



Introduction

The new Certified Information Professional (CIP) certification helps IT and information management professionals demonstrate their ability to solve an organization’s existing information-related problems as well as plan for the future.

Information professionals contribute to the success of their organizations by helping address the following kinds of information management challenges (both on-premises and in the cloud):

1. Ensure information is dynamically delivered to staff and customers
2. Improve information sharing and collaboration
3. Improve enterprise search and access to information
4. Continuously analyze information to identify new business opportunities and improvements
5. Ensure appropriate information security and privacy controls
6. Manage information and records
7. Streamline and automate information intensive processes

The certification is dedicated to enhancing and promoting the profession of information management by providing the premier credential in the industry. The CIP certification accomplishes this mission by:

- Establishing standards for professional practice
- Creating a fair, valid, and reliable examination process by which professionals can demonstrate their knowledge and skill
- Granting certification to those who meet the program's standards
- Communicating the value of the credential to employers, customers and partners.

A broad range of subject matter experts identified in 2011 the skills and knowledge measured by this examination. These industry experts determined the weighing of domains and ensured that the weighting is representative of the relative importance of the content.

Domain	% of Examination
1. Access/ Use	12%
2. Capture/ Manage	20%
3. Collaborate/ Deliver	18%
4. Secure/ Preserve	20%
5. Architecture/ Systems	15%
6. Plan/ Implement	15%
TOTAL	100%

Below is a list of knowledge areas covered on this 2 hours exam, but please know that the bulleted lists below each objective are not exhaustive lists. Other knowledge areas may be included in the exam even though they are not specifically listed.

Access/ Use

<p>1.1 Enterprise Search <i>Search across content from a discrete set of sources available within the organization.</i></p>	a. search technologies and principles (e.g. crawler, index, query engine, human-powered directories, hybrids)
	b. principles of federated search (e.g. forward query, federated vs. enterprise search)
	c. principles of social search (e.g. latest search activities by colleagues)
	d. search engine optimization strategies and tuning principles to improve findability
	e. uses for, strengths, weaknesses and overlap of usability of different findability mechanisms (e.g., keyword based search, semantic techniques)
	f. mapping techniques and tools (thesaurus and semantic networks of defined terms) to map one repository's metadata semantics to another
	g. document comparison techniques to identify semantically (e.g. feature extraction and comparison) and structurally (e.g. hash codes) identical documents.
	h. query result deduplication and prioritization
<p>1.2 Business Intelligence <i>The end-product of analysis of business data in support of strategic and tactical decision-making.</i></p>	a. business intelligence tools and processes (e.g., data mining, data cleansing, multi-dimensional modeling, OLAP cubes, data marts, Common Warehouse Metamodel)
	b. basic business process management principles
	c. reporting and querying software
<p>1.3 Master Data Management <i>The activity of systematically controlling an organization's information to ensure quality, consistency, and unity of data, information and records.</i></p>	a. understanding Master Data Management and tools (e.g. data modeling, data quality, master data elements)
	b. data migration concepts
	c. types of data and information: (i.e., unstructured, structured, transactional, metadata)
	d. master data groupings (e.g., people, things, places, time)
	e. understanding authoritative sources of master data (e.g., systems, producers, consumers)
	f. understanding data quality issues and how to resolve them
	g. understanding a data and information governance program
	h. data fusion
<p>1.4 Text Analytics <i>A combination of semantic analysis, linguistics, entity extraction, tagging, pattern recognition, lexical analysis and other forms of artificial intelligence used to infer meaning from bodies of textual content.</i></p>	a. fundamentals of text analytics (e.g., text analytics in data mining, content analytics, content aggregation, content entity extraction)
	b. how to extract meaning from large amounts of unstructured information (e.g. entity extraction, summarization)
	c. methods to identify important classes of (and terms representing) information, and to relate those terms to each other in terms of the classes they represent (e.g. taxonomy, ontology)

