The Pathway Knowledge and Skills Chart describes what all/most learners/workers need to know and be able to do to demonstrate competence within a career pathway. Following the pathway description, there are four sets of knowledge and skill expectations:
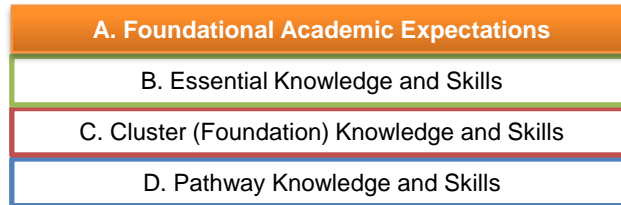
A. Foundational Academic Expectations
B. Essential Knowledge and Skills
C. Cluster (Foundation) Knowledge and Skills
D. Pathway Knowledge and Skills

PATHWAY DESCRIPTION

National Security Pathway: Maintaining a strong national security encompasses such diverse activities as running a hospital, commanding a tank, programming computers, operating a nuclear reactor, or repairing and maintaining a helicopter. The military provides training and work experience in these fields and many others for more than 2.5 million people who serve in the active Army, Navy, Marine Corps, Air Force, and Coast Guard, their Reserve components, and the Air and Army National Guard.
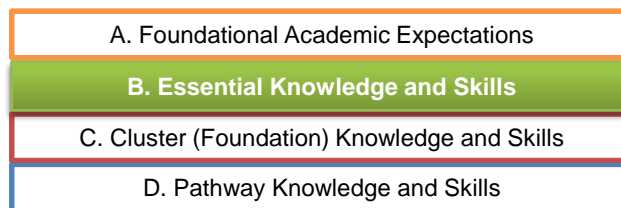
A. FOUNDATIONAL ACADEMIC EXPECTATIONS

All secondary students should meet their state's academic standards. All Essential Cluster and Pathway Knowledge and Skills are predicated on the assumption that foundational academic skills have been attained. Some knowledge and skill statements will further define critical linkages and applications of academics in the cluster and/or pathway.

A. Foundational Academic Expectations
B. Essential Knowledge and Skills
C. Cluster (Foundation) Knowledge and Skills
D. Pathway Knowledge and Skills

B. ESSENTIAL KNOWLEDGE AND SKILLS

The following Essential Knowledge and Skill statements apply to careers in all clusters and pathways. Persons preparing for careers in this pathway should be able to demonstrate these skills in the context of this cluster and pathway.

A. Foundational Academic Expectations
B. Essential Knowledge and Skills
C. Cluster (Foundation) Knowledge and Skills
D. Pathway Knowledge and Skills

Essential Topic ESS01	ACADEMIC FOUNDATIONS: *Achieve additional academic knowledge and skills required to pursue the full range of career and postsecondary education opportunities within a career cluster.*

ESS01.01		**Complete required training, education, and certification to prepare for employment in a particular career field.**
	ESS01.01.01	Identify training, education and certification requirements for occupational choice.
	ESS01.01.02	Participate in career-related training and/or degree programs.
	ESS01.01.03	Pass certification tests to qualify for licensure and/or certification in chosen occupational area.
ESS01.02		**Demonstrate language arts knowledge and skills required to pursue the full range of post-secondary education and career opportunities.**
	ESS01.02.01	Model behaviors that demonstrate active listening.
	ESS01.02.02	Adapt language for audience, purpose, situation. (i.e. diction/structure, style).
	ESS01.02.03	Organize oral and written information.
	ESS01.02.04	Compose focused copy for a variety of written documents such as agendas, audio-visuals, bibliographies, drafts, forms/documents, notes, oral presentations, reports, and technical terminology.
	ESS01.02.05	Edit copy to create focused written documents such as agendas, audio-visuals, bibliographies, drafts, forms/documents, notes, oral presentations, reports, and technical terminology.
	ESS01.02.06	Comprehend key elements of oral and written information such as cause/effect, comparisons/contrasts, conclusions, context, purpose, charts/tables/graphs, evaluation/critiques, mood, persuasive text, sequence, summaries, and technical subject matter.
	ESS01.02.07	Evaluate oral and written information for accuracy, adequacy/sufficiency, appropriateness, clarity, conclusions/solutions, fact/opinion, propaganda, relevancy, validity, and relationship of ideas.
	ESS01.02.08	Identify assumptions, purpose, outcomes/solutions, and propaganda techniques.
	ESS01.02.09	Predict potential outcomes and/or solutions based on oral and written information regarding trends.
	ESS01.02.10	Present formal and informal speeches including discussion, information requests, interpretation, and persuasive arguments.
ESS01.03		**Demonstrate mathematics knowledge and skills required to pursue the full range of post-secondary education and career opportunities.**
	ESS01.03.01	Identify whole numbers, decimals, and fractions.
	ESS01.03.02	Demonstrate knowledge of basic arithmetic operations such as addition, subtraction, multiplication, and division.
	ESS01.03.03	Demonstrate use of relational expressions such as equal to, not equal, greater than, less than, etc.
	ESS01.03.04	Apply data and measurements to solve a problem.
	ESS01.03.05	Analyze Mathematical problem statements for missing and/or irrelevant data.
	ESS01.03.06	Construct charts/tables/graphs from functions and data.

ESS01.03.07	Analyze data when interpreting operational documents.
ESS01.04	**Demonstrate science knowledge and skills required to pursue the full range of post-secondary and career education opportunities.**
ESS01.04.01	Evaluate scientific constructs including conclusions, conflicting data, controls, data, inferences, limitations, questions, sources of errors, and variables.
ESS01.04.02	Apply scientific methods in qualitative and quantitative analysis, data gathering, direct and indirect observation, predictions, and problem identification.

