

Term Information

Effective Term Spring 2021
Previous Value Summer 2018

Course Change Information

What change is being proposed? (If more than one, what changes are being proposed?)

We are proposing this course be offered in alternative formats. In addition to the traditional in person lecture, we propose to teach this course as a completely online course.

What is the rationale for the proposed change(s)?

The new format will make the course more available to students in all terms who need the course offered in an alternative format to accommodate work or athletic schedules, greater accessibility needs, as well as to accommodate students who are away from the OSU campus. The COVID-19 pandemic has also made it necessary for our courses to have online offerings. Alternative formats will also provide greater capacity potential enrollments without detracting from student learning and instructor engagement.

What are the programmatic implications of the proposed change(s)?

(e.g. program requirements to be added or removed, changes to be made in available resources, effect on other programs that use the course)?

None

Is approval of the request contingent upon the approval of other course or curricular program request? No

Is this a request to withdraw the course? No

General Information

Course Bulletin Listing/Subject Area Geography
Fiscal Unit/Academic Org Geography - D0733
College/Academic Group Arts and Sciences
Level/Career Graduate, Undergraduate
Course Number/Catalog 5223
Course Title Design and Implementation of GIS
Transcript Abbreviation GIS Design & Imple
Course Description Practice-oriented development, design, implementation and evaluation of spatial databases, with an emphasis on local problems.
Semester Credit Hours/Units Fixed: 3

Offering Information

Length Of Course 14 Week, 12 Week
Flexibly Scheduled Course Never
Does any section of this course have a distance education component? Yes
Is any section of the course offered 100% at a distance
Previous Value No
Grading Basis Letter Grade
Repeatable No
Course Components Lecture
Grade Roster Component Lecture
Credit Available by Exam No

| | |
|----------------------------|----------|
| Admission Condition Course | No |
| Off Campus | Never |
| Campus of Offering | Columbus |

Prerequisites and Exclusions

| | |
|----------------------------|---|
| Prerequisites/Corequisites | Prereq: A grade of C- or above in 5222. |
| Exclusions | |
| Electronically Enforced | Yes |

Cross-Listings

Cross-Listings

Subject/CIP Code

| | |
|------------------|-----------------------------------|
| Subject/CIP Code | 11.0802 |
| Subsidy Level | Doctoral Course |
| Intended Rank | Junior, Senior, Masters, Doctoral |

Requirement/Elective Designation

Required for this unit's degrees, majors, and/or minors
The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

- Understand the tasks of GIS customization
- Understand event-driven and object-oriented programming techniques
- Write code to implement GIS tools in open-source and commercial GIS
- Understand the fundamentals of agile project management
- Put together and manage a project to automate GIS tasks
- *To have students will be able to understand the tasks of managing a GIS development learning fundamental design and implementation techniques that are commonly used in developing today's geographic information systems.*

Previous Value

Content Topic List

- Software development processes
- Programming interactivity in QGIS
- Processing and mapping vector data in QGIS
- QGIS processing algorithms
- QGIS plugins
- Agile principles and practices
- Product vision and roadmap
- User stories and planning
- ArcPy: spatial data sets and processing
- ArcGIS Pro custom tools
- ArcGIS Pro data rendering
- ArcGIS Pro project

Previous Value

- *Project management*
- *Requirement analysis*
- *Spatial database design*
- *Object-oriented analysis and design*
- *Unified modeling language*
- *System verification and validation*

Sought Concurrence

No

Attachments

- GEOG5223-online-gis-design-implementation.docx: Syllabus (online)
(Syllabus. Owner: Xiao,Ningchuan)
- GEOG5223-inperson-gis-design-implementation.docx: Syllabus (in-person)
(Syllabus. Owner: Xiao,Ningchuan)
- GEOG5223-asctech-review.docx: ASCTech review (online)
(Other Supporting Documentation. Owner: Xiao,Ningchuan)

Comments

Workflow Information

| Status | User(s) | Date/Time | Step |
|------------------|---|---------------------|------------------------|
| Submitted | Xiao,Ningchuan | 10/21/2020 11:29 AM | Submitted for Approval |
| Approved | Munroe,Darla Karin | 10/22/2020 11:45 AM | Unit Approval |
| Approved | Haddad,Deborah Moore | 10/22/2020 01:35 PM | College Approval |
| Pending Approval | Jenkins,Mary Ellen Bigler Hanlin,Deborah Kay Oldroyd,Shelby Quinn Vankeerbergen,Bernadette Chantal | 10/22/2020 01:35 PM | ASCCAO Approval |



