Degree Program Student Learning Report
Revised August 2017

Department of Technology and Justice Studies

AS in Computer Science

For 2016-2017 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.	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. 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,	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 issue s 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.	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. The baccalaureate degrees are taught using a large array of innovative methods.	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.	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
SLO #1: A new textbook will be adopted for Programming I and II courses.	Y	Changing textbook had a little effect in improving PAT scores.
SLO# 3: New textbook adopted in CS 1113; SIMnet replaced SAM; MS Office upgraded to 2016 (This was not mentioned in Part 5 of last year's report).	Y	In keeping with technology trends, MS Office was upgraded to the latest version, and SIMnet was chosen by faculty as a preferred hands-on assessment tool.

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
Not subject to review last 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. <u>Note</u>: 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.

<table>
<tr><td colspan="7">A.
Student Learning Outcome</td></tr>
<tr><td colspan="7">SLO #1:   Students will demonstrate competence in analyzing problems, designing, and implementing programs to solve the problems using computer programming languages.</td></tr>
<tr>
<td>B.
Assessment Measure</td>
<td>C.
Performance Standard</td>
<td>D.
Sampling Method</td>
<td>E.
Sample Size (n)</td>
<td colspan="2">F.
Results</td>
<td>G.
Standard Met (Y/N)</td>
</tr>
<tr>
<td>Program Assessment Test (PAT) will be administered to all CS 2323 students.</td>
<td>50% of the students who took the exam score higher than 50%.

The PAT tests students' cumulative knowledge of programming. The benchmark was set lower than the typical 70 to 75% level to compensate difficulty of the exam for those who have not taken the sequenced programming courses in consecutive semesters.</td>
<td>All students completing CS 2323 Programming II: Fall class online; Spring traditional.</td>
<td>16 Online
12 Traditional</td>
<td colspan="2">All Students (Fall 2016) Online

Range   Count
90-100 0   Mean   50.7%
80-89   1   Median   62.5%
70-79   3   STD   27.1%
60-69   4
50-59   2
0-50   6

All Students (Spring 2017) Traditional
Range   Count
90-100 0   Mean   63.25%
80-89   1   Median   65%
70-79   4   STD   12.6%
60-69   3
50-59   2
0-50   2</td>
<td>Y</td>
</tr>
</table>

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						

All the students in the traditional section completed the exam however four students in the online section did not take the test. This accounts for the difference in the average score in the PAT more than any other factor. The previous two semesters have means of 53.9 and 49.6 which does not show improvement in the online course. A stronger grade incentive to encourage students to complete the exam may produce more meaningful results. The results of traditional class (Spring 2017) were better than those of online (Fall 2016).

Comparative Data:

Fall 2015: Mean 53.9%, Median 57.1%, STD 22.4%

Spring 2016: Mean 49.6%, Median 71.0, STD 37.2%

Fall 2016: Mean 50.7%, Median 62.5%, STD 27.1%

Spring 2017: Mean 63.25%, Median 65%, STD 12.6%

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)
An IT 2153 hands-on project will be assigned that examines the students' knowledge and ability to set up a minimal Local Area Network (LAN) involving a server and two or more clients.	70% of the students will be able to design a Local Area Network (LAN) upon completing the IT2153 Network Operating Systems I course with an accuracy of 70%..	All ASCS students taking IT 2153 in Fall 2016. Class is online.	21	Course Grades: 90-100 11 80-89 6 70-79 2 60-69 0 0-59 2 Course grades were tabulated to make the performance assumption. 19 out of 21 (90.5%) met the performance measure.		Y

H. Conclusions
Comparative data for the past two years shows about the same results (91.7% in 2015/16). The ASCS data was not able to be extracted from the new system. The number of ASCS majors is relatively small-two in 2015/16 and we expect approximately the same number in 2016/17. We hope to be able to extract ASCS majors from the Jenzabar system for the next report. Comparative Data: 2013-2014: 15 out of 18 (83%) met the performance measure. 2014-2015: 8 out of 8 (100%) met the performance measure. 2015-2016 11 out of 12 (91.7%) 2016-2017 19 out of 21 (90.5%) 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 2016.	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 78% or better on the standardized final exam	All ASCS majors who took the Microcomputer Applications course in the fall 2016 and the spring 2017 semesters	7	Final test scores: 3 A's (90-100%) 3 B's (80-89%): 1 C (70-79%) 0 D (60-69%) 0 F's (Below 60%.) Mean: 87 Median: 89 7 out of 7 (100%) scored 78% or higher		Y
H. Conclusions						
ASCS students demonstrated the proficiency in the use of MS Office, thus meeting the RSU computer proficiency requirement. Results of all final exams indicate that students generally score higher on SIMnet than SAM: average score of 86 verses 76 for SAM previous year. Comparative Data: 2013-2014: Overall: 10 out of 12 students (83%) earned a grade of C or better. 2014-2015: Overall: 14 out of 17 students (82.33%) earned a grade of C or better, 2015-2016						

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)
16 out of 16 (100%) scored 78% or higher 2016-2017 7 out of 7 (100%) scored 78% or higher					

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
More emphasis will be placed on programming logic and design in CS 1213 Intro to Computing	SLO# 1	Improving logic and design aspect of programming skills would help students to perform better in Programming I and II courses and hence should improve PAT results.

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), final exam

C. List the indirect measures (see appendix): course grades

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, collect, analyze data for IT 2153	On separate sheet
Tetyana Kyrylova	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 CS 1113	On separate sheet

B. Reviewed by:

Titles	Name	Signature	Date
Department Head	Roy Gardner	On separate sheet	10/03/2017
Dean	Susan Willis	On separate sheet	10/03/2017

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.

<table>
<tr><td align="center">Direct Measures</td><td align="center">Indirect Measures</td></tr>
<tr><td>

- 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

</td><td>

- 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.

</td></tr>
</table>

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?