Essential Topic ESS02	**COMMUNICATIONS:** *Use oral and written communication skills in creating, expressing and interpreting information and ideas including technical terminology and information.*
ESS02.01	**Select and employ appropriate reading and communication strategies to learn and use technical concepts and vocabulary in practice.**
ESS02.01.01	Determine the most appropriate reading strategy for identifying the overarching purpose of a text (i.e. skimming, reading for detail, reading for meaning or critical analysis).
ESS02.01.02	Demonstrate use of content, technical concepts and vocabulary when analyzing information and following directions.
ESS02.01.03	Select the reading strategy or strategies needed to fully comprehend the content within a written document (i.e., skimming, reading for detail, reading for meaning or critical analysis).
ESS02.01.04	Interpret information, data, and observations to apply information learned from reading to actual practice.
ESS02.01.05	Transcribe information, data, and observations to apply information learned from reading to actual practice.
ESS02.01.06	Communicate information, data, and observations to apply information learned from reading to actual practice.
ESS02.02	**Demonstrate use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in the workplace.**
ESS02.02.01	Employ verbal skills when obtaining and conveying information.
ESS02.02.02	Record information needed to present a report on a given topic or problem.
ESS02.02.03	Write internal and external business correspondence that conveys and/or obtains information effectively.
ESS02.02.04	Communicate with other employees to clarify workplace objectives.
ESS02.02.05	Communicate effectively with customers and employees to foster positive relationships.

ESS02.03	**Locate, organize and reference written information from various sources to communicate with co-workers and clients/participants.**
ESS02.03.01	Locate written information used to communicate with co-workers and customers.
ESS02.03.02	Organize information to use in written and oral communications.
ESS02.03.03	Reference the sources of information.
ESS02.04	**Evaluate and use information resources to accomplish specific occupational tasks.**
ESS02.04.01	Use informational texts, Internet web sites, and/or technical materials to review and apply information sources for occupational tasks.
ESS02.04.02	Evaluate the reliability of information from informational texts, Internet Web sites, and/or technical materials and resources.
ESS02.05	**Use correct grammar, punctuation and terminology to write and edit documents.**
ESS02.05.01	Compose multi-paragraph documents clearly, succinctly, and accurately.
ESS02.05.02	Use descriptions of audience and purpose when preparing and editing written documents.
ESS02.05.03	Use correct grammar, spelling, punctuation, and capitalization when preparing written documents.
ESS02.06	**Develop and deliver formal and informal presentations using appropriate media to engage and inform audiences.**
ESS02.06.01	Prepare oral presentations to provide information for specific purposes and audiences.
ESS02.06.02	Identify support materials that will enhance an oral presentation.
ESS02.06.03	Prepare support materials that will enhance an oral presentation.
ESS02.06.04	Deliver an oral presentation that sustains listeners' attention and interest.
ESS02.06.05	Align presentation strategies to the intended audience.
ESS02.06.06	Implement multi-media strategies for presentations.
ESS02.07	**Interpret verbal and nonverbal cues/behaviors to enhance communication with co-workers and clients/participants.**
ESS02.07.01	Interpret verbal behaviors when communicating with clients and co-workers.
ESS02.07.02	Interpret nonverbal behaviors when communicating with clients and co-workers.
ESS02.08	**Apply active listening skills to obtain and clarify information.**
ESS02.08.01	Interpret a given verbal message/information.
ESS02.08.02	Respond with restatement and clarification techniques to clarify information.
ESS02.09	**Develop and interpret tables, charts, and figures to support written and oral communications.**

ESS02.09.01	Create tables, charts, and figures to support written and oral communications.
ESS02.09.02	Interpret tables, charts, and figures used to support written and oral communication.

ESS02.10 **Listen to and speak with diverse individuals to enhance communication skills.**

ESS02.10.01	Apply factors and strategies for communicating with a diverse workforce.
ESS02.10.02	Demonstrate ability to communicate and resolve conflicts within a diverse workforce.

ESS02.11 **Exhibit public relations skills to increase internal and external customer/client satisfaction.**

ESS02.11.01	Communicate effectively when developing positive customer/client relationships.

Essential Topic ESS03	**PROBLEM-SOLVING AND CRITICAL THINKING:** *Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.*

ESS03.01 **Employ critical thinking skills independently and in teams to solve problems and make decisions (e.g., analyze, synthesize and evaluate).**

ESS03.01.01	Identify common tasks that require employees to use problem-solving skills.
ESS03.01.02	Analyze elements of a problem to develop creative solutions.
ESS03.01.03	Describe the value of using problem-solving and critical thinking skills to improve a situation or process.
ESS03.01.04	Create ideas, proposals, and solutions to problems.
ESS03.01.05	Evaluate ideas, proposals, and solutions to problems.
ESS03.01.06	Use structured problem-solving methods when developing proposals and solutions.
ESS03.01.07	Generate new and creative ideas to solve problems by brainstorming possible solutions.
ESS03.01.08	Critically analyze information to determine value to the problem-solving task.
ESS03.01.09	Guide individuals through the process of recognizing concerns and making informed decisions.
ESS03.01.10	Identify alternatives using a variety of problem-solving and critical thinking skills.
ESS03.01.11	Evaluate alternatives using a variety of problem-solving and critical thinking skills.

ESS03.02 **Employ critical thinking and interpersonal skills to resolve conflicts with staff and/or customers.**

ESS03.02.01	Analyze situations and behaviors that affect conflict management.

ESS03.02.02	Determine best options/outcomes for conflict resolution using critical thinking skills.
ESS03.02.03	Identify with others' feelings, needs, and concerns.
ESS03.02.04	Implement stress management techniques.
ESS03.02.05	Resolve conflicts with/for customers using conflict resolution skills.
ESS03.02.06	Implement conflict resolution skills to address staff issues/problems.

ESS03.03 **Identify, write and monitor workplace performance goals to guide progress in assigned areas of responsibility and accountability.**

ESS03.03.01	Write realistic performance goals, objectives and action plans.
ESS03.03.02	Monitor performance goals and adjust as necessary.
ESS03.03.03	Recognize goal achievement using appropriate rewards in the workplace.
ESS03.03.04	Communicate goal achievement with managers and co-workers.

ESS03.04 **Conduct technical research to gather information necessary for decision-making.**

ESS03.04.01	Align the information gathered to the needs of the audience.
ESS03.04.02	Gather technical information and data using a variety of resources.
ESS03.04.03	Analyze information and data for value to the research objectives.
ESS03.04.04	Evaluate information and data to determine value to research objectives.

