



TORO Analysis of Computer and Information Systems Managers to Purchasing Agents, Except Wholesale, Retail, and Farm Products

INPUT SECTION:

Transfer	Title	O* NET	Filters		
From Title:	Computer and Information Systems Managers	11-3021.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Purchasing Agents, Except Wholesale, Retail, and Farm Products	13-1023.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

OUTPUT SECTION:

Grand TORQ:		90
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Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	97	Level	86	Level	88

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Written Expression	60	1	62	Speaking	66	3	76	No Knowledge Upgrades Required!			

LEVEL and IMPT (IMPORTANCE) refer to the Target Purchasing Agents, Except Wholesale, Retail, and Farm Products. GAP refers to level difference between Computer and Information Systems Managers and Purchasing Agents, Except Wholesale, Retail, and Farm Products.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Computer and Information Systems Managers	Purchasing Agents, Except Wholesale, Retail, and Farm Products	Importance
Oral Expression	69	66	84
Oral Comprehension	71	64	81
Inductive Reasoning	62	57	78
Written Comprehension	69	60	72
Problem Sensitivity	64	51	72
Deductive Reasoning	69	69	72



Speech Clarity	44	42	72
Speech Recognition	50	50	68
Written Expression	59	60	62
Near Vision	62	60	62
Information Ordering	59	48	59

Skill Level Comparison - Abilities with importance scores over 69

Description	Computer and Information Systems Managers	Purchasing Agents, Except Wholesale, Retail, and Farm Products	Importance
Speaking	63	66	76
Active Listening	70	61	75
Judgment and Decision Making	68	62	72
Critical Thinking	73	64	71

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Computer and Information Systems Managers	Purchasing Agents, Except Wholesale, Retail, and Farm Products	Importance
Mathematics	63	55	69

Experience & Education Comparison

Related Work Experience Comparison				Required Education Level Comparison		
Description	Computer and Information Systems Managers	Purchasing Agents, Except Wholesale, Retail, and Farm Products		Description	Computer and Information Systems Managers	Purchasing Agents, Except Wholesale, Retail, and Farm Products
10+ years	32%	0%		Doctoral	0%	0%
8-10 years	1%	6%		Professional Degree	0%	0%
6-8 years	1%	0%		Post-Masters Cert	0%	0%
4-6 years	37%	29%		Master's Degree	0%	0%
2-4 years	21%	23%		Post-Bachelor Cert	0%	2%
1-2 years	0%	0%		Bachelors	61%	33%
6-12 months	5%	18%		AA or Equiv	6%	2%
3-6 months	0%	22%		Some College	0%	41%
1-3 months	0%	0%		Post-Secondary Certificate	15%	7%
0-1 month	0%	0%		High School Diploma or GED	15%	11%
None	0%	0%		No HSD or GED	0%	0%

Computer and Information Systems Managers

Purchasing Agents, Except Wholesale, Retail, and Farm Products

Most Common Educational/Training Requirement:

Bachelor's or higher degree, plus work experience

Work experience in a related occupation

Job Zone Comparison

5 - Job Zone Five: Extensive Preparation Needed

3 - Job Zone Three: Medium Preparation Needed



Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.

A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

Previous work-related skill, knowledge, or experience is required for these occupations. For example, an electrician must have completed three or four years of apprenticeship or several years of vocational training, and often must have passed a licensing exam, in order to perform the job.

Most occupations in this zone require training in vocational schools, related on-the-job experience, or an associate's degree. Some may require a bachelor's degree.

Employees in these occupations usually need one or two years of training involving both on-the-job experience and informal training with experienced workers.

Tasks

Computer and Information Systems Managers

Core Tasks

Generalized Work Activities:

- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
- Interpreting the Meaning of Information for Others - Translating or explaining what information means and how it can be used.
- Scheduling Work and Activities - Scheduling events, programs, and activities, as well as the work of others.

Specific Tasks

Occupation Specific Tasks:

- Assign and review the work of systems analysts, programmers, and other computer-related workers.
- Consult with users, management, vendors, and technicians to assess computing needs and system requirements.
- Control operational budget and expenditures.
- Develop and interpret organizational goals, policies, and procedures.
- Develop computer information resources, providing for data security and control, strategic computing, and disaster recovery.
- Direct daily operations of department, analyzing workflow, establishing priorities, developing standards and setting

Purchasing Agents, Except Wholesale, Retail, and Farm Products

Core Tasks

Generalized Work Activities:

- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Communicating with Persons Outside Organization - Communicating with people outside the organization, representing the organization to customers, the public, government, and other external sources. This information can be exchanged in person, in writing, or by telephone or e-mail.
- Organizing, Planning, and Prioritizing Work - Developing specific goals and plans to prioritize, organize, and accomplish your work.

Specific Tasks

Occupation Specific Tasks:

- Analyze price proposals, financial reports, and other data and information to determine reasonable prices.
- Arrange the payment of duty and freight charges.
- Attend meetings, trade shows, conferences, conventions and seminars to network with people in other purchasing departments.
- Confer with staff, users, and vendors to discuss defective or unacceptable goods or services and determine corrective action.



deadlines.

