# URP 6270: Introduction to Planning Information Systems

Note: This syllabus is subject to change. Any changes will be communicated in advance.

## Course Description

Introduction/Survey to Planning Information Systems is intended to introduce both undergraduate and graduate students to the concepts, principles, and reality of using Geographic Information Systems (GIS).  It teaches the essential skills of operating a functional GIS mainly using **ArcGIS Pro**.  This powerful technology provides users with a very effective tool for capturing, analyzing, and display of spatial data that is crucial to the planning and decision-making process. The course is both *theoretical* and *practical* (i.e., very hands-on), addressing both the structure of geographic information systems and the use of this tool within planning for spatial analysis and data management. Our applications also address a variety of planning topics such as resilience, sustainability, and accessibility among others.

## Course information

**INSTRUCTOR: Dr. Yan Wang**, Associate Professor, Department of Urban and Regional Planning[1]

**TA:** Ziyi, Guo[2] (PhD Candidate), Department of Urban and Regional Planning

**COURSE COMMUNICATIONS:** All communication with course faculty will take place within **Canvas**, through the **Inbox**.  All emails will be sent and received within Canvas. You should NOT be emailing the course instructor/TA outside of the system. The instructor/TA is also available for a zoom meeting by appointment. Please contact the instructor through the Canvas Inbox to arrange a meeting. For exercises/homework relevant questions, it is recommended you send questions to *both* the instructor and TA (if any).

**CLASS NUMBER (SECTION):** URP 6270

**CLASSROOM:** AH 0439 (a nice conference room on the 4th floor of Antevy Hall, 1480 Inner Road, Gainesville, FL 32611)

**CREDIT HOURS:** 3 Credit Hours

**COURSE MEETING TIMES: Friday** Period 3 - 5 (**9:35 AM - 12:35 PM**) | **8/21/25 - 12/03/25**

**OFFICE HOURS:** 30 minutes following the in-class lectures in AH 0439 (and) Fridays 12:00 PM - 1:00 PM in Student Hub (1st floor of AH) and AH 454.

**COURSE WEBSITE:** All materials are posted on the Canvas e-Learning University of Florida.  The course may be accessed at http:/elearning.ufl.edu/

**INSTRUCTIONAL METHODS**

The concepts and techniques will be covered in lectures (in-class/face-to-face), demo videos (pre-recorded videos and PDFs/virtual), hands-on exercises, and homework assignments. Students will practice the concepts learned in the materials through exercises, homework assignments, quizzes, and a final project. Students will learn the concepts of spatial thinking and problem solving through course materials and then apply and practice those concepts through

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[1] Office location: AH 454; Telephone number: 352-294-3376; Email address: yanw@ufl.edu
[2] Office: student hub (1st floor of Antevy Hall)

exercises, homework and the final project, which utilize ArcGIS Pro software techniques. Office hours/flipped classes will facilitate students' self-learning and answer questions relevant to the course and assignments.

## Materials

**REQUIRED TEXT:** <u>No</u> required text. However, for students that wish for more detailed information or are having trouble with concepts for this course the following resources are recommended:

- GIS Tutorial 1 for ArcGIS Pro (published by Esri)
- Getting to Know ArcGIS Pro (published by Esri)
- Assigned readings from open source book: *Essentials of Geographic Information Systems* (available online)

**PREREQUISITE KNOWLEDGE AND SKILLS:** None (knowledge of basic computer skills, Windows Operating Systems, Excel, etc. is useful, but not required.)