Essential Topic ESS04	**INFORMATION TECHNOLOGY APPLICATIONS:** *Use information technology tools specific to the career cluster to access, manage, integrate, and create information.*

ESS04.01 **Use Personal Information Management (PIM) applications to increase workplace efficiency.**

| ESS04.01.01 | Manage personal schedules and contact information. |
| ESS04.01.02 | Create memos and notes. |

ESS04.02 **Employ technological tools to expedite workflow.**

| ESS04.02.01 | Use information technology tools to manage and perform work responsibilities. |

ESS04.03 **Operate electronic mail applications to communicate within a workplace.**

ESS04.03.01	Use email to share files and documents.
ESS04.03.02	Identify the functions and purpose of email systems.
ESS04.03.03	Use email to communicate within and across organizations.

ESS04.04 **Operate Internet applications to perform workplace tasks.**

ESS04.04.01	Access and navigate Internet (e.g., use a web browser).
ESS04.04.02	Search for information and resources.
ESS04.04.03	Evaluate Internet resources for reliability and validity.

ESS04.05 **Operate writing and publishing applications to prepare business communications.**

| ESS04.05.01 | Prepare simple documents and other business communications. |

| ESS04.05.02 | Prepare reports and other business communications by integrating graphics and other non-text elements. |
| ESS04.05.03 | Prepare complex multi-media publications. |

ESS04.06   **Operate presentation applications to prepare presentations.**

| ESS04.06.01 | Prepare presentations for training, sales and information sharing. |
| ESS04.06.02 | Deliver presentations with supporting materials. |

ESS04.07   **Employ spreadsheet applications to organize and manipulate data.**

| ESS04.07.01 | Create a spreadsheet. |
| ESS04.07.02 | Perform calculations and analyses on data using a spreadsheet. |

ESS04.08   **Employ database applications to manage data.**

ESS04.08.01	Manipulate data elements.
ESS04.08.02	Manage interrelated data elements.
ESS04.08.03	Analyze interrelated data elements.
ESS04.08.04	Generate reports showing interrelated data elements.

ESS04.09   **Employ collaborative/groupware applications to facilitate group work.**

ESS04.09.01	Facilitate group work through management of shared schedule and contact information.
ESS04.09.02	Facilitate group work through management of shared files and online information.
ESS04.09.03	Facilitate group work through instant messaging or virtual meetings.

ESS04.10   **Employ computer operations applications to manage work tasks.**

ESS04.10.01	Manage computer operations.
ESS04.10.02	Manage file storage.
ESS04.10.03	Compress or alter files.

ESS04.11   **Use computer-based equipment (containing embedded computers or processors) to control devices.**

ESS04.11.01	Operate computer driven equipment and machines.
ESS04.11.02	Use installation and operation manuals.
ESS04.11.03	Troubleshoot computer driven equipment and machines.
ESS04.11.04	Access support as needed to maintain operation of computer driven equipment and machines.

| **Essential Topic ESS05** | **SYSTEMS:** *Understand roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment. Identify how key organizational systems affect organizational performance and the quality of products and services. Understand global context of industries and careers.* |

ESS05.01   **Describe the nature and types of business organizations to build an understanding of the scope of organizations.**

| ESS05.01.01 | List the types and functions of businesses. |
| ESS05.01.02 | Describe the types and functions of businesses. |

ESS05.01.03	Explain the functions and interactions of common departments within a business.
ESS05.02	**Implement quality control systems and practices to ensure quality products and services.**
ESS05.02.01	Describe quality control standards and practices common to the workplace.

Essential Topic ESS06	**SAFETY, HEALTH AND ENVIRONMENTAL:** *Understand the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. Follow organizational policies and procedures and contribute to continuous improvement in performance and compliance.*

ESS06.01	**Implement personal and jobsite safety rules and regulations to maintain safe and healthful working conditions and environments.**
ESS06.01.01	Assess workplace conditions with regard to safety and health.
ESS06.01.02	Align safety issues with appropriate safety standards to ensure a safe workplace/jobsite.
ESS06.01.03	Identify safety hazards common to workplaces.
ESS06.01.04	Identify safety precautions to maintain a safe worksite.
ESS06.01.05	Select appropriate personal protective equipment as needed for a safe workplace/jobsite.
ESS06.01.06	Inspect personal protective equipment commonly used for selected career pathway.
ESS06.01.07	Use personal protective equipment according to manufacturer rules and regulations.
ESS06.01.08	Employ a safety hierarchy and communication system within the workplace/jobsite.
ESS06.01.09	Implement safety precautions to maintain a safe worksite.
ESS06.02	**Complete work tasks in accordance with employee rights and responsibilities and employers obligations to maintain workplace safety and health.**
ESS06.02.01	Identify rules and laws designed to promote safety and health in the workplace.
ESS06.02.02	State the rationale of rules and laws designed to promote safety and health.
ESS06.03	**Employ emergency procedures as necessary to provide aid in workplace accidents.**
ESS06.03.01	Use knowledge of First Aid procedures as necessary.
ESS06.03.02	Use knowledge of CPR procedures as necessary.
ESS06.03.03	Use safety equipment as necessary.
ESS06.04	**Employ knowledge of response techniques to create a disaster and/or emergency response plan.**
ESS06.04.01	Complete an assessment of an emergency and/or disaster situation.
ESS06.04.02	Create an emergency and/or disaster plan.

Essential Topic ESS07	**LEADERSHIP AND TEAMWORK:** *Use leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.*
ESS07.01	**Employ leadership skills to accomplish organizational goals and objectives.**
ESS07.01.01	Analyze the various roles of leaders within organizations (e.g. contribute ideas; share in building an organization; act as role models to employees by adhering to company policies, procedures, and standards; promote the organization's vision; and mentor others).
ESS07.01.02	Exhibit traits such as empowerment, risk, communication, focusing on results, decision-making, problem solution, and investment in individuals when leading a group in solving a problem.
ESS07.01.03	Exhibit traits such as compassion, service, listening, coaching, developing others, team development, and understanding and appreciating others when acting as a manager of others in the workplace.
ESS07.01.04	Exhibit traits such as enthusiasm, creativity, conviction, mission, courage, concept, focus, principle-centered living, and change when interacting with others in general.
ESS07.01.05	Consider issues related to self, team, community, diversity, environment, and global awareness when leading others.
ESS07.01.06	Exhibit traits such as innovation, intuition, adaptation, life-long learning and coachability to develop leadership potential over time.
ESS07.01.07	Analyze leadership in relation to trust, positive attitude, integrity, and willingness to accept key responsibilities in a work situation.
ESS07.01.08	Describe observations of outstanding leaders using effective management styles.
ESS07.01.09	Participate in civic and community leadership and teamwork opportunities to enhance skills.
ESS07.02	**Employ organizational and staff development skills to foster positive working relationships and accomplish organizational goals.**
ESS07.02.01	Implement organizational skills when facilitating others' work efforts.
ESS07.02.02	Explain how to manage a staff that satisfies work demands while adhering to budget constraints.
ESS07.02.03	Describe how staff growth and development to increase productivity and employee satisfaction.
ESS07.02.04	Organize team involvement within a group environment.
ESS07.02.05	Work with others to develop and gain commitment to team goals.
ESS07.02.06	Distribute responsibility and work load fairly.
ESS07.02.07	Model leadership and teamwork qualities to aid in employee morale.
ESS07.02.08	Identify best practices for successful team functioning.
ESS07.02.09	Explain best practices for successful team functioning.