Capture/ Manage

<p>2.1 Information Capture <i>The process of transforming content into a format that can be reliably searched, retrieved, and used by the organization.</i></p>	a. document imaging and conversion
	b. scanning, web capture, fax capture, mobile capture
	c. indexing strategies for image capture (e.g. metadata)
	d. document capture and recognition software (e.g., optical character recognition, optical mark recognition, barcode, forms processing)
	e. planning: necessary document preparation, image enhancement, document distribution (or transfer) into the repository, scanning and capture location, where information needs to be captured (e.g., web forms, paper, fax, legacy output)
	f. ways of integrating solutions (e.g. software development kits)
	g. determine what to capture from existing repositories (e.g. complete backfile/partial backfile, day-forward, day-forward with on-demand)
	h. techniques for cleaning up shared drives (e.g. ask users to migrate relevant files followed by read-only access before taking it offline)
	i. factors that determine the conversion strategy (e.g. location of files, required skill sets, access to information during process)
	j. migration strategy (e.g. what to move vs. what not to move)
	k. standard document formats and compression
l. capture process mapping	
<p>2.2 Business Process Management <i>The practice of strategically aligning business processes with partners and customers in order to maximize performance.</i></p>	a. workflow/business process management processes (e.g., workflows to support information management processes)
	b. how information management can improve the business process management process
	c. business process analysis techniques (e.g., interviewing, process mapping) and standards (e.g. BPEL, BPMN)
	d. how to design and perform a workflow/process audit
	e. process improvement technologies (e.g., simple workflow, business process management, transactional content management, advanced case management)
	f. how to plan routing of task or information according to roles and responsibilities using a workflow/BPM system (e.g., deadlines/time stamp, parallel processing, sequential processing)
	g. how business process reengineering fits in with business process management (e.g. studying & changing factors, including work flows & processes, information flows & Users, management & business practices and staffing)
	h. How to enable organizations to abstract business processes from technology infrastructure. (e.g. BPM Tools/Lifecycle- Vision, Define, Model, Analyze, Improve, Control, Re-engineer)
<p>2.3 Knowledge Management <i>The practice of systematically capturing, controlling, and</i></p>	a. knowledge management principles (e.g., expertise location, knowledge sharing, tacit vs. explicit)
	b. definition of and methods used to disseminate "organizational intelligence" (e.g. tools, processes, knowledge audits)

<i>disseminating organizational intelligence among its workers.</i>	c. customer/client intelligence
2.4 Email Management <i>The activity of systematically controlling the quality and quantity of electronic communications within an organization.</i>	a. email management concepts b. issues to address as part of a comprehensive email policy (e.g. acceptable use, ownership, attachments) c. basic email architecture (e.g. client/server, web-based email, attachments) d. email backup and storage approaches (e.g. Microsoft .PST files, backup tapes, shared folders) and their impact on the overall information management program e. email archiving principles and solutions f. when to implement email archiving software to support email management, improve security and reduce costs g. how to identify instances or types of emails that need to be managed more formally (e.g. archived, deleted, declared as records)
2.5 Content Management <i>The activity of systematically collecting and organizing information intended for distribution to a designated audience.</i>	a. information life cycle phases and management b. digital assets management c. Public access requests (e.g., what they are and how they apply) d. file formats (e.g. PDF, Word, JPEG) and functionality (e.g. ECM, document management, case management) e. differences between structured, unstructured and semi-structured data f. usage metrics g. information management processes for a working group h. case management i. how to perform a content inventory j. Knowledge of information and interaction flows (e.g. creation, use, storage, reuse)

