The Cross-Disciplinary STEM Core: Implications for Technician Education

October 10, 2023 • Hope Cotner, President/CEO, CORD

About CORD

A national nonprofit organization

CORD
Leading Change in Education

Core tenets:

- Connecting the classroom to the workplace through contextual and cross-disciplinary instruction
- Designing seamless pathways from secondary to postsecondary to career
- Facilitating industry-education collaboration to ensure America's technicians are globally competitive

Agenda

- Background – Preparing Technicians for the Future of Work
- The Cross-Disciplinary STEM Core
- Tools for Local Adoption/Implementation
- NCyTE and CSSIA Facilitate Cross-Disciplinary Collaboration
- CyAD Conference Takeaways/Resources
- Cyber Awareness Reports and Resources

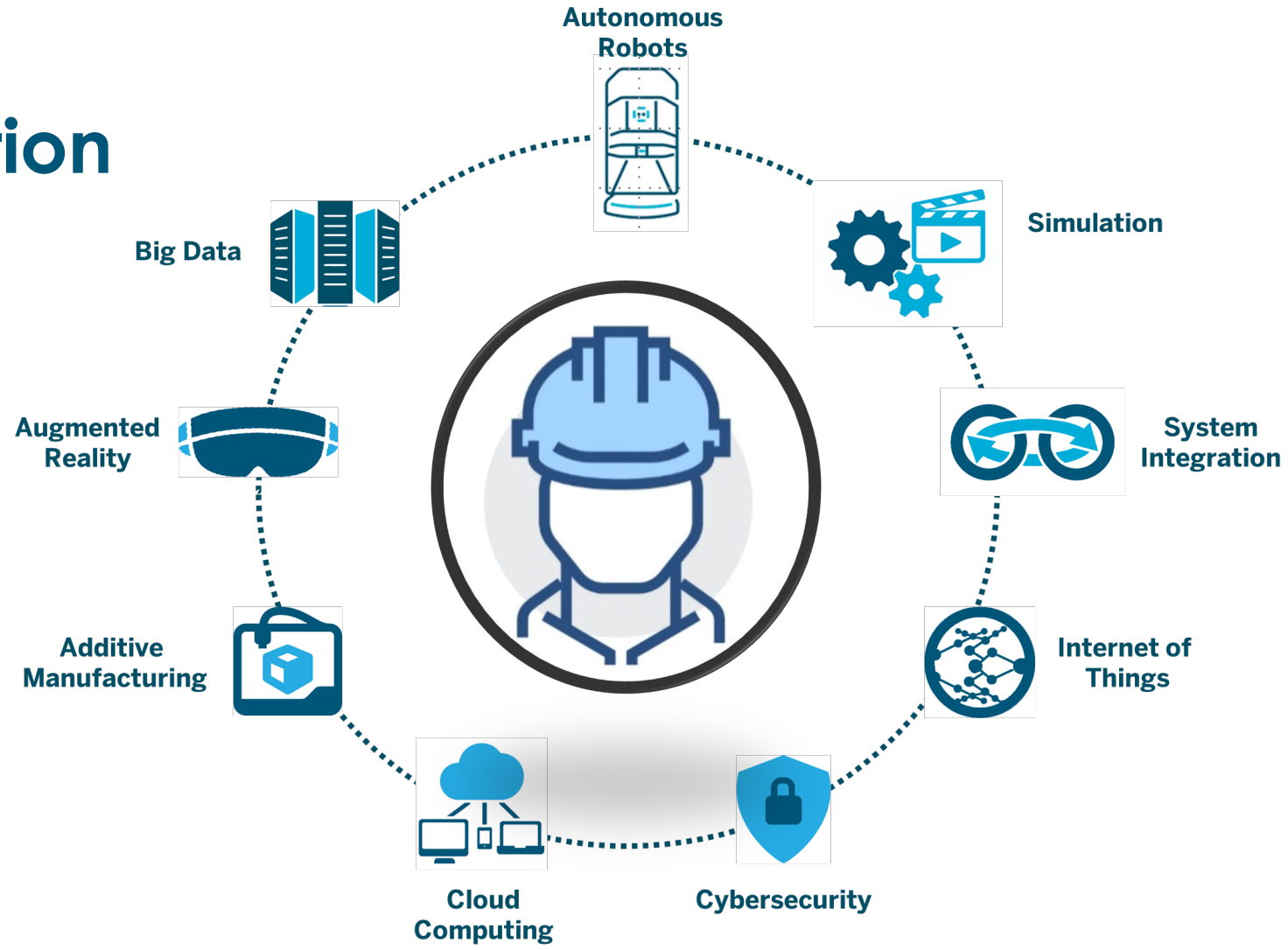
Preparing Technicians for the FUTURE OF WORK

Evolving Workplace

- Nature of work changing at unprecedented speeds
- Technology advancements in machine learning, AI, IoT, and robotics eliminating some jobs, creating others
- Work is more cross-disciplinary every day
- Technicians sit at the center of much of this disruption
- Career paths are continuously evolving
- Education must keep up

Preparing Technicians for the
FUTURE OF WORK

Workplace Transformation



Future of Jobs

Reskilling needs

WORLD ECONOMIC FORUM

44%

of workers' core skills are expected to change in the next five years

Source: World Economic Forum, *Future of Jobs Report 2023.*

Project Mission

Enable the NSF-ATE community (2-year colleges)
to collaborate regionally with industry partners,
within and across disciplines, on the
transformation of associate degree programs
to prepare US technicians for the work of the future

Preparing Technicians for the
FUTURE OF WORK
preparingtechnicians.org

Project Goals

1. Empower community colleges to prepare technicians for work of the future.
2. Promote regional collaboration between community colleges and industry to determine the technical demands of work of the future.
3. Support ATE Regional Networks focused on technician education for work of the future.
4. Foster adoption of Cross-disciplinary STEM Core to maximize impact on technician education.

Driving Questions

- How is new technology changing what technicians need to know and be able to do?
- What new advanced technologies are rapidly being adopted?
- What new knowledge and skills are needed? Are there any that *all* STEM technicians need?
- How will colleges teach new knowledge and skills in existing technical associate degree programs?