ESS07.03	**Employ teamwork skills to achieve collective goals and use team members' talents effectively.**
ESS07.03.01	Work with others to achieve objectives in a timely manner.
ESS07.03.02	Promote the full involvement and use of team members' individual talents and skills.
ESS07.03.03	Employ conflict-management skills to facilitate solutions.
ESS07.03.04	Demonstrate teamwork skills through working cooperatively with co-workers, supervisory staff, and others, both in and out of the organization, to achieve particular tasks.
ESS07.03.05	Demonstrate teamwork processes that provide team building, consensus, continuous improvement, respect for the opinions of others, cooperation, adaptability, and conflict resolution.
ESS07.03.06	Develop plans to improve team performance.
ESS07.03.07	Demonstrate commitment to and a positive attitude toward team goals.
ESS07.03.08	Take responsibility for shared group and individual work tasks.
ESS07.03.09	Assist team members in completing their work.
ESS07.03.10	Adapt effectively to changes in projects and work activities.
ESS07.03.11	Negotiate effectively to arrive at decisions.
ESS07.04	**Establish and maintain effective working relationships with all levels of personnel and other departments in order to accomplish objectives and tasks.**
ESS07.04.01	Build effective working relationships using interpersonal skills.
ESS07.04.02	Use positive interpersonal skills to work cooperatively with co-workers representing different cultures, genders and backgrounds.
ESS07.04.03	Manage personal skills to accomplish assignments.
ESS07.04.04	Treat people with respect.
ESS07.04.05	Provide constructive praise and criticism.
ESS07.04.06	Demonstrate sensitivity to and value for diversity.
ESS07.04.07	Manage stress and control emotions.
ESS07.05	**Conduct and participate in meetings to accomplish work tasks.**
ESS07.05.01	Develop meeting goals, objectives and agenda.
ESS07.05.02	Assign responsibilities for preparing materials and leading discussions.
ESS07.05.03	Prepare materials for leading discussion.
ESS07.05.04	Assemble and distribute meeting materials.
ESS07.05.05	Conduct meeting to achieve objectives within scheduled time.
ESS07.05.06	Demonstrate effective communication skills in meetings.
ESS07.05.07	Produce meeting minutes including decisions and next steps.
ESS07.05.08	Use parliamentary procedure, as needed, to conduct meetings.
ESS07.06	**Employ mentoring skills to inspire and teach others.**
ESS07.06.01	Use motivational techniques to enhance performance in others.
ESS07.06.02	Provide guidance to enhance performance in others.

Essential Topic ESS08	**ETHICS AND LEGAL RESPONSIBILITIES:** *Know and understand the importance of professional ethics and legal responsibilities.*

ESS08.01	**Apply ethical reasoning to a variety of workplace situations in order to make ethical decisions.**
ESS08.01.01	Evaluate alternative responses to workplace situations based on legal responsibilities and employer policies.
ESS08.01.02	Evaluate alternative responses to workplace situations based on personal or professional ethical responsibilities.
ESS08.01.03	Identify personal and long-term workplace consequences of unethical or illegal behaviors.
ESS08.01.04	Explain personal and long-term workplace consequences of unethical or illegal behaviors.
ESS08.01.05	Determine the most appropriate response to workplace situations based on legal and ethical considerations.
ESS08.01.06	Explain the most appropriate response to workplace situations based on legal and ethical considerations.
ESS08.02	**Interpret and explain written organizational policies and procedures to help employees perform their jobs according to employer rules and expectations.**
ESS08.02.01	Locate information on organizational policies in handbooks and manuals.
ESS08.02.02	Discuss how specific organizational policies and procedures influence a specific work situation.

Essential Topic ESS09	**EMPLOYABILITY AND CAREER DEVELOPMENT:** *Know and understand the importance of employability skills. Explore, plan, and effectively manage careers. Know and understand the importance of entrepreneurship skills.*
ESS09.01	**Identify and demonstrate positive work behaviors and personal qualities needed to be employable.**
ESS09.01.01	Demonstrate self-discipline, self-worth, positive attitude, and integrity in a work situation.
ESS09.01.02	Demonstrate flexibility and willingness to learn new knowledge and skills.
ESS09.01.03	Exhibit commitment to the organization.
ESS09.01.04	Identify how work varies with regard to site, from indoor confined spaces to outdoor areas, including aerial space and a variety of climatic and physical conditions.
ESS09.01.05	Apply communication strategies when adapting to a culturally diverse environment.
ESS09.01.06	Manage resources in relation to the position (i.e. budget, supplies, computer, etc).
ESS09.01.07	Identify positive work-qualities typically desired in each of the career cluster's pathways.
ESS09.01.08	Manage work roles and responsibilities to balance them with other life roles and responsibilities.

