

# CAREER PATHWAY KNOWLEDGE MANAGER (431)

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# 1 431-KNOWLEDGE MANAGER

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## 1.1 WORK ROLE OVERVIEW

The table below provides an overview of various role-specific elements related to 431-Knowledge Manager.

*Table 1. 431-Knowledge Manager Work Role Overview*

<b>NICE Role Description</b>	<i>Responsible for the management and administration of processes and tools that enable the organization to identify, document, and access intellectual capital and information content.</i>
<b>OPM Occupational Series</b>	<p>Personnel performing the 431-Knowledge Manager work role are most commonly aligned to the following Occupational Series: (Top 5 Shown)</p> <ul style="list-style-type: none"> <li>- 2210-Information Technology – 45%</li> <li>- 301-Misc. Administration and Program – 11%</li> <li>- 343-Management and Program Analysis – 7%</li> <li>- 303-Misc. Clerk and Assistant – 3%</li> <li>- 1550-Computer Science – 3%</li> </ul>
<b>Work Role Pairings</b>	<p>Personnel performing the 431-Knowledge Manager work role are most commonly paired with the following complimentary Work Roles (Top 5 shown):</p> <ul style="list-style-type: none"> <li>- 411-Technical Support Specialist – 36%</li> <li>- 422-Data Analyst – 9%</li> <li>- 451-System Administrator – 7%</li> <li>- 801-Program Manager – 6%</li> <li>- 441-Network Operations Specialist – 5%</li> </ul>
<b>Functional Titles</b>	<p>Personnel performing the 431-Knowledge Manager work role may unofficially or alternatively be called:</p> <ul style="list-style-type: none"> <li>- Business Analyst</li> <li>- Business and Requirements Analyst</li> <li>- Business Intelligence Analyst/Manager</li> <li>- Content Manager</li> <li>- Data Custodian</li> <li>- Data Storage Specialist</li> <li>- Information Dissemination Manager</li> <li>- Information Manager</li> <li>- Information Owner/Steward</li> <li>- Records and Information Management Specialist</li> </ul>
<b>Distribution of GS-Levels</b>	<p>Personnel performing the 431-Knowledge Manager work role are most commonly found within the following grades on the General Schedule.</p> <ul style="list-style-type: none"> <li>- <input type="checkbox"/> GS-4 – redacted**</li> <li>- <input type="checkbox"/> GS-5 – redacted**</li> <li>- <input checked="" type="checkbox"/> GS-6 – 3%</li> </ul>

	<ul style="list-style-type: none"> <li>- <input checked="" type="checkbox"/> GS-7 – 4%</li> <li>- <input type="checkbox"/> GS-8 – redacted**</li> <li>- <input checked="" type="checkbox"/> GS-9 – 6%</li> <li>- <input type="checkbox"/> GS-10 – redacted**</li> <li>- <input checked="" type="checkbox"/> GS-11 – 12%</li> <li>- <input checked="" type="checkbox"/> GS-12 – 20%</li> <li>- <input checked="" type="checkbox"/> GS-13 – 23%</li> <li>- <input checked="" type="checkbox"/> GS-14 – 14%</li> <li>- <input checked="" type="checkbox"/> GS-15 – 3%</li> </ul> <p>*12% of all 431s are in non-GS pay plans and excluded from this section  **Percentages below 3% are redacted.</p>
<p><b>On Ramps</b></p>	<p>The following work roles are examples of possible roles an individual may perform prior to transitioning into the 431- Knowledge Manager work role:</p> <ul style="list-style-type: none"> <li>- 411-Technical Support Specialist</li> <li>- 422-Data Analyst</li> <li>- 641-Systems Requirements Planner</li> </ul>
<p><b>Off Ramps</b></p>	<p>The following work roles are examples of common transitions an individual may pursue after having performed the 431-Knowledge Manager work role. This is not an exhaustive list, nor does it consider learning and development opportunities an individual may pursue to prepare themselves for performing alternate work roles:</p> <ul style="list-style-type: none"> <li>- 421-Database Administrator</li> <li>- 422-Data Analyst</li> </ul> <p>*Note: Leveraging the knowledge, skills, abilities, and tasks of the 431-Knowledge Manager work role, individuals may prepare themselves to transition into one or more of the following cross-functional work roles:</p> <ul style="list-style-type: none"> <li>- <i>711- Cyber Instructional Curriculum Developer</i></li> <li>- <i>712-Cyber Instructor</i></li> <li>- <i>732-Privacy Officer / Privacy Compliance Manager</i></li> <li>- <i>751-Cyber Workforce Developer and Manager</i></li> <li>- <i>752-Cyber Policy and Strategy Planner</i></li> <li>- <i>802-IT Project Manager</i></li> <li>- <i>803-Product Support Manager</i></li> </ul>

