# NICCS

NATIONAL INITIATIVE FOR CYBERSECURITY CAREERS AND STUDIES

# CAREER DEVELOPMENT AND TRAINING GUIDE

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# Overview

The purpose of this guide is to help individuals understand how to create a cybersecurity development and training plan. As a current or future cybersecurity professional, you are at the forefront of the Cybersecurity and Infrastructure Security Agency (CISA) mission to mitigate risks to our Nation's critical infrastructure. To put this mission into practice, you must keep your skills sharp, so you're ready to tackle any new challenge.

**This guide is a tool to help you:**

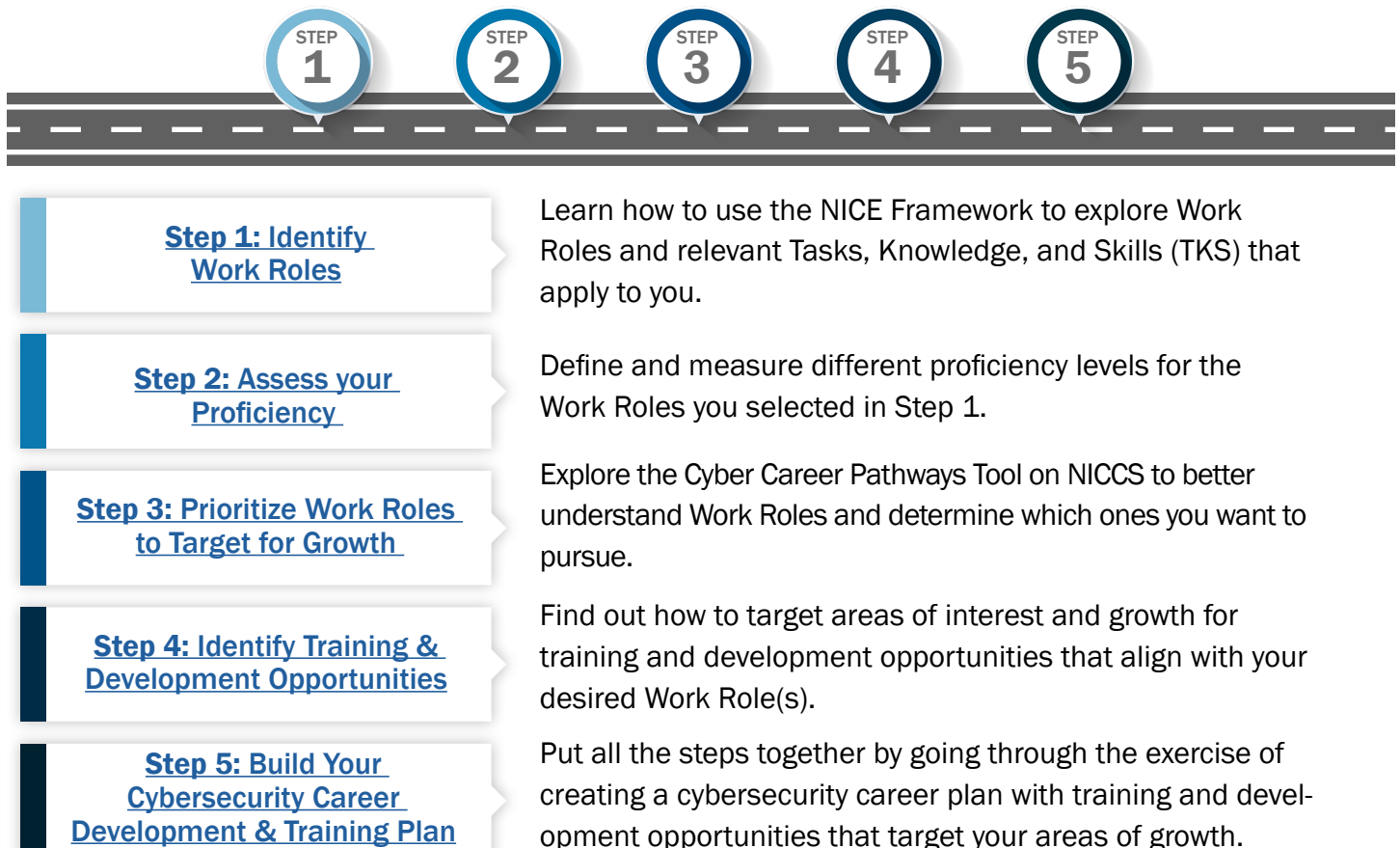| | | |
|---|---|---|
| Identify your job track so you can pinpoint areas for growth. | Understand the Work Roles, Tasks, Knowledge, and Skills (TKS) that are your keys to success. | Discover training and professional development opportunities to build your skills and maximize your potential. |

