

Adopting a Career Pathways Framework that Supports and Sustains Innovation



CENTER FOR OCCUPATIONAL
RESEARCH & DEVELOPMENT

Panel



Hope Cotner

President/CEO

CORD

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Dinkins**

*Adv. Mfg
Department
Chair*

FTCC



Zack Hubbard

*Dean of Technical
Programs*

RCCC

About CORD

A national nonprofit organization founded in 1979

Core tenets:

1. Contextual teaching in STEM disciplines
2. Seamless transitions from secondary to postsecondary education
3. Training solutions to help America's technicians remain globally competitive



Providing innovative changes in education to prepare students for greater success in careers and higher education

CENTER FOR OCCUPATIONAL
RESEARCH & DEVELOPMENT



Today's Agenda

- Common Vision of Career Pathways
- *Advancing Credentials through Career Pathways Framework*
- Examples of and Resources for Framework Components

Common Vision

- Programs that match the **economic development needs** of your community
- Graduates that possess the skills to ensure a **high-quality workforce**
- A **community of lifelong learners**



What's Happening?

- Nature of work changing at unprecedented speeds
- Technology advancements in machine learning, AI, IoT, and robotics eliminating some jobs, creating others
- Technicians sit at the center of much of this disruption
- Education must keep up
- Our students' career paths will evolve



Preparing Technicians for the
FUTURE OF WORK

Top 10 Skills

Future of Jobs Report 2020
World Economic Forum

Top 10 skills of 2025

Type of skill

- Problem-solving
- Self-management
- Working with people
- Technology use and development



Analytical thinking and innovation



Active learning and learning strategies



Complex problem-solving



Critical thinking and analysis



Creativity, originality and initiative



Leadership and social influence



Technology use, monitoring and control



Technology design and programming



Resilience, stress tolerance and flexibility



Reasoning, problem-solving and ideation

Framework for a Cross-Disciplinary STEM Core

DATA KNOWLEDGE AND ANALYSIS

Manipulating and interpreting data to resolve issues and using Excel and other common software proficiently to accomplish tasks

Analytics tools
Computational thinking
Data analysis
Data backup and restoration
Databases
Data fluency
Data life cycle
Data management
Data modeling
Data storage
Data visualization
Query languages
Spreadsheets
Statistics

ADVANCED DIGITAL LITERACY

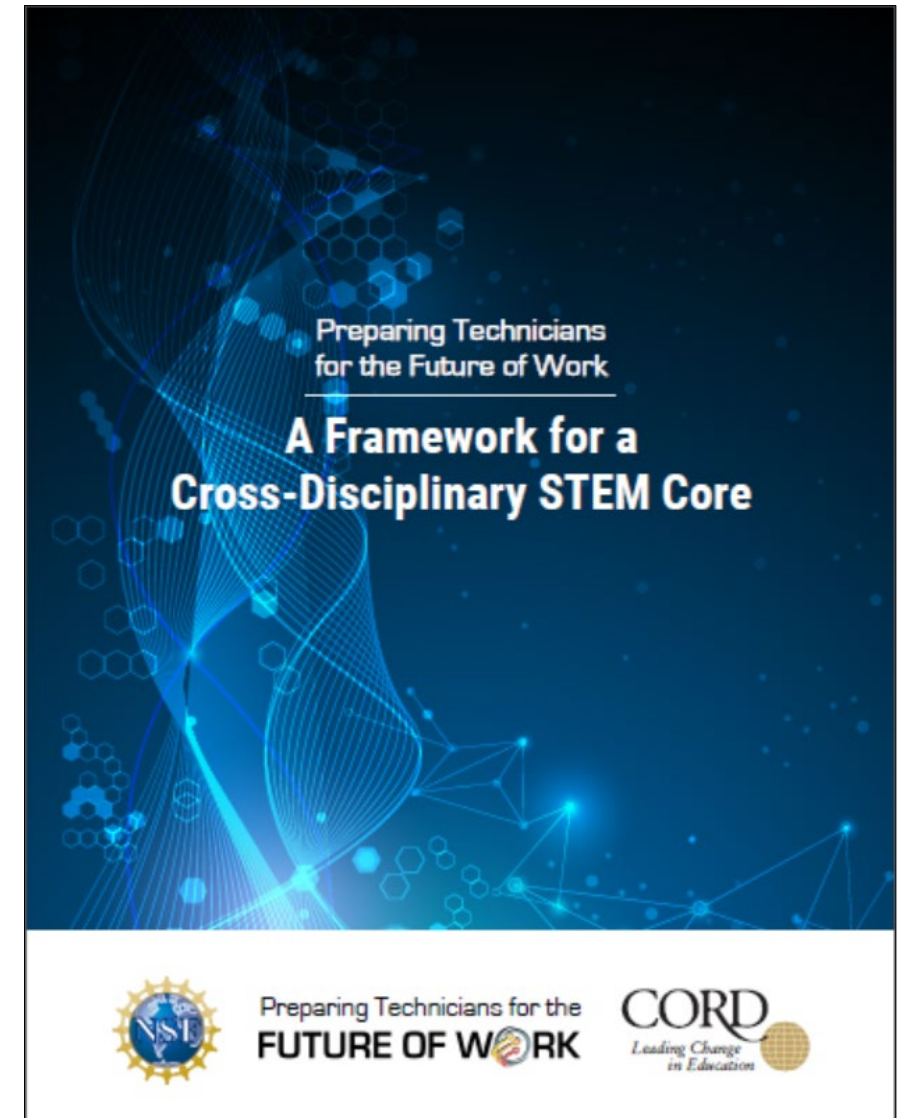
Understanding digital communications and networking, cybersecurity, machine learning, sensors, programming, and robotics at a higher than introductory level