THE OHIO STATE UNIVERSITY

COLLEGE OF ARTS AND SCIENCES

SYLLABUS: GEOG 5223 (ONLINE) GIS DESIGN AND IMPLEMENTATION SPRING 2021

Course overview

Instructor

Instructor: Prof. Ningchuan Xiao

Email address: xiao.37@osu.edu

Phone number: 614-292-4072

Office hours: by appointment only (CarmenZoom)

Office Location: 1132 Derby Hall

Course description

This course covers topics in developing GIS software tools. There are two main themes of this course. First, we introduce techniques that will help students build custom tools to automate spatial data handling processes, including topics about programming skills, software testing, and verification. The second theme of this course is about agile methods for GIS software development and project management. The course is organized around a set of coding activities, lectures, discussions, and a final project. It is mostly a project-oriented course, where each group of coding exercises will lead to finishing a project using the concepts covered in that workshop, and there is also a group (in-person) or individual (online) final project.

Course learning outcomes

By the end of this course, students should successfully be able to:

- Understand the tasks of GIS customization
- Understand event-driven and object-oriented programming techniques
- Write code to implement GIS tools in open-source and commercial GIS
- Understand the fundamentals of agile project management
- Put together and manage a project to automate GIS tasks

How this course works

Mode of delivery: This course is 100% online. There are no required sessions when you must be logged in to Carmen at a scheduled time.

Pace of online activities: This course is divided into **weekly modules** that are released one week ahead of time. Each module is organized around a specific topic (see course schedule below) and consists of introduction videos, coding tutorials, and student activities (see assignment information below). Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame.

Credit hours and work expectations: This is a 3-credit-hour course. According to [Ohio State policy](#), a 3 credit hour course comprises 3 hours of instruction in class (including online instruction content and Carmen activities) and 6 hours of homework/study time outside class per week, for a total of 9 hours per course per week, for the student to earn a C grade.

GE Course Information

- This is not a GE course.

Prerequisites

GEOG 5222, or consent of instructor.

Course materials

Required

Layton, Mark C. and Ostermiller, Steven J. 2017. *Agile Project Management for Dummies*, (2nd Ed.) John Wiley & Sons, Inc.

Other materials

In addition to the required textbook, we will also use online sources for tool development in QGIS and ArcGIS Pro. Detailed instructions and tutorials will be provided during the semester. There are other readings materials that will be handed out during the class.

Course technology

For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at <https://ocio.osu.edu/help/hours>, and support for urgent issues is available 24x7.

- **Self-Service and Chat support:** <http://ocio.osu.edu/selfservice>
- **Phone:** 614-688-HELP (4357)
- **Email:** 8help@osu.edu
- **TDD:** 614-688-8743

Baseline technical skills necessary for online courses

- Basic computer and web-browsing skills
- Navigating Carmen

Technology skills necessary for this specific course

- CarmenZoom text, audio, and video chat
- Collaborating in CarmenWiki
- Recording a slide presentation with audio narration
- Recording, editing, and uploading video

Necessary equipment

- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection
- Webcam: built-in or external webcam, fully installed
- Microphone: built-in laptop or tablet mic or external microphone

Necessary software

- [OpenOffice](https://www.openoffice.org/privacy.html) is a free and complete suite of software tools for word processing, spreadsheet, and presentations. View their privacy statement at <https://www.openoffice.org/privacy.html>.
- [Microsoft Office 365 ProPlus](https://www.microsoft.com/education/office365) All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. Each student can install Office on five PCs or Macs, five tablets (Windows, iPad® and Android™) and five phones.
 - Students are able to access Word, Excel, PowerPoint, Outlook and other programs, depending on platform. Users will also receive 1 TB of OneDrive for Business storage.
 - Office 365 is installed within your BuckeyeMail account. Full instructions for downloading and installation can be found <https://ocio.osu.edu/kb04733>.
- [Python](https://python.org): students will install Python 3 and necessary libraries on their own computers and detailed instructions will be provided. You can download Python from <https://python.org>. The privacy policy for Python can be found at <https://www.python.org/privacy/>.
- ArcGIS Pro: OSU students can either install ESRI's software on their own computer or through our lab computers. For instructions of installing ArcGIS Pro, please visit the web