ESS09.02	**Develop a personal career plan to meet career goals and objectives.**
ESS09.02.01	Develop career goals and objectives as part of a plan for future career direction.
ESS09.02.02	Develop strategies to reach career objectives.
ESS09.03	**Demonstrate skills related to seeking and applying for employment to find and obtain a desired job.**
ESS09.03.01	Use multiple resources to locate job opportunities.
ESS09.03.02	Prepare a résumé.
ESS09.03.03	Prepare a letter of application.
ESS09.03.04	Complete an employment application.
ESS09.03.05	Interview for employment.
ESS09.03.06	List the standards and qualifications that must be met in order to enter a given industry.
ESS09.03.07	Employ critical thinking and decision-making skills to exhibit qualifications to a potential employer.
ESS09.04	**Maintain a career portfolio to document knowledge, skills and experience in a career field.**
ESS09.04.01	Select educational and work history highlights to include in a career portfolio.
ESS09.04.02	Produce a record of work experiences, licenses, certifications and products.
ESS09.04.03	Organize electronic or physical portfolio for use in demonstrating knowledge, skills and experiences.
ESS09.05	**Demonstrate skills in evaluating and comparing employment opportunities in order to accept employment positions that match career goals.**
ESS09.05.01	Compare employment opportunities to individual needs and career plan objectives.
ESS09.05.02	Evaluate employment opportunities based upon individual needs and career plan objectives.
ESS09.05.03	Demonstrate appropriate methods for accepting or rejecting employment offers.
ESS09.06	**Identify and exhibit traits for retaining employment to maintain employment once secured.**
ESS09.06.01	Model behaviors that demonstrate reliability and dependability.
ESS09.06.02	Maintain appropriate dress and behavior for the job to contribute to a safe and effective workplace/jobsite.
ESS09.06.03	Complete required employment forms and documentation such as I-9 form, work visa, W-4 and licensures to meet employment requirements.
ESS09.06.04	Summarize key activities necessary to retain a job in the industry.
ESS09.06.05	Identify positive work behaviors and personal qualities necessary to retain employment.

ESS09.07	**Identify and explore career opportunities in one or more career pathways to build an understanding of the opportunities available in the cluster.**
ESS09.07.01	Locate and identify career opportunities that appeal to personal career goals.
ESS09.07.02	Match personal interest and aptitudes to selected careers.
ESS09.08	**Recognize and act upon requirements for career advancement to plan for continuing education and training.**
ESS09.08.01	Identify opportunities for career advancement.
ESS09.08.02	Pursue education and training opportunities to acquire skills necessary for career advancement.
ESS09.08.03	Examine the organization and structure of various segments of the industry to prepare for career advancement.
ESS09.08.04	Research local and regional labor (workforce) market and job growth information to project potential for advancement.
ESS09.08.05	Manage employment relations to make career advancements.
ESS09.09	**Continue professional development to keep current on relevant trends and information within the industry.**
ESS09.09.01	Use self assessment, organizational priorities, journals, Internet sites, professional associations, peers and other resources to develop goals that address training, education and self-improvement issues.
ESS09.09.02	Read trade magazines and journals, manufacturers' catalogues, industry publications and Internet sites to keep current on industry trends.
ESS09.09.03	Participate in relevant conferences, workshops, mentoring activities and in-service training to stay current with recent changes in the field.
ESS09.10	**Examine licensing, certification and credentialing requirements at the national, state and local levels to maintain compliance with industry requirements.**
ESS09.10.01	Examine continuing education requirements related to licensing, certification, and credentialing requirements at the local, state and national levels for chosen occupation.
ESS09.10.02	Examine the procedures and paperwork involved in maintaining and updating licensure, certification and credentials for chosen occupation.
ESS09.10.03	Align ongoing licensing, certification and credentialing requirements to career plans and goals.
ESS09.11	**Examine employment opportunities in entrepreneurship to consider entrepreneurship as an option for career planning.**
ESS09.11.01	Describe the opportunities for entrepreneurship in a given industry.

Essential Topic ESS10	**TECHNICAL SKILLS:** *Use of technical knowledge and skills required to pursue careers in all career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster.*

ESS10.01	**Employ information management techniques and strategies in the workplace to assist in decision-making.**
ESS10.01.01	Use information literacy skills when accessing, evaluating and disseminating information.
ESS10.01.02	Describe the nature and scope of information management.
ESS10.01.03	Maintain records to facilitate ongoing business operations.
ESS10.02	**Employ planning and time management skills and tools to enhance results and complete work tasks.**
ESS10.02.01	Develop goals and objectives.
ESS10.02.02	Prioritize tasks to be completed.
ESS10.02.03	Develop timelines using time management knowledge and skills.
ESS10.02.04	Use project-management skills to improve workflow and minimize costs.

C. CLUSTER (FOUNDATION) KNOWLEDGE AND SKILLS

The following Cluster (Foundation) Knowledge and Skill statements apply to all careers in the Government and Public Administration Cluster. Persons preparing for careers in the Government and Public Administration Cluster should be able to demonstrate these skills in addition to those found on the Essential Knowledge and Skills Chart.

A. Foundational Academic Expectations

B. Essential Knowledge and Skills

C. Cluster (Foundation) Knowledge and Skills

D. Pathway Knowledge and Skills

Cluster Topic GVC01	**ACADEMIC FOUNDATIONS:** *Achieve additional academic knowledge and skills required to pursue the full range of career and postsecondary education opportunities within a career cluster.*
GVC01.01	**Interpret and apply concepts of geography to demonstrate understanding of the academic foundations used in government and public administration.**
GVC01.01.01	Utilize graphic tools and technologies common to government and public administration to depict and interpret international, national, state, and local systems.
Sample Indicators	Use maps and globes to locate places and regions.
	Devise maps, globes, and graphs to gather, analyze and report geographic information.
GVC01.01.02	Analyze and explain information about the human and physical features of places and regions to execute governmental and public administrative functions.
Sample Indicators	Discuss similarities and differences that emerge among international, national, state, and local communities.
	Interpret the importance of cultural symbols in the planning of government and public administration activities.
	Predict how geographical considerations impact regional change over time.

Develop plans that integrate the diversity of different international, national, state, and local social and economic environments.

GVC01.01.03 Interpret geographical influences on requirements for international, national, state, and local governments and public administrations.

Sample Indicators Interpret the need to exchange goods and services, create population centers, and interact culturally.

Explain the importance of global networks for communications and transportation.
Analyze how changes in technology, transportation, and communication impact social, cultural, economic, and political activity.

Analyze how conflict and cooperation shape government and public administration.
Interpret demographic trends to forecast impacts on government and public administration.

GVC01.02 **Distinguish the functions of government and public administration in society to demonstrate an understanding of key issues in governance.**

GVC01.02.01 Examine concepts of authority, rights, and responsibility to evaluate their impact on government and public administration.

Sample Indicators Contrast how various societies have governed themselves.