Identifying What Future Technicians Need To Know

Sources:

- Industry site visits/interviews
- Focus groups with ATE faculty and national/ international industry advisors
- Regional convenings of educators and industry
- Subject Matter Experts across I4.0 technologies
- Review of current research

Iterative Process

Results: Prioritized lists of knowledge and skills within three broad skill areas

“Future Proofing” STEM Technicians

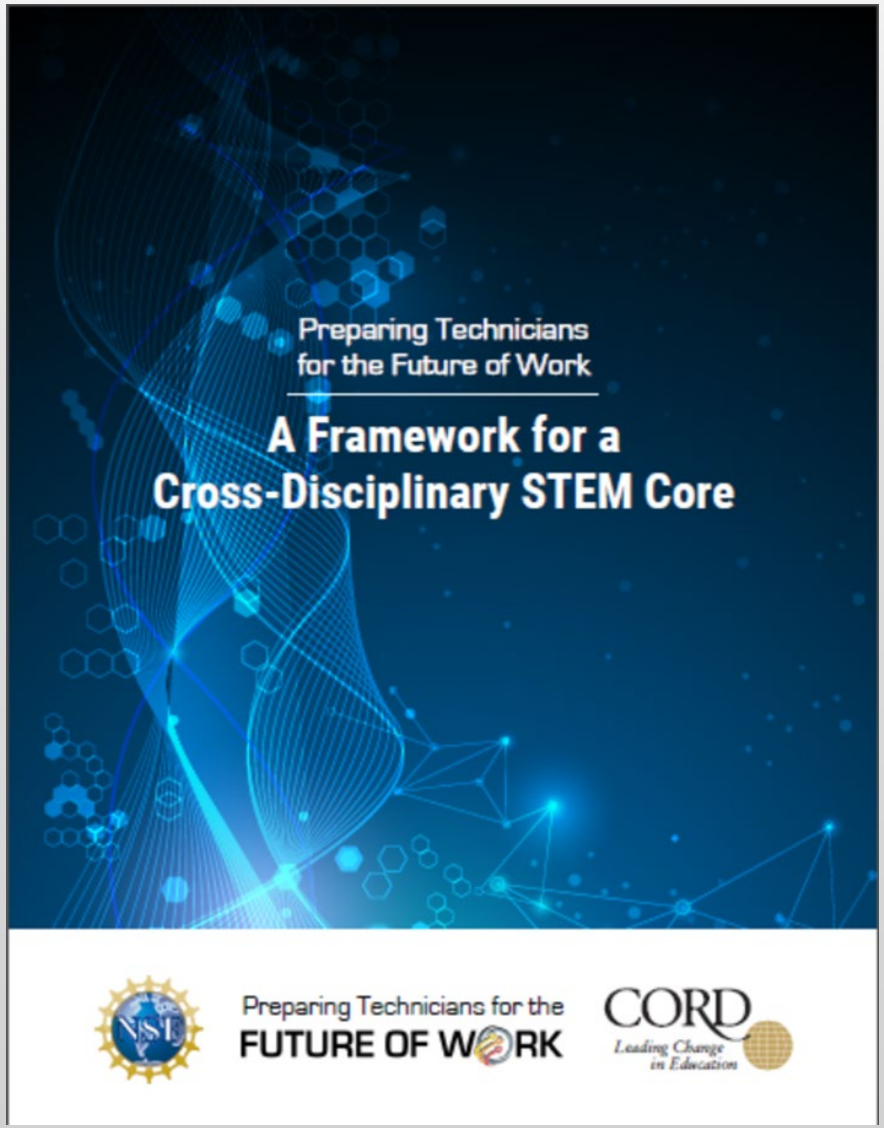
Cross-Disciplinary STEM Core:

Skill Area 1: Data Knowledge and Analysis

Skill Area 2: Advanced Digital Literacy

Skill Area 3: Business Knowledge and Processes

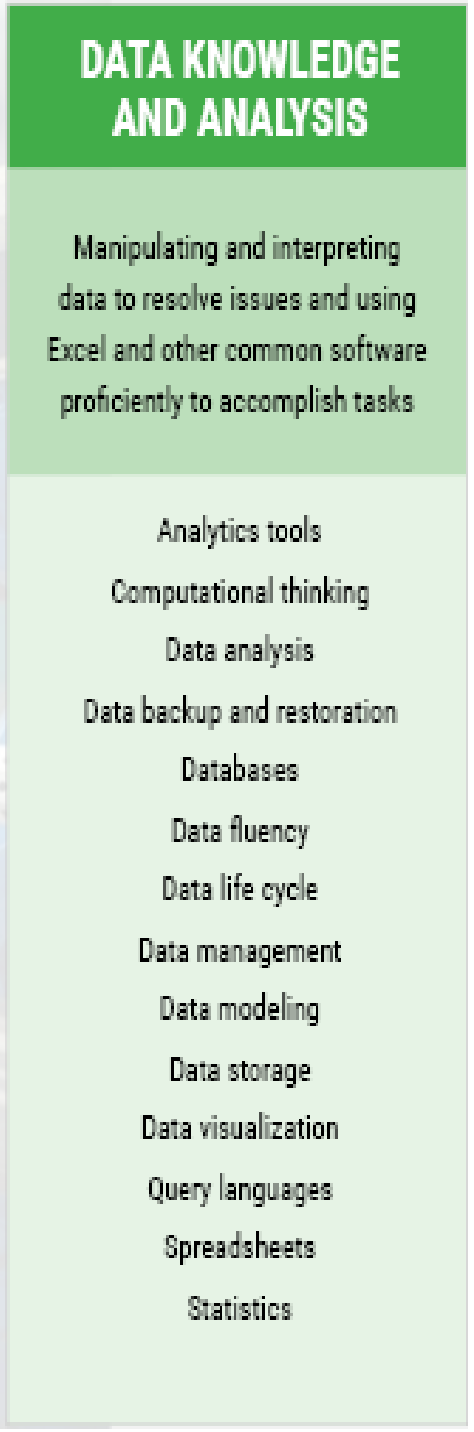
Framework for a Cross-Disciplinary STEM Core



DATA KNOWLEDGE AND ANALYSIS	ADVANCED DIGITAL LITERACY	BUSINESS KNOWLEDGE AND PROCESSES
Manipulating and interpreting data to resolve issues and using Excel and other common software proficiently to accomplish tasks	Understanding digital communications and networking, cybersecurity, machine learning, sensors, programming, and robotics at a higher than introductory level	Understanding the value chain and business practices of an enterprise and applying principles of ethical adoption of new technologies
Analytics tools	Artificial intelligence/ machine learning	Business cycles
Computational thinking	Automation/robotics	Blockchain
Data analysis	Basic programming	Communication
Data backup and restoration	Cloud literacy	Continuous process improvement
Databases	Digital fluency	Customer/stakeholder analysis
Data fluency	Digital twins	Entrepreneurship
Data life cycle	Edge computing	Ethics
Data management	Function block diagram programming	Lean processes
Data modeling	Human-Machine Interface (HMI)	Logistical chains
Data storage	Internet of Things (IoT)	Market trends
Data visualization	Network architecture	Overall Equipment Efficiency (OEE)
Query languages	Network communication	Return on Investment (ROI)
Spreadsheets	Security controls	Risk management
Statistics		Supply and demand
		Vertical and horizontal integration

Skill Sets within Data Knowledge & Analysis

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



Skill Sets within Advanced Digital Literacy

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

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

Skill Sets within Business Knowledge & Processes

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

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
Supply chains
Market trends
Overall Equipment Efficiency (OEE)
Return on Investment (ROI)
Risk management
Supply and demand
Vertical and horizontal integration

Which skill sets in the Cross-Disciplinary STEM Core are most important to your employer partners?

Where are they currently being taught?

Steps for Adopting the Cross-Disciplinary STEM Core

What could make faculty more comfortable integrating topics that are outside their discipline?

