National Information Technology Innovation Center

Business Industry Leadership Team (BILT)

AI Literacy KSAs August 2026

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This prioritized Knowledge, Skills, and Abilities (KSA) list was updated on the date provided by the National IT Innovation Center (NITIC) in collaboration with IT industry subject matter experts (SMEs).

This list is intended to help faculty and administrators align curriculum with industry needs so graduates are "workforce ready" when they graduate.

SMEs convened online to rank each KSA item one by one – a ranking of "4" meant that item was essential for entry-level IT workers, while a "1" meant that item could be removed from program curriculum. By default, items with an average vote of 2.6 or lower were turned pink to signal that this item may not be worth keeping.

After the vote, the SMEs discussed the results as a group. This discussion led to some revisions in the KSA descriptions and rankings. Some "pink" items the SMEs together deemed important despite the lower average and were kept, while some "green" items with a higher average the SMEs recommended be removed from the list. Those items can be found at the bottom of each KSA section under "Recommended Removal."

The "To Be Included in the Next Vote" section at the bottom includes items the SMEs suggested that were not included in the original list vote. This KSA prioritization process is a cornerstone of the successful Business and Industry Leadership Team (BILT) model which puts businesses in a co-leadership role.

Learn more about how the BILT works – and how you can implement it with your own program – by using these resources:

NITIC orientation video; www.tiny.cc/BILTorient

Convergence Technology Center BILT handbook: www.tiny.cc/implementingBILT

The items on the original list came from:

- KSAs for the 5 foundational areas of the DOL AI Literacy Framework recently released (https://www.dol.gov/sites/dolgov/files/ETA/advisories/TEN/2025/TEN%2007-25/TEN%2007-25%20%28complete%20document%29.pdf)
- KSAs that other colleges have used for AI literacy for non-AI professionals
- A select group of AI literacy knowledge and skills for those majoring in an IT field

A.I. Literacy Knowledge and Skills - updated August 2026

	Knowledge Knowledge focuses on the understanding of concepts. It is theoretical and not practical. An individual may have an understanding of a topic or tool or some textbook knowledge of it but have no experience applying it. For example, someone might have read hundreds of articles on health and nutrition, many of them in scientific journals, but that doesn't make that person qualified to dispense advice on nutrition.	# votes (4 = most important)				
		4	3	2	1	Avg
K-1	Knowledge of the basic meaning of artificial intelligence and how AI differs from conventional software.	11	1	1	0	3.77
K-2	Knowledge of how AI systems identify patterns in data and generate probabilistic rather than guaranteed outputs.	5	7	1	0	3.31
K-3	Knowledge of Common AI capabilities, including generating text, analyzing data, recognizing images, processing audio, and producing multimodal content.	10	3	0	0	3.77
K-4	Knowledge of the distinction between model training and inference.	2	6	5	0	2.77
K-5	Knowledge of the roles of training data, algorithms, goals, parameters, and human design choices in shaping AI behavior.	1	3	9	0	2.38
K-6	Knowledge of the causes and implications of hallucinations, inaccuracies, outdated information, and inconsistent outputs.	5	6	2	0	3.23
K-7	Knowledge of ways AI can augment human work without replacing human responsibility, expertise, or judgment.	10	3	0	0	3.77
K-8	Knowledge of common AI-supported productivity uses, such as drafting, summarizing, organizing, planning, and analyzing information.	9	4	0	0	3.69
K-9	Knowledge of common uses of AI for information support, personalized learning, brainstorming, creative assistance, and task automation.	8	4	0	0	3.67
K-10	Knowledge of how AI can support recommendations, forecasts, risk assessments, and other decisions while leaving final decisions to people.	6	5	1	0	3.42
K-11	Knowledge of how the value, appropriateness, and risk of an AI use case vary by discipline, occupation, audience, and context.	5	6	2	0	3.23

