COCONINO COMMUNITY COLLEGE
COURSE OUTLINE

Prepared by: Duane Marshall   December 10, 2019
Effective Term: Fall 2020

A.   Identification:
1. Subject Area: Geography (GEO)
2. Course Number: 135
3. Course Title: Introduction to GIS
4. Credit Hours: 3
5. Course Description: Introduces students to digital map creation including vector and raster data, data sources, map elements, and design, symbology, and geographic data storage using commercial and/or open source products in both desktop and online formats. 3 lecture.

B.   Course Goals:
Students will learn how to compile, analyze, and present geospatial data while emphasizing the value of visual communication. Students will learn basic geospatial concepts while working with GIS software packages.

C.   Course Outcomes:
Students will be able to:
1. identify the concepts and principles of geospatial data analysis;
2. demonstrate how to create, edit, and maintain geospatial data for use in mapping applications;
3. understand vector and raster data structures and the appropriate use of each of these data structures;
4. illustrate basic geospatial applications using GIS software;
5. demonstrate an understanding of problem identification, project design and successful geographic modeling using geospatial technology;
6. understand typical uses of GIS in business, government, resource management, wildfire management and environmental research;
7. generate appropriate visual map representations.

D.   Course Outcomes Assessment
Must include:
1. graded labs;
2. graded written projects including an
3. independent personal project;
4. exams.

E.   Course Content:
 will include:
1. types of maps, map scale, map projections, and cartographic principles:
    a. latitude and longitude;
    b. topographic map interpretation;

    c. map overlays;

    d. online geospatial data resources;

2. operational parameters of GIS software including generation of raster and vector databases:

    a. spatial and non-spatial data;

    b. methods for displaying and presenting geospatial data;

    c. symbolizing, classifying, and labeling features for map presentations;

3. principles of modeling geographic information:

    a. problem identification;

    b. proposal design;

    c. project description;

    d. project objectives and goals;

    e. techniques for communication, visualization, animation, and color;

    f. ethics and rules of conduct for data usage and sharing;

    g. geospatial applications and methodology;

    h. project significance;

    i. data resources, GIS online;

4. the use of GIS across disciplines to resolve problems or determine possible interactions and assist in the study of the environmental sciences, natural sciences and human geography/urban planning;

5. methods for the collection and usage of spatial and tabular data: advantages, limitations, and applicability relevant to the discipline in question;