Artificial intelligence/
machine learning
Automation/robotics
Basic programming
Cloud literacy
Digital fluency
Digital twins
Edge computing
Function block diagram
programming
Human-Machine Interface (HMI)
Internet of Things (IoT)
Network architecture
Network communication
Security controls

BUSINESS KNOWLEDGE AND PROCESSES

Understanding the value chain and business practices of an enterprise and applying principles of ethical adoption of new technologies

Business cycles
Blockchain
Communication
Continuous process improvement
Customer/stakeholder analysis
Entrepreneurship
Ethics
Lean processes
Logistical chains
Market trends
Overall Equipment Efficiency (OEE)
Return on Investment (ROI)
Risk management
Supply and demand
Vertical and horizontal integration



Stackable Credentials Initiative



Three Essential Components:

1. Engaging employers in strategic and sustainable ways
2. Building career pathways based on industry-validated stackable credentials
3. Supporting completion through non-credit/credit alignment



Advancing Credentials
THROUGH Career Pathways



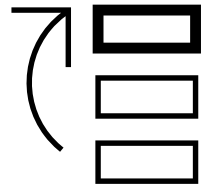


Business & Industry Leadership Team Model



1. A Business Advisory Council
“on steroids”
2. A **structured, repeatable process** that can be used for any technical program
3. A model that puts employers in a **co-leadership role** that greatly increases their engagement with your program