## 1.2 CORE TASKS

The table below provides a list of tasks that represent the Core, or baseline, expectations for performance in the 431-Knowledge Manager work role, as well as additional tasks that those in this role may be expected to perform.

*Table 2. 431- Knowledge Manager Core Tasks*

<b>Task ID</b>	<b>Task</b>	<b>Core or Additional</b>
T0037	Construct access paths to suites of information (e.g., link pages) to facilitate access by end-users.	Core
T0060	Develop an understanding of the needs and requirements of information end-users.	Core
T0154	Monitor and report the usage of knowledge management assets and resources.	Core
T0185	Plan and manage the delivery of knowledge management projects.	Core
T0339	Lead efforts to promote the organization's use of knowledge management and information sharing.	Core
T0421	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (e.g., hard copy documents, digital files).	Core
T0452	Design, build, implement, and maintain a knowledge management framework that provides end-users access to the organization's intellectual capital.	Core
T0524	Promote knowledge sharing between information owners/users through an organization's operational processes and systems.	Core
T0209	Provide recommendations on data structures and databases that ensure correct and quality production of reports/management information.	Additional

### 1.3 CORE KNOWLEDGE, SKILLS, AND ABILITIES

The table below provides a ranking of KSAs that represent the Core, or baseline, expectations for performance in the 431-Knowledge Manager work role, as well as additional KSAs that those in this role may be expected to demonstrate.

Table 3. 431- Knowledge Manager Core Knowledge, Skills, and Abilities

KSA ID	Description	Competency	Importance to Work Role
K0004	Knowledge of cybersecurity and privacy principles.	Information Systems/Network Security	Foundational to All Work Roles
K0001	Knowledge of computer networking concepts and protocols, and network security methodologies.	Infrastructure Design	Foundational to All Work Roles
K0003	Knowledge of laws, regulations, policies, and ethics as they relate to cybersecurity and privacy.	Legal, Government, and Jurisprudence	Foundational to All Work Roles
K0002	Knowledge of risk management processes (e.g., methods for assessing and mitigating risk).	Risk Management	Foundational to All Work Roles
K0005	Knowledge of cyber threats and vulnerabilities.	Vulnerabilities Assessment	Foundational to All Work Roles
K0006	Knowledge of specific operational impacts of cybersecurity lapses.	Vulnerabilities Assessment	Foundational to All Work Roles
K0095	Knowledge of the capabilities and functionality associated with various technologies for organizing and managing information (e.g., databases, bookmarking engines).	Data Management	Core
K0195	Knowledge of data classification standards and methodologies based on sensitivity and other risk factors.	Data Management	Core
K0260	Knowledge of Personally Identifiable Information (PII) data security standards.	Data Privacy and Protection	Core
K0261	Knowledge of Payment Card Industry (PCI) data security standards.	Data Privacy and Protection	Core
K0262	Knowledge of Personal Health Information (PHI) data security standards.	Data Privacy and Protection	Core
K0194	Knowledge of Cloud-based knowledge management technologies and concepts related to security, governance, procurement, and administration.	Knowledge Management	Core
K0228	Knowledge of taxonomy and semantic ontology theory.	Knowledge Management	Core
K0283	Knowledge of use cases related to collaboration and content synchronization across platforms (e.g., Mobile, PC, Cloud).	Knowledge Management	Core
K0146	Knowledge of the organization's core business/mission processes.	Organizational Awareness	Core
K0094	Knowledge of the capabilities and functionality associated with content creation technologies (e.g., wikis, social networking, content management systems, blogs).	Technology Awareness	Core
K0096	Knowledge of the capabilities and functionality of various collaborative technologies (e.g., groupware, SharePoint).	Technology Awareness	Core
K0013	Knowledge of cyber defense and vulnerability assessment tools and their capabilities.	Vulnerabilities Assessment	Core
K0338	Knowledge of data mining techniques.	Data Management	Additional

