UP 503 | Physical Planning | Fall 2022
Instructor: Dustin Allred, dallred2@illinois.edu
TA: Ouafa Benkraouda, ouafab2@illinois.edu
Time: M, W, 3:30pm – 4:50pm
Location: M – Temple Buell Hall room 227, W – TBD
Office Hours: Instructor by appointment, TA by appointment – Temple Buell Hall room 224 or Zoom
Prerequisite: Graduate standing in the Department of Urban and Regional Planning or consent of the instructor

Course Description
Urban areas change to keep pace with the shelter, work, recreation, shopping, and travel needs of its inhabitants. In accommodating these human activities, land is consumed through urban development, creating both good and bad outcomes - new housing created where affordability is an issue, but at the expense of degrading environmentally sensitive landscapes. Longstanding trends in the United States show land being consumed by expanding urban areas at an unprecedented rate. For instance, between 1990 and 2000 in the St. Louis metropolitan region, the urbanized area grew by around 50% even though its population grew by less than 1%. This suggests that the physical space our cities occupy is changing and evolving without, or in some cases despite, changes in population.

This consumption of land triggers several questions:
- What do we do on the land?
- How much land do we use?
- What is the type, manner, and intensity of our use of land?
- What are the environmental, economic, and social consequences of land use change?
- How do planners manage the way land is used?

Physical planning – managing the way land is used and reused to support human activities – has been a significant and longstanding part of a professional planner's responsibilities. Physical planning in the United States is typically a function of local government. Physical planners use land-use controls (ordinances and regulations) along with site plan review to shape physical planning decisions.

Course Objectives
This course seeks to prepare you to deal with a variety of complexities that characterize the practice of physical planning through a series of hands-on tasks. Rather than learn about issues at an arm's length, you will engage intensely with information and through this experience learn about the possibilities and limitations in physical planning. These tasks will also introduce you to software tools commonly used to analyze and communicate planning information.

By the end of this course you should:
- Understand contemporary, effective physical planning
- Understand the process of physical planning decisions
- Know how to use Adobe software applications to communicate planning analysis and create professional reports
- Know how to use digital spatial data to create effective maps
Course Format
Course content will be covered in recorded lectures, discussions, labs, and work sessions. The course is organized as a “flipped” classroom model, with recorded lecture materials viewed in advance of in-class discussions. All class meetings will be in-person. Recorded lectures will be posted in advance and should be viewed prior to the Monday class session. In general, Monday sessions will be for activities, unstructured discussions and work sessions that build on the readings and recorded lectures. These sessions are also a chance to ask questions and get help on assignments. Wednesday sessions will be lab sessions. Lab sessions will introduce both software applications and analytical frameworks that will be applied in completing weekly assignments. These sessions will be a hands-on opportunity to become familiar with common software applications used in planning practice. The course brings together some preliminary work and key components all built around planning for physical development at both the regional and site scale. Key topics include:

- Preliminaries
  - Getting familiar with the built environment
  - Map interpretation and making skills
  - Software introductions
- Regional and site scale natural systems analysis
- Socio-economic context and the built environment
- Site engineering analysis
- Site layout and small area plans

All assignments will be worked on individually. While you are encouraged to discuss the work with each other and with the course instructors, the work and material you hand in must be your own.

Deliverables in the course will include several smaller assignments and a larger report. The first half of the course focuses on suitability analysis as a framework for physical planning at the regional or metropolitan scale. The second half of the semester will focus on site scale planning with weekly assignment that builds towards a site plan report. For both sections of the course, intermediate weekly assignments will build on each other; therefore it is crucial that you complete assignments on time, as this work will be useful for synthesizing your report.

Course Materials
There are no required books for this course and all required readings will be made available online via the course Compass site. This course involves considerable computer-based work using Adobe Creative Cloud applications and ArcGIS. You can access these applications in campus computing facilities, both in person and in some cases through remote servers – check the specific computing facility for details. You can also download these applications from the campus WebStore for free:

- Adobe Creative Cloud (includes Illustrator and InDesign): https://webstore.illinois.edu/shop/product.aspx?zpid=4201
- ESRI ArcGIS: https://webstore.illinois.edu/shop/product.aspx?zpid=3873

For more information: https://answers.uillinois.edu/illinois/page.php?id=99109
For remote access to campus computing facilities, here are some step-by-step login instructions:

1. Go to https://go.illinois.edu/remotecomputerlabs
2. Select the UIUC AnyWare tab and click the UIUC AnyWare link
3. Log in with uofi\<netID> and your netID password
4. On the left, select Desktops > All Desktops
5. Select a Lab

For more information: https://answers.uillinois.edu/105054

Additionally, the University of Illinois has contracted with LinkedIn to provide students with access to over 1,200 online courses provided by LinkedIn Learning. These courses provide excellent background and additional depth in some of the software packages you will use to include Adobe Creative Suite and ArcGIS. These video based tutorials are taught by industry experts and available 24/7 for convenient, self-paced learning. Links to specific courses are provided in the modules and the schedule below.

