

2024 SJC CERTIFICATE PROGRAM IN URBAN SUSTAINABILITY

SESSION DESCRIPTIONS

Five Modules – 2 Sessions Each; Session Time - 2 hours; Total – 20 Hours of Study

Course starts Tuesday evening March 12th and ends Tuesday evening May 14th

Classes are all on Tuesday evenings weekly and start at 6:30 pm, end 8:30pm; all classes are VIRTUAL via Zoom - details to be provided to all registrants before the course starts

Welcome & Overview

Debra Italiano, Course Facilitator / Founder & Chair, Sustainable JC

[Deb Italiano](#)

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Module 1 – Sustainability / Resiliency / Systems Thinking - 2 Sessions (4 hours)

Instructor - Ashwani Vasishth

Session Dates: March 12th & March 19th

At the end of this First Module, we should have an understanding of what it means, to be “a change agent,” given what we know about the realities of “wicked problems” and evolutionary complex systems, and be able to craft community-level interventions.

N.B.: See Stony Brook University’s explanation: [What is a Wicked Problem?](#) See also, my [excerpt of the characteristics of wicked problems](#). And see also the [Wikipedia Entry for this](#).

Session 1 - Level Setting - What does “sustainability” actually mean? Why should we use it as a marker for the most desirable directions for humanity to take? How does it relate to “resilience”? What does it mean to “take a systems approach” to depicting issues, situations, or problems? We will see how looking at the world holistically, rather than in a siloed and fragmentary sort of way, generates significant synergistic benefits—or, in pop-culture terms, “how the whole is greater than the sum of its parts.”

But. “Think holistically,” is a wonderful thought. Can it be more than that? Can we, actually, do it? We will explore why holistic thinking, like sustainability, is **not a destination**. We’ll never get there. All we can do is, “tend toward it.”

We will also explore the idea of “wicked problems”—that is to say organic, evolutionary problems—and how they differ markedly from more conventional “mechanical” problems. We will understand why the laws and rules of evolution and complexity mean that such problems—definitionally and conventionally—cannot be “solved.” They can only be “managed,” in some adaptive, learning-by-doing sort of way.

At end of session 1, a reading and a video will be assigned as homework to complete before Session 2

Session 2 - Implications: We will learn to use tricks and techniques that allow us to view the world as an organic, complex whole, even though we are limited, cognitively, to thinking of the world in simple terms. This segment of the Certificate Program will give you the tools, world views, mental models and concrete methods you need to better understand and communicate about the world holistically, and to use **adaptive management** to move reality this way and that.

We shall understand while single points of view can **never** adequately capture the happening world, and why we must necessarily grasp and apply effective participatory approaches and techniques, when we need to take decisions and get a handle on what it means to incorporate resilience discourse into sustainability planning.

At the end of the two-session module, participants will have a clear understanding of what it means to take a systems approach to urban sustainability and resiliency planning, and will begin to grasp complex-system dynamics in crafting community-level interventions.

Ashwani Vasishth, PhD, SJC Board - Founding Advisor
Professor of Sustainability
Ramapo College

Module 2 - Environmental Justice / Eco Justice Exploration - 2 Sessions (4 hours)

Instructors – David Larrabee & Ashwani Vasishth **Session Dates: March 26th & April 2th**

Session 3 – Understanding Environmental and Eco Justice Concepts and Frameworks.

This section starts by laying out the fundamental ethical roots of sustainability thinking exploring the relationship between societal justice, ecology, and economics.

An Environmental Justice or EJ approach lays emphasis on the implications of societal decisions upon communities that lack economic and political power. Globally this includes: “less developed, under-developed or developing countries,” indigenous, tribal and aboriginal peoples, as well as otherwise marginalized communities.

Eco-justice looks at ethical and moral issues through the lens of economics, ecology, and social justice considering systematic changes, lifestyle changes, and the pursuit of reconciliation. **“Eco-justice** is the journey ... It is the emerging, demanding, promising reality with which human moral agents must come to terms if there is to be a good and viable future for people and the planet.”[1] .

