# GIS Spatial Applications Course No. 21112 Credit: 1.0

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| **Student name:** |  | **Graduation Date:** |  |

Pathways and CIP Codes:Web & Digital Communications (11.1004)

Course Description: **Application Level:** GIS Spatial Applications courses apply technology skills to build and utilize representations of three-dimensional space to provide location information, data collection, and statistical information to build representations appropriate for use in areas such as conservation, urban planning, flight, human networks, geographic surveying and topography, and patterns and processes related to multidimensional data.

Directions:The following competencies are required for full approval of this course. Check the appropriate number to indicate the level of competency reached for learner evaluation.

**RATING SCALE:**

4. Exemplary Achievement: Student possesses outstanding knowledge, skills or professional attitude.

3. Proficient Achievement:Student demonstrates good knowledge, skills or professional attitude. Requires limited supervision.

2. Limited Achievement:Student demonstrates fragmented knowledge, skills or professional attitude. Requires close supervision.

1. Inadequate Achievement:Student lacks knowledge, skills or professional attitude.

0. No Instruction/Training:Student has not received instruction or training in this area.

## Benchmark 1: Click or tap here to enter text.

### Competencies

| **#** | **DESCRIPTION** | **RATING** |
| --- | --- | --- |
| 1.1 | Understanding Mapping |  |
| 1.2 | Data Usage & Format |  |
| 1.3 | Demonstrate how to analyze land use, population, and flood zone data. |  |
| 1.4 | Create geospatial data |  |
| 1.5 | Create a geodatabase, import existing feature classes into a geodatabase, and import multiple feature classes to a geodatabase. |  |
| 1.6 | Plan and build a local data inventory. |  |
| 1.7 | View single band and multispectral images. |  |
| 1.8 | Perform various manipulations to an image including creating a subset of an image, mosaic two georeferenced images, and orthorectification. |  |
| 1.9 | Perform image analysis by orthorectifying non-georeferenced digital images to existing map features. |  |
| 1.10 | Use various tools in image analysis to extract land features from imagery data. |  |
| 1.11 | Categorize land cover types using image analysis tools. |  |
| 1.12 | Conduct vegetation analysis on imagery using image analysis |  |
| 1.13 | Evaluate areas of change in images. |  |
| 1.14 | Enhance an image by adjusting the brightness and contrast, adjusting the histogram, applying custom histogram stretches, sharpening and smoothing its appearance. |  |
| 1.15 | Measure and Interpolation |  |
| 1.16 | Navigate various types of surfaces. |  |
| 1.17 | Explore methods of obtaining, downloading, and extracting free data using the Internet. |  |
| 1.18 | Build 3D datasets. |  |
| 1.19 | Display 2D features onto a 3D surface. |  |
| 1.20 | Create shapefiles to view in a 3D environment. |  |
| 1.21 | Construct a 3D model of an urban environment. |  |
| 1.22 | Display georeferenced data measurements in 3D. |  |
| 1.23 | Apply Interpolation methods. |  |
| 1.24 | Utilize georeferenced 2D data in a 3D environment to provide valuable information. |  |
| 1.25 | Create contour lines in a 3D environment. |  |

I certify that the student has received training in the areas indicated.

Instructor Signature:

For more information, contact:

CTE Pathways Help Desk

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