page at <https://cura.osu.edu/esri#arcgis-pro>. Please refer to below about how to access our lab computers through RemoteLab. This is provided through ESRI's Education Site License Program and you may review ESRI's privacy policies at <https://www.esri.com/en-us/privacy/overview>. For information about accessibility, visit [Accessibility in ArcGIS Pro](#).

- **QGIS** is a powerful and fully fledged GIS package. It is free and open-source and is widely used in many enterprise applications. You can download the software from here: <https://qgis.org/en/site/forusers/download.html>. Students can install this on their own computer or use the installations on our lab computers through RemoteLab (see below).
- RemoteLab is a remote desktop access platform provided for OSU students to access computers in our computer labs at <remotelab.osu.edu>. It is a workaround if installation on your own computers does not work. More instructions about RemoteLab can be found at [this Google Doc](#).

Grading and faculty response

Grades

| Category | Points |
|--------------------|--------|
| Weekly assignments | 40 |
| Term project | 30 |
| Quizzes | 20 |
| Participation | 10 |
| Total | 100 |

Assignment information

Weekly assignments. The course is organized into weekly modules and assignments will be given for students to complete each week's topic.

Term project. Each student will develop a tool for either QGIS or ArcGIS Pro as the term project for this class. Each project has a few milestones and deliverables as outlined in the course schedule. Each student will make a 10-minute video presentation of the project. Each project will also be peer reviewed by at least two students.

Quizzes. There will be three quizzes throughout the semester.

Participation. Students are required to post and respond to online discussion boards. Each student will also be assigned to peer review two or more term projects.

Late assignments

Late submissions will be accepted up to a week past the due date. One day late will incur a 10% penalty. Two days late will incur 20% penalty. Three days will incur a 30% penalty. Four days late will incur a 40% penalty. Five to seven days late will only receive 50% credit of the grade you would have received if it is submitted on time. If you contact me ahead of time for deadline adjustments, you will not incur any penalty. Please refer to Carmen for due dates.

Grading scale

93–100: A
90–92.9: A-
87–89.9: B+
83–86.9: B
80–82.9: B-
77–79.9: C+
73–76.9: C
70–72.9: C-
67–69.9: D+
60–66.9: D
Below 60: E

Faculty feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

Grading and feedback

For large weekly assignments, you can generally expect feedback within **7 days**.

E-mail

I will reply to e-mails within **24 hours on school days**.

Discussion board

I will check and reply to messages in the discussion boards **Monday, Wednesday, and Friday on school days**.

Attendance, participation, and discussions

Student participation requirements

Because this is a distance-education course, your attendance is based on your online activity and participation. The following is a summary of everyone's expected participation:

- **Logging in: AT LEAST TWICE PER WEEK**
Be sure you are logging in to the course in Carmen each week, including weeks with holidays or weeks with minimal online course activity. (During most weeks you will probably log in many times.) If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible*.
- **Office hours and live sessions: OPTIONAL OR FLEXIBLE**
This course is asynchronous, no live sessions. If you are required to discuss an assignment with me, please contact me at the beginning of the week if you need a time outside my scheduled office hours.
- **Participating in discussion forums: 4+ TIMES PER WEEK**
As participation, each week you can expect to post at least four times as part of our substantive class discussion on the week's topics.

Discussion and communication guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- **Writing style:** While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. Informality (including an occasional emoticon) is fine for non-academic topics.
- **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online.
- **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. (For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.)
- **Backing up your work:** Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.

Other course policies

Academic integrity policy

- **Quizzes and exams:** You must complete the quizzes yourself, without any external help or communication.
- **Written assignments:** Your written assignments, including discussion posts, should be your own original work. In formal assignments, you should follow Chicago style to cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proofread your assignments before you turn them in--but no one else should revise or rewrite your work.
- **Reusing past work:** In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you've explored in previous courses, please discuss the situation with me.
- **Falsifying research or results:** All research you will conduct in this course is intended to be a learning experience; you should never feel tempted to make your results or your library research look more successful than it was.
- **Collaboration and informal peer-review:** The course includes many opportunities for formal collaboration with your classmates. While study groups and peer-review of major written projects is encouraged, remember that comparing answers on a quiz or assignment is not permitted. If you're unsure about a particular situation, please feel free just to ask ahead of time.