Adopting the Framework for a Cross-Disciplinary STEM Core

A Toolkit for Action

Preparing Technicians for the
FUTURE OF WORK

NSF

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Leading Change in Education

6 Concrete Steps Toward Framework Adoption

STEP 1: Recruit a Cross-Disciplinary STEM Implementation Team

STEP 2: Convene Employers to Prioritize Topics

STEP 3: Determine Curriculum Gaps and Integration Points

STEP 4: Develop Real-World Scenarios

STEP 5: Facilitate Professional Development Opportunities

STEP 6: Support Systemic Change

Toolkit for Action

How to Use This Toolkit

This Toolkit provides colleges with actionable steps and practical tools which can be adapted to facilitate the adoption of the Cross-Disciplinary STEM Core Framework in a local context. Each step begins with an introduction and a checklist. The checklist helps colleges assess their readiness for action. Each step offers a series of recommended actions supported by tools and templates for colleges to use.

Steps for Adopting the Framework

1. STEP ONE — **Recruit a Cross-Disciplinary STEM Core Implementation Team**
2. STEP TWO — **Convene Employers to Prioritize Topics**
3. STEP THREE — **Determine Curriculum Gaps and Integration Points**
4. STEP FOUR — **Develop Real-World Scenarios**
5. STEP FIVE — **Participate in Professional Development Opportunities**
6. STEP SIX — **Support Systemic Change**

Step-by-step Guidance

1 STEP ONE
Recruit a Cross-Disciplinary STEM Core Implementation Team

The first step to implementing *A Framework for a Cross-Disciplinary STEM Core* is to recruit a team that spans technical specializations across the college. First, meet with faculty across program areas to introduce the Framework. At this meeting, solicit volunteers to serve on the team. Next, host a team meeting to review the toolkit, lay out a timeline for adopting the steps and elect a team lead or chair to help shepherd the implementation of the Framework and facilitate future meetings.

The Implementation Team should include the following members:

- *College President*: The President (or their designee) serves as the Executive Sponsor and can drive the necessary changes throughout the institution and engage external stakeholders.
- *Instructional Leaders and Faculty Across Disciplines*: The individuals that will be doing the legwork on the ground are the instructional leaders and faculty of technician education programs.

Food for Thought

Ready-to-use Tools

3 STEP THREE
Determine Curriculum Gaps and Integration Points

The best strategy for adding the Cross-Disciplinary STEM Core into technician programs is to integrate relevant lessons into existing courses rather than attempting to add new courses. In this step, team members determine where the skill sets are currently taught, if at all, within their programs and identify natural integration points within their courses.

Step 3 Checklist

Do you currently teach any of the Cross-Disciplinary STEM Core skill sets in your discipline?
☐ Yes ☐ No

If yes:

Would you be willing to share the content and lesson(s) with faculty from other disciplines?
☐ Yes ☐ No

Would the content and/or lessons need to be modified to share with faculty who may not be subject matter experts?
☐ Yes ☐ No ☐ Depends/Unsure

Are you familiar with the *Preparing Technicians for the Future of Work* materials available for classroom use, such as instructional cards, podcasts, and/or other resources?
☐ Yes ☐ No

Action 3.1

Identify where in the curriculum prioritized skill sets are already being taught.

Team members—ideally from multiple programs—examine their existing course content for lessons that could be used to teach the top skill sets prioritized by employers. This should include lessons that can be shared, if needed, with faculty who are not subject matter experts in the discipline. The Implementation Team then collects this information.

TOOL: *Cross-Disciplinary STEM Core Curriculum Matrix*


Data Knowledge & Analysis — Student Resource

SPREADSHEETS

What are spreadsheets and how are they related to Data Knowledge & Analysis?

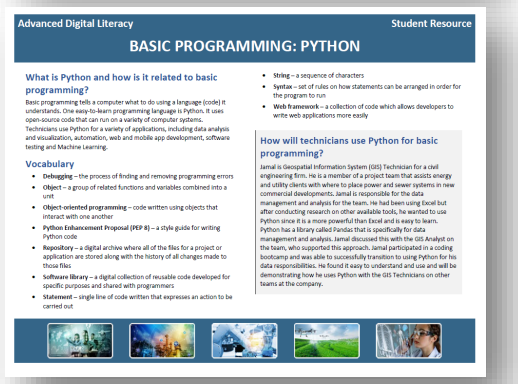
A spreadsheet is a file created using software such as Microsoft Excel to capture, display, and manipulate data arranged in rows and columns. Technicians collect data as part of their normal daily workflow to install and configure systems, diagnose problems, and perform maintenance. Spreadsheets are a convenient and simple tool with which to store this data. Once the data is stored, the technician can use spreadsheet features to analyze data, including summaries, trends, and patterns. Spreadsheets can also be used to create data visualizations.

Vocabulary

- CSV – the file extension indicating that data will be displayed separated by commas and line breaks; compatible with all spreadsheets
- Data visualization – represents information in the form of a chart, diagram, or infographic so that data can be quickly and easily understood
- Export – to copy or move data from one program or computer to be saved or imported into another program; exporting can be used to back up and save important data or to move data between versions of a file
- Pivot table – a Excel tool used to reorganize and summarize data from specific rows and columns of data, making it easier to spot trends and patterns
- TSV – the file extension indicating data will be displayed separated by tabs; used when data is stored in tables
- XLS or XLSX – the file extension that indicates a spreadsheet can be opened in Microsoft Excel

How will technicians use spreadsheets?

Shanice is a Solar Technician on a solar farm. Recently her company installed sensors on each panel. The sensors collect data including voltage, current, temperature and the amount of sunlight reaching the panel. When there was a problem with the system in the past, Shanice would need to walk through the solar farm and examine each panel to determine which panels were malfunctioning. Now the sensors on the panels transmit readings to a database available on a computer at her workstation. When there is a system problem, Shanice logs into the database, exports the data to a CSV file, or a comma separated file, clicks on "Save As," and selects the "xlsx file" option where it's converted to an Excel spreadsheet. She then can review data that is displayed in with rows and columns (or use the program to create data visualizations) where she can easily spot the specific panel that is the source of the issue. Shanice can go directly to that panel and service it.


Advanced Digital Literacy — Student Resource

BASIC PROGRAMMING: PYTHON

What is Python and how is it related to basic programming?

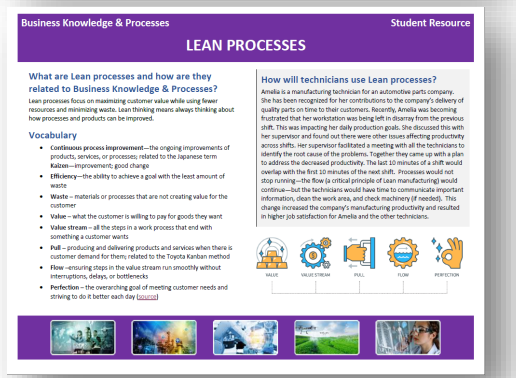
Basic programming tells a computer what to do using a language (code) it understands. One easy-to-learn programming language is Python. It uses open-source code that can run on a variety of computer systems. Technicians use Python for a variety of applications, including data analysis and visualization, automation, web and mobile app development, software testing and Machine Learning.