GVC01.02.02 Evaluate the alignment of institutions of government and public administration with the principles of U.S. and international law to guide policy development.

Sample Indicators Evaluate importance of individuals, public opinion, media, political parties, associations, and groups in forming public policy.
Describe the significance of diversity in the American political system.
Recognize tension between constitutional ideals and realities of American political and social life.

GVC01.02.03 Examine the levels of government and public administration to establish roles and relationships among federal, state, and local governments.

Sample Indicators Explain the various forms of state and local governments, agencies, and commissions.
Compare the role of and relationship of federal, state, and local government.

GVC01.02.04 Analyze US foreign policy to determine its effect on other countries.

Sample Indicators Analyze the affects of domestic politics on foreign policy.
Evaluate circumstances in which the United States has politically influenced other nations.
Evaluate circumstances in which other nations have influenced the politics and society of the United States.
Examine the purpose and function of international governmental organizations.

Cluster Topic GVC02	COMMUNICATIONS: *Use oral and written communication skills in creating, expressing and interpreting information and ideas including technical terminology and information.*

GVC02.01 **Select appropriate communication formats to facilitate the flow of ideas and information among government, public administration, the business community, and the general public.**

GVC02.01.01	Use communication techniques to stimulate the exchange of government and public administration ideas and information.
Sample Indicators	Translate complex government and public administration technical information or issues in language appropriate for the audience.
	Explain, justify, or discuss public issues.
	Employ presentation techniques to handle difficult interviews and political situations.
	Prepare information for the media.
GVC02.01.02	Accurately document, report, and record governmental and public administrative information to conform to legal requirements.
Sample Indicators	Secure additional or clarifying information and documentation.
	Choose exact words to precisely describe a situation.
	Integrate information about compliance with public standards.
	Recommend modifications in practices and advise on corrective action.
	Document compliance with due process of law.

GVC02.02   **Utilize negotiation skills to achieve the goals of government.**

GVC02.02.01	Develop international, national, state, and local networks to accomplish the governmental goals.
Sample Indicators	Identify common ground among a range of stakeholders.
	Evaluate the diversity of agencies and people in a variety of situations.
	Facilitate outcomes that are advantageous to all the parties involved.
	Develop alliances with internal and external groups.
GVC02.02.02	Interpret the impact of international, national, state, or local politics on goals of governmental or public administrative agencies.
Sample Indicators	Identify the political ramifications of issues affecting the agency.
	Implement strategies to manage political ramifications.

GVC02.03   **Communicate in one or more foreign languages to perform government and public administration functions.**

GVC02.03.01	Use Spanish or another language other than English to correspond with speak with, write to, and read materials received from persons whose first language is Spanish or another foreign language.
Sample Indicators	Speak and write Spanish or another foreign language.
	Interpret printed and electronic media, audio and visual information in a non-English language.
	Translate accurately from Spanish or another foreign language.
	Apply the functions and structure of one language to study another language.

Cluster Topic GVC03	**PROBLEM-SOLVING AND CRITICAL THINKING:** *Solve problems using critical thinking skills (analyze, synthesize, and evaluate) independently and in teams. Solve problems using creativity and innovation.*

GVC03.01   **Apply democratic principles in the process of governmental and administrative policy-making to achieve the public will.**

GVC03.01.01	Employ governmental decision-making processes to achieve desired objectives.
Sample Indicators	Visibly support policies, programs, and ideals.
	Work with elected officials, interest groups, and the public.
	Generate consensus among and within diverse groups.

Assess programs, organizations, and activities to effectively engage the political and institutional environment.
Recognize crossover relationships and multiple causes of issues.
Assist with analysis and drafting or refinement of regulations, policies, procedures, and/or processes.
Assist with analysis and drafting or refinement of legislative measures.
Plan for anticipated consequences of policy decisions.

Cluster Topic GVC04	**INFORMATION TECHNOLOGY APPLICATIONS:** *Use information technology tools specific to the career cluster to access, manage, integrate, and create information.*

GVC04.01 — **Execute work related tasks and processes using emerging and specialized technologies to achieve common objectives specific to government and public administration.**

GVC04.01.01 — Utilize appropriate information technologies to accomplish tasks in government and public administration.

Sample Indicators
Integrate technologies suitable for the application.
Analyze issues using most appropriate information technology.
Innovate to create new knowledge.

Cluster Topic GVC05	**SYSTEMS:** *Understand roles within teams, work units, departments, organizations, inter-organizational systems, and the larger environment. Identify how key organizational systems affect organizational performance and the quality of products and services. Understand global context of industries and careers.*

GVC05.01 — **Analyze and summarize the systemic relationships of government and public administration agencies to achieve the strategic objectives of those agencies.**

GVC05.01.01 — Examine the interrelated nature of complex international, national, state, and local governmental and public administrative systems to serve the public interest.

Sample Indicators
Compare organizational similarities.
Contrast differences.
Delineate intergovernmental and private contractor relationships.
Educate the public about government systems and their functions.

Cluster Topic GVC06	**SAFETY, HEALTH AND ENVIRONMENTAL:** *Understand the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. Follow organizational policies and procedures and contribute to continuous improvement in performance and compliance.*

GVC06.01 — **Maintain safe and healthful working conditions and environment in order to promote well-being in governmental and public administrative workplaces.**

GVC06.01.01 — Assess workplace conditions with regard to safety and health.
Sample Indicators
Identify the types of risk of injury/illness at work.
Identify those who are susceptible to risk of injury/illness at work.

Describe ways to positively impact occupational safety and health.

GVC06.02   **Conduct government and public administration work tasks in accordance with employee rights and responsibilities and employers' obligations concerning occupational safety and health to promote safe and healthful working conditions.**

GVC06.02.01   Demonstrate behaviors that comply with the rules and laws designed to promote safety and health in the workplace.

Sample Indicators   Identify key rights of employees related to occupational safety and health.

Identify the responsibilities of employers related to occupational safety and health.

Explain the role of government agencies in providing a safe workplace.

GVC06.03   **Assess types and sources of workplace hazards common to government and public administration work settings in order to demonstrate understanding of health and safety concerns.**

GVC06.03.01   Implement training for stakeholders on mitigation for workplace hazards.

Sample Indicators   Identify and describe common hazards in the workplace.

Identify and describe major sources of information about hazards in the workplace (e.g., MSDS, work procedures, exposure control plans, training materials, labels, and signage).