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K-12	Knowledge of how prompt clarity, specificity, context, audience, tone, constraints, and desired format influence AI outputs.	10	3	0	0	3.77
K-13	Knowledge of when examples, reference materials, and relevant data can improve the usefulness of AI responses.	4	7	2	0	3.15
K-14	Knowledge of why effective AI interaction is iterative and may require clarification, refinement, or reframing.	7	5	1	0	3.46
K-15	Knowledge of criteria for judging AI outputs, including accuracy, completeness, clarity, relevance, logic, usability, and fitness for purpose.	8	4	1	0	3.54
K-16	Knowledge of the importance of corroborating AI-generated information with current and independent sources.	8	4	0	1	3.46
K-17	Knowledge of how bias, gaps, faulty assumptions, weak logic, fabricated citations, and missing context can affect AI outputs.	7	5	1	0	3.46
K-18	Knowledge of the role of subject-matter knowledge, critical thinking, creativity, communication, and values in reviewing AI work.	4	6	3	0	3.08
K-19	Knowledge of types of sensitive, personal, proprietary, regulated, or confidential information that should not be entered into unapproved AI tools.	11	2	0	0	3.85
K-20	Knowledge of the importance of institutional, course, workplace, legal, organization-specific, local, regional, national, global, and tool-specific policies governing AI use.	11	1	1	0	3.77
K-21	Knowledge of ethical risks such as plagiarism, undisclosed AI use, impersonation, deception, discrimination, and harmful content.	7	6	0	0	3.54
K-22	Knowledge of how privacy, security, copyright, intellectual property, accessibility, and fairness considerations affect AI use.	9	3	1	0	3.62
K-23	Knowledge of why higher-stakes uses in areas such as health, safety, employment, finance, and legal matters require added scrutiny and qualified oversight.	9	3	1	0	3.62
K-24	Knowledge of the user's continuing accountability for decisions, submissions, and outcomes produced with AI assistance.	7	4	2	0	3.38
K-25	Knowledge of the need to update AI knowledge as tools, capabilities, policies, and occupational applications change.	4	7	1	1	3.08

K-26	Knowledge of how to distinguish among artificial intelligence, machine learning, deep learning, generative AI, narrow AI, and claims about general AI using accurate, plain-language examples.	3	3	7	0	2.69	13
K-27	Knowledge of why digitization, usable data, and baseline digital literacy are prerequisites for effective AI use.	3	3	6	1	2.62	13
K-28	Knowledge of how to distinguish rule-based automation, generative AI assistance, and agentic systems that can plan or act toward a goal.	3	3	6	1	2.62	13
K-29	Knowledge of how structured and unstructured data, data quality, provenance, representativeness, and readiness affect AI results.	3	3	7	0	2.69	13
K-30	Knowledge of reliability, robustness, transparency, and explainability and why they matter when evaluating AI-supported results or decisions.	3	4	6	0	2.77	13
K-31	Knowledge of how human-centered AI prioritizes human needs, values, accessibility, agency, and well-being.	4	4	5	0	2.92	13
K-32	Knowledge of common manipulation and disclosure risks, including prompt injection, prompt leaking, malicious instructions, and untrusted inputs.	3	7	3	0	3.00	13
K-33	Knowledge of how to distinguish artificial intelligence, machine learning, deep learning, generative AI, narrow AI, and major learning approaches at a conceptual level.	2	4	5	2	2.46	13
K-34	Knowledge of how digitization, structured and unstructured data, data quality, and data availability enable or constrain AI-enabled IT services.	2	5	6	0	2.69	13
K-35	Knowledge of, at a systems level, how models are trained, validated, and used for inference, including generative, multimodal, batch, real-time, cloud, and edge use.	1	2	8	2	2.15	13
K-36	Knowledge of how to distinguish rule-based automation, AI assistance, and agentic systems, including the implications of permissions, tools, autonomy, and human approval.	5	3	4	1	2.92	13
K-37	Knowledge of criteria for selecting AI tools or services, including task fit, performance, interpretability, privacy, security, licensing, cost, support, integration, and ethical implications.	3	2	6	2	2.46	13