Vocabulary

- Debugging – the process of finding and removing programming errors
- Object – a group of related functions and variables combined into a unit
- Object-oriented programming – code written using objects that interact with one another
- Python Enhancement Proposal (PEP 8) – a style guide for writing Python code
- Repository – a digital archive where all of the files for a project or application are stored along with the history of all changes made to those files
- Software library – a digital collection of reusable code developed for specific purposes and shared with programmers
- Statement – single line of code written that expresses an action to be carried out
- String – a sequence of characters
- Syntax – set of rules on how statements can be arranged in order for the program to run
- Web framework – a collection of code which allows developers to write web applications more easily

How will technicians use Python for basic programming?

Jamal is Geospatial Information System (GIS) Technician for a civil engineering firm. He is a member of a project team that assists energy and utility clients with where to place power and sewer systems in new commercial developments. Jamal is responsible for the data management and analysis for the team. He had been using Excel but after conducting research on other available tools, he wanted to use Python since it is a more powerful than Excel and is easy to learn. Python has a library called Pandas that is specifically for data management and analysis. Jamal discussed this with the GIS Analyst on the team, who supported this approach. Jamal participated in a coding bootcamp and was able to successfully transition to using Python for his data responsibilities. He found it easy to understand and use and will be demonstrating how he uses Python with the GIS Technicians on other teams at the company.


Business Knowledge & Processes — Student Resource

LEAN PROCESSES

What are Lean processes and how are they related to Business Knowledge & Processes?

Lean processes focus on maximizing customer value while using fewer resources and minimizing waste. Lean thinking means always thinking about how processes and products can be improved.

Vocabulary

- Continuous process improvement—the ongoing improvements of products, services, or processes; related to the Japanese term Kaizen—improvement; good change
- Efficiency—the ability to achieve a goal with the least amount of waste
- Waste – materials or processes that are not creating value for the customer
- Value – what the customer is willing to pay for goods they want
- Value stream – all the steps in a work process that end with something a customer wants
- Pull – producing and delivering products and services when there is customer demand for them; related to the Toyota Kanban method
- Flow –ensuring steps in the value stream run smoothly without interruptions, delays, or bottlenecks
- Perfection – the overarching goal of meeting customer needs and striving to do it better each day (source)

How will technicians use Lean processes?

Amelia is a manufacturing technician for an automotive parts company. She has been recognized for her contributions to the company's delivery of quality parts on time to their customers. Recently, Amelia was becoming frustrated that her workstation was being left in disarray from the previous shift. This was impacting her daily production goals. She discussed this with her supervisor and found out there were other issues affecting productivity across shifts. Her supervisor facilitated a meeting with all the technicians to identify the root cause of the problems. Together they came up with a plan to address the decreased productivity. The last 10 minutes of a shift would overlap with the first 10 minutes of the next shift. Processes would not stop running—the flow (a critical principle of Lean manufacturing) would continue—but the technicians would have time to communicate important information, clean the work area, and check machinery (if needed). This change increased the company's manufacturing productivity and resulted in higher job satisfaction for Amelia and the other technicians.

Scenario-Based Instructional Cards

- Designed to infuse existing technical courses with skill sets from the Cross-Disciplinary STEM Core
- Provide short, informative, introductory content for students and an activity instructors can easily facilitate
- Include workplace scenarios in which technicians must apply skills sets from the Cross-Disciplinary Core to solve a problem

Student Content

- Exposure to skill set at intro level
- Definition and basic vocabulary
- Workplace scenario in which technician applies the skill set

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Instructor Content

- Essential competencies
- Cross-disciplinary skills
- Additional scenarios

Data Knowledge & Analysis

Instructor Resource: *Classroom Activity*

SPREADSHEETS

What are spreadsheets?

A spreadsheet program stores data in a grid of rows and columns and a file in the program may contain multiple worksheets used for organization, analysis, and storage of data in tabular form. Data may consist of numbers, formulas, or text. Spreadsheets have features that enable users to store, analyze, model and visualize data. Common spreadsheets include Microsoft Excel and Google Sheets.

Spreadsheet Competencies

- Creating spreadsheets
- Performing basic functions, including sums and averages
- Manipulating data cells
- Analyzing data
- Organizing and formatting related data
- Sorting data
- Creating charts
- Importing data from an external source

Cross-disciplinary Skills

- Applying computational thinking
- Using basic statistics
- Utilizing analytics tools, such as Excel
- Managing data
- Demonstrating data literacy
- Creating data visualizations
- Communicating the implications of the data

Advanced Manufacturing Scenario

Mohammed is a Manufacturing Technician for a plastics manufacturing company where he works with an injection molding machine. Mohammed uses an HMI, a touch screen with that allows him to control the machine and track various functions, such as the temperature of the molds and the operation of the hoses. Since maintaining machinery is part of his responsibilities, Mohammed needs to periodically collect data that provides insight into the machine's functioning over time to determine when to do preventive maintenance. When Mohammed's company installed the HMI for his machine, they were able to set up a reporting feature where he can download the data directly into an Excel format. He views the data in rows and columns by date and function and uses that information to determine whether maintenance will be needed to ensure his machine is functioning properly.

Engineering Technologies Scenario

Lisa is a Materials Technician in a plasma lab where they are studying how to the shrink the size of chips used in electronics. She is responsible for setting up test fixtures, conducting materials and component tests, and collecting data. Lisa needs to share data on her materials testing with her supervisor weekly. She finds charts the most effective way to visually summarize the data. To accomplish this, she tracks and stores data daily exported to an Excel spreadsheet. On Fridays, Lisa creates charts by highlighting the data she wants to share, clicking on "Insert-Recommended Chart" and then selecting Bar or Pie charts. She then emails them to her supervisor or prints them out before discussing the week's testing results.