Identify sources of combustible/flammable materials, fire and emergencies to establish a fire safe environment.

Interpret safety signs and symbols.

GVC06.03.02   Use technology, when appropriate, to assess hazards (such as GIS/GPS and others).

GVC06.04   **Control hazards common to government and public administration work settings to demonstrate application of procedures for maintaining a safe environment.**

GVC06.04.01   Demonstrate the application of personal and group health and safety practices.

Sample Indicators   Identify procedures necessary for maintaining a safe work area.

Identify methods to correct common hazards.

Identify methods for disposing of hazardous materials.

Demonstrate principals of safe physical movement to avoid slips, trips, and spills.

Inspect and use protective equipment (PPE).

GVC06.04.02   Implement training for stakeholders on preparedness for a safe environment.

Sample Indicators   Create notes, informal memos, and reminders.

GVC06.04.03   Develop and implement an emergency response plan for a simulated scenario involving a workplace emergency.

GVC06.04.04   Use technology, when appropriate, to control hazards (such as GIS/GPS and others).

GVC06.05   **Implement plans and policies to respond to public health, safety and environmental needs of the public.**

GVC06.05.01   Demonstrate the application of policy to ensure public well being and environmental protection.

Sample Indicators	Evaluate the roles of organizations that impact the well being of the public and the environment. Form partnerships that ensure the best utilization of resources. Implement programs to protect the public and the environment. Ensure compliance.

GVC06.06 — Identify public hazards and determine abatement strategies to implement safety procedures.

GVC06.06.01	Develop and implement safety standards and practices to ensure public safety.
Sample Indicators	Evaluate safety hazards in the environment. Formulate abatement actions.
GVC06.06.02	Implement homeland security procedures by coordinating with the Department of Homeland Security and other security agencies.
Sample Indicators	Support partnerships with international, national, state and local governments, the private sector, and citizens to share responsibility for homeland security. Comply with federal preparedness standards and directives.
GVC06.06.03	Use new and existing technologies to identify and develop strategies for safety procedures (such as GIS/GPS and others).

Cluster Topic GVC07	**LEADERSHIP AND TEAMWORK:** *Use leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives.*

GVC07.01 — Develop an organizational vision and strategic plan to inform stakeholders of the goals of a government or public administration agency.

GVC07.01.01	Incorporate the vision and strategic plan into the activities of the agency.
Sample Indicators	Act as a catalyst for innovation in government or public administration. Involve stakeholders in the development of the vision. Identify key policies and economic, political and social trends. Interpret the affects of economic, political, and social trends on agency goals. Formulate effective strategies for reaching the goals of the organization.
GVC07.01.02	Formulate strategies to manage the interests of various stakeholders.
Sample Indicators	Recognize stakeholder interests. Maintain focus under adverse conditions. Plan effective responses to political challenges.

GVC07.02 — Design and implement human resource strategies to maximize organizational potential in government and public administration agencies.

GVC07.02.01	Create a culture that fosters mutual trust and confidence using leadership skills.
Sample Indicators	Foster a sense of organizational responsibility and commitment to public service. Develop staff talents. Encourage collegial involvement in decision making. Plan strategies to minimize conflict. Coach staff in conflict resolution.
GVC07.02.02	Organize team-building experiences to develop leadership in others.

Sample Indicators	Foster team identity.
	Coach teams to work together to achieve the goals of the agency.
	Facilitate cooperation between teams and the public.

Cluster Topic GVC08	**ETHICS AND LEGAL RESPONSIBILITIES:** *Know and understand the importance of professional ethics and legal responsibilities.*
GVC08.01	**Adopt and apply a standard of practices sufficient to meet legal and ethical requirements and meet the public's expectations for government and public administration.**
GVC08.01.01	Apply established directives to ensure protection of confidential information while carrying out duties as a government or public administration employee.
Sample Indicators	Practice confidentiality in accordance with legal requirements relating to privacy.
	Practice responsible public disclosure.
	Provide appropriate information to regulators and to the public as required by law.
	Retain records in compliance with government regulations.
	Comply with open meeting laws.
GVC08.01.02	Apply established regulations to ensure governmental actions are free from conflict of interest or the appearance of conflict of interest.
Sample Indicators	Analyze situations for any appearance of conflict of interest.
	Choose behaviors that do not use a position in government or public administration for direct or indirect personal benefit.
	Disclose all interests or activities that might create or appear to create a conflict of interest.
GVC08.01.03	Model principles of ethical conduct to comply with the letter and the spirit of all laws and regulations affecting government and public administration agencies.
Sample Indicators	Practice compliance with laws and regulations affecting government and public administration.
	Modify practices to ensure compliance with changes in laws and regulations.
	Consult with an authority when in doubt about the application or interpretation of any legal requirement.

Cluster Topic GVC09	**EMPLOYABILITY AND CAREER DEVELOPMENT:** *Know and understand the importance of employability skills. Explore, plan, and effectively manage careers. Know and understand the importance of entrepreneurship skills.*
GVC09.01	**Interpret and apply written organizational policies, rules and procedures to ensure government and public administration employees effectively perform their jobs.**
GVC09.01.01	Locate appropriate information on organizational policies in handbooks and manuals.
Sample Indicators	Identify the contents of various organizational publications.
	Select the appropriate document(s) as reference for the situation.
GVC09.01.02	Discuss the influence of individual organizational policies and rules on a specific work situation.

Sample Indicators	Locate and identify specific organizational policy, rule or procedure to assist with a given situation.
	Explain specific organizational policy, rule or procedure to improve a given situation.

GVC09.02	**Compare and evaluate career opportunities in one or more government and public administration career pathways to broaden awareness of careers available in the agencies related to the career cluster.**
GVC09.02.01	Research and match career opportunities based upon their fit with personal career goals.
Sample Indicators	Locate and interpret career information for at least one career cluster.
	Identify job requirements for career pathways.
	Identify educational and credentialing requirements for career cluster and pathways.
GVC09.02.02	Match personal interests and aptitudes to careers when researching opportunities within the pathways.
Sample Indicators	Identify personal interests and aptitudes.
	Identify job requirements and characteristics of selected careers.
	Compare personal interests and aptitudes with job requirements and characteristics of career selected.
	Modify career goals based on results of personal interests and aptitudes with career requirements and characteristics.
GVC09.02.03	Develop a career plan for advancement in government and public administration careers.