Ohio State's academic integrity policy

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct <http://studentlife.osu.edu/csc/>.

Copyright disclaimer

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

Statement on title IX (Recommended)

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at <http://titleix.osu.edu> or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu

Accessibility accommodations for students with disabilities

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Accessibility of course technology

This online course requires use of Carmen (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations with your instructor.

- [Carmen \(Canvas\) accessibility](#)
- Streaming audio and video
- Synchronous course tools

Your mental health! (Recommended)

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and Consultation Service (CCS) by visiting ccs.osu.edu or calling 614- 292-5766. CCS is located on the 4th Floor

of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273- TALK or at suicidepreventionlifeline.org

Course schedule (tentative)

| Week | Dates | Topics | Modules |
|------|-----------|---------------------------|--|
| 1 | 1/11-1/15 | Introduction | Software development processes <u>Readings:</u> Ch 1 <u>Exercise:</u> market share analysis, a manual approach |
| 2 | 1/18-1/22 | QGIS plugins | Programming interactivity in QGIS <u>Tutorial:</u> getting started with Python in QGIS <u>Exercise:</u> making a map tool in QGIS |
| 3 | 1/25-1/29 | | Processing and mapping vector data <u>Tutorial:</u> working with vector data <u>Exercise:</u> dynamic mapping vector data |
| 4 | 2/1-2/5 | | QGIS processing algorithms <u>Tutorial:</u> automating GIS processes <u>Exercise:</u> making your own GIS layer cookie cutter |
| 5 | 2/8-2/12 | | QGIS plugins <u>Tutorial:</u> tools and interface design <u>Exercise:</u> developing a QGIS select tool |
| 6 | 2/15-2/19 | | QGIS project <u>Tutorial:</u> calculating areas and other geometries <u>Exercise:</u> QGIS market share tool <u>Quiz 1</u> |
| 7 | 2/22-2/26 | Agile development methods | Agile principles and practices <u>Readings:</u> Ch 2-6 <u>Exercise:</u> pros and cons of agile methods |

| | | | |
|----|-----------|------------------------|--|
| 8 | 3/1-3/5 | | Product vision and roadmap <u>Readings:</u> Ch 7 <u>Term project:</u> project vision statement |
| 9 | 3/8-3/12 | | User stories and planning <u>Readings:</u> Ch 8 <u>Term project:</u> vision statement revision, user stories and planning <u>Quiz 2</u> |
| 10 | 3/15-3/19 | Spring break | No class |
| 11 | 3/22-3/26 | ArcGIS Pro development | ArcPy: spatial data sets and processing <u>Tutorial:</u> getting started with ArcPy for ArcGIS Pro <u>Exercise:</u> geoprocessing tools <u>Term project:</u> user stories revision |
| 12 | 3/29-4/2 | | ArcGIS Pro custom tools <u>Tutorial:</u> parameters, geoprocessing, and messages <u>Exercise:</u> making user interface for a custom tool |
| 13 | 4/5-4/9 | | ArcGIS Pro data rendering <u>Tutorial:</u> mapping vector data <u>Exercise:</u> data exploration with a mapping tool <u>Term project:</u> prototype/first version |
| 14 | 4/12-4/16 | | ArcGIS Pro project <u>Tutorial:</u> handling geometries using ArcPy <u>Exercise:</u> ArcGIS Pro market share tool <u>Quiz 3</u> |
| 15 | 4/19-4/23 | Project | Term project Project final release Project video presentation Peer review of at least two other projects |



THE OHIO STATE UNIVERSITY

COLLEGE OF ARTS AND SCIENCES

SYLLABUS: GEOG 5223

GIS DESIGN AND IMPLEMENTATION

SPRING 2021

Course overview

Instructor

Instructor: Prof. Ningchuan Xiao

Email address: xiao.37@osu.edu

Phone number: 614-292-4072

Office hours: Monday and Wednesday, 10-11:30 AM or by appointment

Office Location: 1132 Derby Hall

Course description

This course covers topics in developing GIS software tools. There are two main themes of this course. First, we introduce techniques that will help students build custom tools to automate spatial data handling processes, including topics about programming skills, software testing, and verification. The second theme of this course is about agile methods for GIS software development and project management. The course is organized around a set of coding activities, lectures, discussions, and a final project. It is mostly a project-oriented course, where each group of coding exercises will lead to finishing a project using the concepts covered in that workshop, and there is also a group (in-person) or individual (online) final project.

