

Revised Summer 2014

GIS 102

Introduction to Geospatial Technology I

COURSE OUTLINE

Pre-rerequisites: GIS 101

Course Description:

GIS 102 Introduction to Geospatial Technology II (3 CR) Continues with the concepts of Geographic Information Systems (GIS), Global Positioning Systems (GPS) and remote sensing components of Geospatial Technology. Covers additional concepts of geographic location and problem solving by using GIS and GPS units in demonstrating solutions to cross-curricular applications of the technology.

Semester Credits: 3 Lecture Hours: 3

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Course Outcomes:

At the completion of this course, the student should be able to:

- A. Understand and describe the components and relationships between the major parts of Geospatial Technology. (GIS, GPS and remote sensing)
- B. Operate a GPS unit and be able to transfer locational data from and to a GIS.
- C. Apply the components of Geospatial Technology to a variety of advanced cross-curricula areas.
- D. Understand the types of geospatial data and select the appropriate geospatial data types needed to answer specific problems.
- E. Apply Geospatial technology to answer questions using more advanced analysis of GIS data.
- F. Use spatial analysis and advanced query tools to solve problems.
- G. Create and organize geospatial data.
- H. Apply the intermediate principles of cartography to create maps.

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Required Materials:

1. Textbook: None
2. Internet access
3. Blackboard
4. Disks: USB drive.

Textbook:

NA

The following supplementary materials are available:

1. Esri courses provided under the statewide license.
2. VWCC offers an open computer lab format available throughout each semester.
The class schedule and tutoring opportunities are found at:
<http://www.viriniawestern.edu/academics/bet/labtutoring.php>

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Topical Description:

1. Review of GIS 101 Topics.
2. Geographic locational methods including latitude, longitude, datums, and map projection methods.
3. The Global Positioning system, its use to locate objects, and interaction with a GIS.
4. The Geographic Information System, its components, introductory use of the software and building/editing the database.
5. The data types used by GIS, selecting appropriate data to solve a problem and quality assurance of the data.
6. Use of a GIS/GPS to solve more advanced problem and produce a map of the results.
7. Remote sensing data and analysis.
8. Spatial analysis of geospatial problems.
9. 3D analysis of geospatial problems.
10. Advanced data organization and creation.
11. Intermediate principles of Cartography and application to map creation.

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Notes to Instructors

None

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