Principles and Fundamentals of Sustainable Design – MOOC

WEEK	TOPICS + DETAILS	LEARNING OUTCOMES
Week 1 May 13	**Introduction + Context for Sustainability** Course Introduction and a brief historical context of human development Time: 1 Week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Review course format and expectations -Expand the definition and scope of Sustainable Design -Recognize the long-term consequences of our decisions -Understand the importance and role Worldview plays in sustainable design and human actions -Recognize the importance of long-term thinking
Week 2 May 20	**Environmental Literacy** Nature: Air, Water, Earth, Energy, Life, Climate Change and Climate change effects Time: 1 week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Identify the basic elements of the earth's energy systems -Review and create a basic understanding of the primary elements of Air, Water, Earth, Energy, Life -Identify indicators of Climate Change and potential long-term effects. -Recognize the impacts of major environmental change
Week 3 May 27	**Motivations for Sustainable Design** Define sustainability values and motivations Time: 1 week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Consider how motivations and values are at the basis of sustainable design -Understand the role self-interest plays in sustainable design -Examine cognitive empathy and its potential for deep positive change -Define sustainability values using triple and quadruple bottom lines -Examine the importance of beauty and "Place" in Sustainable Design
Week 4 June 3	**Integral Sustainable Design** Synthesize sustainability values into holistic frameworks for sustainable design Time: 1 week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Explore multiple lens perspectives to sustainable design -Discover a holistic analysis process to organize the varied project goals -Explore the role of culture connection, equity, and experiential aspects in sustainable design -Recognize how expanded design directives can increase project success and long-term sustainability
Week 5 June 10	**Bio-Inspired Design**	-Identify the Bio-Inspired Design approaches of Biomimicry and Biophilia

	Identify the emerging influences of Bio-Inspired Design in sustainable design Time: 1 week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Understand the importance of evaluating and analyzing natural systems -Recognize the importance of human health, productivity, and cognition by increasing exposure to nature and natural elements -Identify strategies for their inclusion in the built environment
Week 6 June 17	**Resilience + Adaptability** Identify emerging strategies and methodologies to increase resilience and adaptation Time: 1 week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Discover long-term benefits of extending the built environment's lifespan -Discover planning and analysis methodologies to increase resilience -Evaluate the benefits of using existing structures as a basis for new purposes -Identify passive strategies to increase resilience during extreme events and reduce energy usage
Week 7 June 24	**Health + Wellbeing** Identify emerging sustainable design influences of health and well-being Time: 1 week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Discover the importance of the built environment on health, healing, productivity, and cognitive function -Explore indoor air quality, common toxins and their sources, acoustics, light, and thermal comfort -Identify social equity issues such as food deserts/apartheid
Week 8 July 1	**Integrative Design** Discover integrative design practices that are influencing design procedures and promoting collaborative work environments Time: 1 week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Identify the most common collaborative approaches to integrative design -Identify the role of current rating systems -Explore the benefits of collaborative and integrated approaches to individual design firms, communities, and within the larger design professions
Week 9 July 8	**Global + Urban Scale Sustainable Design** Identifying strategies for applying sustainable design principles at the global and urban scales Time: 1 week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Explore United Nations Sustainable Development Goals and implications to sustainable design at all scales -Discover differing development patterns and their social, and cultural impact -Identify design methodologies and strategies to reduce environmental impact at the Urban and District scale. -Use case studies to explore strategies and methodologies for increasing resilience

Week 10 July 15	**Site + Building Scale Sustainable Design** Identifying and applying design strategies at the human and building scale Time: 1 week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Understand the importance of climate and micro-climate on building placement, configuration, and energy use -Examine time-tested passive systems for reducing energy use -Identify emerging active systems for reducing energy use and energy creation -Explore current rating systems focused on the built environment and human health and wellbeing
Week 11 July 22	**Human Scale Sustainable Design + How to be an agent for change** Identifying and applying design strategies and research at the human scale Time: 1 week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Discover health implications of material sourcing -Identify and understand the toxicity of material used -Identifying and applying strategies and research at the Human Scale -Discover resources for material research and specification -Review applicable Rating Systems and their implementation -Introduce Life Cycle Analysis and its implications for sustainable design -Identify areas of personal and professional influence for change and how to make an impact
Week 12 July 29	**Final Project Due** Case study to synthesize strategies and motivations with the goal of moving forward to make a positive change Time: 1 week Level: Hours of Instruction: 1 Expected hour of Completion: 4 to 12 hours	-Synthesize information and strategies by analyzing current successful sustainable projects -Analyze personal and professional current spheres of influence -Consider and recognize future role in creating a more sustainable world