Continuum of Cross-Disciplinary Collaboration

Level 1: Great Starting Point	**Level 2:** Expands Cross-Disciplinary Teaching	**Level 3:** Truly Cross-Disciplinary
▪ Use existing resources ▪ Teach the content yourself ▪ Introduce students to cross-disciplinary thinking with scenarios	▪ Work with a faculty member in a different discipline ▪ Team teach an existing card ▪ Highlight examples of the skill area being used in each other's field	▪ Work with faculty in a different discipline ▪ Co-develop cross-disciplinary scenarios ▪ Design project-based learning ▪ Bring employers from different fields to the table
Requires less time and fewer resources	*Requires more time*	*Requires more time and resources*

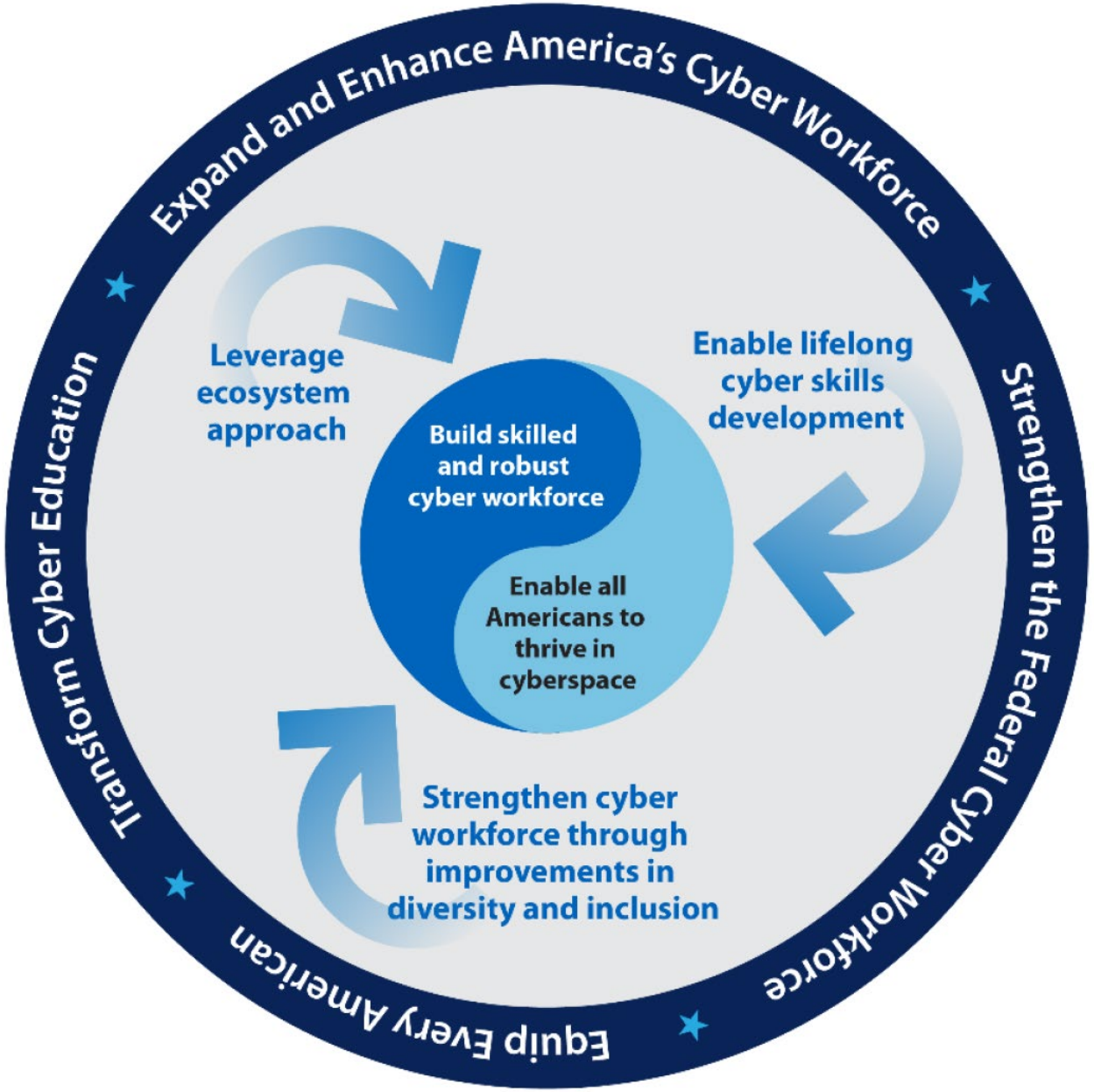
National Cyber Workforce and Education Strategy

Unleashing America's Cyber Talent

JULY 31, 2023

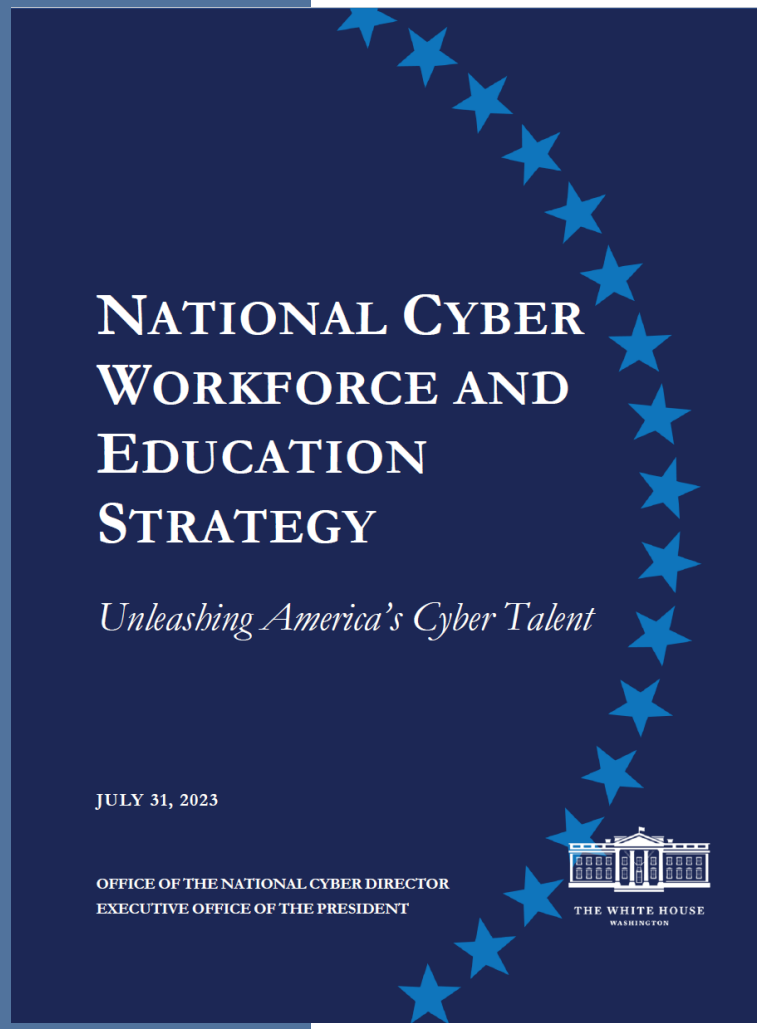
OFFICE OF THE NATIONAL CYBER DIRECTOR
EXECUTIVE OFFICE OF THE PRESIDENT

THE WHITE HOUSE
WASHINGTON



The Strategy's 4 Pillars:

1. Equip Every American
2. Transform Cyber Education
3. Expand and Enhance America's Cyber Workforce
4. Strengthen the Federal Cyber Workforce