Collaborate/ Deliver

<p>3.1 Collaboration <i>A working practice whereby individuals work together to a common purpose to achieve business benefit. Includes synchronous collaboration (e.g. online meetings and instant messaging) and asynchronous collaboration (e.g. shared workspaces, annotations, wikis).</i></p>	<p>a. technologies that enable collaboration (e.g. SharePoint, wikis, virtual conferencing, social networking, VoIP, blogs, microblogging, social sharing, content rating, recommendations)</p> <p>b. functionality associated with various collaboration solutions (e.g. shared workspaces, virtual conferencing)</p> <p>c. use of social technologies to improve collaboration (e.g., wikis, micro-blogging, social networking)</p> <p>d. required social functionality to improve collaboration (e.g. Andrew McAfee's SLATES framework or profiles, activity wall, ratings, status updates, forums, etc)</p> <p>e. information management needs and issues associated with virtual teams (e.g. synchronous vs. asynchronous collaboration)</p> <p>f. leveraging consumer IT and commercial sites to improve collaboration (e.g. Skype for calls, Google Maps for directions, Wikipedia for references)</p> <p>g. single point of access portals</p> <p>h. how to route tasks or information for approval or processing according to roles and responsibilities (e.g. sequential processing, parallel processing, deadlines)</p> <p>i. information management governance roles and responsibilities</p>
<p>3.2 Social Media <i>Methods of collaboration and communication through internal channels, company-controlled external channels, and/or branded external channels. Examples include wikis, blogs, forums, and document sharing sites.</i></p>	<p>a. common commercial social media services (e.g. FaceBook, YouTube, SlideShare, Wikipedia, Twitter)</p> <p>b. difference between branded social technologies (e.g. FaceBook, Twitter), white-label social technologies (e.g. Ning) and social technologies in the workplace (e.g. Yammer)</p> <p>c. role of social, local and mobile technologies in business processes</p> <p>d. social content governance, management and retention considerations (e.g. social media policies, makeup of the social media team)</p> <p>e. techniques for leveraging/integrating social technologies to your site (e.g. FaceBook Connect)</p> <p>f. what mashups are and their potential business value to the organization</p>
<p>3.3 Information Workplace <i>An emerging mode of business operations in which tools and processes are seamlessly integrated with workers' roles.</i></p>	<p>a. tools to enable an information workplace (e.g., portal, collaboration, content management, and office productivity technologies, plus many emerging technologies in the Web 2.0 and Social Computing space) and architectures (e.g. SOA, XML, enterprise information portals)</p>
<p>3.4 Instant Messaging <i>A system for electronic synchronous one-to-one or one-to-many communications. Considered a component of synchronous collaboration.</i></p>	<p>a. how instant messaging tools support synchronous collaboration and the benefits of using instant messaging compared to other collaboration tools (e.g. email)</p> <p>b. how instant messaging works from an architecture perspective (e.g. client/server, peer-to-peer, store and forward capabilities)</p> <p>c. basic capabilities for commercial and enterprise instant messaging solutions(e.g. file and link sharing, contact lists, presencing)</p>

	d. how to support instant messaging with the use of proprietary protocols (e.g. https based protocol, multi network IM clients)
	e. mobile instant messaging architecture and information management issues
	f. information management principles for decommissioning and/or migrating instant messaging systems
3.5 Telecommuting Support <i>The practice of providing the necessary tools and conditions for employees to work flexible locations and hours.</i>	a. how external users and staff will access and use corporate information
	b. appropriate telecommuting practices (e.g., organization policies on usage, access, home office environment)
	c. issues associated with personal computers, networks, and devices used to do organizational work (e.g. security, bandwidth)
3.6 Web Conferencing <i>Methods and tools for conducting meetings remotely via the Internet. Considered a component of synchronous collaboration.</i>	a. How to address information professionals' needs and issues with accessing information remotely
	b. self-provision and self-service via the web
	c. Basic functionality associated with web conferencing tools (e.g. desktop sharing, chat, annotation) and deployment models

