



Dallas College · School of Manufacturing and Industrial Technology · Geospatial Information Systems Technology

Programming for GIS

GISCI-2335

Spring 2025 Section 22001 3 Credits 01/21/2025 to 05/15/2025 Modified 01/15/2025

Instructor Contact Information

Professor: Mr. Erik Bushland

Email: EBushland@DallasCollege.edu

Talk with Me on Microsoft Teams:

Response Time: Typically I respond to emails from students within 24 hours. However, responses may be delayed over the weekend and during holiday periods.

Office Hours

What are Office Hours?

Office hours are times that instructors set aside to help students. These are the best times to contact your instructor to ask questions, get help, or discuss anything school related. [However, you can also request an appointment for another time.](#)

Office Hours:

Tentative Schedule:

- Monday - 11:00am - Noon (Online)
- Tuesday - 4:00 - 5:00 (H105)
- Wednesday - 5:30 - 6:30 (H105)
- Thursday - 4:00 - 5:00 (Online)
- Sunday - 3:00 - 4:00 (Online)

Office Location:

In-Person: H105

Online: Message or call me on Microsoft Teams

Course Information

Class Meetings:

Bldg	Room	Type	Days	Start Time	End Time
BHH	H105	LEC	T R	05:00PM	05:50PM
BHH	H105	LAB	T R	06:00PM	07:20PM

Withdraw Date:04/17/25

Certification Date:02/03/25

Course Description

Seminar course designed for the final semester of a degree or certificate in Geographic Information Systems (GIS). Projects will include individual and group studies of GIS applications using the skills acquired in previous courses. The student will produce a professional project and present the results to a panel consisting of peers, instructors, or practicing GIS professionals.

State-Defined Learning Outcomes

Describe and understand basic programming for GIS applications; and perform programming for GIS customizations.

Instructor-Defined Learning Outcomes

This course will provide the student with the fundamental concepts of customizing ESRI's ArcGIS application and task workflows. By completing this course, students will: Become familiar with the geoprocessing framework and how to automate tasks using the geoprocessor.

- Become familiar with the ArcGIS Geoprocessing object model.
- Be able to create, obtain and evaluate data programming objects.
- Understand basic concepts development environments using Python.
- Understand general programming standards.
- Organize code sections and routines.
- Create branching and filtering objects.
- Track project scenarios through data preparation, desktop customization, and publishing on the internet.
- Build GIS tools and programmatically edit data content.
- Manipulate, with code and automation, workflows, data, and processes.

Required Course Materials

[Course Materials Link \(https://www.bkstr.com/webApp/discoverView?bookstore_id-1=606&term_id-1=3&dept-1=GIS&course-1=2335§ion-1=22001\)](https://www.bkstr.com/webApp/discoverView?bookstore_id-1=606&term_id-1=3&dept-1=GIS&course-1=2335§ion-1=22001)

✓ Graded Work

The "**Criteria**" table below is a summary of all the graded work in this course.

The "**Breakdown**" table explains the final letter grade.

Criteria

Type	Weight	Topic	Notes
Chapter Assignments	72% (1300 points)	13 Chapter Assignments @ 100 points each	An applied assignment that follows each chapter discussion. Each assignment will apply the techniques learned up to that point in the required text.
Portfolio Items	17% (300 Points)	3 Portfolio Items (100 points each)	Portfolio items are GIS work that is not assigned in the context of the course work but rather is an effort you make outside of assigned work. Portfolio items demonstrate your abilities beyond prescribed assignments.
Exams	11% (200 points)	Two Exams - midterm and final (100 points each)	The mid term exam will occur approximately half way through the semester and will cover the content of the text book chapters covered to the data of the exam. The final exam will occur during the last week of the semester and will cover the text book chapter covered following the mid term exam. The final may have content discussed in the first half of the semester.

Breakdown

Grade	Range	Notes
A	1,620 - 1,800 points	90-100%
B	1,440 - 1,619 points	80-89%
C	1,260 - 1,439 points	70-79%
D	1,080 - 1,259 points	60-69%
F	<1,080 points	0-59%

📅 Course Schedule

The table below is a summary of course topics and due dates.