K-38	Knowledge of how to differentiate no-code, low-code, and code-based AI implementation approaches and identify when each is appropriate.	1	4	5	3	2.23	13
K-39	Knowledge of the major layers of an AI-enabled solution: infrastructure, cloud or edge services, data management, model or service, application, integration, and agent layer.	0	4	6	3	2.08	13
K-40	Knowledge of how to distinguish AI-enhanced from AI-native systems and explain implications for availability, support, monitoring, vendor dependence, and risk.	0	4	8	1	2.23	13
K-41	Knowledge of common AI security, privacy, misuse, and governance risks, including prompt injection, data leakage, malicious inputs, excessive permissions, and unsafe tool use.	4	6	3	0	3.08	13
K-42	Knowledge of how data selection, representation, labeling, and system design can produce biased or unfair AI outcomes.	3	5	5	0	2.85	13
K-43	Knowledge of reliability, robustness, transparency, and explainability and their importance to testing, troubleshooting, auditing, and user trust.	2	3	7	1	2.46	13
K-44	Knowledge of how accessibility, usability, human agency, values, and well-being should influence AI-enabled IT systems.	3	4	5	1	2.69	13
Skills The capabilities or proficiencies developed through training or hands-on experience. Skills are the practical application of theoretical knowledge. Someone can take a course on investing in financial futures, and therefore has knowledge of it. But getting experience in trading these instruments adds skills.							
S-1	Skill in using accurate, plain-language AI vocabulary when discussing tools, capabilities, limitations, and outputs.	7	6	0	0	3.54	13
S-2	Skill in identifying tasks in an academic, workplace, or civic workflow that may benefit from appropriate AI assistance.	4	6	3	0	3.08	13
S-3	Skill in selecting an AI tool or modality that fits the task, available data, desired output, and level of risk.	5	5	1	2	3.00	13
S-4	Skill in using AI to support drafting, summarizing, brainstorming, organizing, planning, learning, or basic analysis.	6	6	1	0	3.38	13

S-5	Skill in comparing an AI-assisted approach with a non-AI approach for quality, efficiency, and appropriateness.	2	6	3	1	2.75
S-6	Skill in writing clear prompts that specify the task, context, audience, goal, constraints, and desired output format.	9	4	0	0	3.69
S-7	Skill in providing relevant examples, source material, or non-sensitive data to improve an AI response.	8	5	0	0	3.62
S-8	Skill in breaking a complex task into manageable steps and direct the AI through those steps.	6	6	1	0	3.38
S-9	Skill in using follow-up prompts to clarify, correct, expand, reformat, or refine an AI output.	6	7	0	0	3.46
S-10	Skill in revising vague, biased, leading, or misleading prompts to improve clarity and reduce unintended results.	5	5	3	0	3.15
S-11	Skill in verifying factual claims, calculations, quotations, and citations using authoritative and current sources.	6	7	0	0	3.46
S-12	Skill in assessing an AI output for accuracy, completeness, clarity, relevance, logic, and fitness for purpose.	8	3	2	0	3.46
S-13	Skill in detecting unsupported claims, fabricated information, logical gaps, questionable assumptions, bias, and missing perspectives.	7	3	3	0	3.31
S-14	Skill in comparing AI-generated work with human-created work or other sources to identify differences in quality and perspective.	2	8	3	0	2.92
S-15	Skill in applying subject-matter knowledge and contextual judgment when deciding whether to accept, revise, or reject an AI output.	5	5	3	0	3.15
S-16	Skill in revising AI-generated material for accuracy, tone, clarity, accessibility, persuasiveness, and audience needs.	4	6	3	0	3.08
S-17	Skill in recognizing and withholding sensitive, personal, proprietary, regulated, or confidential information from unapproved AI systems.	9	3	1	0	3.62
S-18	Skill in following applicable institutional, course, workplace, legal, and tool-specific requirements when using AI.	7	4	2	0	3.38
S-19	Skill in disclosing, citing, or documenting AI assistance when required by the assignment, employer, profession, or publication context.	7	4	2	0	3.38

