

## SUST301

# Sustainable Built Environment

### *General Information*

Class meets: 2:30-3:45pm, Tuesday, Thursday  
Room: CO123  
Semester Hours/Credits: 3

### *Instructor Information*

#### **Sumei Zhang**

Office hours: Tuesdays, Thursdays 1:30pm-2:30pm or by appointment  
Email: [sumeizhang@louisville.edu](mailto:sumeizhang@louisville.edu)

#### **Maryam (Marie) Entezam**

Email: [maryam.entezam@louisville.edu](mailto:maryam.entezam@louisville.edu)

Please feel free to email me at any time. We will respond to email within 24 hours in most cases, 48 hours on weekends or holidays. If you do not receive a response within that time period, please reach out again.

### *Course Overview:*

This course introduces the fundamental elements of a built environment, and explore how modern urban practices promote or hurt the sustainability of the environment we are living in. This course addresses a variety of topics, including basic physical elements of cities, various city management tools, and social and political issues related sustainable environment. A wide variety of sub-fields of cities, which are directly related to sustainability, will be explored, including transportation, housing, environmental planning, urban design, and sustainable urban growth.

### *Desired Learning Outcomes:*

By the end of the course, students are expected to be able to:

- (1) Understand the general concept and dimensions of built environment and the meaning of sustainable built environment.
- (2) Apply theoretical models and methods to analyze a diversified set of urban issues, including economy, environment, and equity.
- (3) Distinguish objectives and issues specific to selected urban sub-fields that directly promote sustainability.
- (4) Critically analyze the roles of our current land-use regulatory system and planning practice on urban sustainability.
- (5) Apply the Prism Sustainability Model to analyze specific urban issues and make policy recommendations to promote more sustainable cities.
- (6) Think, write, and talk critically about different aspects of urban sustainability.
- (7) Present information effectively to educate the public about sustainability and engage in effective communication with the public for the purpose of promoting sustainability.

***Course Format:***

This class is essentially designed to be a combination of lecture/group discussion/debate with substantial reading requirements. You are expected to attend class and contribute to discussions.

***Course Texts:***

Yin, Jordan. *Urban Planning for Dummies*. Wiley. 2012.

***Required Assignments:***

The evaluation is based on two papers, one debate, one exam, and class participation. Grades will be calculated with the following weights:

Weekly Reflection Tests (13)	35 points
Debate Assignment	20 points
Exams (2)	30 points
In class participation	15 points

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Total possible points	100 points
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Grading will be on a straight point system (i.e., no curve):

A+ = 98-100%	A = 94-97%	A- = 90-93%	B+ = 88-89%
B = 84-87%	B- = 80-83%	C+ = 78-79%	C = 74-77%
C- = 70-73%	D+ = 68-69%	D = 64-67%	D- = 60-63%

F = below 60%

### Weekly Reflection Tests

A weekly reflection test will be assigned within the Blackboard as an online test on a Thursday. It is due at 11:59pm on the upcoming Sunday. Before you take a test, please review what you have learned in the corresponding week. These tests not only provide you opportunities to assess your learning progress, but also prepare you for the two exams. Most questions of the two exams will be from the weekly reflection tests.

### Debate Assignment

There are ten debate topics. Every four students form a debate group, with two students arguing for the topic and the other two arguing against the topic. I will provide your more information about the format of a debate, the expectation, and the grading rubrics.

Every student must complete one debate assignment. Please review the debate topics, which are listed in the following. If you are interested in a topic, please let me know as early as possible. These debate topics will be first assigned on a voluntary basis. First come, first serve. If you cannot decide, I will assign you the topic.