1. **SOFTWARE:** This course will be using **ArcGIS Pro 3.3**. We advise that you download and run ArcGIS Pro on your personal computer. To ensure uniformity and ease of instruction, I recommend that everyone using Version 3.3 for the duration of this semester. Alternatively, you can choose to run ArcGIS Pro via UFApps, however, *performance has been noted to be VERY slow*. Note: While following the Canvas instructions and videos, you might notice some discrepancies between the 3.3 version and Version 2.8. These differences are typically minor and can be addressed easily. We will use Version 3.3 in our in-class demonstrations, aligning our coursework with the most current tools available on UFAPP.**Acquiring Desktop software license for ArcGIS Pro**: Students can acquire the latest version of ArcGIS software and a student license from the GeoPlan Center. Please note it may take up to 24 hours to receive your software license. It is recommended that students install ArcGIS software prior to beginning the class: https://www.geoplan.ufl.edu/software/software.shtml#student
2. **Accessing ArcGIS Pro via UFApps**: The ArcGIS Pro is available on UFApps (http://info.apps.ufl.edu/). UFApps provides access to software applications from any computing device--laptops, tablets, desktops, and smartphones--from any location, at any time. In order to access UFApps and ArcGIS Pro you will need to install *Citrix Receiver* which is available from the UFApps website. If you have to use UFAPP and try to figure out **how to move your file from OneDrive to M/R Drive**, here is the newest instruction I got from UFIT: https://info.apps.ufl.edu/frequently-asked-questions/using-kumo/start-using-kumo/. If you have any other questions with UFAPP, please send them a request or call them during working hours or simply stop by their front desk.
3. **For students who use Mac** you will need to use an alternate method of accessing ArcGIS Pro. If you plan to take more GIS courses in the future or continue using the software, consider whether installing Windows software to your Mac using Boot Camp (free) is a good option. See these articles for more information: Run ArcGIS on Mac or Esri Blog: Pro on Mac. You will need to get Parallels Desktop v18 or later and there may be some limitations. If you choose not to run Boot Camp, another option is UFApps.

## Course Learning Objectives

Upon successful completion of the course, students will be able to:

1. Explain geographic information systems and basic models of digital geographic representation

2. Explain the concept of coordinate systems and map projections and how they affect data representation
3. Apply appropriate spatial functions to match stated problems or objectives
4. Develop methodologies to address geographic problems and evaluate results
5. Utilize cartographic principles to communicate geographic data and analyses through map creation

## Expectations, Evaluation and Grading

### ATTENDANCE POLICY

Students are responsible for satisfying all academic objectives as defined by the instructor. Absences count from the *first* class meeting.

In general, **acceptable reasons** for absence from or failure to participate in class include *illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, and professional conferences), military obligation, severe weather conditions, religious holidays, and participation in official university activities such as music performances, athletic competition or debate. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused.* Other reasons also may be approved.

Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence.

Students cannot participate in classes unless they are registered officially or approved to audit with evidence of having paid audit fees. The Office of the University Registrar provides official class rolls to instructors.

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/.

### *CELL PHONE POLICY*

Distractions are a part of our daily activities, and they often result from electronic technology (e.g., laptops, tablets, cellphones). The challenge is to ensure that they take a proper role in teaching and learning.  Because the ***lecture section of the course is designed to maximize participation***, students should plan to minimize the interference of technology during class.  Students will turn off and put away cellphones and other handhelds, tablets and other devices that are not a direct part of the educational experience. If you are expecting an urgent call, please let your instructor know so that you do not disturb the class when the call comes in.

### QUIZ & EXAM POLICIES

Quizzes and Exams will be given to test students' knowledge of course materials.

### HOMEWORK ASSIGNMENT POLICY

Homework assignments, discussions, and exercises are due on the following **Friday (by 11:59pm)** of each new module week. For example, Module 1 assignments are due the Friday when Module 2 starts. Please refer to the course schedule in Canvas.

### MAKE-UP POLICY

Students shall be permitted a reasonable amount of time to make up the material or activities covered in their absence, if the absence is due to the one of accepted reasons listed in the Attendance Policy.

If you are unable to turn in an assignment on time, please contact me before the due date to discuss your options. **A grade reduction of 5% per day will occur unless there is an acceptable excuse for the late submittal.**

Computer problems that arise during submission will not be accepted as an excuse for late work. In the event that you have technical difficulties with e-Learning, please contact the UF Help Desk. If technical difficulties cause you to miss a due date, you MUST report the problem to Help Desk. Include the ticket number and an explanation of the issue based on consult with Help Desk in an e-mail to the instructor to explain the late assignment/exam. The course faculty reserves the right to accept or decline tickets from the UF Help Desk based on individual circumstances.

**GRADING POLICY**

Grades are determined only by points earned on exams and other assignments given during the semester. There is no opportunity other than what is explicitly stated in this syllabus to earn points, that is, no special assignments nor additional work beyond that given other students.

