

Future-Ready Skills Framework

At QuantHub, our mission is to help everyone develop the abilities needed to thrive in a rapidly evolving workforce. In every great story, the hero needs a guide — throughout this framework, the learner is the hero, and our role is to guide their journey.

Two sides of the baseball, woven together: Enduring Capabilities and Digital Agility

ENDURING CAPABILITIES				DIGITAL AGILITY			
The human capabilities that remain valuable across roles and technologies by enabling sound thinking, productive connection, adaptation, and reliable execution.				The capacity to understand evolving digital and AI capabilities, design effective human-machine systems of work, and operate them with trust, accountability, and economic discipline.			
CATEGORY				CATEGORY			
#	CATEGORY	LEARNING OUTCOME	COMPETENCIES	#	CATEGORY	LEARNING OUTCOME	COMPETENCIES
1	Analysis & Innovation	Our hero makes sense of complexity, exercises sound judgment, and creates useful new approaches.	• Sensemaking and Analysis • Judgment and Discernment • Creativity and Innovation	1	Frontier Fluency	Our hero understands evolving digital and AI capabilities, limitations, and appropriate applications.	• Digital, Data, and AI Foundations • Agent Literacy • Boundary Sensing • Model and Task Routing
2	Connective Fluency	Our hero understands people, communicates meaning, and mobilizes relationships toward shared outcomes.	• Communication • Collaboration • Relational Intelligence • Leadership and Strategy	2	Agentic Work Design	Our hero structures assignments, context, tools, and workflows so humans and AI agents can perform together effectively.	• Specification and Assignment Design • Context Architecture and Ownership • Harness, Workflow, and Loop Design
3	Adaptive Execution	Our hero manages self, learns continuously, and turns priorities into dependable results and better processes.	• Self-Management • Learning Agility • Execution and Improvement	3	Trusted Operations	Our hero runs AI-enabled work accurately, securely, accountably, and economically over time.	• Evaluation and Verification • Failure, Security, and Permission Design • Cost, Leverage, and Attention Allocation

COMPETENCY				COMPETENCY			
#	CATEGORY	COMPETENCY	LEARNING OUTCOME	#	CATEGORY	COMPETENCY	LEARNING OUTCOME
1	Analysis & Innovation	Sensemaking and Analysis	Our hero structures ambiguity, evaluates information, and develops a coherent understanding before acting.	1	Frontier Fluency	Digital, Data, and AI Foundations	Our hero uses digital systems and data competently and understands the basic operating principles, opportunities, and risks of AI.
2		Judgment and Discernment	Our hero makes and explains responsible choices under uncertainty by weighing evidence, context, risk, and consequences.	2		Agent Literacy	Our hero understands how agents use tools, memory, and state and knows how to steer, dispatch, inspect, and intervene in their work.
3		Creativity and Innovation	Our hero generates useful possibilities and converts promising ideas into tested improvements.	3		Boundary Sensing	Our hero continually recalibrates what AI can do reliably, where it remains fragile, and where human involvement is necessary.
4		Communication	Our hero expresses ideas clearly and adapts messages to the audience, medium, and desired action.	4		Model and Task Routing	Our hero matches each task to the appropriate human, model, tool, or combination based on capability, risk, speed, and cost.
5	Connective Fluency	Collaboration	Our hero coordinates interdependent effort, manages disagreement, and contributes reliably to shared results.	5	Agentic Work Design	Specification and Assignment Design	Our hero translates an objective into a clear assignment with context, constraints, evidence standards, and escalation rules.
6		Relational Intelligence	Our hero accurately understands others and builds constructive relationships across differences, tension, and ambiguity.	6		Context Architecture and Ownership	Our hero organizes and maintains the source material, memory, rules, and institutional knowledge AI systems need to perform reliably.
7		Leadership and Strategy	Our hero aligns people and stakeholders around direction, priorities, standards, and long-term value.	7		Harness, Workflow, and Loop Design	Our hero builds the tools, permissions, handoffs, checkpoints, recurring loops, and human-review points surrounding AI work.
8	Adaptive Execution	Self-Management	Our hero regulates attention, emotions, time, and conduct to sustain trustworthy performance.	8		Evaluation and Verification	Our hero independently tests AI-enabled work and requires evidence before accepting or using the result.
9		Learning Agility	Our hero acquires new capabilities, applies feedback, and adapts effectively as conditions change.	9	Trusted Operations	Failure, Security, and Permission Design	Our hero anticipates failure, limits potential harm, protects information, and maintains clear authority and accountability boundaries.
10		Execution and Improvement	Our hero converts goals into coordinated action, completed work, and continuously improved processes.	10		Cost, Leverage, and Attention Allocation	Our hero balances model capability, cost, review burden, and scarce human attention to maximize meaningful value.

