

CNM ANNUAL STUDENT LEARNING ASSESSMENT REPORT

Due to the Student Academic Assessment Committee by October 15



PART 1: REPORT INFORMATION

Report Year and Contact Information			
<u>2017-2018</u> Academic Year	<u>Theresa Watson</u> Contact Person	<u>Twatson16@cnm.edu224-4000</u> CNM Email	<u>224-4000 x50799</u> CNM Office Extension

Subject of this Report (Please copy and paste the program identifier from the Program Identifiers spreadsheet without making any changes. Only one program identifier can be included per report.)

AT--GEOG_AAS--Geographic Information Technology Degree

PART 2: CONTEXT IN WHICH THE ASSESSMENT TOOK PLACE

Program/Area Highlights and Successes (Wherever applicable, include course completion rates, job placement outcomes, and licensing examination pass rates. See the program information dashboard at <https://livecnm.sharepoint.com/Sites/Dashboards/SitePages/Program%20Information%20Dashboard.aspx> (access restricted to CNM employees) and other reports at <https://www.cnm.edu/depts/opie>.)

The GIT Program is a small program that has courses that cross-over with Surveying, UAS and Geogrpahy. The UAS courses that started in GIS have been tremendously successful and have now branched off into their own program: UAS. There is still crossover between the two programs.

Job Placement outcomes for GIT, that have not been reported to OPIE:
Students placed in related jobs and/or transferred to university programs 2017-2018: 14.

Changes Implemented During the Past Year in Support of Student Learning

- With the addition of the Fundamentals course (GIS 1002) students are getting more foundation for later GIS courses.
- With an emphasis on Critical Thinking, Assessments will be changed to Lab Exercises with high levels of CT requirements.

PART 3: REPORT ON ASSESSMENT OF STUDENT LEARNING

Assessment Method	Type of Assessment Tool	Population or Course(s) Assessed	Graduate Learning Outcome(s) Assessed	Mastery Level (E.g., "Minimum score of 3 on a rubric scaled 0-4" or "Minimum score of 75%")	Targeted % Achieving Mastery	Outcome
Questions	Direct internal	11	Course Outcome 1. (5 Questions) Demonstrate understanding of theoretical concepts related to geographic data including spatial references, data models, data file structures and database management.	Minimum Score of 80%	90%	Target met
Questions	Direct internal	13	Course Outcome 1. (5 Questions) Demonstrate understanding of theoretical concepts related to geographic data including spatial references, data models, data file structures and database management.	Minimum Score of 80%	100%	Target met
Final Project	Direct internal	9	Course Outcome 2. Obtain, process and create GIS data layers appropriate to a particular research topic using a variety of techniques including field data collection, downloading from Internet, manual digitizing and other methods. (Project)	Minimum Score of 80%	89%	Target met
Lab Exercise	Direct internal	7	Course Outcome 3. Perform GIS Analysis using various types of data, geoprocessing tools, and modeling software. (Lab exercises)	Minimum Score of 80%	100%	Target met

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Summary of Assessment Findings

For one of the Program Learning outcomes (#2), and several of the Course Outcomes, two types of assessment were used: Scores from applicable computer laboratory exercises, and scores from the Final Project. This has now been separated out, resulting in an Outcome #3 for the Laboratory Exercises. Using the Final Project for an outcome will be discontinued in the future, as this method of assessment will be changing in the classroom.

Scores from Quizzes and Exam questions demonstrated a good understanding of concepts in the assessment areas. However, overall there was a small decrease in scores in Fall of 2017. This picked up again in Spring of 2018.

Scores from Final Project for GIS 2001 was 88.8%.

Scores for Lab exercise were 100.00% in both GIS 2001 and 2007.

Interpretation of Assessment Findings

Overall, students demonstrated understanding of concepts and demonstrated abilities to complete GIS tasks.

Due to the thinness of data for the previous assessment cycle (depending upon higher level courses that would not always make), it was decided that data for GIS 1001 would be collected and used for this and future reports for Learning Outcome #1.

Action Plan in Support of Student Learning (Describe changes to be made that are based at least in part on the assessment interpretation. If the assessment did not yield useful information, describe changes to be made in the assessment methodology and/or criteria.)

Change in assessment types (i.e. from Final Project to specific Lab Exercises).
 For Assessment Outcome #1, more material, examples, and exercises can be introduced to help provide multiple approaches to understanding the fundamentals.

Please select all of the following that characterize the types of changes described in the above action plan:

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| <input type="checkbox"/> Assessment criteria revision | <input checked="" type="checkbox"/> Assessment methodology revision | <input checked="" type="checkbox"/> Assignment revision |
| <input type="checkbox"/> Budgetary reallocation | <input checked="" type="checkbox"/> Change in teaching approach | <input checked="" type="checkbox"/> Course content revision |
| <input type="checkbox"/> Curricular Revision | <input type="checkbox"/> Faculty training/development | <input type="checkbox"/> Process revision |

Recommendations, Proposals, and/or Funding Requests	Budget Needed

PART 4: REMAINING YEARS IN CURRENT ASSESSMENT CYCLE PLAN (including any revisions) – **OR -- UPCOMING ASSESSMENT CYCLE PLAN** (if this was the final year)

Years of Full Cycle	Next Year's Assessment Focus (Describe how the next planned assessment is expected to provide information that can be used toward improving student learning.)
2017-2020	This next cycle focuses on Lab Exercises requiring Critical Thinking.

Graduate Learning Outcomes to Be Assessed	Years in which Assessment Is Planned	Population/Courses to Be Assessed	Planned Assessment Approach
1. Demonstrate understanding of theoretical concepts related to geographic data including spatial references, data models, data file structures and database management. (Questions)	2017-2018; 2018-2019; 2019-2020	GIS 1001	Quiz Questions (5 Total)
2. Lab exercise: Data Sources, Metadata, Coordinate Systems, and Projections Students complete a lab whereby they download various data sets from different sources, and identify the appropriate Coordinate System and Projection by examining the metadata. They then need to use the proper GIS tools, in the correct order to align the data to a unified Coordinate System and Projection.	2017-2018; 2018-2019; 2019-2020	GIS 1001	Lab Exercise completion. (Final results can only be obtained if all steps are performed correctly.)
3. Lab exercise: Distance Analysis Using Raster data, Advanced Students complete a lab whereby they download data, identify and use appropriate geoprocessing tools and workflows. Students calculate weighted distance, create cost surfaces, perform least-cost path analyses.	2017-2018; 2018-2019; 2019-2020	GIS 2007, 2092	Lab Exercise completion. (Final results can only be obtained if all steps are performed correctly.)
4. Lab exercise: Overlay Analysis with Modelbuilder	2017-2018; 2018-2019; 2019-2020	GIS 2001	Lab Exercise completion. (Final results can only be obtained if all steps are performed correctly.)

<p>Students must identify the problem, describe it, and determine steps to address it. They must determine the appropriate data needed, the geoprocessing tools to apply, and the order of steps for the procedures. This assignment requires building a workflow model and using the modeling tool with the GIS.</p>			
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