Secure/ Preserve

<p>4.1 Security <i>Protecting information and information systems from unauthorized access, use, disclosure, disruption, modification, perusal, inspection, recording, or destruction.</i></p>	a. accessible vs. inaccessible data
	b. information security concepts (e.g. passwords, access control lists, directory services, authentication and authorization)
	c. encryption technology principles and use cases
	d. the application of risk management principles
	e. access permissions schemas, information classification schemas
	f. redaction
	g. types of security (e.g. application, computing, data, information, network) and security architecture considerations
	h. common regulatory drivers for security (e.g. financial information, personal health information, confidential information)
<p>4.2 Records Management <i>A set of activities required for systematic control of creation, receipt, classification, maintenance, use and disposition of recorded information maintained as evidence of business activities and transactions.</i></p>	a. industry information management standards (e.g., Dublin core, CMIS, ISO 15489)
	b. lifecycle considerations and disposition methods for paper and electronic media
	c. elements of a records retention schedule
	d. leading practices for information disposition and declaring a record
	e. how jurisdictions can affect retention requirements
	f. rationales for document retention and disposition
	g. common regulatory issues and regulated sectors (e.g. financial information, protected health information, personally identifiable information, financial services firms, pharmaceutical firms)
	h. vital records
	i. applying retention to information in the organization's control and controlled by third parties
	j. Basic functionality offered by electronic records management systems
<p>4.3 Data Privacy <i>Protection of personally identifiable information.</i></p>	a. methods to ensure data privacy and protecting personal information
	b. security protocols and approaches
	c. administrative rights creation and maintenance
	d. standard operating procedures for creation, training and auditing of the management of personal information
	e. regulatory considerations related to data privacy (e.g. financial information, personal information)
<p>4.4 Digital Rights Management <i>Access control technologies used to limit the use of digital content and devices. Technology that inhibits uses of digital content that is not desired or intended by the content provider.</i></p>	a. where the digital rights management software and/or functionality can protect and secure information
	b. principals of digital rights management
	c. how DRM can improve compliance with information security regulations
	d. Elements of a public key infrastructure
<p>4.5 Archiving <i>The practice of long-term</i></p>	a. information archives
	b. multi-tier storage strategies

<i>preservation of records with enduring business or historical value.</i>	c. implications of centralized storage vs. managed in place
	d. integration implications with legacy system or line of business system (e.g., CRM, ERP)
	e. storage concepts
	f. web archiving (e.g. web storage sites, cloud storage)
	g. how standards affect archiving (e.g. International Council on Archives-ICA, General International Standard Archival Description-ISAD(G), US-Describing Archives Content Standard-DACS, Canada-Rules for Archive Descriptions-RAD, Healthcare-ISO-International Standards Org)
	h. enterprise content management alternatives vs. micrographics
	i. Issues associated with long-term access to digital information (e.g. media degradation, media/hardware obsolescence, format/software obsolescence)
	j. approaches to ensure long-term access to information (e.g. analog conversion, emulation, migration, conversion)
	k. open vs. proprietary file and storage formats and their impacts on long-term access to information
4.6 E-Discovery <i>The process of legal discovery carried out in electronic formats. Includes electronically stored information data mapping.</i>	a. best practices of information collection within the organization to fulfill regulatory environment and legal obligations in relation to discovery and/or disclosure
	b. the discovery/disclosure process and each of the steps within it (e.g. those described in the Electronic Discovery Reference Model, legal holds)
	c. issues associated with capturing and producing web-based information assets
	d. issues associated with authenticity, integrity, and reliability of information assets
	e. cost models associated with discovery and disclosure processes
	f. the difference between information production requirements relating to litigation, audits, and open records-type legislation
	g. how to develop a comprehensive list of information assets (e.g. servers, applications, backup/archival holdings, workstations, mobile assets, and assets stored offsite)