CISA is committed to helping you grow your career by providing access to training and tools for advancement. This guide is the first step to help you chart your path to future success in the cybersecurity field.

## Steps to Developing your Cybersecurity Career Development and Training Plan

This guide includes five steps to help you chart your cybersecurity career development and training plan. Each step includes information about how to use the NICE Workforce Framework for Cybersecurity (NICE Framework) and the National Initiative for Cybersecurity Careers and Studies (NICCS) website to make a plan for growth in the cybersecurity industry. The graphic below lays out the steps covered within this guide.

STEP **1**  STEP **2**  STEP **3**  STEP **4**  STEP **5**

**Step 1: Identify Work Roles**

Learn how to use the NICE Framework to explore Work Roles and relevant Tasks, Knowledge, and Skills (TKS) that apply to you.

**Step 2: Assess your Proficiency**

Define and measure different proficiency levels for the Work Roles you selected in Step 1.

**Step 3: Prioritize Work Roles to Target for Growth**

Explore the Cyber Career Pathways Tool on NICCS to better understand Work Roles and determine which ones you want to pursue.

**Step 4: Identify Training & Development Opportunities**

Find out how to target areas of interest and growth for training and development opportunities that align with your desired Work Role(s).

**Step 5: Build Your Cybersecurity Career Development & Training Plan**

Put all the steps together by going through the exercise of creating a cybersecurity career plan with training and development opportunities that target your areas of growth.

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## Step 1: Identify Work Roles

The first step to identifying the right cybersecurity career path is to explore the types of work available to you within the cybersecurity field. A great way to do this is by familiarizing yourself with the NICE Workforce Framework for Cybersecurity, commonly referred to as the NICE Framework.

### What is the NICE Framework?

The NICE Framework (NIST Special Publication 800-181 Rev. 1) is a nationally focused resource that categorizes and describes cybersecurity work. It establishes a common lexicon that describes cybersecurity work and workers regardless of where or for whom the work is performed. The NICE Framework applies across public, private, and academic sectors.

Visit the interactive version of the NICE Framework on NICCS, and explore the following components:

- **Work Role Categories:** A high-level grouping of common cybersecurity functions.

- **Work Roles:** A grouping of work for which someone is responsible or accountable.

- **Task, Knowledge, and Skill (TKS) Statements:** A set of discrete building blocks that describe the work to be done (in the form of Tasks) and what is required to perform that work (through Knowledge and Skills).

- **Competency Areas:** Clusters of related Knowledge and Skill statements that correlate with one's capability to perform Tasks in a particular domain.

Start with Work Role Categories, and drill down to the Work Roles you want to learn more about. Read the TKS Statements for those Work Roles, and take note of the areas you are interested in, have aptitude for, or want to build experience, knowledge, or skills further in. Make a list of the Work Roles that apply to you – either in your current position or a position you aspire to have in the future.