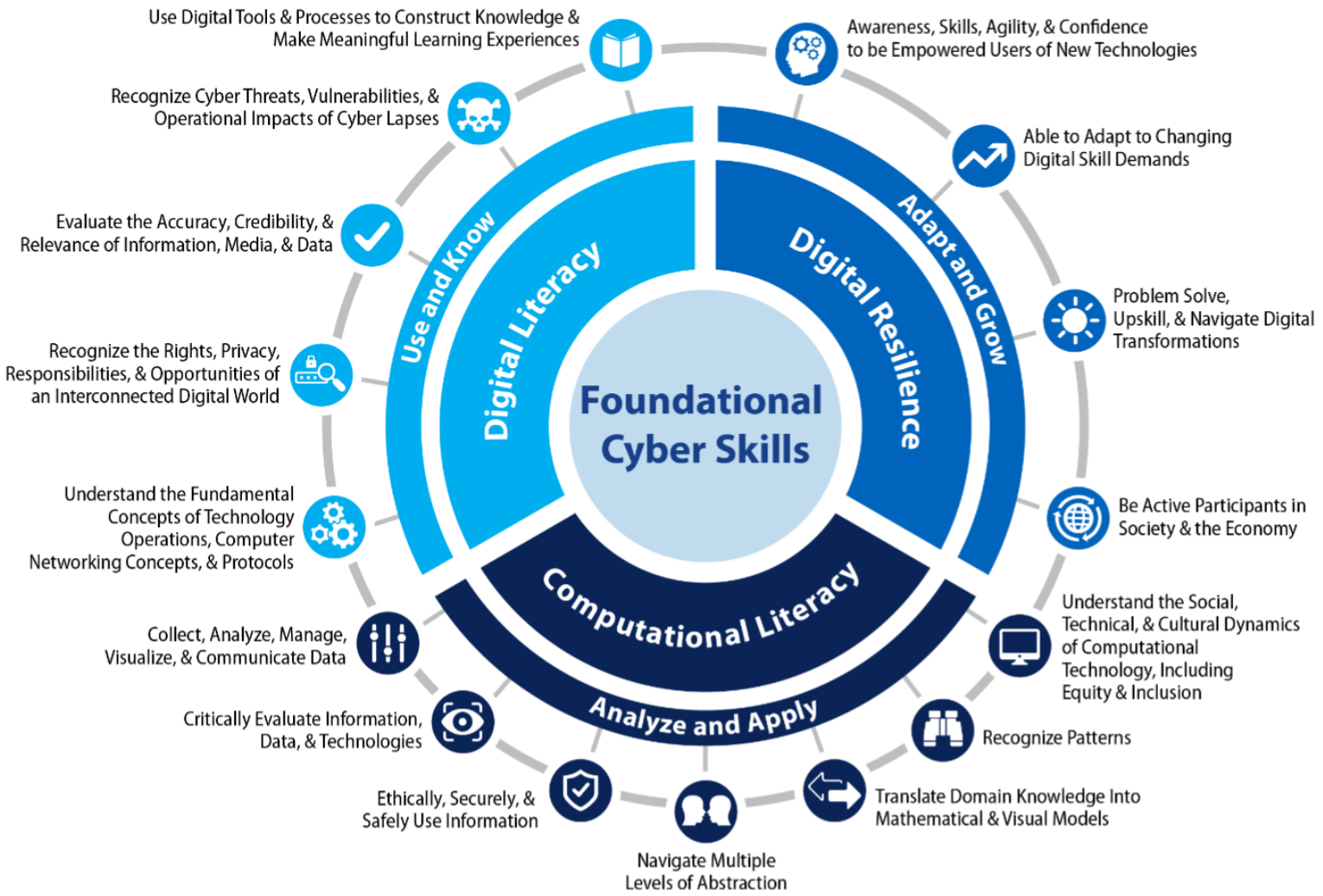


Figure 5. Foundational Cyber Skills (see also Appendix B)