<b>KSA ID</b>	<b>Description</b>	<b>Competency</b>	<b>Importance to Work Role</b>
K0420	Knowledge of database theory.	Database Administration	Additional
K0287	Knowledge of an organization's information classification program and procedures for information compromise.	Information Management	Additional
K0315	Knowledge of the principal methods, procedures, and techniques of gathering information and producing, reporting, and sharing information.	Information Management	Additional
S0011	Skill in conducting information searches.	Information Management	Additional
S0012	Skill in conducting knowledge mapping (e.g., map of knowledge repositories).	Knowledge Management	Additional
S0049	Skill in the measuring and reporting of intellectual capital.	Knowledge Management	Additional
S0055	Skill in using knowledge management technologies.	Knowledge Management	Additional
A0002	Ability to match the appropriate knowledge repository technology for a given application or environment.	Knowledge Management	Additional

## 1.4 CORE COMPETENCIES

The table below is a compilation of competencies aligned to the 431-Knowledge Manager work role, and their associated importance. Listed competencies are collections of three or more similar Knowledge, Skills, or Abilities aligned to the Work Role. *These competencies originate from the [NICE Framework Competency Pivot Tool](#).*

Table 4. 431- Knowledge Manager Core Competencies

Technical Competency	Comp ID	Definition	Work Role Related KSAs	Importance
Data Management	C013	KSAs that relate to the development and execution of data management plans, programs, practices, processes, architectures, and tools that manage, control, protect, deliver, archive, dispose of, and enhance the value of data and information assets.	<ul style="list-style-type: none"> <li>- Knowledge of the capabilities and functionality associated with various technologies for organizing and managing information (e.g., databases, bookmarking engines).</li> <li>- Knowledge of data classification standards and methodologies based on sensitivity and other risk factors.</li> <li>- Knowledge of data mining techniques.</li> </ul>	Core
Information Management	C023	KSAs that relate to where or how to gather, organize, maintain, or modify information or information management systems to effectively process, store, and/or distribute information	<ul style="list-style-type: none"> <li>- Knowledge of an organization's information classification program and procedures for information compromise.</li> <li>- Knowledge of the principal methods, procedures, and techniques of gathering information and producing, reporting, and sharing information.</li> <li>- Skill in conducting information searches.</li> </ul>	Core
Knowledge Management	C029	KSAs that relate to the value of collected information and the methods of sharing that information throughout an organization.	<ul style="list-style-type: none"> <li>- Knowledge of Cloud-based knowledge management technologies and concepts related to security, governance, procurement, and administration.</li> <li>- Knowledge of taxonomy and semantic ontology theory.</li> <li>- Knowledge of use cases related to collaboration and content synchronization across platforms (e.g., Mobile, PC, Cloud).</li> <li>- Skill in conducting knowledge mapping (e.g., map of knowledge repositories).</li> <li>- Skill in the measuring and reporting of intellectual capital.</li> <li>- Skill in using knowledge management technologies.</li> <li>- Ability to match the appropriate knowledge repository technology for a given application or environment.</li> </ul>	Core



Technical Competency	Comp ID	Definition	Work Role Related KSAs	Importance
Data Privacy and Protection	C014	KSAs that relate to the relationship between the collection and dissemination of data, technology, the public expectation of privacy, legal and political issues surrounding them	<ul style="list-style-type: none"> <li>- Knowledge of Personally Identifiable Information (PII) data security standards.</li> <li>- Knowledge of Payment Card Industry (PCI) data security standards.</li> <li>- Knowledge of Personal Health Information (PHI) data security standards.</li> </ul>	Additional
Vulnerabilities Assessment	C057	KSAs that relate to the principles, methods, and tools for assessing vulnerabilities and developing or recommending appropriate mitigation countermeasures	<ul style="list-style-type: none"> <li>- Knowledge of cyber threats and vulnerabilities.</li> <li>- Knowledge of specific operational impacts of cybersecurity lapses.</li> <li>- Knowledge of cyber defense and vulnerability assessment tools and their capabilities.</li> </ul>	Additional