1. **Class Attendance, Engagement, and Quizzes: 10%**
2. **Homework Assignments: 35%**
3. **Exercises: 25%**
4. **Final Project: 15%**
5. **Final Examination: 15%**

Final grades will be calculated as follows:

| A | A- | B+ | B | B- | C+ | C | C- | D+ | D | D- | E |
|---|----|----|---|----|----|---|----|----|---|----|---|
| 93 or above | 90-92 | 88-89 | 83-87 | 80-82 | 78-79 | 73 - 77 | 70-72 | 68-69 | 58-67 | 55-57 | 55 or below |

For greater detail, see the Grades section of the Graduate Catalog for the University of Florida (Links to an external site.). It also contains the policies and procedures, course descriptions, colleges, departments, and program information for UF.

## Expectations on COVID-19 Relevant Practices

In response to COVID-19, the following practices are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to further the health and safety of ourselves, our neighbors, and our loved ones.

- If you are not vaccinated, get vaccinated. Vaccines are readily available at no cost and have been demonstrated to be safe and effective against the COVID-19 virus. Visit this link for details on where to get your shot, including options that do not require an appointment: https://coronavirus.ufhealth.org/vaccinations/vaccine-availability/. Students who receive the first dose of the vaccine somewhere off-campus and/or outside of Gainesville can still receive their second dose on campus.
- You are welcome to wear approved face coverings at all times during class and within buildings even if you are vaccinated. Please continue to follow healthy habits, including best practices like frequent hand washing. Following these practices is our responsibility as Gators.
  - Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class.
  - Hand sanitizing stations will be located in every classroom.

- If you are sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive, or have tested positive yourself. Visit the UF Health Screen, Test & Protect website for more information.
  - Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work.
  - If you are withheld from campus by the Department of Health through Screen, Test & Protect you are not permitted to use any on-campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.
- Continue to regularly visit coronavirus.UFHealth.org and coronavirus.ufl.edu for up-to-date information about COVID-19 and vaccination.

## UF Policies:

**SPECIAL ACCOMMODATIONS**

Students requesting disability-related academic accommodations must first register with the Disability Resource Center (Links to an external site.).

The Disability Resource Center will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation.

**UNIVERSITY POLICIES**

University policies on such matters as add/drop, incomplete, academic probation, termination of enrollment, reinstatement, and other expectations or procedures can be found in the graduate student handbook (Links to an external site.) and on the Dean of Students website (Links to an external site.).

**UNIVERSITY POLICY ON ACADEMIC MISCONDUCT**

Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code (Links to an external site.).

**STUDENT HONOR CODE**

UF students are bound by The Honor Pledge which states "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "*On my honor, I have neither given nor received unauthorized aid in doing this assignment*." The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. *See the UF Conduct Code website for more information*. If you have any questions or concerns, please consult with the instructor or TA in this class.

**NETIQUETTE: COMMUNICATION COURTESY**

All members of the class are expected to follow rules of common courtesy in all messages, threaded discussions and chats. Course communication should be civilized and respectful to

everyone. The means of communication provided to you through e-Learning (e-mail, discussion posts, course questions, and chats) are at your full disposal to use in a respectful manner. Abuse of this system and its tools through disruptive conduct, harassment, or overall disruption of course activity will not be tolerated. Conduct that is deemed to be in violation with University rules and regulations or the Code of Student Conduct will result in a report to the Dean of Students.

Refer to the following link for more information: https://teach.ufl.edu/wp-content/uploads/2020/04/NetiquetteGuideforOnlineCourses.docx

**COURSE EVALUATION**

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

## Student Support Services

As a student in a distance learning course or program, you have access to the same student support services that on-campus students have. For course content questions contact your instructor.

For any technical issues you encounter with your course please contact the UF computing Help Desk at 342-392-HELP (4357). For Help Desk hours visit: http://helpdesk.ufl.edu (Links to an external site.). For a list of additional student support services links and information please visit: http://www.distance.ufl.edu/student-services (Links to an external site.).

