

# 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			
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<b>Academic Year</b>	<b>Contact Person</b>	<b>CNM Email</b>	<b>CNM Office Extension</b>

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_CERT--Geographic Information Technology, Geographic Information Systems Certificate

## 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 <a href="https://livecnm.sharepoint.com/Sites/Dashboards/SitePages/Program%20Information%20Dashboard.aspx">https://livecnm.sharepoint.com/Sites/Dashboards/SitePages/Program%20Information%20Dashboard.aspx</a> (access restricted to CNM employees) and other reports at <a href="https://www.cnm.edu/depts/opie">https://www.cnm.edu/depts/opie</a> .)
<p>The GIT Program is a small program that has courses that cross-over with Surveying, UAS and Geography. 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, which continues to be encouraged</p> <p>Job Placement outcomes for GIT, that have not been reported to OPIE:</p> <p>Students placed in related jobs and/or transferred to university programs 2018-2019: 10+ (?).</p>

Changes Implemented During the Past Year in Support of Student Learning
<p>-With the addition of the Fundamentals course (GIS 1002) students are getting more foundation for later GIS courses.</p> <p>-With an emphasis on Critical Thinking, Assessments are being changed to Lab Exercises with high levels of CT requirements.</p>

**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	GIS 1001 2019Spr	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%	81%	Target met
Lab Exercise	Direct internal	GIS 1001 2019Spr	2. Lab exercise:  Outcome: 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.	Minimum Score of 80%	90%	Target met

Lab Exercise	Direct internal	GIS 2001 Fall 2018	4.Lab exercise: Outcome: Overlay Analysis with Modelbuilder  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.	Minimum Score of 80%	100%	Target met
Exam Question	Direct internal	GIS 2011 Spring 2019	5. Exam Question Outcome: Students must be able to define and explain the difference between spatial, temporal, spectral, and radiometric resolutions.	Minimum Score of 80%	87%	Target met
	N/A			Minimum Score of 80%	N/A	N/A
	N/A				N/A	N/A
	N/A				N/A	N/A
	N/A				N/A	N/A
	N/A				N/A	N/A
	N/A				N/A	N/A

<b>Summary of Assessment Findings</b>
Scores from Exam questions and Lab Exercises demonstrated a good understanding of concepts in the assessment areas.

<b>Interpretation of Assessment Findings</b>
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. Also, this course is the primary course for the Certificate. Additionally, one of the classes listed above has been discontinued. An assessment was added from GIS 2011 Remote Sensing and Image Analysis. This will continue to be used for the next cycle.

<b>Action Plan in Support of Student Learning</b> (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.)
Because these assessments are for the AAS and Cert level, more comprehensive activities will be incorporated in the future. For example, more complex labs that require multiple steps that build would be very appropriate. Currently, three are in use. More should be added. Perhaps another higher level course can be re-added into the program.

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

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

<b>Recommendations, Proposals, and/or Funding Requests</b>	<b>Budget Needed</b>
It is recommended that a higher level course be added back into the GIST program to replace GIS 2007. Too many necessary concepts were lost and could not be incorporated into other courses. Also, GIS 1001 needs to be returned to Term 1 as part of the enlistment for the program (it was changed to Term 2 a cycle or two ago.)	

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

<b>Years of Full Cycle</b>	<b>Next Year's Assessment Focus</b> (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 Fundamental Concepts of GIS.

<b>Graduate Learning Outcomes to Be Assessed</b>	<b>Years in which Assessment Is Planned</b>	<b>Population/Courses to Be Assessed</b>	<b>Planned Assessment Approach</b>
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  Students must identify the problem, describe it, and determine steps to address it. They must determine	2017-2018; 2018-2019; 2019-2020	GIS 2001	Lab Exercise completion. (Final results can only be obtained if all steps are performed correctly.)

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.			
5. Exam Question: Students must be able to define and explain the difference between spatial, temporal, spectral, and radiometric resolutions.	2018-2019; 2019-2020	GIS 2011	Exam question- short answer/short essay