This course also involves considerable writing - but writing of a particular type: brief professional memos. The basics of memo writing will be covered in class but a good resources for the particulars of writing as a key component of communication for planning professionals can be found in the book Writing for Planners : A Handbook for Students and Professionals in Writing, Editing, and Document Production. You can access this book online at the link above through the university library.

Learning Philosophy
This course is designed around the idea of learning by doing. You grasp concepts and develop skills by applying them in a real-world situation rather than only reading about them. You engage your classmates and instructors in conversations about the work. While this is often a more effective way to learn the material covered in this course, you must expect to spend more time working on tasks than you would in a course with only reading and homework assignments.

All of the course material is available on the course Compass site, and it is critical that you read and understand all of this material. This will make classroom time more effective and enhance your experience in the course. Please inform the course instructor if there are any errors or discrepancies on this site.

Course Evaluation
Student evaluation in the class will be based on participation, weekly assignments, and a report assignment. Class participation grades will reflect your command of the assigned readings and contribution to class discussions. Unless noted, attendance during is mandatory, and any unexcused absence will reflect in your participation grade. All other grades will depend on the quality of ideas generated and of the presentation of these ideas, on the effectiveness of responses to comments, and on the timely completion of work. For weekly assignment, late submissions will be penalized one point and subsequently one point for each week that they are further delayed. For reports, late assignments will be graded down one letter grade per day (half a letter grade if turned in after class on due date). If you must miss a class session due to special circumstance such as illness or family emergency, you should notify me via e-mail.
as soon as possible. All assignments should be submitted to Compass on
the due date unless otherwise noted. The course grade earned will be the weighted average of
the following components:

Class participation 10%
Preliminary assignments 10%
Suitability analysis assignments 30%
Site planning and engineering analysis assignments 30%
Site plan report 20%

Transformation of numerical grade to letter grade will be according to the schedule below:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Score Range</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>93-100</td>
</tr>
<tr>
<td>A-</td>
<td>90-92.9</td>
</tr>
<tr>
<td>B+</td>
<td>87-89.9</td>
</tr>
<tr>
<td>B</td>
<td>83-86.9</td>
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<tr>
<td>B-</td>
<td>80-82.9</td>
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<tr>
<td>C</td>
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<tr>
<td>C+</td>
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<tr>
<td>C-</td>
<td>70-72.9</td>
</tr>
<tr>
<td>D+</td>
<td>67-69.9</td>
</tr>
<tr>
<td>D</td>
<td>60-66.9</td>
</tr>
</tbody>
</table>

The general grading rubric for assignments is as follows:

An “A” assignment demonstrates original thought and synthesis of ideas and sophisticated,
cogent analysis. It is clearly written and presented.

A “B” assignment includes above average analysis with appropriate evidence to support ideas.
It is clearly written and presented.

A “C” assignment shows a basic level of understanding, with analysis limited to obvious
arguments. Writing is competent. It is adequate work.

A “D” assignment misunderstands or misrepresents the material or is so poorly written that it
obscures the analysis. It is inadequate work.

**Course Policies**

**Student conduct**: From the University Student Code, Article 1, Part 3: Students enrolling in the
University assume an obligation to conduct themselves in a manner compatible with the
University’s function as an educational institution and suitable to members of the academic
community. Students are responsible for knowing their rights and responsibilities as found in

**Special Circumstances**: Due to the participatory nature of this course, please communicate any
expected or unexpected absences with the instructor as early as possible. Every effort will be
made to work with students with unusual or unexpected obligations outside the course (family
emergencies, health issues, participation in University sanctioned activities, etc.). Students
with disabilities or special needs who require any accommodations to facilitate full participation
and completion of the course should contact the instructor as soon as possible. Please refer to
the Disability Resources and Educational Services at [http://www.disability.illinois.edu/](http://www.disability.illinois.edu/) for
more information.
Safety and Security in the Classroom: Emergencies can happen anywhere and at any time. It is important that we take a minute to prepare for a situation in which our safety or even our lives could depend on our ability to react quickly. When we’re faced with any kind of emergency – like fire, severe weather or if someone is trying to hurt you – we have three options: Run, hide or fight. Please refer to the General Emergency Response Recommendations at https://police.illinois.edu/emergency-preparedness/run-hide-fight/ for more information.

COVID-19 Policies and Expectations: Following University policy, all students are required to engage in appropriate behavior to protect the health and safety of the community. Please refer to the campus COVID-19 website for information. If you feel ill or are unable to come to class or complete class assignments due to issues related to COVID-19, including but not limited to testing positive yourself, feeling ill, caring for a family member with COVID-19, or having unexpected child-care obligations, you should contact the instructor immediately, and you are encouraged to copy your academic advisor.