Debate 1: Louisville should adopt strict environmental policies to curb any growth to achieve sustainability for the city. (Week 2)

Debate 2: Large lot single use single-family housing development hurts sustainability. (Week 4)

Debate 3: The Old Louisville presents a better community form than Suburban Communities. (Week 5)

Debate 4: The transportation system serves all people in Louisville and provides the same level of mobility to both west end and east end neighborhoods. (Week 6)

Debate 5: The Parklands of Floyds Fork parks are more sustainable than the Olmsted parks. (Week 7)

Debate 6: Louisville should bring the sewage system to the Parklands. (Week 9)

Debate 7: Gentrification hurts the sustainability of a city. (Week 11)

Debate 8: Louisville has a vivid and healthy economy in the east end. The east end growth presents an example of sustainability economic growth. (Week 12)

Debate 9: Louisville's flood mitigation efforts after the great 1937 flood present a

good example of creating a resilient cities. (Week 14)

Debate 10: Louisville should adopt an urban growth boundary (as shown in the map). (Week 13)

### Exams

There will be two exams. Currently both exams are scheduled as in-class exams. However, these exams can be converted as online exams. Regardless of the format, you have 75 minutes for completing the exam.

### In-class participations

Your in-class participation will be graded weekly. The following are examples of in-class participation:

- Raise questions or participate in the discussion during a lecture;
- Participate in Quizzizz activities;
- Do in-class exercises;
- Participate in in-class debates.

### ***About the COVID***

We will follow CDC and university guidelines. All university members are required to mask in public, indoor spaces, regardless of vaccination status. If you have any COVID symptoms, please **notify me by emailing** and stay at home.

### ***How This Course Fulfills University Cardinal Core Requirements:***

#### Cardinal Core Social & Behavioral (SB) Science Student Outcomes

Social and behavioral sciences are concerned with understanding human behavior, human interactions, human environment, and the related social structures and forms. This course fulfills a General Education requirement in social and behavioral sciences. Students who satisfy this requirement will **demonstrate** that they are able to do all of the following:

1. Apply knowledge and theories and analyze evidence via qualitative and/or quantitative research methods that are utilized in the field.

Students are able to apply the Prism Sustainability Model to analyze specific urban issues and make policy recommendations to promote more sustainable cities. There is a group project assignment. Every project topic is related to an aspect of sustainability of cities. All these project topics focus on Louisville, and cover such issues as transportation,

neighborhood style, infrastructure, downtown revitalization, equity, economic development, environmental issues, and so on. These projects provide real-world scenarios for students to apply what they have learned to assess the impacts of the specific issue on the sustainability status of Louisville.

2. Identify how different fields of inquiry conceptualize diversity and the dynamics of social inequalities.

Students are able to distinguish objectives and issues related to selected urban sub-fields that directly promote sustainability. The Prism Sustainability Model is a tripod model, involving environment, equity, and economy. Social equity will be one of the themes throughout the learning process.

The assessments of students' understanding of social equity are made through in class discussions. There are in-class discussions for every class session. These discussions will be based on real-world scenarios. For instance, students will conduct a land-use inventory analysis for the University of Louisville campus. There will be discussions about whether the current land-use activity pattern promotes social equity on campus.

3. Use critical thinking and reasoning skills such as making inferences, evaluating assumptions, and assessing limitations of knowledge claims.

One goal of the course will be to practice and develop our critical thinking skills. Students are encouraged to critically analyze the roles of our current land-use regulatory system and planning practice on urban sustainability. Assessment of students' critical thoughts is made through weekly journal. In the end of every week, students need to write a journal to summarize what they have learned throughout the week. They are also expected to link the knowledge to urban phenomenon and to criticize the strength and limitations of different theories.

4. Communicate effectively in speech and writing, while respecting others' contributions, through proper citation appropriate to the discipline.

Students are expected to present information effectively to educate the public about sustainability. The assessment is made through the final project presentation and weekly journal. For the project oral presentation, students will give a speech to the whole class. I will give them feedbacks about their gestures, voices, presentation speed and so on. Weekly journal assignments offer students opportunities to improve their writing skills.

### U.S. Diversity (D1)

Students who satisfy this requirement will demonstrate that they are able to do all of the following:

1. Identify how historical, social, and cultural structures and processes shape

understandings of race, class, and gender and/or their interaction with other social demographics in the U.S.