## 1.5 SUGGESTED QUALIFICATIONS / CAPABILITY INDICATORS

*Table 5. 431- Knowledge Manager Suggested Qualifications / Capability Indicators*

*For indicators of capability for the 431- Knowledge Manager work role, please see [Draft NISTR 8193 - National Initiative for Cybersecurity Education \(NICE\) Framework Work Role Capability Indicators](#).*

*Section to be populated with updated DoD-8140 Qualification Matrix for 431- Knowledge Manager.*

## 2 APPENDIX: 431-KNOWLEDGE MANAGER TASK ANALYSIS AND KSA MAPPING

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### 2.1 KEY TO READING THE TASK ANALYSIS AND KSA MAPPING

Table 6. Key to Reading the Task Analysis and KSA Mapping

Proficiency	Task Statement	Importance
As Written	Task as written within the NICE Cybersecurity Workforce Framework (NICE Framework).	Overall Importance to Work Role
Entry	<i>Example behavioral indicator / task permutation for performing this task at an Entry skills proficiency level.</i>	
Intermediate	<i>Example behavioral indicator / task permutation for performing this task at an Intermediate skills proficiency level.</i>	
Advanced	<i>Example behavioral indicator / task permutation for performing this task at an Advanced skills proficiency level.</i>	

Table 7. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
ID of K, S, or A	Knowledge, Skill or Ability needed to perform the task as written within the NICE Framework	Competency mapped to the individual K, S, or A.

## 2.2 431-KNOWLEDGE MANAGER TASK ANALYSIS AND KSA MAPPING

Table 8. T0037 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Construct access paths to suites of information (e.g., link pages) to facilitate access by end-users.	Core
Entry	<i>Under supervision, assist with constructing access paths to suites of information (e.g., link pages) to facilitate access by end-users.</i>	
Intermediate	<i>Construct access paths to suites of information (e.g., link pages) to facilitate access by end-users.</i>	
Advanced	<i>Review, approve, and suggest enhancements to access paths to suites of information (e.g., link pages) to facilitate access by end-users.</i>	

Table 9. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0287	Knowledge of an organization's information classification program and procedures for information compromise.	Information Management
K0315	Knowledge of the principal methods, procedures, and techniques of gathering information and producing, reporting, and sharing information.	Information Management
S0011	Skill in conducting information searches.	Information Management

Table 10. T0060 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Develop an understanding of the needs and requirements of information end-users.	Core
<i>Entry</i>	<i>Collect the needs and requirements of information end-users.</i>	
<i>Intermediate</i>	<i>Develop an understanding of the needs and requirements of information end-users.</i>	
<i>Advanced</i>	<i>Prioritize and approve the needs and requirements of information end-users.</i>	

Table 11. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0315	Knowledge of the principal methods, procedures, and techniques of gathering information and producing, reporting, and sharing information.	Information Management
K0146	Knowledge of the organization's core business/mission processes.	Organizational Awareness

Table 12. T0154 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Monitor and report the usage of knowledge management assets and resources.	Core
Entry	<i>Monitor the usage of knowledge management assets and resources.</i>	
Intermediate	<i>Monitor and report the usage of knowledge management assets and resources.</i>	
Advanced	<i>Review, approve, and advise on the usage of knowledge management assets and resources.</i>	

Table 13. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0095	Knowledge of the capabilities and functionality associated with various technologies for organizing and managing information (e.g., databases, bookmarking engines).	Data Management
K0338	Knowledge of data mining techniques.	Data Management
K0315	Knowledge of the principal methods, procedures, and techniques of gathering information and producing, reporting, and sharing information.	Information Management
S0012	Skill in conducting knowledge mapping (e.g., map of knowledge repositories).	Knowledge Management
S0055	Skill in using knowledge management technologies.	Knowledge Management

Table 14. T0185 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Plan and manage the delivery of knowledge management projects.	Core
<i>Entry</i>	<i>Assist with planning and managing of knowledge management projects.</i>	
<i>Intermediate</i>	<i>Plan and manage the delivery of knowledge management projects.</i>	
<i>Advanced</i>	<i>Direct and lead the delivery of multiple, complex knowledge management projects, and serve as a subject matter expert.</i>	