S-20	Skill in evaluating an intended AI use for privacy, security, copyright, accessibility, fairness, safety, and potential harm.	7	4	2	0	3.38	13
S-21	Skill in applying greater verification, caution, and qualified human oversight to high-stakes AI-supported tasks.	6	4	2	1	3.15	13
S-22	Skill in maintaining personal accountability by reviewing, editing, and approving AI-assisted work before submission or use.	6	5	2	0	3.31	13
S-23	Skill in combining AI assistance with critical thinking, creativity, communication, collaboration, and disciplinary expertise.	4	6	2	1	3.00	13
S-24	Skill in using personal, professional, institutional, and community values to resolve ambiguous AI-use decisions.	3	6	4	0	2.92	13
S-25	Skill in monitoring changes in AI tools and policies, evaluate new capabilities, and pursue relevant next-step learning.	4	5	3	1	2.92	13
S-26	Skill in defining the problem, desired outcome, success criteria, and appropriate human role before deciding whether and how to use AI.	5	5	3	0	3.15	13
S-27	Skill in assessing whether data used with AI are relevant, accurate, sufficiently complete, authentic, traceable, representative, and appropriate to share.	4	6	3	0	3.08	13
S-28	Skill in saving, labeling, versioning, and appropriately sharing effective prompts and relevant settings so AI-assisted work can be reproduced and improved.	2	6	5	0	2.77	13
S-29	Skill in recognizing suspicious instructions or untrusted content, avoid exposing protected information, and respond appropriately to possible prompt-injection or data-leakage attempts.	8	4	1	0	3.54	13
S-30	Skill in checking an intended generative AI use for intellectual-property, privacy, bias, end-user, trust, and compliance risks before proceeding.	5	3	5	0	3.00	13
S-31	Skill in defining the problem, users, constraints, desired outcomes, success criteria, and appropriate human role before selecting an AI-enabled solution.	5	4	4	0	3.08	13
S-32	Skill in assessing data for relevance, accuracy, completeness, cleanliness, integrity, provenance, authenticity, representativeness, and appropriateness for use.	6	2	5	0	3.08	13

S-33	Skill in using AI appropriately to assist with technical documentation, troubleshooting, log analysis, scripting, spreadsheet formulas, data exploration, and user support.	4	5	2	2	2.85
S-34	Skill in comparing AI tools or services using task fit, quality, security, privacy, integration, cost, latency, accessibility, supportability, and organizational requirements.	3	4	3	3	2.54
S-35	Skill in testing an AI-enabled service for accuracy, reliability, robustness, bias, unsafe behavior, and performance under varied inputs and operating conditions.	3	3	6	1	2.62
S-36	Skill in configuring or demonstrating a basic AI-enabled workflow using approved no-code, low-code, API, or scripting methods appropriate to the program's technical level.	3	5	4	1	2.77
S-37	Skill in document prompts, settings, data sources, versions, test results, limitations, changes, and required human approvals for reproducible support and auditability.	2	6	5	0	2.77
S-38	Skill in monitoring AI-enabled services and use logs, tests, user reports, and documented baselines to identify errors, drift, misuse, availability issues, or unexpected behavior.	3	3	5	2	2.54
S-39	Skill in applying institutional policies and appropriate controls for access, data protection, intellectual property, prompt injection, third-party risk, compliance, and escalation.	5	3	5	0	3.00
S-40	Skill in defining approval points, fallback procedures, escalation paths, and human review appropriate to the risk of an AI-supported IT process.	3	5	4	1	2.77
S-41	Skill in explaining AI system capabilities, limitations, acceptable use, privacy considerations, and known risks clearly to technical and nontechnical users.	6	2	4	1	3.00
S-42	Skill in evaluating changes in AI tools, services, threats, standards, and vendor capabilities and update technical practices accordingly.	4	2	5	2	2.62