Course learning outcomes

By the end of this course, students should successfully be able to:

- Understand the tasks of GIS customization
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Prerequisites

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Course materials

Required

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Other materials

In addition to the required textbook, we will also use online sources for tool development in QGIS and ArcGIS Pro. Detailed instructions and tutorials will be provided during the semester. There are other readings materials that will be handed out during the class.

Course technology

Necessary software

- [Python](https://python.org): students will install Python 3 and necessary libraries on their own computers and detailed instructions will be provided. You can download Python from <https://python.org>. The privacy policy for Python can be found at <https://www.python.org/privacy/>.
- ArcGIS Pro: OSU students can either install ESRI's software on their own computer or through our lab computers. For instructions of installing ArcGIS Pro, please visit the web page at <https://cura.osu.edu/esri#arcgis-pro>. Please refer to below about how to access our lab computers through Remotelab. This is provided through ESRI's Education Site License Program and you may review ESRI's privacy policies at <https://www.esri.com/en-us/privacy/overview>. For information about accessibility, visit [Accessibility in ArcGIS Pro](#).
- [QGIS](https://qgis.org/en/site/forusers/download.html) is a powerful and fully fledged GIS package. It is free and open-source and is widely used in many enterprise applications. You can download the software from here: <https://qgis.org/en/site/forusers/download.html>. Students can install this on their own computer or use the installations on our lab computers through Remotelab (see below).

Grading and faculty response

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Quizzes. There will be three quizzes throughout the semester.

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Late assignments

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Below 60: E

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Other course policies

Academic integrity policy

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- **Reusing past work:** In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you've explored in previous courses, please discuss the situation with me.

- **Falsifying research or results:** All research you will conduct in this course is intended to be a learning experience; you should never feel tempted to make your results or your library research look more successful than it was.
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Accessibility accommodations for students with disabilities

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| Week | Dates | Topics | Modules |
|------|-----------|---------------------------|---|
| 1 | 1/11-1/15 | Introduction | Software development processes <u>Readings</u> : Ch 1 <u>Exercise</u> : market share analysis, a manual approach |
| 2 | 1/18-1/22 | QGIS plugins | Programming interactivity in QGIS <u>Tutorial</u> : getting started with Python in QGIS <u>Exercise</u> : making a map tool in QGIS |
| 3 | 1/25-1/29 | | Processing and mapping vector data <u>Tutorial</u> : working with vector data <u>Exercise</u> : dynamic mapping vector data |
| 4 | 2/1-2/5 | | QGIS processing algorithms <u>Tutorial</u> : automating GIS processes <u>Exercise</u> : making your own GIS layer cookie cutter |
| 5 | 2/8-2/12 | | QGIS plugins <u>Tutorial</u> : tools and interface design <u>Exercise</u> : developing a QGIS select tool |
| 6 | 2/15-2/19 | | QGIS project <u>Tutorial</u> : calculating areas and other geometries <u>Exercise</u> : QGIS market share tool <u>Quiz 1</u> |
| 7 | 2/22-2/26 | Agile development methods | Agile principles and practices <u>Readings</u> : Ch 2-6 <u>Exercise</u> : pros and cons of agile methods |
| 8 | 3/1-3/5 | | Product vision and roadmap <u>Readings</u> : Ch 7 <u>Term project</u> : project vision statement |
| 9 | 3/8-3/12 | | User stories and planning <u>Readings</u> : Ch 8 <u>Term project</u> : vision statement revision, user stories and planning <u>Quiz 2</u> |

