Resiliency Reimagined

PROTECTING HOUSTON’S FUTURE, TODAY
AN UNCERTAIN HORIZON
Over the last several years, the Greater Houston community has faced incredible challenges.
A Community Culture of Strength

Through it all, Houstonians have channeled our innate spirit of strength, collaboration, and resiliency. **Our city and people are known for our willingness to help others and bounce back.**
Transforming Strength into Resiliency

AS WE LOOK TO THE FUTURE:
How do we train the next generation of first responders?
How do we prepare Houstonians for the next natural disaster?
How do we fortify our economy and infrastructure against calamity?
How do we transform Houston Strength into Houston Resiliency?
A Bold Vision for Houston’s Future

Houston Community College (HCC) envisions a more resilient Houston.

**The Proposal:** To create the first-in-the Nation “Resilience Center of Excellence” Operations Training Center to connect residents, employers, civic and community organizations, neighborhoods, and small businesses with appropriate levels of education and awareness to reduce loss of life and well-being, and increase economic stability through risk mitigation.
One College–One Community

Community resiliency is more than responding to major flood events—it includes disasters like fires, oil spills and leaks, pandemics, and freezes. This initiative is about skill mastery for ALL potential disaster scenarios.

HCC Centers of Excellence are existing nexuses of education and training located across the greater Houston region. Each provides education around critical elements of resiliency:
A One Community Vision

Connect Our Campuses to the Resilience of Citizens, Neighborhoods, Businesses by Serving Urgent Pre-Disaster and Risk Mitigation Adjacent to Our Footprint (“Resiliency Lily Pads”)
Alignment with Local Goals

• Skills and Workforce: Design, Develop, Build, Operate and Maintain Resilient Infrastructure, Facilities (Public and Private); Engage 500K in Resilient-Disaster Preparedness;

• Entrepreneurship and Investment: Increase flood mitigation and resilient infrastructure by $50 Billion; Design, develop, deploy alternative technologies-equipment-practices for flood mitigation, resilience

• Facilities, Infrastructure: Promote and expand green-, sustainable-, resilient residential and commercial development; Leverage city assets as platforms for alternative, unique mitigation
In Weather- and Pandemic-Centric Disasters, communities have identified and sought workforce prepared to maintain public services, while the private and philanthropic sectors continue to deliver complimentary resources and continuity of operations.

Characteristics of the “New Resilient Workforce”:

• Competencies not Sectors
• Skills not Degrees
• Active Not Passive Employees
• Access not Permission-Based Inclusion
Addressing City of Houston Goals for Resiliency and Sustainability, Equity and Inclusion

Resilient Houston Progress Report 2022

GOAL 1  We will support Houstonians to be prepared for an uncertain future.

GOAL 2  We will expand access to wealth-building and employment opportunities.

GOAL 3  We will improve safety and well-being for all Houstonians.

GOAL 12  We will advance equity and inclusion for all.

GOAL 17  We will enhance regional emergency preparedness and response.
A Decade of Challenging Disasters, Incidents, Impacts
Our Pathway to Resiliency

PREPAREDNESS  RESPONSE  RECOVERY  REBUILD
HCC Resiliency Curricula Development Teams
Our Mission Statement:

• “...Design and deliver 21st century skills, workforce, and talent development for 500,000 Houstonians; thereby creating a new generation of resilient, future risk mitigated fellow citizens, neighbors, and industries from loss of life, well-being and economic competitiveness...”
Examples of Employment, Competencies for Resilient Workforce*

**Skills Trades**
(average starting wage= $79,500)
- Rescue, Recovery
  Transportation Vehicle Upgrade, Maintenance
- Plumber, Electrician, HVAC Installation, Retrofit
- Debris Material Removal, Reuse
- Building, Landscape, and Facilities Retrofit (including Sustainability, Energy)

**Internet of Things/Data Sciences**
(average starting wage= $90,000)
- AI, Predictive Analytics, GIS Mapping
- Simulation, Visualization and Modeling
- Sensors, Meters, Data Curation, Information Management
- Real-Time Monitoring, Operational Systems, Situational Awareness from Drones