Your instructor will notify you of any changes to the schedule during the term.

When	Topic	Notes
Week 1 Week Beginning: 1/20 H105 and/or Online via Teams	Review Syllabus Concepts & Terms Ancillary Resources Review of IDEs	<ul style="list-style-type: none"> • W3schools.com • Python.org • Beginners Guide • Python Guru <p>Make sure you have access to your textbook by class Week #2</p>
Week 2 Week Beginning: 1/27 H105 and/or Online via Teams	Ch. 1: Introducing Python	Due by 5pm, next Tuesday <ul style="list-style-type: none"> • Ch. 1 Exercise • PB&J sandwich
Week 3 Week Beginning: 2-03 H105 and/or Online via Teams	Ch. 2: Working with Python Editors	Due Now: <ul style="list-style-type: none"> • Ch. 1 Exercise • PB&J sandwich Due by 5pm, next Tuesday <ul style="list-style-type: none"> • Ch. 2 Exercise
Week 4 Week Beginning: 02/10 H105 and/or Online via Teams	Ch. 3: Geoprocessing with ArcGIS Pro	Due Now: <ul style="list-style-type: none"> • Ch. 2 Exercise Due by 5pm, next Tuesday: <ul style="list-style-type: none"> • Ch. 3 Exercise
Week 5 Week Beginning: 2/17 H105 and/or Online via Teams	Ch. 4: Learning Python Language Fundamentals	Due Now: <ul style="list-style-type: none"> • Ch. 3 Exercise Due by 5pm, next Tuesday: <ul style="list-style-type: none"> • Ch. 4 Exercise
Week 6 Week Beginning: 2/24 H105 and/or Online via Teams	Ch. 5: Geoprocessing Using Python	Due Now: <ul style="list-style-type: none"> • Ch. 4 Exercise Due by 5pm, next Tuesday: <ul style="list-style-type: none"> • Ch. 5 Exercise

When	Topic	Notes
Week 7 Week Beginning: 3/03 H105 and/or Online via Teams	Ch. 6: Exploring Spatial Data	Due Now: <ul style="list-style-type: none"> Ch. 5 Exercise Due by 5pm, Tuesday 3/18: <ul style="list-style-type: none"> Ch. 6 Exercise
Week 8 Week Beginning: 03/10 N/A	Spring Break	No Class or new assignments. Use time to get caught up if necessary.
Week 9 Week Beginning: 3/17 H105 and/or Online via Teams	Optional Mid Term Review and Non-optional MIDTERM!!!	Due Now: <ul style="list-style-type: none"> Ch. 6 Exercise Midterm Available - <u>12:00pm (noon) Wednesday 3/19 - 11:59pm Sunday 3/23.</u>
Week 10 Week Beginning: 3/24 H105 and/or Online via Teams	Ch. 7: Debugging and Error Handling	Due by 5pm, next Tuesday: <ul style="list-style-type: none"> Ch. 7 Exercise
Week 11 Week Beginning: 3/31 H105 and/or Online via Teams	Ch. 8: Manipulating Spatial Data	Due Now: <ul style="list-style-type: none"> Ch. 7 Exercise Due by 5pm, next Tuesday: <ul style="list-style-type: none"> Ch. 8 Exercise
Week 12 Week Beginning: 4/07 H105 and/or Online via Teams	Ch. 9: Working With Geometries	Due Now: <ul style="list-style-type: none"> Ch. 8 Exercise Due by 5pm, next Tuesday: <ul style="list-style-type: none"> Ch. 9 Exercise
Week 13 Week Beginning: 4/14 H105 and/or Online via Teams	Ch. 10: Working With Rasters	Due Now: <ul style="list-style-type: none"> Ch. 9 Exercise Due by 5pm, next Tuesday: <ul style="list-style-type: none"> Ch. 10 Exercise