NCyTE CENTER

CSSIA

National Support Center for Systems Security and Information Assurance

2023 CyAD Conference

August 1-2, 2023 • Palos Hills, IL

Hosted at:
Moraine Valley Community College

CyAD

Cybersecurity Across Disciplines

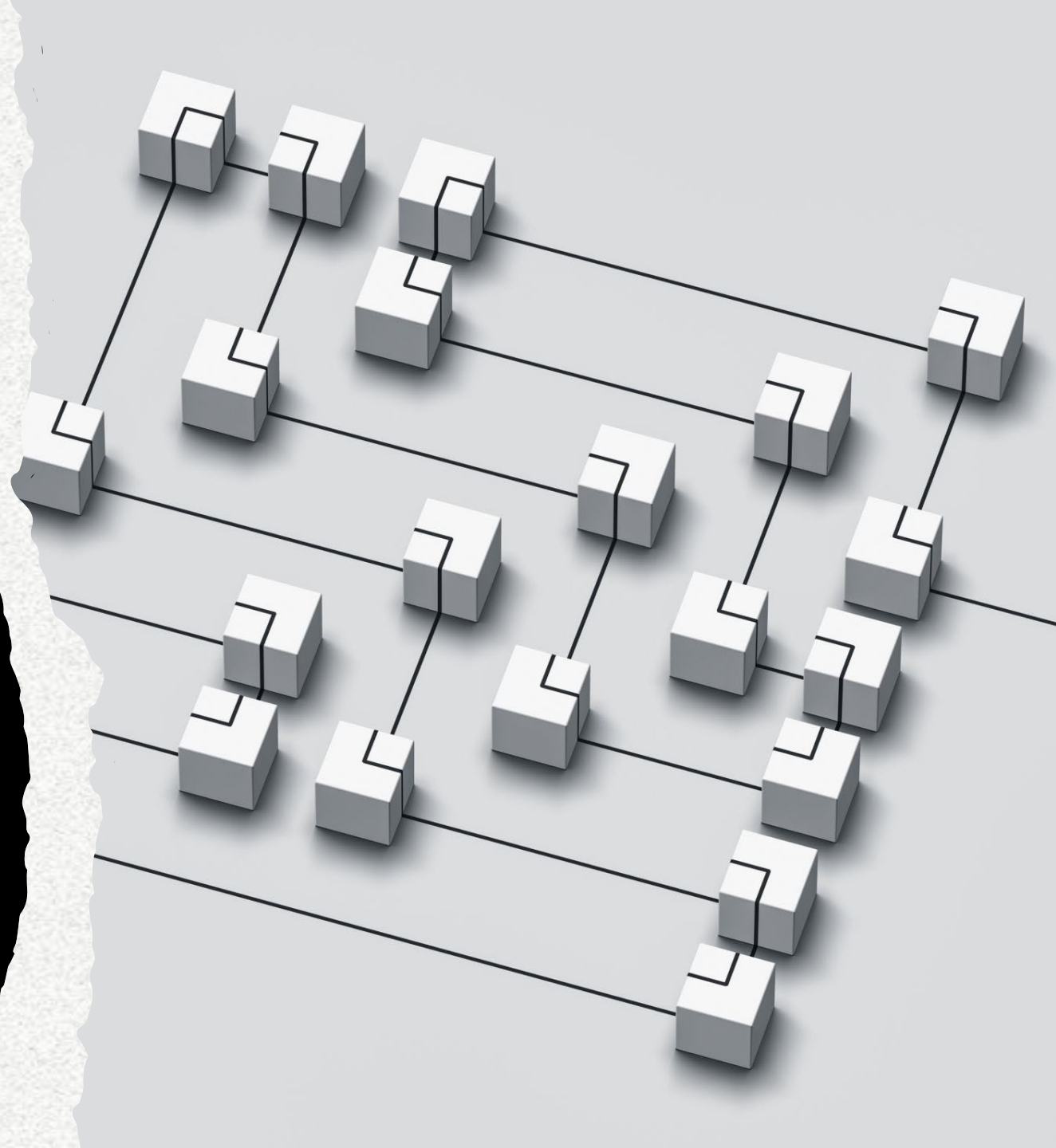
CyAD Conference Program Tracks

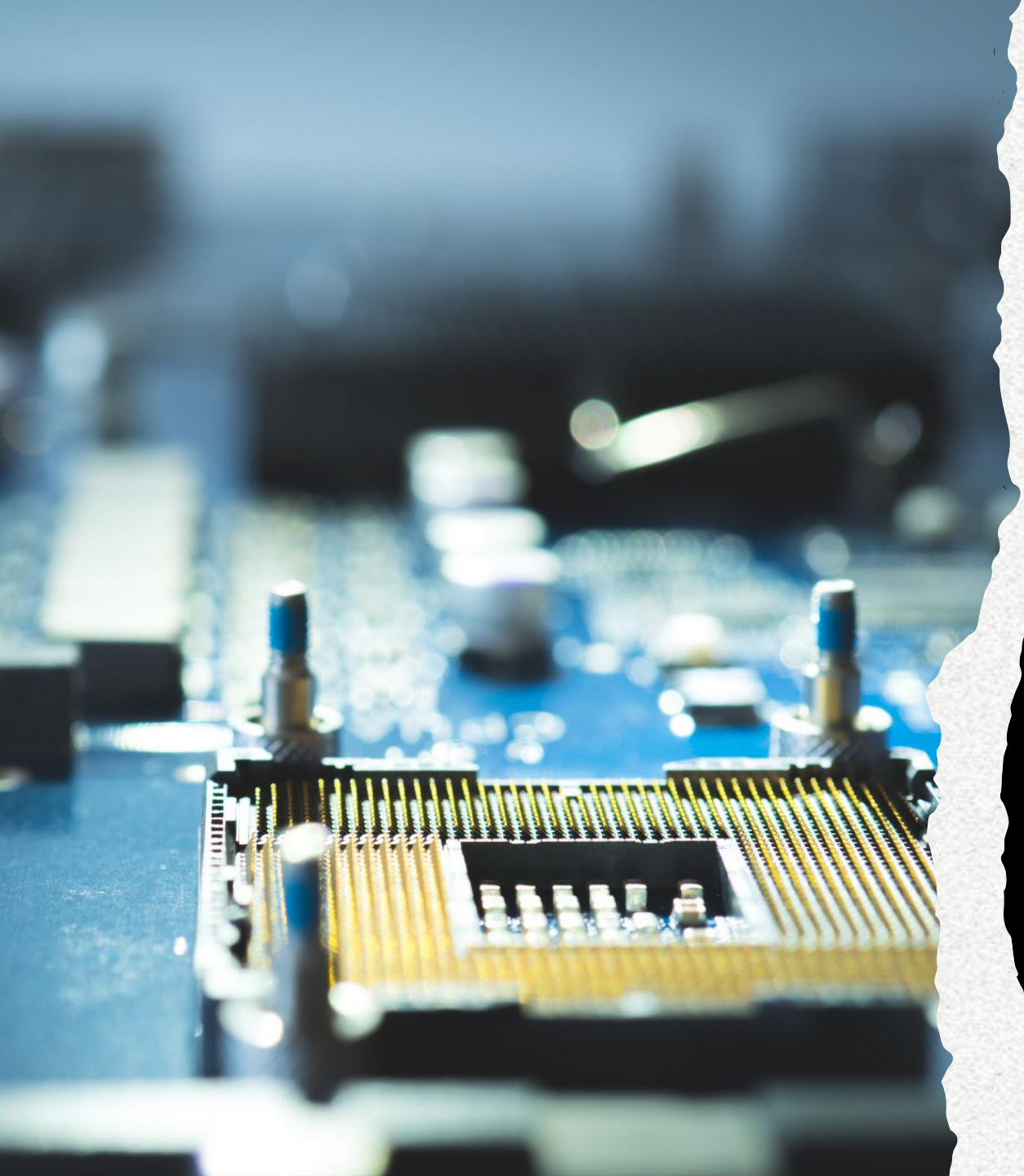
- Automotive and Autonomous Systems
- Business
- Critical Infrastructure
- Healthcare and Life Sciences
- Manufacturing and Automation

Why are we all here?

Data and automation are rapidly changing the way we live, work and play.

Data systems and Artificial Intelligence (AI) are replacing more and more of the decision making and tasks performed by the technical workforce.



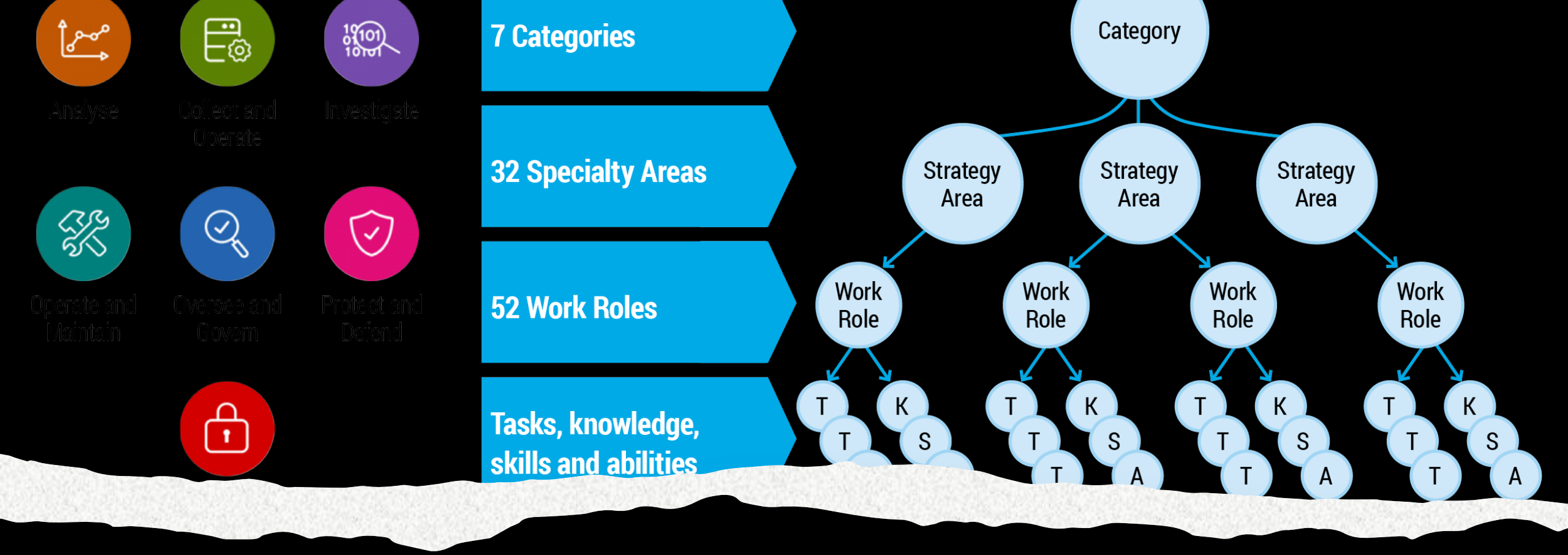


Data Control, Availability, and Integrity

The cybersecurity discipline is primarily concerned with training the technical workforce to control, protect, and maintain the availability of modern data systems and the information they collect, use, and process.