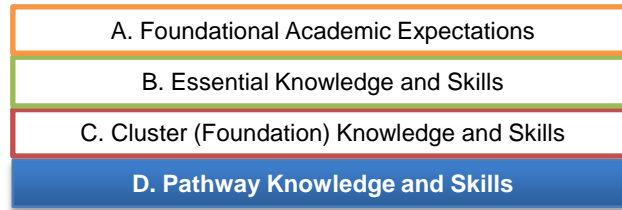|	
Cluster Topic GVC10	**TECHNICAL SKILLS:** *Use the technical knowledge and skills required to pursue the targeted careers for all pathways in the career cluster, including knowledge of design, operation, and maintenance of technological systems critical to the career cluster.*
GVC10.01	**Administer human, financial, material, and information resources in a manner that instills public trust.**
GVC10.01.01	Apply accepted principles of financial management to administer budgets and programs.
Sample Indicators	Prepare, justify and administer budgets.
	Integrate cost-benefit analyses to set priorities.
	Monitor expenditures in support of programs and policies.
	Incorporate cost–effective approaches.
GVC10.01.02	Utilize effective human resource management skills to achieve agency goals.
Sample Indicators	Assess current and future staffing needs based on goals and objectives.
	Select and manage a multi-cultural workforce.

D. PATHWAY KNOWLEDGE AND SKILLS

The following knowledge and skill statements apply to all careers in the National Security Pathway. The statements are organized within six topics.

A. Foundational Academic Expectations

B. Essential Knowledge and Skills

C. Cluster (Foundation) Knowledge and Skills

D. Pathway Knowledge and Skills

Pathway Topic GVPB01	**TRAINING**

GVPB01.01	**Develop and implement courses to instruct persons who will perform tasks relating to national and homeland security.**
GVPB01.01.01	Manage education and training activities to enable individuals and groups to perform missions.
Sample Indicators	Have experience performing missions for which training is to be provided. Plan and evaluate teaching methods. Devise means of evaluating student progress.
GVPB01.01.02	Use mission objectives to explain purposes of training.
Sample Indicators	Prepare units of instruction that recognize mission priorities.

Pathway Topic GVPB02	**RESPONSIBILITY AND AUTHORITY**

GVPB02.01	**Recognize the appropriate duties, responsibilities, and authority of organization personnel at all levels to facilitate maximum utilization of human resources.**
GVPB02.01.01	Apply knowledge of tables of organization and other administrative systems to assign tasks and responsibilities for achievement of maximum effectiveness.
Sample Indicators	Recognize goals and objectives of organization. Align personnel assignments with job demands. Appreciate demands on personnel of tasks and responsibilities assigned.
GVPB02.01.02	Evaluate performance to decide personnel recommendations.
Sample Indicators	Use evaluation systems and standards of the organization.
GVPB02.01.03	Provide counseling and training/retraining to correct deficiencies affecting individual or organizational performance.
Sample Indicators	Use available counseling and training resources.

Pathway Topic GVPB03	**ETHICS**

GVPB03.01	**Provide leadership necessary to ensure compliance with rules of engagement and other applicable ethical standards.**
GVPB03.01.01	Provide training to ensure that all personnel are familiar with rules of engagement and other applicable ethical standards.
Sample Indicators	Master rules of engagement. Master U.S. and international laws, treaties, and conventions applicable to military or other security agency conduct. Teach training material effectively.

GVPB03.01.02	Create an environment that fosters respect for ethical issues.
Sample Indicators	Conduct discussions of ethical issues raised by current events.
GVPB03.01.03	Take necessary action to remove violators from engagement and enforcement disciplinary action as prescribed by law.
Sample Indicators	Exercise working familiarity with international laws, treaties, and conventions.
	Exercise working familiarity with procedures of U.S. and international military, maritime, criminal, and civil law.
	Apply laws, rules or standards to appropriate situations.
	Recognize actions in violation of laws, rules, and standards.

Pathway Topic GVPB04	**INTELLIGENCE**
GVPB04.01	**Collect and analyze information from within and outside the United States to assess opportunities and threats to national security.**
GVPB04.01.01	Process intelligence information to brief commanders and other qualified personnel and recommend priorities for further intelligence activity.
Sample Indicators	Work within the scope and limits of the assigned mission.
	Gain familiarity with the target entities physically, psychologically, culturally, and militarily.
	Define the specific goals and intentions of foreign entities relevant to the mission.
	Study physical characteristics of areas that could become battlegrounds in time of war.
	Study foreign troop and equipment movements.
	Direct aerial and satellite observations.
	Direct ground and sea surveillance.
	Systematically analyze data received.
	Prepare intelligence reports, maps, and charts.
GVPB04.01.02	Protect channels of communication to maintain the integrity of intelligence operations.
Sample Indicators	Test for security leaks.
	Intercept foreign military communications.
	Coordinate information with other national security agencies.

Pathway Topic GVPB05	**SIGNAL INTELLIGENCE**
GVPB05.01	**Translate and analyze elements indicative of intent, plans, and operations of potentially hostile governments, groups, or individuals.**
GVPB05.01.01	Organize and present evidence to facilitate discovery and interpretation of actions of a potentially hostile nature.
Sample Indicators	Operate signal intelligence equipment and understand its uses and limitations.
	Encrypt and decrypt signals.
	Analyze ciphering and telecommunications protocols for hidden information.
	Relate signal information to information from other agencies and contexts.
	Discern patterns of significance and organize data.

Identify sources of transmissions.

Pathway Topic GVPB06	NUCLEAR, BIOLOGICAL, AND CHEMICAL SAFETY

GVPB06.01 — **Prepare and coordinate strategies to defend against effects of chemical, biological, radiological, nuclear (CBR-N), or other emergent events.**

GVPB06.01.01 — Utilize information, equipment and tactics to defend self and other persons and resources from effects of CBR-N events and other emergent events.

Sample Indicators

Make and implement plans for response to both hostile and unintended events.
Secure equipment and supplies needed for protection against CBR effects.

Access intelligence information to determine appropriate state of plan implementation.
Continually access local and global intelligence, including information about weather and geophysical events.
Maintain communications with other federal agencies and installations and with state and local authorities.