

Degree Program Student Learning Report

Revised August 2017

Department of Technology and Justice Studies

BS in Game Development

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.	<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 highest possible quality education in the areas of game development and general education.

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>	<p>Students will be able to utilize current professional 2-D and 3-D software to produce high-quality virtual worlds for animated games.</p> <p>Students will demonstrate skill in creating large scale computer graphics programs.</p> <p>Students will demonstrate their proficiency in programming.</p>
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 programs and 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# 2: Allow the use of game engines to be use be used in Senior Projects.	Y	Seniors wrote their projects using Unreal Engine.

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. 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 be able to utilize current professional 2-D and 3-D software to produce high-quality virtual worlds for animated games					
B. Assessment Measure	C. Performance Standard	D. Sampling Method	E. Sample Size (n)	F. Results	G. Standard Met (Y/N)
In CS 3733, students will complete a large 3D software project requiring the use of the industry standard OpenGL API. This project will be evaluated by the instructor.	In CS 3733 100% of the BS GD students will be able to complete a large 3D project with an accuracy of 86%.	All GD taking CS 3733.	4	Range: Count 80-89: 2 90-100: 2 Avg=88 <u>Previous Year</u> Range: Count 80-89: 1 Avg=82	Y
In CS 3553, students will complete an animation of a 3D world of their own creation.	In CS 3553, 100% of BS GD students will complete an animation of a 3D world of their own creation with an accuracy of 80%	All GD students taking CS 3553	8	Range: Count 80-89: 4 90-100: 4 Avg=87 <u>Previous Year</u> Not offered	Y
H. Conclusions					
All students in CS 3553 completed their animation projects at score above the threshold of 80%. There were issues in CS 3733 with the use of varying OpenGL standards used by student graphics cards. This created some problems in that some students were unable to implement all the modern shader coding techniques on their own machines. While the classroom graphics cards used in the Game Development Lab were up to date, there were some problems when students tried to implement the same code on the home computers.					

A. Student Learning Outcome					
SLO #2: Students will demonstrate skill in creating large scale computer graphics programs.					
B. Assessment Measure	C. Performance Standard	D. Sampling Method	E. Sample Size (n)	F. Results	G. Standard Met (Y/N)
Students will complete their Senior Game Project which will be evaluated by the general public.	75% of the projects would be rated at an overall score of 75% approval using a Likert survey. Questions were on 1) Creativity, 2) Artwork, 3) Controls & Movement, 4) Puzzles, 5) Overall Enjoyment	All GD students in CS4503	2	There were 3 students but two worked together so there were only two projects. Project 1: 88 Project 2: 93	Y
H. Conclusions					
The senior projects were well received and highly regarded by the evaluators. Some of the identified issues with the projects could have been resolved if more play testing had been done. Accordingly, a greater emphasize will be placed in the future on systematic testing of code in the course.					

A. Student Learning Outcome					
SLO #3: Students will demonstrate their proficiency in programming.					
B. Assessment Measure	C. Performance Standard	D. Sampling Method	E. Sample Size (n)	F. Results	G. Standard Met (Y/N)
The ETS Major Field Test in Computer	50% of the students will score at the 25	All GD students in CS4503	3	Student 1: 4 percentile	N

A. Student Learning Outcome					
SLO #3: Students will demonstrate their proficiency in programming.					
B. Assessment Measure	C. Performance Standard	D. Sampling Method	E. Sample Size (n)	F. Results	G. Standard Met (Y/N)
Science will be given to all students enrolled in the Capstone CS4504.	percentile level.			Student 2: 14 percentile Student 3: 47 percentile	
H. Conclusions					
The results were disappointing, particularly the student who scored at only the 4 percentile rank on a nationally normed test. The widely varying results are similar to the BSBIT scores on the same exam. Having such a small number (3) makes drawing conclusions difficult particularly since it is a general test for Computer Science students not Game Development students who follow a different curriculum than the ACM guidelines use by the MFT.					

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
Change Graphics libraries from OpenGL	SLO1	While OpenGL has been an industry standard for years, it is no longer being developed as its replacement Vulkan is being adopted. Because of

Proposed Change	Applicable Learning Outcomes	Rationale and Impact
		the newness of Vulkan, Windows Presentation Foundation will be used.
Replace the MFT with our own exit exam	SLO3	The proposed exam will draw upon material from the core of the BSBIT/Game Development degree and better evaluate the knowledge of our students rather than standardized MFT.

PART 6
Summary of Assessment Measures

- A. How many different assessment measures were used? 3
- B. List the direct measures (see appendix): Computer Science MFT, Class Assignments, Capstone Projects
- 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
Dr. Peter Macpherson	Collect data, analyze data, prepare report	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.

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?