Mischaracterization of the Cybersecurity Technical Workforce

Fending off hackers



The True Picture

Cybersecurity professionals traditionally focused on information systems.

Today, operational technologies are indistinguishable from information technologies.

This will require both the cybersecurity technical workforce and the operational technology workforces to work together.

Cybersecurity needs OT!
OT needs Cybersecurity!

The Relevance of Cybersecurity in Healthcare

Cybersecurity Risks in Healthcare

The healthcare industry faces a number of cybersecurity risks, including:

- Data breaches that compromise sensitive patient information.
- Ransomware attacks that can shut down critical systems and prevent patient care.
- Phishing attacks that trick employees into divulging sensitive information or installing malware.

Mitigating Cybersecurity Risks in Healthcare

To mitigate cybersecurity risks in healthcare, organizations can take the following steps:

- Implement strong access controls to limit who has access to sensitive data and systems.
- Regularly update software and operating systems to patch known vulnerabilities.
- Train employees on how to identify and avoid phishing attacks.

Innovative Cybersecurity Solutions for Healthcare

Case Study 1: Northwell Health

Northwell Health, a healthcare provider in New York, implemented a comprehensive cybersecurity program that includes advanced threat detection, incident response, and risk management. The program leverages machine learning algorithms to identify potential threats and prevent attacks before they happen.

Case Study 2: Mayo Clinic

Mayo Clinic, a healthcare organization based in Minnesota, deployed a multi-layered approach to cybersecurity that includes network segmentation, data encryption, and continuous monitoring. The organization also conducts regular security audits and employee training to ensure compliance with industry standards and best practices.

Case Study 3: Cedars-Sinai Medical Center

Cedars-Sinai Medical Center in Los Angeles implemented a cybersecurity program that includes advanced threat intelligence, network segmentation, and endpoint protection. The organization also conducts regular security assessments and penetration testing to identify vulnerabilities and improve its security posture.

The Relevance of Cybersecurity in Finance

The Increasing Trend of Cyber Attacks on Financial Institutions

Financial institutions are a prime target for cyber attacks due to the sensitive information they hold, such as personal and financial data. According to a report by Accenture, the number of security breaches in financial services has increased by 480% over the past four years.

Why Strong Cybersecurity Measures are Essential

A successful cyber attack on a financial institution can result in significant financial losses, reputational damage, and legal liabilities. Strong cybersecurity measures, such as firewalls, encryption, and multi-factor authentication, are essential to protect against cyber threats and ensure the safety of customer data. It is also important for financial institutions to regularly update their security protocols and provide ongoing training to employees on cybersecurity best practices.

Cybersecurity Case Study: Finance

JPMorgan Chase Cyber Attack Prevention

In 2014, JPMorgan Chase suffered a major cyber attack that resulted in the theft of personal information from over 76 million households and 7 million small businesses. In response, JPMorgan Chase implemented several new cybersecurity measures to prevent future attacks.

- Increased spending on cybersecurity by $250 million annually.
- Established a new team of cybersecurity experts to monitor and respond to threats.
- Implemented two-factor authentication for all employees accessing sensitive data.

These measures have helped JPMorgan Chase prevent further cyber attacks and protect the personal information of its clients.

The Relevance of Cybersecurity in Government

Importance of Cybersecurity in Government

Cybersecurity is a critical concern for governments worldwide as they increasingly rely on technology to store sensitive data and communicate with citizens. A cyber attack on government systems can have serious consequences, including the theft of sensitive information, disruption of essential services, and even threats to national security.

Implications for National Security

A successful cyber attack on a government agency or critical infrastructure can have far-reaching implications for national security. It can compromise classified information, disrupt essential services, and even cause physical harm. As technology continues to advance, the threat of cyber attacks on government systems will only increase, making cybersecurity a top priority for governments worldwide.

The Relevance of Cybersecurity in Technology

Cybersecurity has become increasingly important in modern technology as the world becomes more connected and reliant on digital systems. With the rise of cyber attacks, protecting sensitive information and assets has become a top priority for individuals and organizations alike.

Data Protection – One of the key reasons why cybersecurity is important is to protect data from unauthorized access or theft. This includes personal information, financial data, and intellectual property. Without proper cybersecurity measures in place, this information can be compromised, leading to significant financial and reputational damage.

Network Security – Another important aspect of cybersecurity is network security. This involves protecting computer networks from unauthorized access or attacks. Network security measures can include firewalls, intrusion detection systems, and encryption protocols. Without proper network security, hackers can gain access to sensitive information or disrupt critical systems.

Collaboration Workshops

Incubator Workshops

- 3 days – bring faculty together from multiple disciplines
- Provide structure for collaboration
- Develop scenario-based modules/case studies

Working Activity at CyAD

- Condensed version of incubator; develop nanomodules
- 3-hr session with automotive group on hacking cars
- 3-hr session on water treatment facility infrastructure

myEMATES

EMATE Interactives help students learn difficult concepts using animation. EMATES were first developed under the leadership of Mike Qaissaunee at the Brookdale Cyber Center and Dr. John Sands at CSSIA that started with funding from an NSF Grant (DUE 1601612) and continued with the development of the Ring curriculum. Use the interactive activities to help teach students and to develop their skills in a variety of disciplines.

Fall Features

Take a look at the new EMATES created and posted this fall

myemates.org

Virtual Private Networks

See if you can match each social engineering technique with its definition

Encryption and Data Formatting

E-Mate Interactive Activity

RING REGIONS INVESTING IN THE NEXT GENERATION

Privacy Tenets

E-Mate Interactive Activity

REGIONS INVESTING IN THE NEXT GENERATION

Restart Back Next

TWO WEEKS AWAY!

Cybersecurity Career Week

October 16-21, 2023

nist.gov/nice/ccw

Cybersecurity Career Week is a campaign to promote the discovery of cybersecurity careers and share resources that increase understanding of the multiple learning pathways that lead to those careers

Resource Toolbox

All the resources:

https://www.cord.org/tracks-cn-oct-10-2023/

Questions about the Cross-Disciplinary STEM Core?

Interested in a webinar/workshop for your faculty?

Reach out!

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