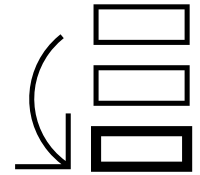




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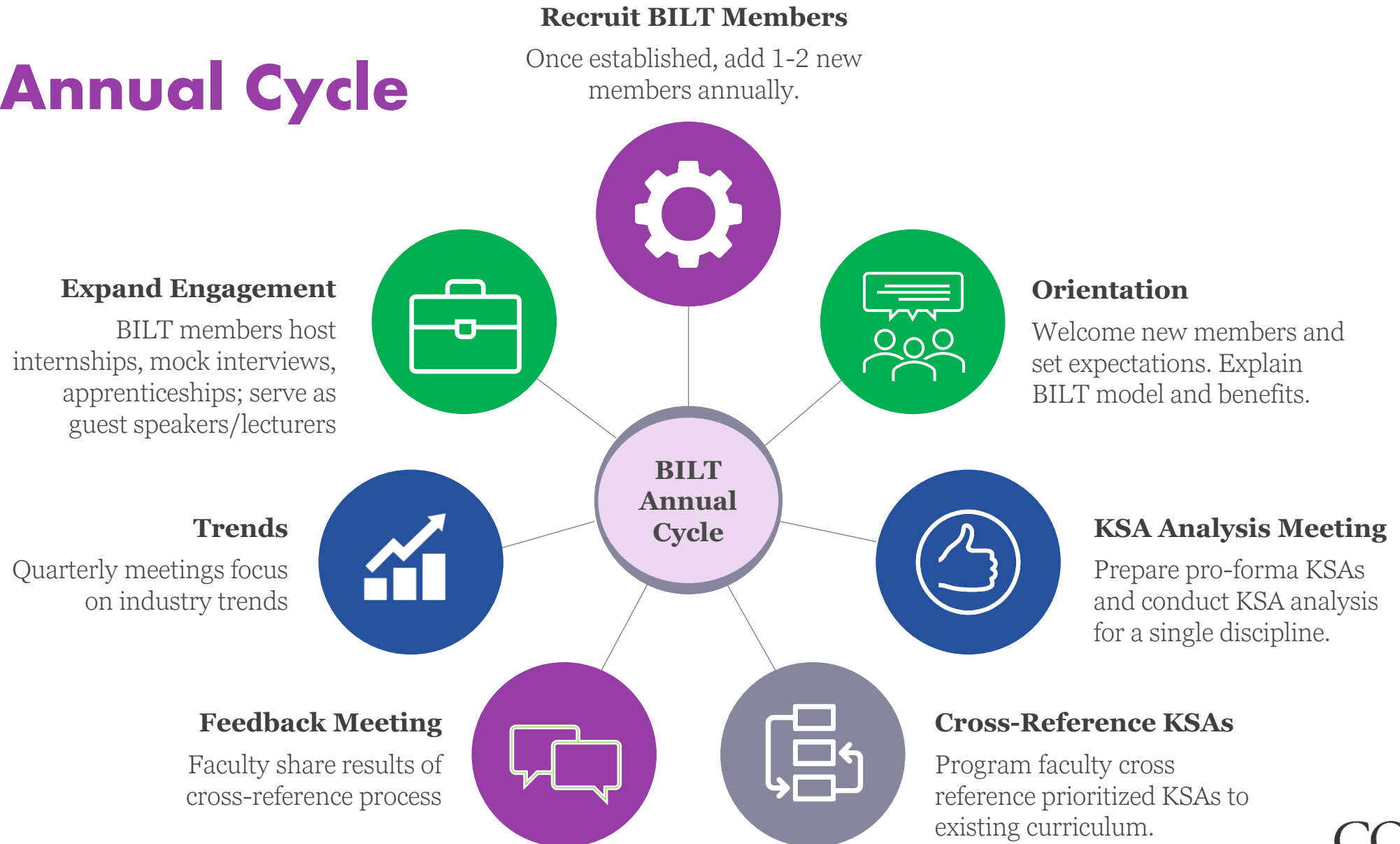
SPECIFICITY

DEPTH OF INPUT



INDUSTRY-LED

BILT Annual Cycle





Advancing Credentials
THROUGH Career Pathways



Pathways to Career Readiness and Advancement

Programs of Study and **Career Pathways** share many of the same attributes. The two terms are used interchangeably in many state and local applications. Both are defined in Federal Law.

