# GEOG 150: PROGRAMMING FOR GIS

## In Workflow

1. GEOG Chair (jwanket@csus.edu)
2. NSM College Committee Chair (mikkel.jensen@csus.edu)
3. NSM Dean (datwyler@csus.edu)
4. Academic Services (catalog@csus.edu)
5. Senate Curriculum Subcommittee Chair (curriculum@csus.edu)
6. Dean of Undergraduate (james.german@csus.edu; celena.showers@csus.edu)
7. Dean of Graduate (cnewsome@skymail.csus.edu)
8. Catalog Editor (torsetj@csus.edu)
9. Registrar's Office (wlindsey@csus.edu)
10. PeopleSoft (PeopleSoft@csus.edu)

## Approval Path

1. Fri, 12 Nov 2021 15:53:28 GMT
   James Wanket (jwanket): Approved for GEOG Chair
2. Thu, 18 Nov 2021 00:51:26 GMT
   Mikkel Jensen (mikkel.jensen): Approved for NSM College Committee Chair
3. Thu, 18 Nov 2021 00:51:50 GMT
   Shannon Datwyler (datwyler): Approved for NSM Dean

## History

1. Nov 12, 2021 by Anna Patterson (anna.kp)

Date Submitted: Fri, 12 Nov 2021 15:38:30 GMT

## Viewing: GEOG 150 : Programming for GIS

## Last approved: Fri, 12 Nov 2021 15:03:20 GMT

## Last edit: Thu, 18 Nov 2021 00:51:03 GMT

Changes proposed by: Anna Patterson (219679266)

**Contact(s):**

| Name (First Last) | Email | Phone 999-999-9999 |
|---|---|---|
| Anna Patterson | anna.kp@csus.edu | 9162784272 |

**Catalog Title:**
Programming for GIS

**Class Schedule Title:**
Programming for GIS

**Academic Group: (College)**
NSM - Natural Sciences & Mathematics

**Academic Organization: (Department)**
Geography

**Will this course be offered through the College of Continuing Education (CCE)?**
No

**Catalog Year Effective:**
Fall 2022 (2022/2023 Catalog)

**Subject Area: (prefix)**
GEOG - Geography

**Catalog Number: (course number)**
150

**Course ID: (For administrative use only.)**
202854

**Units:**
3

**Is the primary purpose of this change to update the term typically offered or the enforcement of requisites at registration?**
No

**In what term(s) will this course typically be offered?**
Fall, Spring

**Does this course require a room for its final exam?**
Yes, final exam requires a room

**Does this course replace an existing experimental course?**
No

**This course complies with the credit hour policy:**
Yes

**Justification for course proposal:**
Only change is to remove the pre-requisite.

**Course Description: (Not to exceed 80 words and language should conform to catalog copy.)**
This course is an introduction to programming and scripting for intermediate GIS users, using an object-oriented programming approach. You will develop and write clearly documented and structured geoprocessing programs using the Python programming language and ArcPy, a site package (library) for ArcGIS geoprocessing tools.

**Are one or more field trips required with this course?**
No

**Fee Course?**
No

**Is this course designated as Service Learning?**
No

**Does this course require safety training?**
No

**Does this course require personal protective equipment (PPE)?**
No

**Does this course have prerequisites?**
No

**Does this course have corequisites?**
No

**Graded:**
Letter

**Approval required for enrollment?**
No Approval Required

**Course Component(s) and Classification(s):**
Laboratory
Lecture

**Laboratory Classification**
CS#16 - Science Laboratory (K-factor=2 WTU per unit)
**Laboratory Units**
1

**Lecture Classification**

CS#02 - Lecture/Discussion (K-factor=1WTU per unit)

**Lecture Units**

2

**Is this a paired course?**

No

**Is this course crosslisted?**

No

**Can this course be repeated for credit?**

No

**Can the course be taken for credit more than once during the same term?**

No

**Description of the Expected Learning Outcomes: Describe outcomes using the following format: "Students will be able to: 1), 2), etc."**

By the end of this course, you will be able to:
1. Demonstrate programmatic thinking and problem-solving skills through construction of algorithms and Python code
2. Write clearly structured, documented, reproducible, and distributable Python programs to solve a given problem set
3. Create and debug original and actionable solutions for their own applications
4. Import, manipulate, analyze, and export data
5. Identify, define, and use key programming terms and concepts

**Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above.**

Reading quiz (pre-assessment; LO 5), laboratory assignment (assessment; LOs 1, 2, 3, 4), programming quiz (post-assessment; LOs 1, 3, 5), final programming project (LOs 1, 2, 3, 4, 5)

**Is this course required in a degree program (major, minor, graduate degree, certificate?)**

No

**Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?**

No

**Will there be any departments affected by this proposed course?**

No

**I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.**

I/we agree

## University Learning Goals

**Undergraduate Learning Goals:**

Competence in the disciplines
Integrative learning
Intellectual and practical skills

**Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?**

No

## GE Course and GE Goal(s)

**Is this a General Education (GE) course or is it being considered for GE?**

No

**Please attach any additional files not requested above:**

Syllabus_GEOG150_F2021.docx

Key: 2327