Table 15. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0228	Knowledge of taxonomy and semantic ontology theory.	Knowledge Management
S0055	Skill in using knowledge management technologies.	Knowledge Management

Table 16. T0339 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Lead efforts to promote the organization's use of knowledge management and information sharing.	Core
Entry	<i>Promote the organization's use of knowledge management and information sharing.</i>	
Intermediate	<i>Lead efforts to promote the organization's use of knowledge management and information sharing.</i>	
Advanced	<i>Develop, implement, and manage the organization's knowledge management program, policies, and culture.</i>	

Table 17. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0095	Knowledge of the capabilities and functionality associated with various technologies for organizing and managing information (e.g., databases, bookmarking engines).	Data Management
K0287	Knowledge of an organization's information classification program and procedures for information compromise.	Information Management
K0315	Knowledge of the principal methods, procedures, and techniques of gathering information and producing, reporting, and sharing information.	Information Management
S0012	Skill in conducting knowledge mapping (e.g., map of knowledge repositories).	Knowledge Management
A0002	Ability to match the appropriate knowledge repository technology for a given application or environment.	Knowledge Management
K0003	Knowledge of laws, regulations, policies, and ethics as they relate to cybersecurity and privacy.	Legal, Government, and Jurisprudence



Table 18. T0421 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (e.g., hard copy documents, digital files).	Core
Entry	<i>Assist with managing the indexing/cataloguing, storage, and access of explicit organizational knowledge (e.g., hard copy documents, digital files).</i>	
Intermediate	<i>Manage the indexing/cataloguing, storage, and access of explicit organizational knowledge (e.g., hard copy documents, digital files).</i>	
Advanced	<i>Oversee others and manage recommendations managing the indexing/cataloguing, storage, and access of explicit organizational knowledge (e.g., hard copy documents, digital files).</i>	

Table 19. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0338	Knowledge of data mining techniques.	Data Management
K0420	Knowledge of database theory.	Database Administration
S0011	Skill in conducting information searches.	Information Management
K0228	Knowledge of taxonomy and semantic ontology theory.	Knowledge Management
S0012	Skill in conducting knowledge mapping (e.g., map of knowledge repositories).	Knowledge Management
K0146	Knowledge of the organization's core business/mission processes.	Organizational Awareness

Table 20. T0452 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Design, build, implement, and maintain a knowledge management framework that provides end-users access to the organization's intellectual capital.	Core
Entry	<i>Assist with designing, building, implementing, and maintaining a knowledge management framework that provides end-users access to the organization's intellectual capital.</i>	
Intermediate	<i>Design, build, implement, and maintain a knowledge management framework that provides end-users access to the organization's intellectual capital.</i>	
Advanced	<i>Oversee, manage, and suggest innovative improvements to the design, build, implementation, and maintenance of a knowledge management framework that provides end-users access to the organization's intellectual capital.</i>	

Table 21. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0338	Knowledge of data mining techniques.	Data Management
K0004	Knowledge of cybersecurity and privacy principles.	Information Systems/Network Security
K0228	Knowledge of taxonomy and semantic ontology theory.	Knowledge Management
S0012	Skill in conducting knowledge mapping (e.g., map of knowledge repositories).	Knowledge Management
S0055	Skill in using knowledge management technologies.	Knowledge Management

Table 22. T0524 Task Analysis

Proficiency	Task Statement	Importance
As Written within Framework	Promote knowledge sharing between information owners/users through an organization's operational processes and systems.	Core
Entry	<i>Assist with knowledge sharing between information owners/users throughout the organization in support of operational processes and systems.</i>	
Intermediate	<i>Promote knowledge sharing between information owners/users through an organization's operational processes and systems.</i>	
Advanced	<i>Facilitate the knowledge sharing opportunities and challenges between information owners/users throughout the organization in support of innovating operational processes and systems.</i>	

Table 23. Primary Knowledge, Skills, and Abilities Required to Perform the above Task

KSA ID	Description	Competency
K0315	Knowledge of the principal methods, procedures, and techniques of gathering information and producing, reporting, and sharing information.	Information Management
S0055	Skill in using knowledge management technologies.	Knowledge Management
K0146	Knowledge of the organization's core business/mission processes.	Organizational Awareness
K0006	Knowledge of specific operational impacts of cybersecurity lapses.	Vulnerabilities Assessment