## Weekly Schedule

| Weeks | Dates | Module# and Key Topics |
|---|---|---|
| Week 1 | 22-Aug | **Module 1. Introducing Planning Information System**<br>Intro to GIS concepts and components<br>History of GIS Application in Urban and Regional Planning<br>Commonly used GIS software |
| Week 2 | 29-Aug | **Module 2. ArcGIS Pro Data and Map Basics**<br>Navigate ArcGIS Pro<br>Manage GIS Data for ArcGIS Pro (download/store/import)<br>Making maps basics<br>Two models of GIS: vector and raster |
| Week 3 | 5-Sep | **Module 3. Making and sharing maps**<br>Map types and basic elements of maps<br>Symbology settings |

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|---|---|---|
| | | Create and export a map layout<br>Introduction to ArcGIS Online and story map<br>*In-Class **Quiz 1*** |
| Week 4 | 12-Sep | **Module 4. Exploring geospatial relationships**<br>Understand tabular/attribute data in a spatial dataset<br>Work with **tabular** data<br>Connect Spatial datasets (**Join and Relate**) |
| Week 5 | 19-Sep | **Module 5. Making Selections**<br>Selection tools<br>Select by attributes<br>Select by location |
| Week 6 | 26-Feb | **Module 6. Map Projections**<br>Coordinate system, projections, and datum<br>Add spatial reference<br>Define tool vs. Project tool |
| Week 7 | 3-Oct | **Module 7. Geoprocessing**<br>Workflow of geoprocessing<br>Dissolve \| Clip \| Merge \| Append \| Intersect \| Union \| Buffer |
| Week 8 | 10-Oct | **Module 8. Creating and Editing Spatial Data, and Geocoding**<br>Create and edit geographic features and attributes<br>Create new shapefile or feature class<br>Geocoding descriptive address to create spatial data |
| **Oct 17 Homecoming; No Class**<br>**Work on:**<br>1. Exercises/homework for Module 8 (homework for this module can take longer time!)<br>2. **Quiz 2**: during Oct 20 (M)-Oct 24 (F) (the week following homecoming). | | |
| Week 9 | 24-Oct | **Module 9. Introduction to Raster Data and Analysis**<br>Raster GIS Basics) /<br>Environment settings for Raster analysis<br>Mapping density (heat map)<br>Surface analysis: Contour, Slope |
| Week 10 | 31-Oct | **Module 10. Determining Suitability**<br>Introduction to terrain and digital elevation data |

| | | Understanding suitability analysis<br>Calculating Cell, Neighborhood, and Zonal Statistics<br>Converting Data (vector to raster)<br>Reclassifying Data<br>Using Raster Calculator<br>Suitability analysis process |
|---|---|---|
| Week 11 | 7-Nov | **Final Exam Review**<br>Final exam review: Thorough review and comparison of GIS concepts; Important processing steps review; Final exam logistics<br>Introduce expectations for Final Project |
| Week 12 | 14-Nov | **Module 11. Final Project (flipped learning class):**<br>Identify the steps required to plan, implement, and carry through to completion a successful GIS analysis project. Produce a professional project output including proper symbology, analysis, map elements, and written components<br>Others:<br>1. Keep working on Homework for Module 10<br>2. Preparing for your Final Exam<br>   Module 11 homework due |
| Week 13 | 21-Nov | **Module 12. Final Exam (in Class)**<br>(Note: Our final exam will be an in-class exam from *10:00 -11:30 AM*) |
| **No class on November 28 (Holiday) and December 5th (Reading Day)**<br><br>*Final Project Due* December 7th, 11:59 PM (Available from Nov 7) | | |

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**Disclaimer:** *This syllabus represents our current plans and objectives.  As we go through the semester, those plans may need to change to enhance the class learning opportunity.  Such changes, communicated clearly, are not unusual and should be expected.*

Campus Resources:

**Health and Wellness**

*U Matter, We Care:* If you or someone you know is in distress,  please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.

*Counseling and Wellness Center*: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.

*Student Health Care Center:* Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.

*University Police Department:* Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).

*UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.

*GatorWell Health Promotion Services:* For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-2734450.

**Academic Resources**

E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-3921601. Career assistance and counseling services.

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources. Call 866-281-6309 or email ask@ufl.libanswers.com for more information.

Teaching Center: 1317 Turlington Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

Writing Studio: Daytime (9:30am-3:30pm): 2215 Turlington Hall, 352-846-1138 | Evening (5:00pm-7:00pm): 1545 W University Avenue (Library West, Rm. 339). Help brainstorming, formatting, and writing papers.

Academic Complaints: Office of the Ombuds; Visit the Complaint Portal webpage for more information.

Enrollment Management Complaints (Registrar, Financial Aid, Admissions): View the Student Complaint Procedure webpage for more information.