Students are expected to understand the general concept and dimensions of built environment, and the meaning of sustainable built environment. The sustainability of a built environment relies on its ability in dealing with a diversified set of issues, which include race, class, and gender interactions.

Students will explore the concept of urban sustainability from historical viewpoint. They will understand how social, economic, environmental, and cultural events nurtured our current understanding of sustainability.

2. Identify, interpret, and evaluate evidence from different social locations and from multiple points of view.

Students are expected to apply the Prism Sustainability Model to analyze specific urban issues and make policy recommendations to promote more sustainable cities. The outcome will be assessed based on students' debate assignments. Many of the debate topics focus on Louisville. They evaluate the status of sustainability at different locations, for different community patterns, and for different people. For instance, the "Old Louisville versus Suburban Communities" debate offers students an opportunity to explore the relation between different community patterns and sustainability from different perspectives.

### ***University Policies***

Title IX/Clery Act Notification. Sexual misconduct (including sexual harassment, sexual assault, and any other nonconsensual behavior of a sexual nature) and sex discrimination violate University policies. Students experiencing such behavior may obtain confidential support from the PEACC Program (852- 2663), Counseling Center (852-6585), and Campus Health Services (852-6479). To report sexual misconduct or sex discrimination, contact the Dean of Students (852-5787) or University of Louisville Police (852-6111).

Disclosure to University faculty or instructors of sexual misconduct, domestic violence, dating violence, or sex discrimination occurring on campus, in a University-sponsored program, or involving a campus visitor or University student or employee (whether current or former) is not confidential under Title IX. Faculty and instructors must forward such reports, including names and circumstances, to the University's Title IX officer. For more information, see the Sexual Misconduct Resource Guide (<http://louisville.edu/hr/employeerelations/sexual-misconduct-brochure>).

Disability Resource Center. University of Louisville is committed to equal opportunity for all academically qualified students and does not discriminate based on disability. The mission of the Disability Resource Center (DRC) is to coordinate services that ensure individuals with disabilities have equal access to take full advantage of the University's educational, social, and cultural opportunities. Students with disabilities, who need

reasonable modifications to complete assignments successfully and otherwise satisfy course criteria, must contact the instructor as soon as possible to identify and plan specific accommodations. Any identified modification(s) deemed necessary must be documented in writing by the Disability Resource Center. For more information, please visit <http://louisville.edu/disability/> OR Disability Resource Center, Belknap Campus, Stevenson Hall, Louisville, KY 40292; (502) 852-6938, (502) 852-0924 fax.

Religious Holidays and Observances. Federal law and university policy prohibit discrimination on the basis of religious belief. It is the policy of the University of Louisville to accommodate students, faculty, and staff who observe religious work-restricted holy days. Students who observe work-restricted religious holy days must be allowed to do so without jeopardizing their academic standing in any course. Faculty are obliged to accommodate students' request(s) for adjustments in course work on the grounds of religious observance, provided that the student(s) make such request(s) in writing during the first two (2) weeks of term.

Student Rights and Responsibilities. The University Code of Student Rights and Responsibilities establishes rights to which you are entitled and the responsibilities that you must assume. Along with preparing for and attending class, you are responsible for promoting high academic standards. High academic standards will not allow us to tolerate cheating, plagiarism, disruption of class, or other inappropriate behavior. For more information, please check <https://louisville.edu/dos/students/studentrightsandresponsibilities>.

## Tentative Schedule

### Week 1 (Jan. 11, 13)

- Introduction of the course;
- The concepts of Built Environment;

#### Readings:

- Yin, Chapter 2
- Bartuska, Tom J. 2007. The built environment: Definition and scope. The built environment: A collaborative inquiry into design and planning, 3.

Weekly reflection test 1 due at *11:59pm on Jan 16* (Sunday).