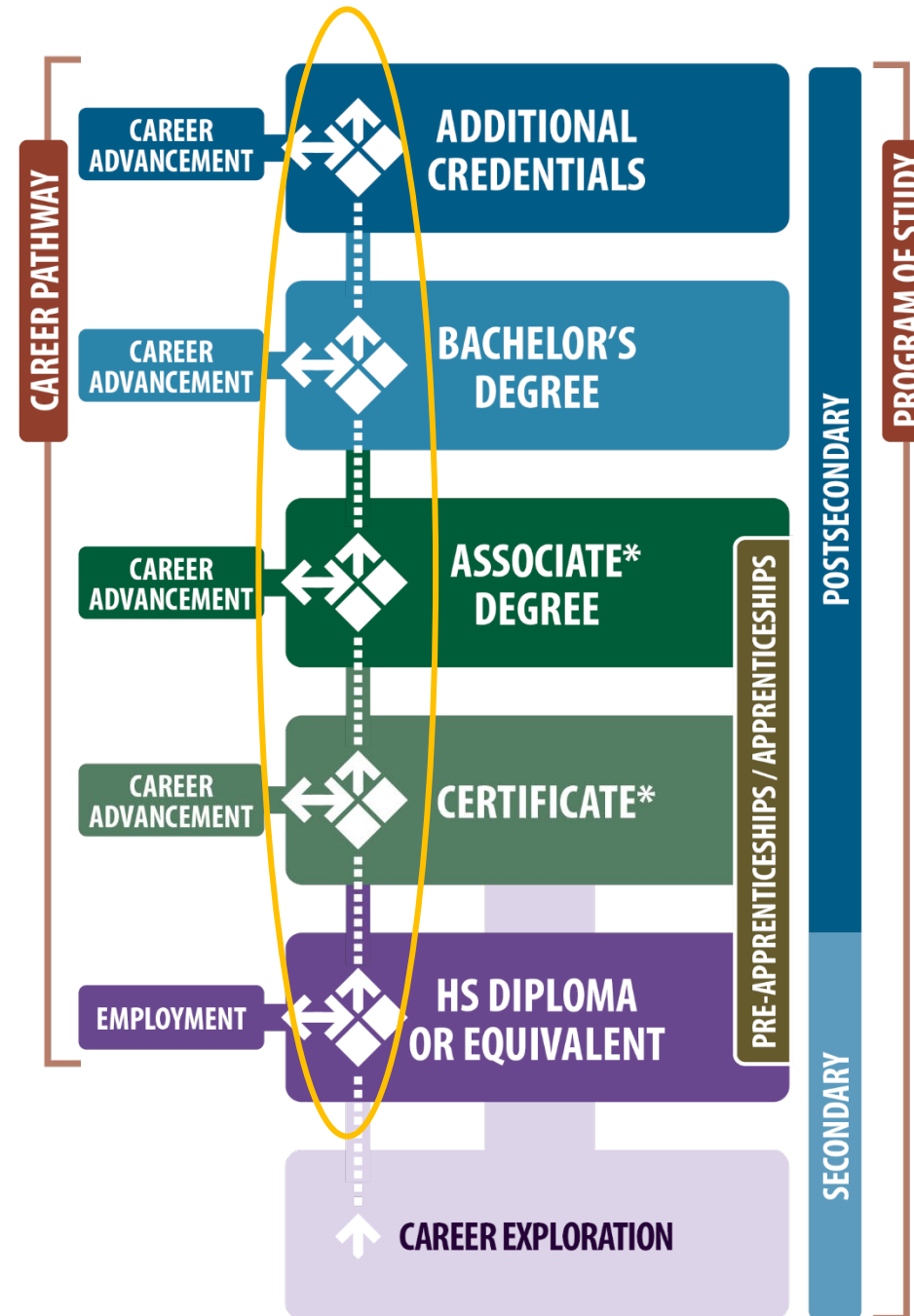


STACKABLE CREDENTIALS

At these milestones the learner may advance to the next-higher-skill job in the sector for which they have trained, and/or continue in or reenter the learning pathway to pursue additional credentials.

*These stackable credentials may:

- Include preparation for industry certifications.
- Articulate to bachelor's degree programs.
- Be obtainable by HS students through dual credit.



Career Pathways Embedded with Stackable Credentials



Provide flexibility for **students**



Meet the evolving skill needs of **employers**



Improve the ability of colleges and **communities** to increase postsecondary credential attainment



Give **colleges** tools for continuous upskilling

Why Pathway Maps?