**Professions**
(average starting wage= $98,000)
- Medical Emergency Triage and Community Health
- Coastal and Inland Restoration
- 3D, Virtual Reality Content for Resilience-Focused Engineering, Architecture, and Technical Services
- Disaster Case Management
- Preparedness, Response Customer Engagement

* Source: 2019 Regional Boot Camp, 2019-2020 Sub-Regional Focus Groups, REMI/Industry Analyses, Local Employment Demand
## Definition of Resiliency Credentials

### Proposed Credentials and Program Content: HCCS Resilience COE

#### Preparedness | Rescue/Response | Recovery/Rebuild

<table>
<thead>
<tr>
<th>Resilience Domain</th>
<th>Resilience Target Sectors/Impact</th>
<th>Resilience Credential</th>
<th>Business Continuity Specialists</th>
<th>Interprofessional and Transdisciplinary: Team Building and Communication</th>
<th>OSHA and Other Required Compliance</th>
<th>FEMA-Approved Cadre On-Call (CORE)</th>
<th>Simulation and Scenario Trainers</th>
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<tbody>
<tr>
<td>General: Domain</td>
<td>Residence 101+ CERT</td>
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<tr>
<td>Residential</td>
<td>Crisis, Emergency, and Disaster</td>
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<tr>
<td>Resilience 201</td>
<td>Bridging Cross-Functional: Teambuilding, Expertise Among and Across the Following Domains: Public Safety + Rescue, Medical Triage, Facilities and Construction, Debris Removal and Reuse, E- and Internet of Things (IoT), and Disaster Case Management.</td>
<td>Focusing on risk mitigation and preparedness based on understanding different types of businesses, sectors, and operational setups (metal, commercial, industrial and non-industrial assets, equipment, human capital).</td>
<td>Industry Credential: Business Continuity Certifier (BCCP). Among others</td>
<td>Employment/soft-skills capabilities for just-in-time team formation coupled with the information and communication technologies, resources, and connectivity, interoperability, focusing on diverse contexts and settings. For example, Fire Science &amp; Safety, Emergency Medical Services, and Criminal Justice programs collaborating on disaster/crisis/emergency contacts that require them to work together, communicate, etc. Medical Triage is another good example, especially regarding the Interprofessional and Transdisciplinary communication, hierarchical/functional/authority structures of professions, cross-disciplinary communication with colleagues and about the contributions each discipline makes to the care of the patient. This translates to when the Emergency Medical Technicians must transfer the patient to the care of other healthcare providers, like an ER or established site during disasters.</td>
<td>Alignment of rules, regulations, practices within sites and across teams for various disaster scenarios. Industry Credential: OSHA 10-Hour General OSHA 30-Hour General OSHA 30-Hour Construction OSHA 30-Hour Construction OSHA 40-Hour Hazardous Waste Operations &amp; Emergency Response (HW/OREP) Water Operator Class D Wastewater Operator, Class D &amp; NCCEC Construction Site Safety Technician /OHS</td>
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<td>Critical supply chains and pre-positioned resource management</td>
<td>Among others</td>
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<td>Industry Credential: Certified Associate in Project Management</td>
<td>Among others</td>
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<tr>
<td>Industry Credential: Project Management Professional</td>
<td>Among others</td>
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Cadres are groups of employees organized by type of work. These groups are based on skills and experience and play a key role in keeping FEMA ready to deploy the right people to the right job quickly in an emergency management situation.

**Cadre of On-Call Response/Recovery Employees (CORE)** are trained to work for a specific, limited period, between two to four years. These positions may be renewed if there is ongoing disaster work and funding is available.

Alignment within the HCCS CORE Framework (Examples):
- Operations: Acquisitions, Logistics, Operations and Field Training Operations, Safety, Security
- Communications: Disaster Emergency Communications, Information Technology, External Affairs
- Disaster Preparedness and Response (Preparedness, Planning, Disability Integration, Human Resources, Interagency Recovery Coordination, Field Leader/PhD)
- Financial: Disaster Survivor Assistance, Individual Assistance, Public Assistance
- Infrastructure, Facilities, Hazard Mitigation, Environmental Health Protection

An example of a Cadre of On-Call Response/Recovery employees is provided at bottom of table.

Leveraging existing certified individuals, credentials vis-à-vis a professional or union standard of competency to engage a team the trainer program using simulated, in-field, and classroom instruction.

