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| Ecological Issues in Sustainability & the Built Environment  DCP 6205 - 3 Credit Hours  Online Course  Wednesdays at 6:00pm  E-Learning Course website can be found at: http://elearning.ufl.edu/    Instructors  Prof. Michael Volk ( [mikevolk@ufl.edu](mailto:mikevolk@ufl.edu))  Dr. Ruth Steiner ( [rsteiner@dcp.ufl.edu](mailto:rsteiner@dcp.ufl.edu) ) | IMG_5004.jpg  Rural road near the University of Florida |

Course Description

This is the second part of a two-part course. The goal of the first course (fall semester) was to learn about 1) landscape ecology and conservation principles, as they relate to understanding the broader functions of natural systems, landscapes, and potential impacts from human activities, and 2) identifying and analyzing the natural and human characteristics of a site, and identifying opportunities and constraints for land use and development to mitigate human impacts. These topics form a critical foundation for sustainable site planning and design choices that incorporate an understanding of ecosystem processes and suitability.

In this second course (spring semester), the direct and indirect impacts of the built environment on terrestrial and aquatic ecosystems and landscapes are examined in more detail. Cutting edge approaches to planning, design, governance, and management that can be used to reduce negative impacts from human activities and restore ecological health at the regional, metropolitan, neighborhood, and site scales are also presented.

Course Purpose

To engage in sustainable design, individuals must understand the complex relationships between human activities and the natural environment, resulting impacts, and methods for making sustainable land use decisions. This course serves as an introduction to the many facets of this complex reality.

Learning Objectives

By the end of the fall and spring courses students will:

* Be familiar with principles of healthy ecosystems and the benefits they provide people.
* Recognize the types and mechanisms of direct and indirect impacts of the built environment on terrestrial and aquatic ecosystems. (Direct impacts are those occurring due to land and water use.)
* Understand how to analyze a site or region to identify ecologically and socially compatible development strategies.
* Become familiar with development, governance, and management practices from site to regional scales that protect and enhance ecosystems.

Course Structure

This course contains three modules outlined below. The Canvas course site will contain all course materials and grades. Content delivery and faculty interaction with students will occur through real-time technology-enabled discussion sessions. Instructors will present course topics in three modules (see schedule below). Each module will have a reading list and 1-2 learning assessments. The assessment for each module will be due approximately one week following completion of the module. See the Canvas Assignments page for individual assessment due dates.

Textbook and Readings

The required textbook is:

* *Environmental Land Use Planning and Management*, John Randolph, Island Press, 2012.
* Other required readings will be provided via the Canvas course site as needed.

**Course Policies**

Attendance

Students are required to participate in all live lecture and discussion sessions, unless prior approval is obtained from instructors.

Assignments

Students are expected to complete all assignments by the posted due dates. If no prior arrangement is made with an instructor for a late submittal, each assignment will be reduced by a letter grade for each 24-hour period it is late. 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/ugrad/current/regulations/info/attendance.aspx>

Communication

*Class will be held via online Zoom session (no in-person session).* In addition to the weekly discussion sessions, you can post questions and comments to each individual instructor or to the class via the Canvas message system (go to the “Inbox” link on the top right corner of the screen), or by directly emailing any of the course instructors.

Office Hours for Instructors

Instructors are available via email throughout the span of the course, and should a Zoom or telephone conversation be needed these can be arranged by contacting the instructors via email.

#### Grading Policies

The weighting of module assessment grades to determine the final grade is:

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| **Module 1:** Course Introduction, Ecological Considerations & Urban Form, Adaptive Ecosystem Management, & Regional Governance | Assignment 1 | 25% |
| **Module 2:** Neighborhood and Site Design | Assignment 2 | 25% |
|  | Assignment 3 | 25% |
| **Module 3:** Case Studies | Assignment 4 | 25% |

Grades will be based on assignment submissions, evidence that you have viewed the on-line presentations, done the assigned reading, participated in discussion sessions, and worked to understand and synthesize the material. We expect that all students should be able to accomplish a “B” grade, but will mark lower when a student does not show adequate understanding. “A” grades require exceptional quality, depth, synthesis of ideas, or creativity. Final letter grades will convert from numeric grade as follows:

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| Grade |  | Grade Points |
| A | >92.5 | 4.0 |
| A- | 90.0 -92.4 | 3.67 |
| B+ | 87.5-89.9 | 3.33 |
| B | 82.5-87.4 | 3.0 |
| B- | 80.0-82.4 | 2.67 |
| C+ | 77.5-79.9 | 2.33 |
| C | 72.5-77.4 | 2.0 |
| C- | 70.0-72.4 | 1.67 |
| D+ | 67.5-69.9 | 1.33 |
| D | 62.5-67.4 | 1.0 |
| D- | 60.0-62.4 | 0.67 |
| E | <60.0 | 0.0 |

**UF Policies**

University Policy on Accommodating Students with Disabilities: Students requesting accommodation for disabilities must first register with the Dean of Students Office (<http://www.dso.ufl.edu/drc/>). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

Academic Honesty: 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 Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Communication Courtesy: All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats.<http://teach.ufl.edu/docs/NetiquetteGuideforOnlineCourses.pdf>

Course Evaluations: 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://bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/publicresults/>.

**Getting Help**

For issues with technical difficulties for E-learning in Canvas, please contact the UF Help Desk at:

[Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)

(352) 392-HELP - select option 2

<https://lss.at.ufl.edu/help.shtml>

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at <http://www.distance.ufl.edu/getting-help> for:

* Counseling and Wellness resources
* Disability resources
* Resources for handling student concerns and complaints
* Library Help Desk support

Should you have any complaints with your experience in this course please visit <http://www.distance.ufl.edu/student-complaints> to submit a complaint.

**Schedule**

**Module 1: Course Introduction, Ecological Considerations & Urban Form, Adaptive Ecosystem Management, and Regional Governance**

| **DATES** | **TOPIC** | **READINGS/ASSIGNMENT** | |
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| Week 1  Jan 29 –  Feb 4 | Key lessons from Eco Aspects I (Volk)  Topics to be covered in Eco Aspects II (Volk & Steiner) | * No assigned readings | |
| Land use planning for sustainability  Direct, indirect and cumulative environmental impacts (Steiner) | * *Environmental Land Use Planning and Management* Chapter 1: Environmental Management for Sustainability pp 6 – 10 * Chapter 2: Skim * Chapter 3: C*omprehensive and Strategic Land Use Planning for Sustainability* * Center for Environmental Excellence and American Association of State Highway Transportation Officials (AASHT0) (2016, August). Assessing Indirect Effects and Cumulative Impacts under NEPA <https://wsdot.wa.gov/sites/default/files/2021-10/ENV-NSEPA_AASHTOCummHndbk.pdf>. | |
| Week 2  Feb 5 –  Feb 11 | **Regional Systems** | | |
| Review of natural systems & their interaction with land use decision making (Volk) | | * *Environmental Land Use Planning and Management* Chapter 15: Land Conservation for Sustainability |
| Review of watersheds, landscapes, and suitability  (Volk) | | * *Environmental Land Use Planning and Management* Chapter 7: Water and Land Use: Stream Flow, Flooding and Runoff Pollution |
|  | Science and management objectives for landscapes (Volk) | | * *Environmental Land Use Planning and Management* Chapter 14: Integration Methods and Synthesis Metrics * *Environmental Land Use Planning and Management* Chapter 19: Integrative Management of Ecosystems and Watersheds * Adaptive co-management for social-ecological complexity, *Frontiers in Ecology and the Environment*, Armitage et al. 2009 |
| Due Feb 13 | ASSIGNMENT 1 | | See assignment brief on Canvas |
| Week 3  Feb 12 – 18 | Land use decision making in different forms of governmental organization (US federal, state, local, Western Europe, Singapore, China), Private property rights (Steiner) | | * *Environmental Land Use Planning and Management* Chapter 18: Regional, State, and Federal Management of Growth and the Environment |
|  | Coordination of land use change, infrastructure design and development (Steiner) | | * Steiner, R. and A. Fischman. (2012). “Does Land Use And Transportation Coordination Really Make A Difference In Creating Livable Communities?” Chapter 12 in F. Wagner, R. Caves and E. Noll (eds.), Community Livability: Issues and Approaches to Sustaining the Well-Being of People and Communities, New York: Routledge Press. (on Canvas) |
|  | Local and Regional Governance & Stakeholder involvement and capacity building (Steiner) | | * *Environmental Land Use Planning and Management* Chapter 4: Collaborative Environmental Planning and Learning for Sustainability |
|  | Public realm: Transportation systems and open space  Landscape Urbanism  Ecological Urbanism (Steiner) | | * Barth, D. (2016). High Performance Public Spaces© – a Tool for Building Great Communities, FRPA Journal. Retrieved from: <http://www.barthassoc.com/wp-content/uploads/2017/01/Barth-HPPS-Article-3_16.pdf>. * MacDonald, E. (2006) Building a Boulevard.  *Access Magazine 28: 2-9.* Retrieved from: <http://www.accessmagazine.org/wp-content/uploads/sites/7/2016/07/Access-28-02-Building-a-Boulevard.pdf>. * Gray, C. (2011, Fall). Landscape urbanism: Definition and trajectory. *Scenario Journal.* Retrieved from: <https://scenariojournal.com/article/landscape-urbanism/> * Gintoff, V.. (2016, April 6)12 Projects that Explain Landscape Urbanism and How It's Changing the Face of Cities. *ArchDaily.* Retrieved from <https://www.archdaily.com/784842/12-projects-that-show-how-landscape-urbanism-is-changing-the-face-of-cities/> * Sharifi, A., & Khavarian-Garmsir, A. R. (2020). The COVID-19 pandemic: Impacts on cities and major lessons for urban planning, design, and management. Science of the Total Environment, 749, 142391. https://doi.org/10.1016/j.scitotenv.2020.142391 * Honey-Rosés, J., Anguelovski, I., Chireh, V. K., Daher, C., Konijnendijk van den Bosch, C., Litt, J. S., ... & Nieuwenhuijsen, M. J. (2021). The impact of COVID-19 on public space: an early review of the emerging questions–design, perceptions and inequities. Cities & health, 5(sup1), S263-S279. <https://doi.org/10.1080/23748834.2020.1780074> * Eltarabily, S., & Elghezanwy, D. (2020). Post-pandemic cities-the impact of COVID-19 on cities and urban design. Architecture Research, 10(3), 75-84. DOI: 10.5923/j.arch.20201003.02 |