- To help learners of all ages **understand the opportunities** available to them to learn, earn, and realize success in the career path of their choice
- To identify entry points and exit points aligned to **credential** attainment and advancing levels of **employment**
- To convey that a **seamless pathway** of stackable credits and credentials is not only possible, but critical to success in today's labor market

Mapping Career Opportunities & Economic Mobility



- You're creating a visual story depicting the pathway
- What career opportunities does it comprise?
- What postsecondary credentials can you earn?
- What industry certifications will the pathway prepare you for?



Career Pathways

Health Service Management Associate in Science

Prior Credit High School Career Pathways Certificate	Prior Credit Technical College Certificate	College Credit Certificate	College Credit Certificate	Associate Degree	Bachelor Degree
Administrative Office Specialist	Accounting Operations	Medical Information Coder/Biller (37 credit hours)	Medical Office Management (34 credit hours)	Health Services Management (60 credit hours)	Strategic Leadership (120 credit hours)
Allied Health Assisting	Administrative Office Specialist	Industry Certifications	Career	Industry Certifications	Career
Applied Cybersecurity	Medical Assisting	CCA; CCS; CCS-P; CPC	Average Cost of Program	CAHIMS; CMM	Average Cost of Program
Applied Information Technology	Practical Nursing	Career	\$3,750.00	Career	\$7,200.00
Business Management & Analysis	Industry Certifications	Average Cost of Program	Typical Starting Positions	Average Cost of Program	Typical Starting Positions
Digital Design	Certified Medical Administrative Assistant (CMAA)	\$4,100.00	Medical Secretary, Medical Receptionist, Insurance Clerk, Billing Clerk	\$6,600.00	Medical Practice Manager, Health Services Department Manager, Revenue Cycle Supervisor/Manager, Human Resource Specialist, Entrepreneur
International Business	Registered Medical Assistant (RMA)	Typical Starting Positions	Average Starting Salary	Typical Starting Positions	Average Starting Salary
Legal Administrative Specialist		Medical Records/Health Information Technicians, Insurance/Billing Specialist, Coding Specialist, Coder/Biller, Insurance Specialist	\$15.67 hourly	Medical Office Manager, Health Services Department Supervisor, Billing Supervisor, Revenue Cycle Analyst	\$25.66 hourly
Nursing Assistant		Average Starting Salary		Average Starting Salary	
Web Development		\$15.67 hourly		\$18.00 hourly	
Industry Certifications					
Certified Medical Administrative Assistant (CMAA)					
Certified Nursing Assistant (CNA)					

Learn more at www.LSSC.edu/academics

Cybersecurity Pathway

Earn Credit for What You Already Know:

Through prior learning assessment (PLA), demonstrate mastery of core skills for college credit, or with industry certifications.





HOW **BILT** BENEFITS STUDENTS, FACULTY, AND EMPLOYERS



Forsyth Tech
COMMUNITY COLLEGE

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Forsyth Tech
COMMUNITY COLLEGE