Detailed sub-competencies and worker-centered learning outcomes are listed in parallel on the Detailed Outcomes sheet.

Detailed Skills and Learning Outcomes

ENDURING CAPABILITIES				DIGITAL AGILITY			
The human capabilities (E.g., "Durable skills") that remain valuable across roles and technologies by enabling sound thinking, productive connection, adaptation, and reliable execution.				The capacity to understand evolving digital and AI capabilities, design effective human-machine systems of work, and operate them with trust, accountability, and economic discipline.			
CATEGORY	COMPETENCY	SUB-COMPETENCY	WORKER LEARNING OUTCOME	CATEGORY	COMPETENCY	SUB-COMPETENCY	WORKER LEARNING OUTCOME
Analysis & Innovation	Sensemaking and Analysis	Analytical Thinking	Our hero breaks complex information into component parts and identifies patterns, assumptions, causes, and implications.	Frontier Fluency	Digital, Data, and AI Foundations	Digital Tool Fluency	Our hero confidently uses, connects, and learns common digital applications, platforms, file systems, and collaboration environments.
		Critical Thinking	Our hero tests the quality of evidence, logic, uncertainty, and alternative explanations before accepting a conclusion.			Data Fluency	Our hero reads, interprets, questions, and uses structured and unstructured data without confusing availability with reliability.
		Problem Framing	Our hero turns a messy situation into a clear question with defined goals, constraints, stakeholders, and success criteria.			AI Literacy	Our hero understands the basic capabilities, limitations, risks, and appropriate applications of contemporary AI systems.
		Problem Solving	Our hero generates, tests, and refines solutions to unfamiliar or non-routine challenges.			Automation Awareness	Our hero recognizes repeatable work that could be automated while distinguishing it from tasks requiring judgment or human interaction.
		Systems Thinking	Our hero traces how people, processes, incentives, decisions, and external forces interact across a larger system.	Agent Literacy	Agent Literacy	Agent Concepts	Our hero distinguishes agents from one-shot AI interactions and understands how agents use tools, memory, state, and delegated authority.
		Reading Comprehension	Our hero extracts meaning, nuance, intent, and practical implications from complex written material.			Steering and Dispatching	Our hero chooses between active iterative direction and more independent delegation based on the task and risk.
		Information Synthesis	Our hero combines information from multiple sources into a coherent view without losing important context or disagreement.			Tool-Use Literacy	Our hero understands how agents select and call tools and recognizes common tool-use errors or misuse.
	Judgment and Discernment	Situational Judgment	Our hero weighs context, trade-offs, and likely consequences when no option is clearly correct.			State and Checkpoint Awareness	Our hero tracks what an agent knows, has changed, and can safely resume from.
		Decision-Making	Our hero selects and justifies a course of action from multiple viable alternatives.			Inspection and Intervention	Our hero observes agent progress, diagnoses emerging problems, and intervenes before errors compound.
		Risk Judgment	Our hero identifies uncertainties, estimates potential consequences, and chooses safeguards proportionate to the risk.			Capability Sensing	Our hero maintains an up-to-date practical understanding of what current AI systems can perform reliably in a particular domain.
					Boundary Sensing		

