Professional Certificate in Urban Climate Adaptation Planning

Urban Resilience and Disaster Risk Reduction

Urban Resilience: the ability of an urban system to withstand, adapt to, and recover from adverse events or trends, such as natural disasters, climate change, or economic shocks. A resilient city is able to maintain its essential functions, identity, and quality of life in the face of these challenges.

Disaster Risk Reduction (DRR): a systematic approach to identifying, assessing, and reducing the risks associated with natural and human-induced hazards. The goal of DRR is to prevent or reduce the impact of disasters on communities and infrastructure.

Hazard: a natural or human-induced event or trend that has the potential to cause harm to people, property, or the environment. Examples of hazards include earthquakes, hurricanes, floods, and wildfires.

Vulnerability: the susceptibility of a community or system to the negative impacts of a hazard. Factors that can increase vulnerability include poverty, poor infrastructure, lack of access to resources, and limited coping capacity.

Risk: the likelihood and potential consequences of a hazard. Risk is calculated by multiplying the probability of a hazard occurring by the potential impact it could have.

Mitigation: actions taken to reduce the likelihood or severity of a hazard. Examples of mitigation measures include retrofitting buildings to withstand earthquakes, building sea walls to protect against storm surges, and implementing land use regulations to reduce the risk of wildfires.

Preparedness: actions taken to ensure that a community is ready to respond to a hazard. Preparedness measures include developing emergency response plans, conducting drills and exercises, and educating the public about hazards and their risks.

Response: actions taken immediately after a hazard has occurred to save lives, protect property, and provide assistance to those affected. Response measures include evacuating affected areas, providing emergency shelter, and supplying food, water, and medical care.

Recovery: the process of restoring a community to normal or improved conditions after a hazard has occurred. Recovery measures include repairing or rebuilding infrastructure, providing financial assistance to affected individuals and businesses, and implementing measures to reduce future risk.

Adaptation: the process of adjusting to the negative impacts of climate change. Adaptation measures include building sea walls to protect against sea level rise, implementing water conservation measures to deal with drought, and modifying land use patterns to reduce the risk of wildfires.

Urban Heat Island (UHI): an urban area that is significantly warmer than its surrounding rural areas due to the concentration of buildings, roads, and other impervious surfaces that absorb and re-radiate heat.

Green Infrastructure: the network of natural and semi-natural features, such as parks, gardens, and green roofs, that provide a range of benefits, including reducing urban heat island effect, improving air quality and providing habitat for wildlife.

Low Impact Development (LID): a design approach that aims to minimize the impact of development on the natural environment. LID techniques include the use of permeable pavements, rain gardens, and green roofs to manage stormwater runoff.

Climate-Resilient Infrastructure: infrastructure that is designed and built to withstand the negative impacts of climate change, such as sea level rise, increased frequency and intensity of storms and heatwaves.

Community-Based Disaster Risk Reduction (CBDRR): a participatory approach to disaster risk reduction that involves working closely with communities to identify and reduce their vulnerabilities and risks.

Equity: the principle of fairness and justice in the distribution of resources and opportunities. Ensuring equity in urban climate adaptation planning is critical to ensuring that all members of a community have access to the resources and opportunities they need to adapt to climate change.

Multi-Hazard: a term used to describe the potential for multiple hazards to occur simultaneously or in close succession.

Climate Change: the long-term alteration of temperature and weather patterns due to the build-up of greenhouse gases in the atmosphere.

Urban Climate: the specific climate conditions that exist in an urban area, which are influenced by the concentration of buildings, roads, and other impervious surfaces.

Climate Projections: the use of mathematical models to predict future climate conditions based on different scenarios of greenhouse gas emissions.

Climate Vulnerability: the susceptibility of a community or system to the negative impacts of climate change.

Climate Change Adaptation: the process of adjusting to the negative impacts of climate change.

Climate Change Mitigation: the process of reducing greenhouse gas emissions to limit the negative impacts of climate change.

Climate-Resilient City: a city that is able to adapt and thrive in the face of climate change.

Extreme Weather Events: rare and severe weather events, such as hurricanes, floods, and heatwaves, that can cause significant damage and disruption.

Sustainable Development: the principle of meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Urban Planning: the process of designing and managing the development of urban areas to meet the needs

of communities while protecting the natural environment.

Land Use Planning: the process of regulating the use and development of land in an urban area.

Smart Growth: a development approach that aims to create compact, mixed-use communities with a strong emphasis on public transportation and non-motorized transportation.

Greenhouse Gases: gases that trap heat in the atmosphere, such as carbon dioxide, methane, and nitrous oxide.

Carbon Footprint: the total amount of greenhouse gas emissions associated with a product, service, or organization.

Carbon Neutral: a term used to describe an organization or community that has achieved a net zero carbon footprint by balancing their emissions with carbon offsets or other reduction measures.

Urban Adaptation: the process of adjusting to the negative impacts of climate change in an urban context.

Climate Proofing: the process of designing and building infrastructure and other assets to withstand the negative impacts of climate change.

Climate-Resilient Urban Development: urban development that takes into account the negative impacts of climate change and is designed and built to be resilient to those impacts.

Urban Resilience Assessment: a process of evaluating the resilience of an urban area to the negative impacts of climate change.

Climate Change Impact Assessment: the process of evaluating the potential impacts of climate change on a community or system.

Urban Heat Island Mitigation: the process of reducing the urban heat island effect through the use of green infrastructure, reflective surfaces, and other measures.

Urban Flood Resilience: the ability of an urban area to withstand and recover from flood events, which are becoming more frequent and intense due to climate change.

Urban Stormwater Management: the process of managing the runoff of stormwater in urban areas to reduce flooding and pollution.

Urban Water Management: the process of managing the supply and demand of water in urban areas to ensure a reliable and sustainable water supply.

Urban Air Quality Management: the process of managing the emissions of air pollutants in urban areas to ensure acceptable air quality standards.

Urban Waste Management: the process of managing the collection, transportation, and disposal of waste in urban areas to minimize the negative impacts on the environment and public health.

Urban Green Spaces: the network of parks, gardens, and other natural areas in urban areas that provide a range of benefits, including reducing urban heat island effect, improving air quality, and providing habitat for wildlife.

Urban Forestry: the practice of managing trees and other vegetation in urban areas to provide a range of benefits, including reducing urban heat island effect, improving air quality, and providing habitat for wildlife.

Urban Biodiversity: the variety of plant and animal species that exist in urban areas.