When	Topic	Notes
Week 14 Week Beginning: 4/21 H105 and/or Online via Teams	Ch. 11: Map Scripting	Due Now: <ul style="list-style-type: none"> Ch. 10 Exercise Due by 5pm, next Tuesday: <ul style="list-style-type: none"> Ch. 11 Exercise
Week 15 Week Beginning: 4/28 H105 and/or Online via Teams	Logic Flow for AI Model Project (Variables, Input Data, Binary Result Focus)	Due Now: <ul style="list-style-type: none"> Ch. 11 Exercise Due by 5pm, next Tuesday: <ul style="list-style-type: none"> Logic Model Due by 11:59pm 5/07 - ANY missing work.
Week 16 Week Beginning: 5/05 H105 and/or Online via Teams	Portfolio and Final Exam Review	Due Now: <ul style="list-style-type: none"> Logic Model Due by 11:59pm 5/07 - ANY missing work. Due by 11:59pm, next Tuesday: <ul style="list-style-type: none"> Three (3) Portfolio Items
Week 17 - Finals Week Week Beginning: 5/12 H105 and/or Online via Teams	Final Exam	ABSOLUTE DEADLINES: <ul style="list-style-type: none"> Due by 11:59pm 5/13 - Three (3) Portfolio Items Due by 11:59pm 5/15 - FINAL EXAM (available starting noon 5/09)

* Course Policies

Late Work

Assignments will be accepted up to 1 week late with a penalty of 1 letter grade.

Attendance and Participation

You are expected to review all online materials. It is your responsibility to withdraw from this course if necessary. If you stop participating with your review of course materials your final grade will be determined as shown in the above "Assessments" with zeros for all grades missed.

Unexpected Class Changes

If there is an unexpected change to a class meeting, I will send out a notice via eCampus Announcement.

Support Contacts

[Contact Your Success Coach \(https://www.dallascollege.edu/successcoach\)](https://www.dallascollege.edu/successcoach)

Every Dallas College student has a personalized Success Coach who supports them from day one to graduation. Contact your coach for help navigating college and reaching milestones leading to graduation and a career.

[Get Free Tutoring \(https://www.dallascollege.edu/tutoring\)](https://www.dallascollege.edu/tutoring)

Tutoring is free to all current Dallas College students. You can walk in or schedule an appointment at all [Learning Commons \(https://www.dallascollege.edu/learningcommons\)](https://www.dallascollege.edu/learningcommons) campus locations. Live, online tutoring is also available via eCampus.

[Explore More Free Student Resources \(https://www.dallascollege.edu/help\)](https://www.dallascollege.edu/help)

You have access to many free resources as a Dallas College student, including [Counseling and Psychological Services \(https://www.dallascollege.edu/counseling\)](https://www.dallascollege.edu/counseling), [Child Care Resources \(https://www.dallascollege.edu/childcare\)](https://www.dallascollege.edu/childcare), [Housing Resources \(https://www.dallascollege.edu/housing\)](https://www.dallascollege.edu/housing), [Emergency Aid Funds \(https://www.dallascollege.edu/emergencyaid\)](https://www.dallascollege.edu/emergencyaid), [Food Pantries \(https://www.dallascollege.edu/foodpantry\)](https://www.dallascollege.edu/foodpantry), and more!

[Submit the Student Care Form \(https://www.dallascollege.edu/careform\)](https://www.dallascollege.edu/careform)

Not sure which free college resources can help? Submit the Student Care Form! Our [Student Care Network \(https://www.dallascollege.edu/studentcare\)](https://www.dallascollege.edu/studentcare) will connect you to support for physical and mental health, financial concerns, food, clothing, and more.

[Contact Technical Support \(https://www.dallascollege.edu/techsupport\)](https://www.dallascollege.edu/techsupport)

Need help with eCampus or another college technology? Our technical support staff can assist you.

Institutional Policies

Dallas College Policies

Please review the [Institutional Policies \(https://www.dallascollege.edu/syllabipolicies\)](https://www.dallascollege.edu/syllabipolicies) page to learn about accommodations for students with disabilities, class drop and repeat options, Title IX (harassment, discrimination, and sexual misconduct), and more.