The Connecticut Digital Talent Ecosystem Initiative, a partnership between the New England Board of Higher Education (NEBHE) and the Business Higher Education Forum (BHEF), aims to create a six-credit Digital Generalist microcredential, offered by Connecticut's postsecondary institutions. The Digital Generalist microcredential will connect students with high value education pathways and prepare them for in-demand, technology-enabled occupations across critical industries, including manufacturing, healthcare and finance.

**WHAT IS THE DIGITAL GENERALIST MICROcredential?**

The Digital Generalist microcredential is a bundle of curricula and/or courses (totaling six credits) that, together, fulfill six buckets of Knowledge, Skills and Abilities (KSAs) and learning outcomes (see below).

**ROLE OF EMPLOYERS**

- Verify KSAs as in-demand needs for Digital Generalist talent
- Partner with postsecondary institutions in Connecticut that offer the Digital Generalist microcredential to offer programmatic enhancements, such as work-based learning opportunities
- Hire individuals who complete the microcredential

**ROLE OF INSTITUTIONS**

- Determine courses that align to employer-approved KSAs and bundle into the credit-bearing Digital Generalist microcredential
- Partner with employers seeking job candidates with a Digital Generalist credential to iterate the Digital Generalist microcredential and develop stackable education pathways to Specialist credentials and degrees
- Create career pipelines for students to connect with employers with high-wage, high-demand job openings

**TIMELINE**

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<th>Phase</th>
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<td>0 – Lay Foundation</td>
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<td>I – Analyze Job Market Landscape &amp; In-demand Skills</td>
<td>March 2021</td>
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<td>II- Profile Competencies &amp; Skills</td>
<td>May 2021</td>
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<td>III – Map skills &amp; Curricular Gaps</td>
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<td>IV – Select Academic Credentials</td>
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<td>V – Implementation</td>
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<td>VI – Integrate High Impact Practices</td>
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<td>VII – Develop Industry-Engaged Programs</td>
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<td>VIII – Update Continuously</td>
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<td>IX – Change Talent Development &amp; Recruitment</td>
<td>Fall 2021 &amp; Beyond</td>
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1. The Role of Data and Analytics
   a. Explain the importance of data and what data represent - **knowledge**
   b. Differentiate common data typologies, including structured vs. unstructured, numeric vs. text, root vs. derived - **knowledge**
   c. Explain the performance implications of differing data modeling methods and structures - **knowledge**
   d. Explain potential uses/applications given a source and type of data - **knowledge**
   e. Demonstrate how data can be used to reduce uncertainty and risk related to decisions and decision-making - **knowledge**
   f. Explain and demonstrate how differences in data and desired outcomes impact the appropriateness of data analysis techniques (e.g., descriptive vs. diagnostic vs. predictive vs. statistical) - **knowledge**

2. Probability and Descriptive and Inferential Statistics
   a. Demonstrate knowledge of probability and standard statistical distributions-knowledge
   b. Explain hypothesis testing and statistical significance - **knowledge**
   c. Demonstrate and explain the role and importance of model validation and accuracy metrics in analytics projects, hypothesis testing, and information retrieval - **knowledge**
   d. Describe the conditions that comprise the simple linear regression model and associated concepts including the least squares criterion - **knowledge**
   e. Demonstrate the ability to form hypotheses and appropriate experimental design to test - **skill**

3. Data Manipulation
   a. Perform basic data manipulation and exploration using appropriate tools and software, including use of key Excel functions - **skill**
   b. Create and edit simple data structures and storage - **skill**
   c. Detect and remediate missing, miscoded, and anomalous data - **skill**
   d. Explain the purpose of and code conditional logic statements - **skill**
   e. Use a computer application to manage large amounts of information - **skill**
   f. Implement common information retrieval and filtering applications in databases and data systems - **skill**
   g. Find and access publicly available datasets - **skill**
   h. Conduct ad hoc analysis (summarize, estimate, predict data, use pivot tables) - **skill**

4. Data Visualization and Communication
   a. Explain the role of data visualization in discovery, communication, and decision-making - **knowledge**
   b. Evaluate data visualization options for proper application in various situations - **ability**
   c. Create effective static and interactive data visualizations or narratives that employ analytics and visualization software and strategies for various audiences - **skill**
   d. Visualize data using various types of displays including tables, dashboards, graphs, maps, and trees - **skill**
e. Distinguish between advanced visualizations and explain the advantages of each - knowledge
f. Discuss techniques for creating advanced data visualizations - knowledge
g. Apply the principles of color, composition, and hierarchy to design - skill
h. Properly define a problem in context, use appropriate data, and deliver a compelling visualization to explain or answer a question - ability
i. Utilize effective storytelling methods (e.g. metaphor, analogy, journeys) to provide data insight beyond data reporting - ability
j. Evaluate interactive design techniques and content strategy for digital services (UX) - ability
k. Identify the current and potential impacts of new, emerging, and rapidly evolving technologies on organizations and their operations across a range of industries and sectors - knowledge
l. Apply data mining techniques to structured and unstructured data - skill

5. Data Ethics
   a. Identify how global legal, policy and/or ethical constraints might impact data analyses - knowledge
   b. Identify the established ethical and legal issues in data management facing organizations - knowledge
   c. Explain how ethical, compliance, and legal issues should/must be considered in data driven decision making - knowledge
   d. Demonstrate awareness of personal privacy issues related to the collection and usage of data - knowledge
   e. Explain the important issues around data governance - knowledge
   f. Recognize and explain the potential sources of bias in data or analysis and its effect on outcomes and decisions - knowledge

6. Data Security
   a. Explain information assurance (IA) principles and organizational requirements that are relevant to confidentiality, integrity, availability, authentication, and non-repudiation - knowledge
   b. Apply confidentiality, integrity, and availability principles - skill
   c. Explain data classification standards and methodologies based on sensitivity and other risk factors as they relate to relevant regulatory requirements - knowledge
   d. Explain authorization and access control principles and methods - knowledge
   e. Describe the fundamental concepts of Risk Management and Risk Management Life Cycle - knowledge
   f. Explain rationale for data anonymization and data security standards - knowledge
   g. Identify situations vulnerable to insider threats - knowledge
   h. Explain various methods to prevent insider threats - knowledge
   i. Describe the spectrum of insider threats and its implications - knowledge