### Week 2 (Jan. 18, 20)

- The Meaning of Sustainability for Cities;

#### Readings:

- Yin, Chapter 11
- Top 10 Myths about Sustainability.  
<https://www.scientificamerican.com/article/top-10-myths-about-sustainability/>
- Kidd, C.V. The Evolution of Sustainability. 1992. Journal of Agricultural and Environmental Ethics 5: 1-26.
- Report of the World Commission on Environment and Development: Our Common Future (the Brundtland Report).  
<https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>
- Green cities, growing cities, just cities. Journal of the American Planning Association, (62), 3.
- America's First Greenbelt May Be in Jeopardy.  
<https://www.bloomberg.com/news/articles/2019-05-16/lexington-debates-the-future-of-its-greenbelt>
- Zipperer, W. C., Northrop, R., & Andreu, M. (2020). Urban Development and Environmental Degradation. In Oxford Research Encyclopedia of Environmental Science.

Weekly reflection test 2 due at *11:59pm on Jan 23* (Sunday).

Debate 1: Louisville should adopt strict environmental policies to curb any



growth to achieve sustainability for the city.

### **Week 3 (Jan. 25, 27)**

- The Land Use Element;

Readings:

- Yin, Chapter 5
- Kivell, Philip. Land and the City. Rutledge 1993. Chapters 1.

Weekly reflection test 3 due at *11:59pm on Jan 30* (Sunday).

In class exercise: Campus land use inventory analysis.

### **Topic 4-- Feb 1 (Tuesday), Feb. 8 (Tuesday)**

- Housing;

Readings:

- Yin, Chapter 6
- Després, C. (1991). The meaning of home: Literature review and directions for future research and theoretical development. Journal of architectural and Planning Research, 96-115. Pages 96-102.
- Power, A. (2010). Housing and sustainability: demolition or refurbishment?. Proceedings of the Institution of Civil Engineers-Urban Design and Planning, 163(4), 205-216. Section 5, on pages 211-214.

Debate readings

- Power, A. (2010). Housing and sustainability: demolition or refurbishment?. Proceedings of the Institution of Civil Engineers-Urban Design and Planning, 163(4), 205-216.
- Checkoway, B. (2017). Large builders, federal housing programmes, and postwar suburbanization. In Readings in Urban Analysis (pp. 173-196). Routledge.
- Després, C. (1991). The meaning of home: Literature review and directions for future research and theoretical development. Journal of architectural and Planning Research, 96-115.
- Wegmann, J. (2020). Death to single-family zoning... and new life to the missing middle. Journal of the American Planning Association, 86(1), 113-119.

- 9 Benefits of Living in the Suburbs. <https://squarecowmovers.com/9-benefits-of-living-in-the-suburbs/>

Weekly reflection test 4 due at *11:59pm on Feb. 9 (Wednesday)*.

Debate 2: Large lot single use single-family housing development hurts sustainability. *(Feb. 8)*

**Topic 5-- Feb 10 (Thursday), Feb. 15 (Tuesday) -- Marie**

- Community;

Readings:

- Yin, Chapter 8
- Forrest, R., & Kearns, A. (2001). Social cohesion, social capital and the neighbourhood. *Urban studies*, 38(12), 2125-2143.

Weekly reflection test 5 due at *11:59pm on Feb. 16 (Wednesday)*.

Debate Readings:

- Jackson, L. E. (2003). The relationship of urban design to human health and condition. *Landscape and urban planning*, 64(4), 191-200.
- Charmes, E. (2010). Cul-de-sacs, superblocks and environmental areas as supports of residential territorialization. *Journal of Urban Design*, 15(3), 357-374.
- Cozens, P., & Hillier, D. (2008). The shape of things to come: New urbanism, the grid and the cul-de-sac. *International Planning Studies*, 13(1), 51-73.
- Ellis, C. (2002). The new urbanism: Critiques and rebuttals. *Journal of Urban Design*, 7(3), 261-291.
- Forrest, R., & Kearns, A. (2001). Social cohesion, social capital and the neighbourhood. *Urban studies*, 38(12), 2125-2143.