### Top Three Work Roles that Apply to You

| Work Role | Definition |
|---|---|
|  |  |
|  |  |
|  |  |

## Step 2: Assess Your Proficiency

The next step is to understand your proficiency level for the Work Roles you selected in Step 1. Proficiency is used to indicate a degree of capability or expertise in a specific Task, Knowledge, or Skill area that allows one to function independently in performing that Task, Knowledge, or Skill. Proficiencies also provide a mechanism for organizations to assess learners.

### Which Level is Right for You?

Proficiency levels are not tied to a specific grade level or years of experience. The proficiency level required for each Work Role varies by position, career level, and organizational needs. In fact, it's likely you'll find yourself at different proficiency levels for different Work Roles. You and your supervisor have the flexibility to determine which proficiency level is right for you for each Work Role.

**Here are three common proficiency levels and their definitions:**

### Entry

- You should have familiarity with basic concepts and processes and the ability to apply these with frequent, specific guidance.
- You can complete tasks on your own after being told or shown how but require close or frequent guidance.
- You should be able to perform successfully in routine, structured situations.

### Intermediate

- You must have extensive knowledge of basic concepts and processes as well as experience applying these with only periodic high-level guidance.
- You must be able to preform successfully in non-routine and sometimes complicated situations.
- You are able to draw conclusions and make recommendations.

### Advanced

- You have an in-depth understanding of advanced concepts and processes and experience applying these with little to no guidance.
- You must be able to serve as a resource and provide guidance to others.
- You must be able to preform successfully in complex, unstructured situations.

### Determine Your Proficiency Level

Rank your proficiency level for each of the NICE Framework Work Roles you selected in Step 1. Review the TKS statements you highlighted for each Work Role and use the simple guide below to select a proficiency

level for each. You may be at entry level in some areas and intermediate or advanced in others. If you feel like you fall in between two levels, make a judgment call or ask your manager to weigh in on what fits you best.

| | |
|---|---|
| | |
| | |
| | |

Go through this checklist for each of the Work Roles you are interested in. Which level do you have the most check marks in for each Work Role? List your Work Roles from Step 1 and write down your proficiency level for each.

| Work Role | Proficiency Level |
|---|---|
| | |
| | |
| | |

## Step 3: Prioritize Work Roles to Target for Growth

Once you have determined your proficiency levels for a variety of Work Roles, select areas to focus on for growth through training and development activities. This step ensures your time is invested in improving the proficiency levels that matter most. Here are a few key actions to take:

Use the Cyber Career Pathways Tool on NICCS to:

- Learn more about the TKS statements associated with each Work Role.
- Gain a greater understanding of capability indicators and proficiency levels.
- View the common relationships between the various Work Roles – compare your top two Work Roles of interest to determine where you want to focus your growth opportunities.
- Associate functional job titles with specific Work Roles to find common occupational series used in the Federal Government.
- Find related training links from the NICCS Education & Training Catalog.

Once you have reviewed the Cyber Career Pathways Tool, prioritize Work Roles with your lowest proficiency levels to help you focus on areas most in need of growth. Also, identify the ones that are most important to your current job. Not all TKS carry the same weight, so target those that will have the biggest impact.

If you are early in your career, prioritize new Work Roles or TKS statements to gain complementary skills, knowledge, and experience. You may want to develop multiple Work Roles to help you decide the career path you want to take. If you are later in your career, you may want to develop new Work Roles and TKS areas to stay fresh, learn different perspectives, and avoid getting complacent.

## Work Role Prioritization Worksheet

Use the Cyber Career Pathways Tool to populate the prioritization worksheet below. Select a Work Role and review each of the tabs in the Work Role's information panel within the tool.