This confluence of poverty and cumulative impacts of pollution gives rise to the verified claim that poorer communities disproportionately carry the burden of environmental issues (pollution, climate change, water quality, etc.)

The economic basis of environmental injustice derives from several sources.

1. The cost of land is linked to the desirability of that parcel of land. Poor people can only afford to live on “affordable” land. Polluting activities (landfills, incinerators, factory farms, etc) are almost always located on this cheaper, less desirable land.
2. Poorer communities lack the political power, economic power, and visibility (to decision makers) to prevent the choices that harm their community.
3. Some countries lack the resources to enforce environmental regulations that prevent the exposure of poor people and cheap labor to environmental dangers. This lowers the cost of business which is attractive to companies seeking to lower labor costs. This is facilitated by the globalization of the world's economies.
4. Segregating the poor and environmentally hazardous activities into a common area results in the increase in property values of the remaining areas.

While highly contaminated toxic sites (representing what is called point-source pollution) are certainly a threat to the environment, it would serve us well to not take our eye off what is called “area source pollution.” Here there are many sources of pollution, each responsible for a very small amount of the pollution of concern. But cumulatively, these sources—which permeate an entire area—can prove significant as hard-to-regulate but dangerous phenomena.

These issues are present in all places on the globe, including Jersey City. Of the 114 Superfund sites in New Jersey, five are located in Hudson County. Jersey City has its own share of chromium-contaminated sites, making brownfield development a challenge. As elsewhere, low-income and politically marginalized communities—traditionally under-represented in the political and economic decision making process—bear the brunt of the burden in environmental health outcomes. An historical case study of the development of the chromite ore processing industry in Jersey City illustrates how an industry that benefited the country as whole was located in low-income and marginalized communities which bore the brunt of the environmental impact. It also illustrates how that impact continues to this day on the same communities, after the industry has left.

Students will be invited to work on a case study, in preparation for Session 4.

[1] Eco-Justice the unfinished Journey, William E. Gibson editor ©2004 State University of NY Press page 295

David will assign the Chromium case study, and students will view a recorded conversation about cumulative impacts between Nickie Sheets and Ashwani Vasishth.

Session 4: Local Perspectives on Environmental Justice

This session will cover the history of Environmental Justice in New Jersey over the past 20 years, including challenges and victories, as well as a vision and opportunities for the future.

Environmental Justice is now a household word, but it wasn't always so. EJ activists and advocates have worked tirelessly for over 20 years to bring Environmental Justice into the spotlight in New Jersey. Now, New Jersey is leading the way nationally with strong infrastructure, policy and practice in environmental justice with Newark's Cumulative Impact Ordinance and the State Environmental Justice Law.

The US EPA defines environmental justice as:

... the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.

There can be no sustainable future without addressing the environmental injustices in the past and present. We will review some of the issues within Jersey City and the surrounding area. In the past some guest presenters have been invited into this session, this is also a possibility for 2024.

A quick overview of the EJ related initiatives taken by Sustainable Jersey City will be presented.

At the end of the session the students will reflect on the case study on chromium contamination of Jersey City.

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**Module 3 - Emissions & Emissions Redux / Transition To Renewables -
2 Sessions (4 hours)**

Session 5 – Emissions Introduction and Overview + Emissions Redux Opportunities

Instructor David Larrabee

Session Date – April 9th

This session will provide a primer on greenhouse gas emissions, so that students have a clear foundation of the history and trajectory of this leading cause of climate change. We will explore the subject from a historical lens, to uncover what has happened over time and why, including major contributing factors and turning points.

The session will start with a review of the science that underlies climate change. The student will be exposed to; greenhouse gasses, Earth's albedo, land use change, the history of carbon emissions, CO2 concentrations, as well as the role of fossil fuels and renewable energy. The concepts presented will include: net zero, tipping points, carbon budgets, carbon offsets, reforestation, and carbon capture and storage.