Architecture/ Systems

<p>5.1 Information Architecture <i>A broad term that applies to the activity of structural design and organization of information and data. Includes classification schemas, metadata management, navigation systems, and labeling to support findability and user experience.</i></p>	<p>a. user experience (e.g., presentation, accessibility, design, usability including prioritization of usability issues, website navigation)</p> <p>b. metadata (e.g., structure and purpose, key benefits, industry standards, approaches to populating metadata)</p> <p>d. content organization and classification structures (e.g., taxonomy, folksonomy, controlled vocabulary, ontology, topic maps, semantic network - benefits of each, reasons why to develop one vs. another, reasons to update classification structures)</p> <p>c. folksonomy and social tagging</p> <p>d. ontologies and topic maps</p> <p>e. ECM principles for an information repository (e.g., metadata, access permissions schema, workflow)</p> <p>f. personalization (e.g., by role, by device, by location, by behavior, social navigation of websites)</p> <p>g. technologies for automating information extraction, description and/or classification (e.g. auto-classification, auto-categorization, entity extraction, summarization)</p> <p>h. thesaurus construction and relationships expressed</p> <p>i. semantic networking</p> <p>k. relational knowledge representation</p> <p>l. access permissions schemas, information classification schemas</p> <p>m. how to conduct a content and metadata audit to understand the breadth and depth of the organization’s existing content and metadata (e.g., understand the organizational structure, stakeholders, information needs, information flows, applicable policies)</p> <p>n. standards for classifying information (e.g. ISO15489, Moreq2010, ISO 23081)</p> <p>o. fundamentals of organizing content (e.g., alphabetical, hierarchical, chronological, geographical)</p>
<p>5.2 Technical Architecture <i>A broad term that applies to the activity of analyzing and modeling a technology infrastructure for information systems. Includes hardware configuration, infrastructure applications, networks, and protocols.</i></p>	<p>a. Core aspects of technical architecture including components, integration, testing/sandbox environment, and backups</p> <p>b. the role of pilot implementation</p> <p>c. IT systems audit (purpose and goals)</p> <p>d. issues associated with integrating portable data applications (e.g.; tablets, smart phones) into the workplace</p> <p>e. impact of integrating portable data applications (e.g., tablets, smart phones) into the workplace</p> <p>f. leverage consumer technology to influence IT processes and infrastructure</p> <p>g. virtualization (e.g., shortcomings)</p> <p>h. who is responsible for servers within the enterprise</p> <p>i. how to perform virtualization within the enterprise (cloud computing)</p>

	j. different implementation models (e.g. desktop/standalone, plug-in, appliance, client/server, n-tier, hosted/Software as a Service (SaaS), widget, cloud)
5.3 Cloud Computing <i>The use of remote diverse applications in which knowledge of their location or origin is unnecessary for effective operation.</i>	a. the concepts and principles of cloud computing and SaaS and applications most likely to succeed in this environment
	b. the benefits and implications of cloud/SaaS/Platform-as-a-Service (PaaS)/Infrastructure-as-a-Service (IaaS) vs. on premise deployment (e.g. security, availability, integration, configuration)
	c. IT governance of cloud computing (e.g. privileged user access, regulatory compliance, data location, data segregation, recovery, investigative support, long-term viability)
5.4 Mobile Applications <i>Using a portable computing device to access information and resources. Includes mobile communication, mobile hardware, and mobile software.</i>	a. how real-time information accessed or delivered via mobile devices impacts eCommerce (e.g. location based services, transparent pricing, transparent customer satisfaction, discount offers, immediate gratification, augmented reality)
	b. techniques for gathering information via mobile devices (e.g. record video, take picture, geotagging, user rating, polls)
	c. techniques for making information available to mobile devices (e.g. mobile optimized website, native mobile apps for different platforms) and benefits/issues associated with each
	d. how mobile devices will impact information architecture and usability (e.g. less information per page, shorter menus)
	e. how location-based services can provide relevant information to mobile users (e.g. local ads, contacts are nearby)
	f. techniques for notifying mobile users about news and updates (e.g. email, text message, mobile application notification)
5.5 Websites and portals <i>Mechanisms for accessing information via common Web clients and protocols. Includes publicly accessible Internet sites, intranets, extranets, and web portals.</i>	a. web content management principles, web standards, web usability and accessibility
	b. when to use templates to improve web page creation and control
	c. when to use workflow to improve web page quality and control
	d. opportunities and techniques to provide dynamic content (e.g. personalization)
	e. opportunities and techniques for integrating commercial sites (e.g. Google Maps, Facebook) into websites and vice versa
	e. web access protocols, browser settings and scripting possibilities
	f. mobile platform interfaces and their browser based capabilities and limitations
	g. VPN-Virtual Private Network vs. remote desktop access
	h. internet access methods (e.g. landline broadband, satellite, cable, etc.)
	i. differences between websites and portals
	j. differences between internet, intranet, extranet (e.g., purpose, security, types of appropriate/inappropriate content, access controls)
k. types of websites and portals, WCM, methods to add capabilities to a formal WCM system	

	l. how intranets are now moving towards comprehensive and integrated user experiences (e.g., Enterprise 2.0, Information Workplace)
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Plan/ Implement