**Module 2: Neighborhood and Site Design**

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| Week 4  February  26-Mar 4 | **Urban Systems/ Neighborhood Design** | |
| Smart growth/new urbanism/traditional neighborhood development  Redevelopment, infill, & adaptive reuse (Steiner) | * *Environmental Land Use Planning and Management* Chapter 16: Design with Nature for People: Sustainable, Livable, and Smart Growth Communities * *Environmental Land Use Planning and Management* Chapter 17: Community Smart Growth Management * Congress of the New Urbanism. Charter. <http://www.cnu.org/charter> * United States Environmental Protection Agency (USEPA) (n. d.) About Smart Growth. Retrieved on March 11, 2019 from: [https://www.epa.gov/smartgrowth/about-smart-growth](https://urldefense.proofpoint.com/v2/url?u=https-3A__www.epa.gov_smartgrowth_about-2Dsmart-2Dgrowth&d=DwMFaQ&c=sJ6xIWYx-zLMB3EPkvcnVg&r=qUvOjLQTguVJGD_aL354Mg&m=R1-5fPg6SNpK-OzuNjt_9Tc8aheubuJBnL1EmRxQhkE&s=v9AJlSw-du7sDZkRPaq4mYyamFiP7fjclfTjcwOxmi8&e=) * Smart Growth America. (n. d.)  National Complete Streets Coalition.  Retrieved on March 11, 2019 from: [https://smartgrowthamerica.org/program/national-complete-streets-coalition/](https://urldefense.proofpoint.com/v2/url?u=https-3A__smartgrowthamerica.org_program_national-2Dcomplete-2Dstreets-2Dcoalition_&d=DwMFaQ&c=sJ6xIWYx-zLMB3EPkvcnVg&r=qUvOjLQTguVJGD_aL354Mg&m=R1-5fPg6SNpK-OzuNjt_9Tc8aheubuJBnL1EmRxQhkE&s=2NFEhTKqb3i781-aynL51m4_sKAFw-QD7RerHUfISLI&e=) (also check out the boxes on "What are Complete Streets?" and "Where are Complete Streets?" * Maryland Department of Planning (n. d.) Smart Growth Online.  [http://smartgrowth.org/](https://urldefense.proofpoint.com/v2/url?u=http-3A__smartgrowth.org_&d=DwMFaQ&c=sJ6xIWYx-zLMB3EPkvcnVg&r=qUvOjLQTguVJGD_aL354Mg&m=R1-5fPg6SNpK-OzuNjt_9Tc8aheubuJBnL1EmRxQhkE&s=GtV3Fi8HcTh0iuwsejxbjpSHnNtHv30jxjRcIuwYRGg&e=)   The next four readings are under the link (across the top of the page) for "About Smart Growth".  I have separated them into individual links for each page because you can't go directly to the main page (About Smart Growth).   * Maryland Department of Planning (n. d.) What is Smart Growth? Retrieved on March 11, 2019 from: [http://smartgrowth.org/what-is-smart-growth/](https://urldefense.proofpoint.com/v2/url?u=http-3A__smartgrowth.org_what-2Dis-2Dsmart-2Dgrowth_&d=DwMFaQ&c=sJ6xIWYx-zLMB3EPkvcnVg&r=qUvOjLQTguVJGD_aL354Mg&m=R1-5fPg6SNpK-OzuNjt_9Tc8aheubuJBnL1EmRxQhkE&s=-mPM5qupQfRxxqjZ66x_BnbG48O4Ul-4H0ZDM9TlLc4&e=) * Maryland Department of Planning. (n. d.) Why Smart Growth? Retrieved on March 11, 2019 from: [http://smartgrowth.org/why-smart-growth/](https://urldefense.proofpoint.com/v2/url?u=http-3A__smartgrowth.org_why-2Dsmart-2Dgrowth_&d=DwMFaQ&c=sJ6xIWYx-zLMB3EPkvcnVg&r=qUvOjLQTguVJGD_aL354Mg&m=R1-5fPg6SNpK-OzuNjt_9Tc8aheubuJBnL1EmRxQhkE&s=dc-dyu61BbRmIuYvWqVVbLA9XXme8-mxT2eYwOc0TXE&e=) * Maryland Department of Planning. (n. d.)  Smart Growth Principles. Retrieved on March 11, 2019 from: [http://smartgrowth.org/smart-growth-principles/](https://urldefense.proofpoint.com/v2/url?u=http-3A__smartgrowth.org_smart-2Dgrowth-2Dprinciples_&d=DwMFaQ&c=sJ6xIWYx-zLMB3EPkvcnVg&r=qUvOjLQTguVJGD_aL354Mg&m=R1-5fPg6SNpK-OzuNjt_9Tc8aheubuJBnL1EmRxQhkE&s=57x3RsYVElYiM-sow1bSEpoIuRx0xmoiKQEs2CrpnB0&e=) * Maryland Department of Planning. (n. d.) Smart Growth Principle Examples.  Retrieved on March 11, 2019 from: [http://smartgrowth.org/smart-growth-principle-examples/](https://urldefense.proofpoint.com/v2/url?u=http-3A__smartgrowth.org_smart-2Dgrowth-2Dprinciple-2Dexamples_&d=DwMFaQ&c=sJ6xIWYx-zLMB3EPkvcnVg&r=qUvOjLQTguVJGD_aL354Mg&m=R1-5fPg6SNpK-OzuNjt_9Tc8aheubuJBnL1EmRxQhkE&s=bN8Ju3sRb45h7fTHOYsY7GjdsP095Htzy_hH4h6qU_E&e=) |
|  | Neighborhood design & transportation  TOD – Density, Diversity & Street Design  Design for biking and walking  Complete streets  Neighborhood traffic calming (Steiner) | * Cervero, R. (2004). *Transit-oriented development in the United States: experiences, challenges, and prospects (Vol. 102).* Transportation Research Board. Retrieved from: <http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_102.pdf> Chapters 1-4, and 6-8. * City of New York (2010). Active Design Guidelines: Promoting Physical Activity and Health in Design. Retrieved from: [https://centerforactivedesign.org/dl/guidelines.pdf](https://urldefense.proofpoint.com/v2/url?u=https-3A__centerforactivedesign.org_dl_guidelines.pdf&d=DwMFaQ&c=sJ6xIWYx-zLMB3EPkvcnVg&r=qUvOjLQTguVJGD_aL354Mg&m=R1-5fPg6SNpK-OzuNjt_9Tc8aheubuJBnL1EmRxQhkE&s=jTYLpGPnhxEEzgwWeLlVYih9obZf3QKwa0-rCmhDvSQ&e=)Please read chapters 1 and 2. |
| Due Mar 5 | ASSIGNMENT 2 | See assignment brief on Canvas |
| Week 5  Mar 4 –  Mar 10 | Field Trip | As scheduled in field trip itinerary. |