Certifying individuals to become training resources within the COE as well as within partners, subscribers, and community interests for CORE and customized programs.

Scenario, Place-based, In-person, and hands-on Technology Integration, Simulation (VR, etc.)
<table>
<thead>
<tr>
<th>Domain</th>
<th>Market-Employer Description</th>
<th>Launch Fall 2022</th>
<th>Option 2</th>
<th>Option 3</th>
<th>Option 4</th>
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<tr>
<td>Public Safety + Rescue</td>
<td><strong>Focused on delivery of Traditional First Responders (Police, Fire, EMS) with Citizen and Corporate Responders). Critical Targets: Retirement Centers, Community &amp; Neighborhood Centers, Large Corporate or Operating 'Campuses'); Aligns the Transportation (e.g. Fleet Owners-Management - Rescue Vehicles, Drivers, Maintenance-Retrofit) for the Delivery of Rescue Personnel, Materials, Other Equipment. In advance of RROC Completion - addresses use of HCC Campuses (Parking Lots, Open Areas, etc.), Infrastructure as potential &quot;Resilience Lily Pads&quot; in coordination with hyper-local community needs for preparedness and response.</strong></td>
<td>Project Management for Resiliency</td>
<td>Business Continuity Specialists</td>
<td>Interprofessional and Transdisciplinary: Team Building and Communications</td>
<td>OSHA and other Required Compliance</td>
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<td>Medical Triage</td>
<td><strong>Focused on the Medical Personnel (Nursing, Pharmacy, Medical Technicians, Medical Records, and Community Health Workers) across public and private hospital, medical centers, private emergency delivery, pharmacies, and community-based health care).</strong></td>
<td>Interprofessional and Transdisciplinary: Team Building and Communications</td>
<td>OSHA and other Required Compliance</td>
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<tr>
<td>Facilities and Construction</td>
<td><strong>Focuses on Real-Estate Residential-Multifamily, Commercial, and Industrial Developers, Building Owners and Operators, Large-Scale Distribution Centers. Purposely includes Engineering, Architect, and Design Companies AS WELL AS Installation Companies addressing operating systems (HVAC, Plumbing, Electrical). Includes Support Services and Assessment by Insurance and Reinsurance Carriers.</strong></td>
<td>Business Continuity Specialist</td>
<td>OSHA and other Required Compliance</td>
<td>Project Management for Resiliency</td>
<td>Interprofessional and Transdisciplinary: Team Building and Communications</td>
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<td>Debris Removal and Reuse</td>
<td><strong>Focuses on Public Sector Designated Debris Management Contractors, Providers AS WELL AS Private Sector Companies Delivering Large-Scale Removal-Cleaning Services. Includes Mold and Material, Automotive and Large Appliance Removal and Reuse (including Electronics).</strong></td>
<td>OSHA and other Required Compliance</td>
<td>Interprofessional and Transdisciplinary: Team Building and Communications</td>
<td>Business Continuity Specialists</td>
<td>Project Management for Resiliency</td>
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<tr>
<td>Drones and Internet of Things (IoT)</td>
<td><strong>Focuses on the coordination among FAA, State and Local Approved Operators (Pilots, Support), coupled with Sensors, Optical, Information and Data Gathering Technology Providers and/or Network Architects for Leveraging IoT platforms into the Public and Private Emergency Operations. Additionally engages with Education-Training of Scenarios, Remote Learning, and Autonomous Vehicle Communications. Supports Facilities and Infrastructure Assessment of Pre-Disaster Vulnerability and Event Loss Scenarios, AND Public Safety - Rescue Teams.</strong></td>
<td>Project Management for Resiliency</td>
<td>Interprofessional and Transdisciplinary: Team Building and Communications</td>
<td>OSHA and other Required Compliance</td>
<td>Business Continuity Specialists</td>
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<td>Disaster Case Management</td>
<td><strong>Focuses on Pre-Disaster Preparedness and Response (Immediate), and then Recovery and Rebuild (Near-Term) Individuals and Teams Organized to Assist with Resource Allocation, Personal and Community Benefits, Health and Human Safety Integration, Financial Management (Banking, Other Services) Required for Reducing Long Term Consequences from Disasters. Supports National and Regional Disaster Management Consulting Firms, Engineering and Project Management Firms, AS WELL AS Government and Community Disaster Programs (FEMA, SBA, EDA, etc.)</strong></td>
<td>Business Continuity Specialists</td>
<td>Project Management for Resiliency</td>
<td>Interprofessional and Transdisciplinary: Team Building and Communications</td>
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Targeted Content
- Lessons Learned and Scenario Setting for Future Disaster Preparedness
- Preparing and Protecting Myself, My Family, My Home, My Assets
- Conducting and Continuing Assessment of Risks
- Evaluating Direct and Indirect Impacts on Personal and Public Safety (Financial, Health-Mental Health, Access to Preparedness and Response Services)
- Top 10 "Investments in Preparedness" and Available Resources for Individuals, Families, Asset Owners, Small Businesses, and Community Organizations
- Critical Supplies, Technologies, Equipment, and Product Showcase for Future Proofing and Resilience of Personal and Professional Assets
- Leveraging Existing Local and Regional Programs for Assistance in Preparedness, Response
- Digital, Web-based, Social Media, and Other Information Services in Support of Preparedness, Recovery
- The Role and Value of Insurance as 'Economic Capital' for Resilience - Auto, Homeowner, Flood, Special Property and Casualty, Other Products
- Supporting My Neighbors and Community: Roles After You Are Prepared (especially Elderly, Disabled, Other Challenged Individuals or Families)