Course Schedule: Weekly Topics, Readings, Activities & Assignments

**Week 1: 22/24-Aug**

Lecture/Discussion: Course Introduction

Readings:

Lab: Lab Introduction
Assignment: **A1 – Understanding Space: Distance, Area and Density**

**Week 2: 29/31-Aug**

Lecture/Discussion: How Urban Form Changes: Physical Planning, Real Estate Markets, Land-Use and Reuse

Readings:
  - Chapter 3: Developers and Their Partners
  - Chapter 13: Stage Three: The Feasibility Study
  - Intro to lesson 6
  - Lesson 10 to 17
Lesson 19

Supplemental:

Lab: Using Adobe Illustrator

Assignment: A2 – Diagramming with Adobe Illustrator
Due: A1 – Understanding Space: Distance, Area, and Density

Week 3: September 5/7

Lecture/Discussion: Suitability Analysis (Note: No in-person session on Monday because of the holiday)

Reading:

Supplemental:
- Landscape Architecture Notes

Lab: Graphic Representation and Making Planning Maps

Assignment: A3 – Making Maps with GIS and Illustrator
Due: A2 – Diagramming with Adobe Illustrator

Week 4: 12/14-Sep

Lecture/Discussion: Land Features as Constraints and Opportunities

Readings:

Supplemental:

Lab: ArcGIS, Illustrator, and Soils

Assignments: A4a – Slope and Soil Suitability
Due: A3 – Making Maps with GIS and Illustrator

Week 5: 19/21-Sep

Lecture/Discussion: Water as Resource and Threat

Readings:
- Landscape Architecture Notes: Delineating Watersheds

Lab: Water Analysis
Assignment: A4b – Water Suitability
Due: A4a – Slope and Soil Suitability

Week 6: 26/28-Sep
Lecture/Discussion: Green Infrastructure
Readings:

Supplemental:
• Species Habitat Identification handout

Lab: Composite Suitability and Green Infrastructure
Assignment: A4c – Composite Suitability Analysis
Due: A4b – Water Suitability

Week 7: 3/5-Oct
Lecture/Discussion: Context, Surroundings and Physical Planning
Readings:

Lab: Working with Census Data
Assignments:
• A5 – Site Plan Report
• A5a – Socio-Economic Context and Social Suitability Analysis
Due: A4c – Composite Suitability Analysis

Week 8: 10/12-Oct
Work Sessions
**Week 9: 17/19-Oct**

**Lecture/Discussion:** Feasibility Analysis and Real Estate Pro Formas

**Readings:**

**Supplemental:**

**Lab:** Using a Real Estate Pro Forma

**Assignment:** A5b – Real Estate Pro Forma Analysis

**Due:** A5a – Socio-Economic Context and Social Suitability Analysis

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**Week 10: 24/26-Oct**

**Lecture/Discussion:** Site Engineering Analysis – Storm and Wastewater Management

**Readings:**
- County, P. G. (1999). Low-impact development design strategies: An integrated design approach. *Department of Environmental Resources, Programs and Planning Division, Prince George's County, Maryland.* (skim)

**Supplemental:**

**Lab:** Site Engineering Analysis – Storm and Wastewater Management

**Assignment:** A5c – Site Engineering Analysis – Stormwater and Wastewater Management

**Due:** A5b – Real Estate Pro Forma Analysis

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**Week 11: 31-Oct/2-Nov**

**Lecture/Discussion:** Site Layout and Urban Design

**Readings:**
• Watch: Let's Bake a Master Plan webinar from APA-IL (register for free access).

Supplemental:
• Metrics for Planning Healthy Communities [https://www.planning.org/publications/document/9127204/]
• The Citizen's Guide to Urban Design
• Portland Urban Design Framework
• Typical Elements of a Form-Based Code

Lab: Urban Design Paradigms
Assignment: A5d – Urban Design Paradigms

Due: A5c – Site Engineering Analysis – Stormwater and Wastewater Management

Week 12: 7/9-Nov
Work Sessions

Week 13: 14/16-Nov
Lecture/Discussion: Site Engineering Analysis – Streets, Traffic, & Grading
Readings:
  o Chapter 8: Introduction to Transportation Planning
  o Chapter 9: Street Capacity
  o Chapter 11: Parking
Intro to lesson 5
Lesson 9 & 13
Whatever else looks interesting!

Supplemental:

**Lab**: Streets and Traffic

**Assignment**: A5e – Site Engineering Analysis – Street Layout, and Traffic

**Due**: A5d – Urban Design Paradigms

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**Week 14: 21/23-Nov**

Fall Break

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**Week 15: 28/30-Nov**

Lecture/Discussion: Small Area Plans

**Readings**:

**Lab**: Using SketchUp

**Assignment**: A5 – Site Plan Report

**Due**: A5e – Site Engineering Analysis – Street Layout and Traffic

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**Week 16: 5/7-Dec**

Lecture/Discussion: Course Wrap-up and Work Session

**Peer Review of Draft Site Plan Map**

**Due Dec 11th** (Sunday): A5 – Site Plan Report