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Connective Fluency	Creativity and Innovation	Ethical Reasoning	Our hero considers fairness, harm, privacy, safety, responsibility, and affected stakeholders before acting.	Agentic Work Design	Model and Task Routing	Human-AI Boundary Setting	Our hero determines which portions of the work can be delegated and which require human judgment, accountability, taste, or relationship awareness.
		Verification	Our hero checks claims, recommendations, and work products for accuracy, grounding, appropriateness, and fitness for purpose.			Capability Forecasting	Our hero makes informed near-term predictions about which tasks are likely to become feasible as models and tools improve.
		Creativity	Our hero produces ideas, combinations, approaches, or narratives that are both original and useful.			Limitation Recognition	Our hero notices when apparent fluency is masking weak reasoning, missing context, uncertainty, or capabilities the system does not possess.
		Ideation	Our hero generates multiple plausible approaches rather than immediately settling on the first available answer.			Task Classification	Our hero distinguishes routine, well-understood work from novel, ambiguous, specialized, or high-consequence work.
		Innovation	Our hero translates promising ideas into practical changes that create measurable value.			Model Selection	Our hero chooses among frontier, lower-cost, specialist, local, or other models according to the actual requirements of the task.
		Experimentation	Our hero turns assumptions into testable trials and revises the approach based on evidence and feedback.			Tool Routing	Our hero determines which databases, applications, search systems, code environments, or other tools an agent should use.
	Communication	Entrepreneurial Initiative	Our hero recognizes opportunities and mobilizes action despite incomplete information or limited resources.		Specification and Assignment Design	Human-Machine Allocation	Our hero distributes work among humans and AI systems according to their respective strengths rather than defaulting automatically to either.
		Writing	Our hero communicates clearly, concisely, persuasively, and appropriately for the intended reader and purpose.			Stack Simplification	Our hero maintains a manageable set of models and tools instead of creating unnecessary complexity through constant platform switching.
		Oral Communication	Our hero explains ideas, questions, recommendations, and decisions effectively in live interactions.			Outcome Definition	Our hero clearly states what result should exist and why it matters rather than merely describing an activity to perform.
		Storytelling and Presentation	Our hero organizes information into a compelling narrative that helps an audience understand, remember, or act.			Task Decomposition	Our hero separates complex work into appropriately sized assignments with clear dependencies and sequencing.
		Audience Adaptation	Our hero adjusts language, detail, tone, format, and examples to meet the needs of different audiences.			Instruction and Prompt Design	Our hero provides the objective, context, constraints, examples, format, and quality expectations required for effective AI execution.
	Collaboration	Teamwork	Our hero contributes reliably toward a shared goal while sharing information, responsibility, credit, and accountability.			Completion Criteria	Our hero defines what done means and what evidence must demonstrate that the assignment was completed correctly.
		Cross-Functional Collaboration	Our hero coordinates knowledge and effort across roles, disciplines, departments, or professional backgrounds.			Escalation Design	Our hero specifies when the AI should stop, ask for clarification, or return the issue to a responsible human.

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Adaptive Execution		Conflict Management	Our hero surfaces and addresses disagreement constructively without allowing tension to derail the work or relationship.	Trusted Operations	Context Architecture and Ownership	Source Curation	Our hero identifies and organizes the documents, data, examples, standards, and references an AI system needs to perform accurately.
		Negotiation	Our hero reaches workable agreements when participants have competing interests, goals, constraints, or priorities.			Persistent Scaffolding	Our hero creates planning files, workflow documents, rules, task histories, and memory structures that preserve continuity across sessions.
	Relational Intelligence	Active Listening	Our hero accurately receives, clarifies, and responds to what others mean rather than merely waiting for a turn to speak.			Context Hygiene	Our hero keeps context current, relevant, internally consistent, appropriately scoped, and free from obsolete or conflicting instructions.
		Empathy	Our hero understands and responds appropriately to other people's feelings, needs, experiences, and perspectives.			Context Ownership	Our hero preserves organizational knowledge in portable forms that can be used across models rather than trapped inside one vendor's system.
		Interpersonal Communication	Our hero manages one-to-one interactions constructively across differences, tension, uncertainty, or unequal power.			Context-Window Management	Our hero recognizes when accumulated context has become unreliable and knows when to summarize, refresh, or restart.
		Customer and Service Orientation	Our hero discovers what users or clients genuinely need and adapts the work to create practical value for them.		Harness, Workflow, and Loop Design	Harness Design	Our hero configures the context, memory, tools, permissions, routing, and evaluation layers that shape agent performance.
	Leadership and Strategy	Leadership	Our hero helps others align around a shared direction, clear priorities, appropriate standards, and collective responsibility.			Workflow Decomposition	Our hero structures a larger process into coordinated stages that can be assigned, monitored, reviewed, and improved.
		Strategic Thinking	Our hero connects immediate choices to longer-term goals, risks, opportunities, dependencies, and opportunity costs.			Seam and Handoff Design	Our hero creates clear, verifiable, and recoverable transitions between agents, tools, teams, and human decision-makers.
		Stakeholder Management	Our hero understands and balances the interests, constraints, expectations, and communication needs of affected groups.			Loop Design	Our hero converts recurring work into a persistent process that remembers state, detects changes, and acts according to defined rules.
		Influence	Our hero moves ideas and decisions forward through credibility, reasoning, relationships, and an understanding of what motivates others.			Multi-Agent Coordination	Our hero assigns differentiated roles to agents and manages how their outputs, checks, and decisions interact.
	Self-Management	Self-Awareness	Our hero recognizes personal emotions, motives, strengths, limitations, habits, and effects on other people.			Human-in-the-Loop Design	Our hero places human review where judgment or accountability is valuable rather than requiring people to inspect everything.
		Emotional Regulation	Our hero manages impulses, stress, and reactions so that emotions support rather than undermine performance and trust.			Recovery Design	Our hero ensures workflows can pause, roll back, retry, or escalate when something unexpected occurs.
		Attention Management	Our hero directs sustained focus toward high-value work and resists unnecessary distraction and fragmentation.		Evaluation and Verification	Output Verification	Our hero checks AI-generated claims, calculations, code, recommendations, and deliverables against reliable evidence or observable results.