Targeted Small Business, Chambers, and Industry Interests
- Opportunities for Addressing Hyper-Local Supply Chain Challenges: Roles for Small Enterprises
- Advancing Solutions for Neighborhood and Community Preparedness Challenges: Construction, Facilities and Local Infrastructure, Food and Supply Chains, Medical-Health, Communications and Information, Disaster Case Management Support
- Resources for Serving the Resilient Economy
- Certifications, Registrations, Licensing, Approvals, Recognition as Vendor or Supplier
- Coordinating Preparedness and Response Strategic Partnerships
- Project Level Opportunities: 'Risk Mitigation @ Scale' (Energy, Power, Water, Food, Logistics, Other Sources of Resilience including Green-Sustainability)
Aligning with Employers’ Priorities

Prioritizing Outcomes and Impacts
- 1st: Preparedness and Risk Mitigation
- 2nd: Response and Recovery
- 3rd: Rebuild

Prioritizing Areas of Certification Based On Today’s Roundtable
- 1st: Scenario and Simulation Training
- 2nd: Team Building and Communications
- 3rd: Project Management
- 4th: Compliance

Prioritizing Citizen and Employee Areas of Focus
- 1st: Medical Trauma and Health Support
- 2nd: Rescue Including Equipment and Transportation
- 3rd: Disaster Case Management
- 4th: Facility Management and Operations
- 5th: Debris Removal and Reuse
- 6th: Other
What's The Difference?

The Corporate College@HCC
- Business entities as clients
- Closed enrollment
- Hired by contract
- At client’s chosen site
- Client-focused training

HCC Continuing Education
- Individuals as customers
- Open enrollment
- Acceptance by application
- On campus
- Curriculum-focused education
Entrepreneurial and Small Business Programs
Apprenticeship
Registered apprenticeship is on-the-job training and classroom instruction that prepares students for highly-skilled jobs in various industries.

Industry Partners
Medium to Large
Core Industries:
- Construction
- IT
- Education
- Healthcare
- Advanced Manufacturing
- Logistics
- Culinary
- Automotive

Community Learning
Partnerships with both corporations and community organizations to provide:
- Community Training
- Summer Camps
- Digital Skills
Resiliency Operations Center (ROC)

At the core of the Resilience Center of Excellence is the Resiliency Operations Center (ROC). At this one-of-a-kind complex to be built on the HCC Northeast Campus, up to 3,000 to 4,000 citizens, corporate and small business managers, and first responders a year will safely train in controlled but authentic field and virtual simulations.
Our Vision for Public Safety and Rescue
Every Houstonian can be a first responder.

**The Next Generation of Professionals**
Training the next generation of Houston’s emergency response, medical triage, and infrastructure support professionals.

**Community Organizations & Businesses**
Supporting the local economy through the development of a resilient workforce.
Follow-up Contacts

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