**Week 6 (March 13-19th): UF Spring Break and Field Trip**

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| Week 7  Mar 18 –  Mar 24 | **Green Infrastructure, Site Design and Development** | |
| Urban ecology and urban green space, urban containment and greenbelts  Stormwater management strategies and low impact development, landscape applications, and performance comparisons (Volk) | *Required Readings:*   * *Environmental Land Use Planning and Management Chapter 8: Stormwater Management and Watershed Restoration* * Acomb. The Madera Case Study: LID vs. Conventional Site Design, Land Development Magazine, Fall 2009. (Available on Canvas).   *Readings to quickly review:*   * *United States Environmental Protection Agency (US EPA) resources on Green Infrastructure:*  [*https://www.epa.gov/green-infrastructure*](https://www.epa.gov/green-infrastructure) * *United States Environmental Protection Agency (US EPA), Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices, EPA 841-F-07-006, 2007. See* [*https://www.epa.gov*](https://www.epa.gov/green-infrastructure/stormwater-costs) * *Rooftops to Rivers: Green Strategies for Controlling Stormwater and Combined Sewer Overflows, 2006. See* [*https://www.nrdc.org*](https://www.nrdc.org/resources/rooftops-rivers-green-strategies-controlling-stormwater-and-combined-sewer-overflows) |
| Site clearing, grading and drainage, erosion control, tree preservation, invasive exotic control, landscape management (Volk) | * No assigned readings |
| Due Mar 26 | ASSIGNMENT 3 | See assignment brief on Canvas |

**Module 3: Case Studies**

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| **Date** | **TOPIC** | **READING(S)/ASSIGNMENT** |
| Week 8  Mar 25 –  Mar 31 | Case study project examples: Matanzas River Watershed & City of Gainesville Downtown Redevelopment (Volk and Steiner) | * No assigned reading |
| Due Apr 2 | ASSIGNMENT 4 | See assignment brief on Canvas |

**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.

**About the Instructors**

Prof. Michael Volk

Michael Volk is a Florida registered Landscape Architect, partner at Volk Design Consultants, LLC, and Research Associate Professor in the University of Florida Center for Landscape Conservation Planning, Department of Landscape Architecture.  He has a Master’s Degree in Landscape Architecture from the University of Florida and a degree in Architecture from the Frank Lloyd Wright School of Architecture. Michael’s work with the Center for Landscape Conservation Planning includes applied research on land use, regional conservation planning, and urban green infrastructure; the impacts of sea level rise on natural resources and coastal communities; and climate change adaptation strategies and information needs for landscape architecture students and professionals.

Dr. Ruth Steiner

Dr. Ruth L. Steiner is a professor and director of the Center for Health and the Built Environment in the Department of Urban and Regional Planning and an affiliate faculty in the School of Natural Resources and Environment and the University of Florida Transportation Institute (UFTI) at the University of Florida. Her research focuses on the interactions between transportation and land use, with a particular focus on planning for all modes of transportation including transit, bicycling and walking, and their impact on communities, health and the environment**.**  She is co-author of *Energy Efficiency and Human Activity: Global Trends and Prospects* (Cambridge University Press, 1992) and author of over one hundred fifty book chapters, journal articles, reviews and research reports. Previously, she worked as a computer programmer and systems analyst at a major regional bank in Milwaukee, as a policy analyst for the Public Service Board in Vermont, and as a research associate at Lawrence Berkeley National Laboratory. She received her B.A. in History from Lawrence University in Appleton, Wisconsin, a Master of Business Administration from the University of Wisconsin in Milwaukee and a Master of City Planning and a Ph. D. from the University of California at Berkeley.