Students will learn about the sources of emissions but also the impacts of rising emissions on inequality, health, and climate change.

The United Nations framework Convention on Climate Change (UNFCCC) established; the intergovernmental panel on climate change (IPCC) who reviews the science and the Convention of the Parties (COP) of negotiators that meets annually to address climate change. The results of the latest meeting (COP28) will be discussed. Especially the falling likelihood of limiting the temperature rise to 1.5°C and the implications of a 2+°C world.

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Session 6 – Introduction to the NJ Energy Industry

Instructor – David Larrabee

Session Date – April 16th

Jersey City, along with the rest of the state of New Jersey must make a collective effort to transition to “net-zero” emissions. This section looks at what will be required to accomplish this transition. Since many of the emissions are connected to the consumption of fossil fuels, this section will concentrate on that source of emissions.

Electric vehicles replace fossil fuel consumption by electrical energy consumption. The conversion of gas and oil heat to heat pumps will replace fossil fuel consumption with electrical consumption. Many industrial processes are exploring ways of eliminating fossil fuel heat with electrical heat (this is not always simple). Thus, the transformation to a “net zero” economy will require strategic investments in our electrical generation, distribution and grid back-up / storage, intelligently coupled with both increases in efficiency, and huge improvements in energy conservation.

This session will explore the current methods of generating the electrical energy in the state, touching on the basics of the technology and environmental impacts of each

with the goal of ensuring students understand why changes are coming and how challenging the transition will be.

NJ is making a big bet on off-shore wind energy. In 2023 there was a major setback in this area. The current status of Off-shore wind will be reviewed.

Key to this transition are the NJ Energy Master Plan and the Jersey City Climate and energy Action plan. These will be introduced to the students.

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Module 4 – Best Practices In Urban Sustainability & Community Engagement - 2 Sessions (4 hours)

Session 7 - A Look at Best Practices Urban Sustainability: Principles and Practices

Instructors – Susan Kaplan & Heather Sporn

Session Date – April 23rd

This session will provide a look at urban sustainability best practices. It is clear that climate change is real and we need to take meaningful and deliberate steps to make our urban environments more sustainable. From urban heat islands to water systems to equity, we can no longer afford to make decisions without considering whether we are acting within the framework of best practices.

Our current environmental and social conditions call for us to consider all development through a lens of environmental and social impact and community-building. Our cities are dynamic, living, ecological systems This module will look at how we must utilize the ecology of the urban environment as a source for positive change, creating more effective, beautiful and cost-effective alternatives that enhance nature and our quality of life.

Moving beyond strictly engineering and development solutions doesn't just protect our structures, it begins to define our cities as not just a pile of pipes, roads and buildings, but as urban organisms, where the impacts to both the natural and social worlds are assessed as part of the decision making process.

Today thousands of acres of beautiful parks have become urban havens while also protecting us from floods; communities are creating their own resiliency plans to find ways to work together to protect property and quality of life; and social equity is being more seriously considered as we determine what kind of facilities are really needed, where in a city they should be located, and who creates them.

This module will look at how green infrastructure can be innovative to, promote ecological social, and environmental health. We now have some great ways to measure social impact, from the UN Sustainable Development Goals, to an innovative infrastructure rating system that addresses social justice and community building (Envision). In addition, the US Green Building Council's LEED for Cities and Communities looks at the broad issues that must be addressed in a city to make it sustainable beyond its buildings. We will discuss how systems, from our sewage infrastructure, to permeable pavement, to urban planting and greenspace and to buildings, can go a long way towards improving our urban ecological infrastructure. We will explore some case studies in the process and discuss how we can think more critically about how projects can be made truly sustainable.