| Work Role Name: | | | Proficiency Level: | |
|---|---|---|---|---|
| **Functional Job Titles:** *Find related functional job titles in the "Details" section of the Work Role information panel.* | | **Related Work Roles:** *Learn about the related Work Roles in the "Common Relationships" section of the Work Role information panel.* | **Knowledge and Skill Statements:** *Read through Knowledge and Skill statements and take note of the core ones associated with the Work Role. Record statements that are most relevant to your career aspirations.* | |
| | | | | |
| **Task Statements:** *Read through Task statements and take note of the core tasks associated with the Work Role. Record statements that are most relevant to your career aspirations.* | | | | |
| | | | | |
| **Education & Training Catalog Courses:** *Research related courses in the "Details" section of the Work Role information panel.* | | | **Priority:** *How do you want to prioritize this Work Role? If you select "high," you should build your first plan using this Work Role.* | |
| | | | | |

## Step 4: Identify Training and Development Opportunities

In this step you will discover different ways to target your areas of interest and growth for training and development opportunities that align with your desired Work Role(s).

**At this point in the guide, you have covered the following:**

| | | |
|---|---|---|
| ✓ You know what TKS statements apply to your job. | ✓ You know your current proficiency levels. | ✓ You have prioritized the Work Role(s) you want to target for growth. |

Now you're ready to identify training and professional development opportunities in those areas you want to target for growth. These opportunities are broken into different categories below. Review each one and take note of opportunities that will support growth in your desired growth areas.

### Professional Development & Training

- Use the NICCS Education & Training Catalog to search for thousands of in-person and online cybersecurity courses. All courses are mapped to NICE Framework Work Roles and/or Competency Areas. With basic, intermediate, advanced, and expert proficiency level options, the Catalog has something for everyone.

- CISA Learning replaced several learning management systems, including FedVTE, and offers no-cost cybersecurity training and education courses for federal and SLTT government employees and contractors, U.S. Veterans and military personnel, and the public.

### Competitions & Games

- Competitions and games encourage players to practice, hone cyber-security skills, and build confidence in a controlled, real-world environment. Visit the Cybersecurity Competitions & Games page on NICCS for a curated list of cybersecurity competitions and games options for a wide variety of audiences including K-12 and college students, teachers, federal employees, and the public.

- NIST also provides a list of additional cybersecurity competitions individuals and teams can participate in around the country and online.

## Cyber Career Pathways Tool

- A variety of Work Roles listed in the Cyber Career Pathways Tool offer micro-challenges to help users complete core cybersecurity workforce tasks. The following Work Roles have available micro-challenges: Data Analysis, Database Administration, Defensive Cybersecurity, Digital Evidence Analysis, Incident Response, Network Operations, Systems Administration, Systems Security Analysis, Technical Support, and Vulnerability Analysis.

## Cybersecurity Certifications

- Certifications are credentials you can earn to validate your skills and knowledge.

- To find industry cybersecurity certifications mapped to NICE Framework Work Roles, download the Cybersecurity Credentials Collaborative (C3) Mapping to NICE Work Roles spreadsheet. These cybersecurity certifications are widely recognized by hiring managers and industry professionals as imperative to succeed in the cyber workforce.

## Experience Opportunities

- Experience opportunities are development activities beyond formal courses.

- They include internships and apprenticeships, mentoring, rotational assignments, and self-study. Review these options on your own or with your manager to select the best ones for you.

These training and development opportunities are designed to help you increase cybersecurity-related knowledge and skills that are needed to meet your career goals. By incorporating a variety of these options into your portfolio, you can demonstrate to managers and senior level leadership that you take your growth opportunities seriously.

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## Step 5: Build Your Cybersecurity Career Development and Training Plan

Ready to start mapping out your Cybersecurity Career Development & Training Plan? Below is a completed sample template to give you an idea of how to piece together different training, education, career, and experience opportunities. Tailor this plan by inserting the development activities previously explained in this guide. Ask your manager for assistance in helping to personalize this roadmap to help you reach your training and career goals.