Debate 3: The Old Louisville presents a better community form than Suburban Communities. *(expected on Feb. 15)*

**Topic 6-- Feb 17 (Thursday), Feb. 22 (Tuesday)**

- Transportation;

Readings:

- Yin, Chapter 7

Renne, J. L. (2009). From transit-adjacent to transit-oriented development. *Local Environment*, 14(1), 1-15.

Weekly reflection test 6 due at *11:59pm on Feb. 23 (Wednesday)*.

Debate 4: The transportation system serves all people in Louisville and provides the same level of mobility to both west end and east end neighborhoods.

### **Topic 7-- Feb 24 (Thursday), March 1 (Tuesday) Marie**

- Open Space;

Readings:

- Yin, Chapter 9
- Eisenman, T. S. (2013). Frederick Law Olmsted, green infrastructure, and the evolving city. *Journal of Planning History*, 12(4), 287-311.

Weekly reflection test 7 due at *11:59pm on March 6 (Sunday)*.

Debate 5: The Parklands of Floyds Fork parks are more sustainable than the Olmsted parks.

### **March 3**

- Mid-term;

### **Topic 8 (Mar. 8, 10)**

- Infrastructure;

Readings:

- Yin, Chapter 10
- Doyle, M. W., & Havlick, D. G. (2009). Infrastructure and the environment. *Annual Review of Environment and Resources*, 34, 349-373.

Weekly reflection test 8 due at *11:59pm on Mar. 20 (Sunday)*.

Debate 6: Louisville should bring the sewage system to the Parklands.

## March 15. 17

- Spring Break

## Topic 9 (Mar. 22, 24) (Marie)

- Urban Revitalization

### Readings:

- Yin, Chapter 12
- Atkinson, R. (2004). The evidence on the impact of gentrification: new lessons for the urban renaissance?. *European Journal of Housing Policy*, 4(1), 107-131.

Weekly reflection test 9 due at *11:59pm on Mar. 27 (Sunday)*.

Debate 7: Gentrification hurts the sustainability of a city.

## Topic 10 (Mar. 29, 31)

- Economic Growth

### Readings:

- Yin, Chapter 15
- Chouinard, Y., Ellison, J., & Ridgeway, R. (2011). The sustainable economy. *Harvard Business review*, 89(10), 52-62.

Weekly reflection test 10 due at *11:59pm on April 3 (Sunday)*.

Debate 8: Louisville has a vivid and healthy economy in the east end. The east end growth presents an example of sustainability economic growth.

## Topic10 (Apr. 5, 7) (Marie)

- Growth Management

### Readings:

- Yin, Chapter 13
- Pendall, R., Martin, J., & Fulton, W. B. (2002). Holding the line: urban

containment in the United States. Center on Urban and Metropolitan Policy, the Brookings Institution.

- Ciscel, D. H. (2001). The economics of urban sprawl: Inefficiency as a core feature of metropolitan growth. *Journal of Economic issues*, 35(2), 405-413.

Weekly reflection test 11 due at *11:59pm on April 10 (Sunday)*.

Debate 10: Louisville should adopt a urban growth boundary (as shown in the map).

### **Topic 12** (Apr. 12, 14)

- Planning for Disaster

Readings:

- Yin, Chapter 14
- Godschalk, D. R. (2003). Urban hazard mitigation: creating resilient cities. *Natural hazards review*, 4(3), 136-143.

Weekly reflection test 12 due at *11:59pm on April 17 (Sunday)*.

Debate 9: Louisville's flood mitigation efforts after the great 1937 flood present a good example of creating a resilient cities.

### **Topic 13** (Apr. 19, 21)

- Sustainability Revisited

Readings:

- Report of the World Commission on Environment and Development: Our Common Future.  
<https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>
- Downs, A. (2005). Smart growth: Why we discuss it more than we do it. *Journal of the American Planning Association*, 71(4), 367-378.

Weekly reflection test 13 due at *11:59pm on April 24 (Sunday)*.

Final Exam: Fri., April 29, 11:30AM - 2:00PM