<p>6.1 Strategic Planning <i>Defining an organization's information management strategy or direction, and making decisions on allocating resources to pursue this strategy</i></p>	a. strategic planning tools (e.g., SWOT analysis, balanced scorecards, etc)
	b. information management maturity models
	c. key components of an information management program (e.g., policies, procedures, roles, etc)
	d. roles and responsibilities in an IM program
	e. business objectives (short-term, long-term, metrics associated with business and information management objectives, attributes associated with effective objectives and metrics, assessment of objectives using e.g. SMART framework, contrast between operational and strategic objectives)
	f. technology trends (e.g., industry analysis, disruptive technology innovations, role of social, local and mobile technologies)
	g. risk analysis (i.e., risks and opportunities, techniques for analytic and predictive review)
	h. internal business impact analysis (e.g., SWOT analysis, financial base, cultural (change) climate, stakeholder, required knowledge and support [e.g. in-house expertise, community of practice])
	i. internal IT impact analysis (e.g., project (IT systems) lifecycle)
<p>6.2 Building the Business Case <i>Developing and communicating the reasoning for initiating an information management project or endeavor, such as a business case for implementing a corporate taxonomy. Intended to weigh time and expenditure against value of the project's specific outcomes.</i></p>	a. information management return on investment (ROI) methods and calculations
	b. possible business benefits of implementing different information management technologies (e.g. financially quantifiable, non-financially quantifiable, non-quantifiable or intangible, qualifiable, sustainability, value-added, improve sustainability)
	c. information management program budgeting methods and calculations
	d. strong business case development expertise including clear and compelling writing skills (e.g. alignment of business case to stakeholder priorities, importance of, and cultivation of, buy-in from key stakeholders during development of the business case)
	e. elements to include in a business case (e.g. costs, ROI, budget, timeline, key stakeholders, business benefits, scope)
	f. risk analysis
	g. how to create a comparative return on investment analysis designed to recommend the best technology for the organization
	h. make or buy trade studies to understand information management software packages and basic feature sets
	i. how to clarify the critical business need and the metrics for success

<p>6.3 Implementation Planning <i>Using project management techniques to execute an information management process, solution, or program in a controlled manner in order to maximize chance of success.</i></p>	a. project planning (e.g. defining scope, creating and maintaining a project plan, decomposing larger tasks into smaller tasks, resource planning, budget)
	b. software development process methodologies (e.g. agile, iterative, rapid application development, spiral, lean, waterfall, etc.)
	c. statement of work (SOW) processes
	d. the procurement process (e.g., understanding phases, steps and best practices, deployment tasks)
	e. manage scope (e.g. change order procedure)
<p>6.4 Requirements Definition <i>Defining the scope and constraints of an information management process, solution, or program and collecting requirements from all stakeholders</i></p>	a. the role of business requirements (e.g., functional, non-functional) and system requirements (e.g., technical, domain) and the importance of requirements traceability
	b. requirements gathering techniques (e.g., user analysis, task analysis, gap analysis, interviews, surveys, focus groups, observation, scenarios, personas) and identification of stakeholders for requirements development process
	c. system inventorying to determine systems within scope and dependencies on other systems (e.g., which systems, data bases and programs the business areas may use outside of those identified in the process mapping)
<p>6.5 Solution Design <i>Design activities relating to a process or product intended to meet specific requirements of end users.</i></p>	a. planning and designing the architecture (e.g., system architecture, information architecture) based on business requirements including the possible components to include in a particular information management solution design
	b. solution and deployment options (e.g. platform vs. solutions, out-of-the box vs. customization, in-house vs. cloud computing, open-source vs. commercial, buy vs. build, information management-related integration standards such as CMIS)
<p>6.6 Change Management <i>Transitioning organizations from a current state to a future state through a structured and controlled approach.</i></p>	a. change management techniques (e.g. awareness, communication, training, incentivization, audit, champions/early adopters) and identifying reasons for change
	b. steps required to prepare a given business process or unit for a new process, system, or program (e.g. user impact assessment, pilot, local training, local help desk, communications)
	c. troubleshooting issues and running a support desk
	d. organizational readiness
	e. governance best practices
	f. how to identify and use early adopters to a new solution
	g. transition planning strategies