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		Time Management	Our hero organizes workload and schedule so that deadlines are met without sacrificing important quality.			Independent Evaluation	Our hero uses reviewers, tests, comparison methods, or separate checking agents that are independent of the original generation process.
		Professionalism	Our hero consistently demonstrates preparation, respect, sound conduct, appropriate boundaries, and workplace readiness.			Proof Artifact Design	Our hero requires source trails, test results, citations, change logs, assumptions, or other evidence that makes quality visible.
		Dependability and Accountability	Our hero fulfills commitments, communicates progress, acknowledges mistakes, and takes responsibility for outcomes.			Acceptance Testing	Our hero evaluates whether completed work satisfies the original assignment, constraints, and real-world use case.
	Learning Agility	Curiosity	Our hero proactively seeks new information, questions, perspectives, experiences, and possibilities.			Uncertainty Communication	Our hero identifies what has been established, what remains uncertain, and what additional review or evidence is needed.
		Growth Mindset	Our hero treats capability as something that can be developed through effort, strategy, practice, and feedback.		Failure, Security, and Permission Design	Failure-Model Maintenance	Our hero continually updates the understanding of how current AI systems fail within specific tasks and domains.
		Learning Agility	Our hero acquires unfamiliar capabilities quickly and transfers what is learned into practical performance.			Blast-Radius Control	Our hero limits the scope of agent actions so an error cannot unnecessarily damage data, code, money, or operations.
		Meta-Learning	Our hero monitors how learning occurs, selects effective strategies, and adjusts methods when progress stalls.			Permission Design	Our hero gives agents only the access and authority required for the assignment and requires approval for higher-consequence actions.
		Feedback Literacy	Our hero seeks, interprets, evaluates, and applies feedback to improve the quality of work.			Privacy and Secrets Hygiene	Our hero protects confidential information, credentials, personal data, proprietary content, and sensitive prompts from inappropriate disclosure.
		Adaptability	Our hero adjusts effectively to new tools, tasks, expectations, people, and operating conditions.			Versioning and Rollback	Our hero maintains recoverable copies, change histories, and restoration points before AI systems alter important assets.
		Resilience	Our hero recovers from setbacks and sustains productive effort through uncertainty, difficulty, or change.			Accountability Design	Our hero ensures every agentic workflow has a clearly identified human or organizational owner responsible for its operation and outcomes.
	Execution and Improvement	Initiative	Our hero takes productive action without waiting for exhaustive instructions or perfect certainty.		Cost, Leverage, and Attention Allocation	Token and Cost Economics	Our hero determines when expensive intelligence is justified and when lower-cost models can perform adequately with appropriate safeguards.
		Planning and Prioritization	Our hero determines what should happen first, what can wait, and how limited time and resources should be allocated.			Leverage Calibration	Our hero identifies where AI can create meaningful increases in speed, quality, scope, or capacity rather than automating low-value work.
		Project Management	Our hero organizes work into deliverables, milestones, owners, dependencies, timelines, and review points.			Attention Allocation	Our hero directs scarce human review toward ambiguity, exceptions, consequential decisions, and areas where judgment adds the most value.

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		Process Improvement	Our hero redesigns workflows to improve quality, speed, consistency, or efficiency without eliminating necessary human judgment.			Inspection Budgeting	Our hero considers the cost of checking AI-generated work rather than evaluating productivity solely by the amount of content produced.
							Quality-Cost Optimization
							Operational Measurement