### Sample Career Development and Training Plan

| | **Entry** | **Intermediate** | **Advanced** |
|---|---|---|---|
| **Professional Development Training & Certifications**<br><br>*What training and certifications should I consider?* | **Acquire Base Skills**<br>• Consider general training courses to give you a well-rounded skillset; check CISA Learning for opportunities that align to your needs.<br>• Search your Work Role(s) of interest on the Education & Training Catalog and select "no proficiency" or "basic" in the proficiency level search options.<br>• Research potential certifications of interest and obtain beginner level certifications. | **Hone Your Skills**<br>• Consider more specialized training to hone your skillset.<br>• Search your Work Role(s) of interest on the Education & Training Catalog and select "intermediate" in the proficiency level search options.<br>• Take courses related to your desired certifications. | **Master Your Job**<br>• Consider strategic and leadership training.<br>• Search your Work Role(s) of interest on the Education & Training Catalog and select "advanced" or "expert" in the proficiency level search options.<br>• Take certification courses and take exams to obtain more advanced certifications. |
| **Stretch Opportunities**<br><br>*How can I "stretch" my capabilities into new areas?* | **Get Ready for Opportunities**<br>• Communicate with your supervisor about your interests; be curious and ask questions.<br>• Join a special project team and practice collaboration/teamwork.<br>• Participate in meetings to take notes and shadow more senior staff in action.<br>• Obtain an internship, apprenticeship, or entry-level position. | **Seek Out Opportunities**<br>• Consider a lateral detail or rotation.<br>• Join a professional organization.<br>• Ask your supervisor to shadow or participate in a more advanced project or activity.<br>• Look for stretch job opportunities on the NICCS Cybersecurity Career Map. | **Create Opportunities**<br>• Serve in an "acting" leadership role or lead a challenging project.<br>• Consider a vertical detail or rotation.<br>• Join a team or participate in individual cybersecurity competitions and games.<br>• Look for stretch job opportunities on the NICCS Cybersecurity Career Map. |
| **Leadership Opportunities**<br><br>*How can I build my leadership skills as I move up the career ladder?* | **Lead Yourself**<br>• Once basic skills are mastered, volunteer for additional responsibilities.<br>• Practice interpersonal, public speaking, and briefing skills.<br>• Find a mentor for one-on-one coaching. | **Lead Teams**<br>• Lead a cybersecurity team in a competition or game.<br>• Become a mentor.<br>• Provide training and coaching to junior staff and teams. | **Lead the Organization**<br>• Hold a supervisory position and contribute to a mentorship program.<br>• Establish a cybersecurity working group within your organization.<br>• Provide decision support and recommendations. |

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Use the blank template below to populate your own Cybersecurity Career Development and Training Plan. Regularly update it and track your progress as you move between proficiency levels and accomplish your goals.

## Career Development and Training Plan

| | Entry | Intermediate | Advanced |
|---|---|---|---|
| **Professional Development Training & Certifications**<br><br>*What training and certifications should I consider?* | **Acquire Base Skills** | **Hone Your Skills** | **Master Your Job** |
| **Stretch Opportunities**<br><br>*How can I "stretch" my capabilities into new areas?* | **Get Ready for Opportunities** | **Seek Out Opportunities** | **Create Opportunities** |
| **Leadership Opportunities**<br><br>*How can I build my leadership skills as I move up the career ladder?* | **Lead Yourself** | **Lead Teams** | **Lead the Organization** |

## Summary

Now that you have created your Cybersecurity Career Development and Training Plan, it's time to get started! With hundreds of thousands of cyber-related job openings in the U.S. alone and more than 4 million openings worldwide, the cybersecurity workforce needs qualified, capable individuals that are ready to protect our nation's critical infrastructure. After completing the activities in this guide and exploring the tools on the NICCS website, you should be equipped to pursue your cybersecurity career and training goals.

### Next Steps

- Learn about Work Roles & TKS statements in the NICE Framework
- Explore Work Roles using the Cyber Career Pathways Tool
- Find cybersecurity training courses online and in your area

If you have any questions about the information in this guide or on the NICCS website, please reach out to NICCS@mail.cisa.dhs.gov.

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