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Session 8 - Best Practices In Public Engagement

Instructors - John Ferns & Gensler Team

Session Date – April 30th

Gensler Public Engagement Lab

Grounding Great Design in Meaningful Engagement

A New Public Engagement Imperative

A New Wave of Public Engagement

Greater Demand for Public Engagement in a complex world

Equitable Public Engagement for a changing world

Design with us, not without us: A renewed imperative for public engagement

Equitable outcomes start with an equitable process

This course session will be presented by a network of practitioners at Gensler with a focus on sharing insights for creating equitable and inclusive processes in partnership with community, individuals, small businesses, and other organizations in the context of small, medium, and large-scale development projects.

We believe that intentional and meaningful public engagement leads to more impactful, just, and more resilient project outcomes—and better design. Cities, developers, designers, contractors and other stakeholders are adjusting to a rapidly changing landscape where a greater recognition of historic inequities, combined with a stronger demand for public and private sector accountability especially relative to affordability and economic inclusivity.

For us, Public Engagement is the process of working collaboratively with groups affiliated by geographic proximity, special interests, or other aligning factors to frame opportunities and co-create solutions that improve the well-being and lives of those participants. We see the Public Engagement process as a means to form partnerships and coalitions that build capacity for communities, mobilize resources, and influence systems – helping to catalyze change in policy, services, programs and practices. We believe that the greater the overlap between the interests of the designer, clients, and community, the greater the opportunity for a more successful, equitable, and inclusive design.

Intentional partnering with local organizations, minority businesses, and individual practitioners already embedded in the community is foundational to our engagement philosophy. This leads to move impactful, authentic, and meaningful solutions while building capacity for the local network and community. Partnership at this level enables a ripple effect of impact, extending far beyond the scope of the project to create opportunity and value in collaboration with the community.

The engagement process is about building relationships with people, and providing the structure, tools, and resources that build on current strengths, while organizing community expertise through the development process. This session is intended to provide best practices for community engagement, tools and resources for hosting sessions and case studies happening locally and globally. The focus will be on how to strengthen existing local community relationships and build new ones guided by principles of transparency, honesty, inclusivity, and accessibility.

[Gensler Team Bio and Contact Info](#)

Module 5 – Waste Streams - 2 Sessions (4 hours)

Session 9 – Global Economic Perspectives

Instructor – David Larrabee

Session Dates – May 7th and May 14th

The global economy produces over 2 billion tons of waste annually and may grow to 3.4 billion tons by 2050. The United States generates about 4.9 pounds of Municipal Solid waste per person per day. Construction waste and debris is produced at more than twice that rate. **In this session we will explore why this waste is the inevitable byproduct of our linear socio-economic system, and why a transition to a more circular economy is necessary (think recycling plus). Along the way we will explore questions like: what does it mean to be local? What are the limits of our activities, both locally and globally? Who bears the economic and ecological burdens of our current system?** Jersey City, and its history, will be the source of some of the illustrative examples we will explore.

- circular economy both sides - consumption + supply chain / manufacturing
- consumerism
- economic system throughput of misguided business model - goal is to raise GNP basis is not aligned to HAPPINESS / Bhutan
- other alternatives, e.g., Herman Daly model

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Session 10 – Local / Regional Perspectives

First we will review local and regional aspects and statistics around waste in NJ. How much waste do we create? Where does it go? How does it impact budgets?

There will be a discussion of what we as individuals and organizations can do to minimize the amount of waste that we put into landfills. What organizations are good resources both for our efforts as well as addressing officials with our concerns.

- 1) Preventing and reducing waste
- 2) Prolonging the life cycle of material
 - reuse
 - repair
 - repurpose
- 3) Recycling
 - plastic recycling opportunities and issues
 - glass
 - metal recycling
 - paper
 - composting
 - Electronics
 - Hazardous waste
- 4) disposal options
 - Bury it: landfill
 - Burn it: incineration
 - Dump it in the ocean
 - Ship it somewhere else

An effort will be made to have some local officials present to take questions from the students.

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