Business & Industry Leadership Team

Advisory Committee

- Local industry representatives
- 2x per year
- Gave approval



Forsyth Tech
COMMUNITY COLLEGE

BILT

- Industry led
- Prioritize competencies (KSAs)
- Future facing
- Engaged



Forsyth Tech
COMMUNITY COLLEGE

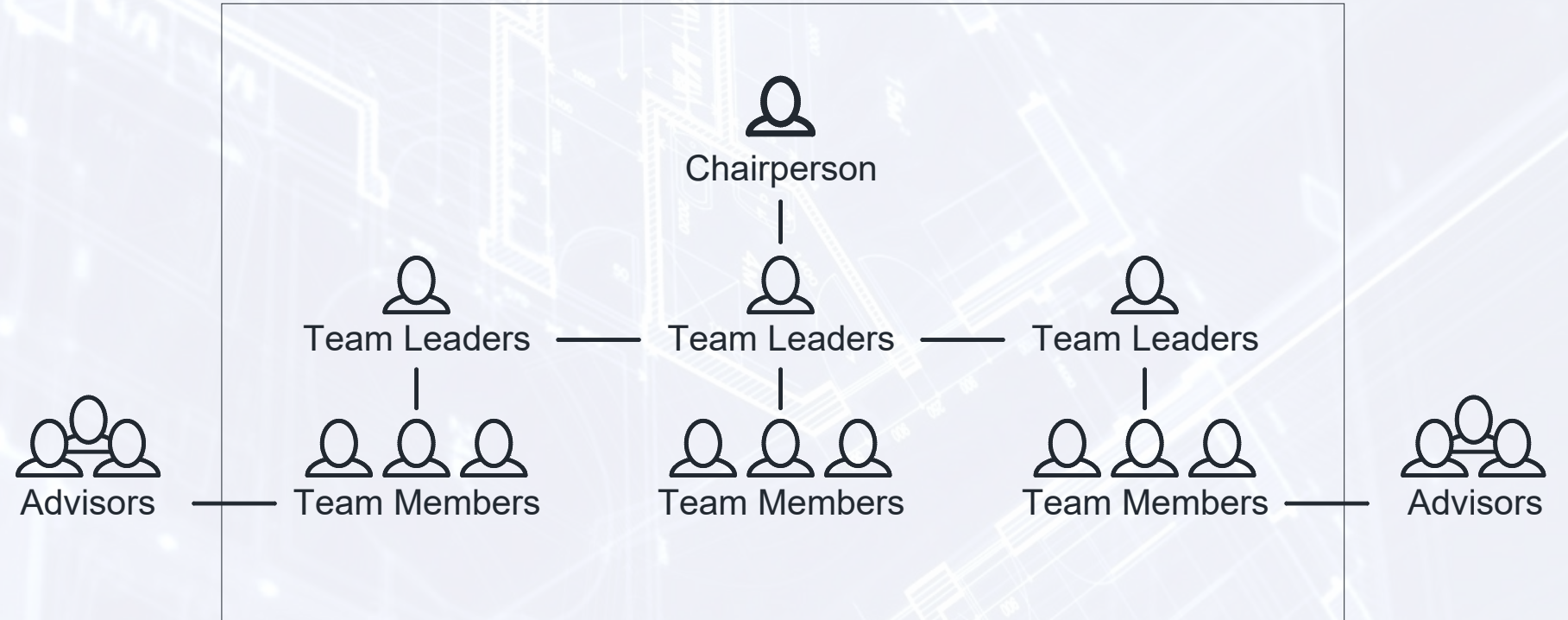
BILT Vision Statement

Inspiring the Evolution of Tomorrow's Advanced Workforce

BILT Mission Statement

Using diverse and creative leadership to increase community awareness and inspire engagement through the promotion of opportunities in advanced manufacturing.

BILT



Implementation

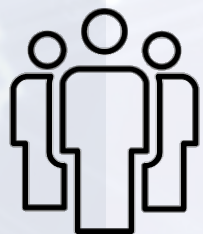
- Recruitment of BILT members
- Assign team members' responsibilities, expectations and deadlines for deliverables
- Team leaders guide their sub teams in developing a clear and concise communication strategy to focus on strengthening recruitment efforts
- Deliver draft recruitment communication plan

Employer Engagement

- Recruiting
- Guest lecturers
- Adjunct faculty
- Exploring Post 972
- LEAP program



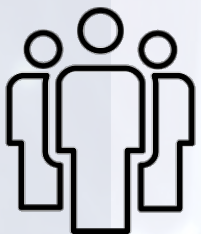
EXPLORING™
DISCOVER YOUR FUTURE



High School
Grads



Adults in the
Community



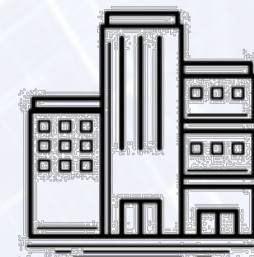
Current
Employees



*Three
Weeks*

Pre-Apprenticeship

Two Years



Employer
Partner



Forsyth Tech
COMMUNITY COLLEGE

Business & Industry Leadership Team

Stackable Credentialing at RCCC

- ▶ Mapping coursework to industry recognized professional certifications.
- ▶ Update course content where needed to better address student learning outcomes from those professional certifications.
- ▶ Formalize a process for paying for/funding certifications.
- ▶ Use Credit by Professional Certification in NC to award credit when possible.
- ▶ Have multiple entry and exit points for students interested in Information Technology



Test Fest at RCCC

To increase student participation in certification testing, RCCC organized an Annual Event called “Test Fest”

- Faculty Proctor exams for 1 day each year.
- Tests are provided free of charge for students.
- Students can take as many exams as they like in the 8-hour period.
- Credit by Professional Certification is awarded as appropriate.

