will be affected and provide a rationale for each proposed change. These proposals will be revisited in next assessment cycle.

Proposed Change	Applicable Learning Outcomes	Rationale and Impact
Continue revise content of Programming I and II.	SLO# 1	This is the first year we implement the curricula of Programming I and II courses using a new textbook. We need to fine-tune and adjust the content of assignments, quizzes and exams to set appropriate standards.

PART 6
Summary of Assessment Measures

- A. How many different assessment measures were used? 3
- B. List the direct measures (see appendix): Programming Assessment Test (PAT), post-test, final exam
- C. List the indirect measures (see appendix):

PART 7
Faculty Participation and Signatures

- A. Provide the names and signatures of all full time and adjunct faculty who contributed to this report.

Faculty Name	Assessment Role	Signature
Roy Gardner	Prepare report.	On separate sheet
Chris Ruhl	Collect, analyze data for CS 1113	On separate sheet
Peter Macpherson	Administer PAT, collect, analyze PAT results.	On separate sheet
Curtis Sparling	Collect, analyze data for IT 2153	On separate sheet

- B. Reviewed by:

Titles	Name	Signature	Date
Department Head	Roy Gardner	On separate sheet	
Dean	Susan Willis	On separate sheet	

Appendix

Student Learning Outcome

Student learning outcomes are the observable or measurable results that are expected of a student following a learning experience. Learning outcomes may address knowledge, skills, attitudes, or values that provide evidence that learning has occurred. They can apply to a specific course, a program of study, or an institution. Outcomes should be worded in language that clearly implies a measurable behavior or quality of student work. Outcomes should also include Bloom's action verbs appropriate to the skill level of learning expected of students.

Examples:

Students will be able to apply principles of evidence-based medicine to determine clinical diagnoses and implement acceptable treatment modalities.

Students will be able to articulate cultural and socioeconomic differences and the significance of these differences for instructional planning.

Assessment Measure

An assessment measure is a tool or instrument used to gather evidence of student progress toward an established learning outcome. Every program learning outcome should have at least one appropriate assessment measure. Learning outcomes are frequently complex, however, and may require multiple measures to accurately assess student performance. Assessment plans should try to incorporate a combination of direct and indirect assessment measures. Direct provide concrete evidence of whether a student has command of a specific subject or content area, can perform a certain task, exhibits a particular skill, demonstrates a certain quality in their work, or holds a particular value. Because direct measures tap into actual student learning, it is often viewed as the preferred measure type. Indirect measures assess opinions or thoughts about the extent of a student's knowledge, skills, or attitudes. They reveal characteristics associated with learning, but they only imply that learning has occurred. Both types of measures can provide useful insight into student learning and experiences in a program. Each also has unique advantages and disadvantages in terms of the type of data and information it can provide. Examples of common direct and indirect measures are listed below.

Direct Measures

- Comprehensive exams
- Class assignments
- Juried review of performances and exhibitions
- Internship or clinical evaluations
- Portfolio evaluation
- Pre/post exams
- Third-party exams such as field tests, certification exams, or licensure exams
- Senior thesis or capstone projects

Indirect Measures

- Graduate exit interviews
- Focus group responses
- Job placement statistics
- Graduate school placement statistics
- Graduation and retention rates
- Student and alumni surveys that assess perceptions of the program
- Employer surveys that assess perceptions of graduates
- Honors and awards earned by students and alumni.

Performance Standard

A performance standard is a clearly-defined benchmark that establishes the minimally-acceptable level of performance expected of students for a particular measure.

Examples:

At least 70% of students will score 70% or higher on a comprehensive final exam.

At least 75% of students will earn score a “Proficient” or higher rating on the Communicate Effectively rubric.

Sampling Method

Sampling method describes the methodology used for selecting the students that were assessed for a given measure. In some cases, such as most course-embedded measures, it is possible to assess all active enrolled students. In other cases, however, it is not feasible to measure the population of all potential students. In these cases, it is important that a well-designed sampling scheme be used to ensure the sample of students measured is an unbiased representation of the overall population. Where multiple instructors teach a particular course, care should be taken to assess students across all instructors, including adjuncts.

Examples:

All students enrolled in BIOL 4801 Biology Research Methods II

All majors graduating in the 2016-17 academic year.

Sample Size

Sample size is the number of students from which evidence of student learning was obtained for a given assessment measure.

Results

Results are an analytical summary of the findings arising from the assessment of student performance for a particular assessment measure. Typical presentation includes descriptive statistics (mean, median, range) and score frequency distributions.

Standard Met?

This is a simple yes/no response that indicates whether the observed level of student performance for a particular measure meets or exceeds the established standard. An N/A may be used where circumstances prevented the department from accurately assessing a measure.

Conclusion

The conclusion is a reflective summary and determination of the assessment results obtained for a specific learning outcome. Questions to consider in this section include the following:

- Does the assessment evidence indicate the learning outcome is being satisfactorily met?
- Where multiple measures are used for a single outcome, do the results present a consistent or contradictory pattern?
- What are the most valuable insights gained from the assessment results?
- What strengths and weaknesses in student learning do the results indicate?
- What implications are there for enhancing teaching and learning?
- How can the assessment process be improved?