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|----|-----------|------------------------|---|
| | | | |
| 10 | 3/15-3/19 | Spring break | No class |
| 11 | 3/22-3/26 | ArcGIS Pro development | ArcPy: spatial data sets and processing <u>Tutorial</u> : getting started with ArcPy for ArcGIS Pro <u>Exercise</u> : geoprocessing tools <u>Term project</u> : user stories revision |
| 12 | 3/29-4/2 | | ArcGIS Pro custom tools <u>Tutorial</u> : parameters, geoprocessing, and messages <u>Exercise</u> : making user interface for a custom tool |
| 13 | 4/5-4/9 | | ArcGIS Pro data rendering <u>Tutorial</u> : mapping vector data <u>Exercise</u> : data exploration with a mapping tool <u>Term project</u> : prototype/first version |
| 14 | 4/12-4/16 | | ArcGIS Pro project <u>Tutorial</u> : handling geometries using ArcPy <u>Exercise</u> : ArcGIS Pro market share tool <u>Quiz 3</u> |
| 15 | 4/19-4/23 | Project | Term project Project final release Project video presentation Peer review of at least two other projects |

Arts and Sciences Distance Learning Course Component Technical Review Checklist

Course: Geog 5223

Instructor: Ningchuan Xiao

Summary: GIS Design and Implementation

| Standard - Course Technology | Yes | Yes with Revisions | No | Feedback/Recomm. |
|---|-----|--------------------|----|---|
| 6.1 The tools used in the course support the learning objectives and competencies. | X | | | <ul style="list-style-type: none"> Office 365 Carmen Python 3 ARC GIS Pro QGIS |
| 6.2 Course tools promote learner engagement and active learning. | X | | | <ul style="list-style-type: none"> CarmenZoom CarmenWiki Carmen Discussion Boards Remote Lab |
| 6.3 Technologies required in the course are readily obtainable. | X | | | All tools are available via OSU site license free of charge. |
| 6.4 The course technologies are current. | X | | | All are updated regularly. |
| 6.5 Links are provided to privacy policies for all external tools required in the course. | X | | | No external tools are used. |
| Standard - Learner Support | | | | |
| 7.1 The course instructions articulate or link to a clear description of the technical support offered and how to access it. | X | | | Links to 8HELP are provided |
| 7.2 Course instructions articulate or link to the institution's accessibility policies and services. | X | | | a |
| 7.3 Course instructions articulate or link to an explanation of how the institution's academic support services and resources can help learners succeed in the course and how learners can obtain them. | X | | | b |
| 7.4 Course instructions articulate or link to an explanation of how the institution's student services and resources can help learners succeed and how learners can obtain them. | X | | | c |
| Standard – Accessibility and Usability | | | | |
| 8.1 Course navigation facilitates ease of use. | X | | | Recommend using the Carmen Distance Learning "Master Course" template developed by ODEE and available in the Canvas Commons to provide student-users with a consistent user experience in terms of navigation and access to course content. |
| 8.2 Information is provided about the accessibility of all technologies required in the course. | X | | | No 3 rd party tools are used. |
| 8.3 The course provides alternative means of access to course materials in formats that meet the needs of diverse learners. | X | | | Instructions are provided to obtain materials in another format. |
| 8.4 The course design facilitates readability | X | | | |
| 8.5 Course multimedia facilitate ease of use. | X | | | All assignments and activities that use the Carmen LMS with embedded multimedia facilitates ease of use. All other multimedia resources facilitate ease of use by being available through a standard web browser |

Reviewer Information

- Date reviewed: 10/20/20
- Reviewed by: Ian Anderson

Notes: Good to go!

^aThe following statement about disability services (recommended 16 point font):
Students with disabilities (including mental health, chronic or temporary medical conditions) that have been certified by the Office of Student Life Disability Services will be appropriately accommodated and should inform the instructor as soon as possible of their needs. The Office of Student Life Disability Services is located in 098 Baker Hall, 113 W. 12th Avenue; telephone 614- 292-3307, slds@osu.edu; slds.osu.edu.

^bAdd to the syllabus this link with an overview and contact information for the student academic services offered on the OSU main campus.
<http://advising.osu.edu/welcome.shtml>

^cAdd to the syllabus this link with an overview and contact information for student services offered on the OSU main campus. <http://ssc.osu.edu>. Also, consider including this link in the “Other Course Policies” section of the syllabus.