

# Syllabus

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**Code:** ENVR 126

**Title:** Introduction to GIS

**Institute:** STEM

**Department:** Environmental Science

**Course Description:** Introduction to Geographic Information Systems (GIS) is a non-lab science course aimed at both science and non-science majors. Although there is no separate lab time scheduled, this course will focus on computer mapping exercises, so it will meet in a computer lab. The student will be introduced to the field of GIS and how GIS relates to the real world. After learning mapping basics, the student will learn how data is gathered, stored, edited, mapped and analyzed using GIS. Since GIS is now important in almost every aspect of our technologically oriented world we will examine important applications of GIS in various fields of study including environmental studies, health, business, geography and criminal justice.

**Prerequisites:** MATH-021, MATH-025 or satisfactory completion of the College's basic skills requirement in algebra; READ-095 or satisfactory completion of the College's basic skills requirement in reading; ENGL 121 or COMP-129

**Credits:** 3

**Lecture Hours:** 3

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**REQUIRED MATERIALS:**

Bolstad, Paul (2008) GIS Fundamentals, 3<sup>rd</sup> Edition. Publisher: Eider.

512mb (minimum) portable storage device.

**OPTIONAL MATERIALS:**

Ormsby, Tim., [et al.] (2011) Getting to know ArcGIS Desktop, 3rd Edition updated for ArcView 10. Redlands, CA: ESRI Press.

60- day FREE ArcView 10 Evaluation CD\_

<http://www.esri.com/software/arcgis/arcview/eval/evalcd.html>

**ADDITIONAL TIME REQUIREMENTS:**

Time will be provided to complete all exercises and activities during the scheduled meeting time. Students seeking more time to work on class topics can use the software and computers in the science lab when the computer lab is open. A schedule of the lab hours will be provided the first class meeting as well as posted in the window of the computer lab in MAS 019.

**ArcGIS software is not found on any computers outside of MAS 019.**

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## **COURSE LEARNING OUTCOMES:**

Upon completion of this course, students will be able to:

- Apply GIS concepts via ArcGIS
- Create maps and cartography using current GIS methods
- Access and manipulate real data from outside sources
- Apply the structure of geographic data in creating geodatabases
- Manage a group GIS project
- Use mathematical and scientific reasoning for problem solving
- Use appropriate verbal and writing skills to communicate hypotheses, results and analysis

## **GRADING STANDARD:**

Unit Exercises	8 @ 5% each
Exam	20%
Group Project	20%
Final Project	20%

Upon completion of the course, grades will be assigned as follows:

<b>A =</b>	<b>92 – 100%</b>
<b>A- =</b>	<b>89 - 91%</b>
<b>B+ =</b>	<b>86 - 88%</b>
<b>B =</b>	<b>82 - 85%</b>
<b>B- =</b>	<b>79 - 81%</b>
<b>C+ =</b>	<b>76 - 78%</b>
<b>C =</b>	<b>70 - 75%</b>
<b>D =</b>	<b>65 - 69%</b>
<b>F =</b>	<b>&lt;65%</b>

## **COURSE CONTENT:**

Introduction to GIS

Sources of GIS, Introduction to ArcGIS

Maps and Cartography

Exercise 1 – Cartography in ArcGIS: Making Layouts

Applications of GIS

Exercise 2 – Accessing and manipulating data from outside sources

Structure of Geographic data

Exercise 3 – Creating Data in the Geodatabase

Global Positioning Systems & Remote Sensing

Exercise 4 – GPS Data Collection

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GPS Data Collection Exercise

Geographic Features

Exercise 5 – Editing Features & Attributes

Using GIS to Solve Problems

Exercise 6 – Analysis of GIS Data Using ArcToolbox

GIS Project Management

Exercise 7 – Advanced Cartography

## **DEPARTMENT POLICIES:**

**Attendance** during class and group work sessions is necessary for optimum performance in the course.

**Exams** will be given in class or the Testing Center at the discretion of the instructor. Exams, exercises and projects must be completed during the designated time periods determined by the instructor. A student who misses an exam, exercise or project must provide prior notification and proper documentation in order to complete the work at another time. The acceptance of prior notification and proper documentation will be determined by the course instructor.

**Documentation** must be provided within one week of the student's return to the classroom for make-up work to be scheduled. A student who is unable to provide proper documentation will be given a grade of zero for the specific missed work. Students may not re-take exams on which they perform poorly.

## **College Policies:**

As an academic institution, Brookdale facilitates the free exchange of ideas, upholds the virtues of civil discourse, and honors diverse perspectives informed by credible sources. Our College values all students and strives for inclusion and safety regardless of a student's disability, age, sex, gender identity, sexual orientation, race, ethnicity, country of origin, immigration status, religious affiliation, political orientation, socioeconomic standing, and veteran status. For additional information, support services, and engagement opportunities, please visit [www.brookdalecc.edu/support](http://www.brookdalecc.edu/support).

For information regarding:

- ◆ Brookdale's Academic Integrity Code
- ◆ Student Conduct Code
- ◆ Student Grade Appeal Process

Please refer to the [BCC STUDENT HANDBOOK AND BCC CATALOG](#).

## **NOTIFICATION FOR STUDENTS WITH DISABILITIES:**

Brookdale Community College offers reasonable accommodations and/or services to persons with disabilities. Students with disabilities who wish to self-identify must contact the Disabilities Services Office at 732-224-2730 (voice) or 732-842-4211 (TTY) to provide appropriate documentation of the disability, and request specific accommodations or services. If a student qualifies, reasonable accommodations and/or services, which are appropriate for the college level and are recommended in the documentation, can be approved.

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**ADDITIONAL SUPPORT/LABS:**

See the Tutoring Center for information

<https://www.brookdalecc.edu/academic-tutoring/tutoring-center/>.

**MENTAL HEALTH:**

- Mental Health Crisis Support: From a campus phone, dial 5555 or 732-224-2329 from an external line; off-hours calls will be forwarded to BCC police (2222 from a campus phone)
- Psychological Counseling Services: 732-224-2986 (to schedule an appointment during regular hours)

*The syllabus is intended to give student guidance in what may be covered during the semester and will be followed as closely as possible. However, the faculty member reserves the right to modify, supplement, and make changes as the need arises.*