Test Fest Certification Exams

Rowan-Cabarrus Community College

Exam Type	Exam Name
IC3	IC3 Exam (Global Standard 5)
MTA	Introduction to Programming Using Python - Exam 98-381
MTA	Software Development Fundamentals (VB Version)- Exam 98-361
MTA	Introduction to Programming Using Java - Exam 98-388
MTA	Software Development Fundamentals (C# Version) - Exam 98-361
MTA	Networking Fundamentals - Exam 98-366 AND Security Fundamen
MOS	Microsoft Office Specialist – Excel Core
MOS	Microsoft Office Specialist – Excel Expert
MOS	Microsoft Office Specialist - Access
MTA	Database Administration Fundamentals - Exam 98-364
MTA	Windows Operating System Fundamentals- Exam 98-349
MTA	Windows Server Administration Fundamentals - Exam 98-365
MOS	Microsoft Office Specialist – Word Core
MOS	Microsoft Office Specialist – Word Expert
MTA	Introduction to Programming Using HTML and CSS - Exam 98-383

Forms and Artifacts

Suggested Program of Study for Cyber Security

First Year Fall		Professional Certification	Credit Hours	Course Availability
Course Number	Description			
CIS-110	Introduction to Computers	IC3	3.0	FA / SP / SU
CTI-110	Web, Programming & DB Foundations	MTA	3.0	FA / SP / SU
CTI-120	Network & Security Foundations	MTA	3.0	FA / SP / SU
NET-125	Networking Basics		3.0	Fall Only
NET-126	Routing Basics	CCENT	3.0	Fall Only
Total Credit Hours			15	



CREDIT BY PROFESSIONAL CERTIFICATION

Student Name: _____ ID Number: _____

Program Title: _____ Program Code: _____

The original professional certification and one photocopy must be submitted to the program chair. **The program chair will view the original certification**, and provide a high quality photocopy. The original certification is **not** attached to this form and should be returned to the student.

Course Credit Requested

Course Name	Course Number	Professional Certification	Certification Authority	Date of Certification



North Carolina Community College System

CURRICULUM PROCEDURES

REFERENCE MANUAL

**Mission Statements
Table of Contents**

Download the manual from the Academic Programs web page at
<http://www.nccommunitycolleges.edu/academic-programs/curriculum-procedures-reference-manual-cprm>

The Current State of CPL in NC

The Curriculum Procedures Reference Manual contains a detailed section on Credit for Prior Learning.

The [CPRM CPL](#) section was last updated on 2/11/22.

Types of Credit for Prior Learning in NCCCS

1. Registered Apprenticeships
2. Certifications and Licensures
3. Courses Listed in the High School to Community College Articulation Agreement
4. Military Education and Training
5. Standardized Examinations
6. Challenge Examinations/Proficiency
7. Portfolio Assessment (**forthcoming**)
8. Public Safety Training (PST) Courses
9. CE to CU (**forthcoming**)

Credit for Prior Learning - NCCCS Updates

Crosswalks are being sent to CCRC for review.
(CCRC - Curriculum Course Review Committee)

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CAOs have been sent vote letters for several
disciplines already.

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There will be more information soon heading
into next year.



The Robotics and Automation Knowledge Sharing Coordination Network

- ▶ NSF ATE Project out of NC State and RCCC
- ▶ Focused on need to expose current/future technicians to content at the convergence of robotics/automation/mechatronics (RAM) and cybersecurity
- ▶ Session on Micro Credential from TRACKS-CN at **11:15am today:**
 - ▶ *Industry/Academia Collaborations to Enhance Manufacturing Workforce Connections*



Contact Us



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Adopting a Career Pathways Framework

Session Resources