- Evaluate data processing proposals to assess project feasibility and requirements.
- Evaluate the organization's technology use and needs and recommend improvements, such as hardware and software upgrades.
- Manage backup, security and user help systems.
- Meet with department heads, managers, supervisors, vendors, and others, to solicit cooperation and resolve problems.
- Prepare and review operational reports or project progress reports.
- Purchase necessary equipment.
- Recruit, hire, train and supervise staff, or participate in staffing decisions.
- Review and approve all systems charts and programs prior to their implementation.
- Review project plans to plan and coordinate project activity.
- Stay abreast of advances in technology.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- analyze operational or management reports or records
- analyze workflow
- assign work to staff or employees
- compile data for financial reports
- conduct or attend staff meetings
- confer with management or users
- confer with other departmental heads to coordinate activities
- consult with customers concerning needs
- consult with managerial or supervisory personnel
- determine customer needs
- develop computer performance standards
- develop policies, procedures, methods, or standards
- direct and coordinate activities of workers or staff
- estimate time needed for project
- evaluate computer system user requests or requirements
- examine expenditures to ensure activities are within budget
- follow data security procedures
- follow data storage procedures
- hire, discharge, transfer, or promote workers
- monitor operational budget
- order or purchase supplies, materials, or equipment

- Evaluate and monitor contract performance to ensure compliance with contractual obligations and to determine need for changes.
- Formulate policies and procedures for bid proposals and procurement of goods and services.
- Hire, train and/or supervise purchasing clerks, buyers, and expeditors.
- Interview vendors and visit suppliers' plants and distribution centers to examine and learn about products, services and prices.
- Maintain and review computerized or manual records of items purchased, costs, delivery, product performance, and inventories.
- Monitor and follow applicable laws and regulations.
- Monitor changes affecting supply and demand, tracking market conditions, price trends, or futures markets.
- Monitor shipments to ensure that goods come in on time, and in the event of problems trace shipments and follow up undelivered goods.
- Negotiate, or renegotiate, and administer contracts with suppliers, vendors, and other representatives.
- Prepare purchase orders, solicit bid proposals and review requisitions for goods and services.
- Purchase the highest quality merchandise at the lowest possible price and in correct amounts.
- Research and evaluate suppliers based on price, quality, selection, service, support, availability, reliability, production and distribution capabilities, and the supplier's reputation and history.
- Review catalogs, industry periodicals, directories, trade journals, and Internet sites, and consult with other department personnel to locate necessary goods and services.
- Study sales records and inventory levels of current stock to develop strategic purchasing programs that facilitate employee access to supplies.
- Write and review product specifications, maintaining a working technical knowledge of the goods or services to be purchased.

Detailed Tasks

Detailed Work Activities:

- analyze financial data
- analyze sales activities or trends
- communicate technical information
- compute financial data
- confer with sales or purchasing personnel
- confer with vendors



- oversee execution of organizational or program policies
- plan computer security measures
- plan or organize work
- prepare reports
- recommend software or hardware purchases
- revise or correct errors in computer programs, software, or systems
- test computer programs or systems
- use computer application flow charts
- use computer programming language
- use project management techniques
- work as a team member

Technology - Examples

Access software

- Citrix software
- Mac HelpMate

Accounting software

- Billing software

Administration software

- SolarWinds software

Application server software

- BEA WebLogic Server
- Microsoft Windows Server

Backup or archival software

- Backup and archival software

Calendar and scheduling software

- Microsoft Entourage

Charting software

- Microsoft Office Visio

Compliance software

- SOX COBIT

Customer relationship management CRM software

- ACT! software
- Customer relationship management CRM software
- Microsoft Dynamics CRM
- Performance Solutions Technology ManagePro
- Provisioning software
- Siebel Server Sync

Data base management system software

- determine reasonable prices
- develop purchasing policies or procedures
- direct and coordinate activities of workers or staff
- fill out purchase requisitions
- follow contract, property, or insurance laws
- hire, discharge, transfer, or promote workers
- identify supplier with best bid
- inspect merchandise to determine value
- locate sources of supply for purchasing
- maintain records, reports, or files
- make presentations
- manage contracts
- mediate or arbitrate disputes
- monitor consumer or marketing trends
- monitor contract performance
- negotiate business contracts
- obtain information from individuals
- order or purchase supplies, materials, or equipment
- process account invoices
- use appraisal techniques in purchasing
- use computers to enter, access or retrieve data
- use interpersonal communication techniques
- use spreadsheet software
- use word processing or desktop publishing software
- write business correspondence
- write business project or bid proposals

Technology - Examples



- AlphaFour software

- Database management software

- Microsoft Access

- Microsoft SQL Server

- Oracle software

Data base user interface and query software

- Structured query language SQL

Desktop publishing software

- Adobe Systems Adobe Distiller

- Desktop publishing software

Development environment software

- Assembler

- Borland Delphi software

- C

- Common business oriented language COBOL

- Extensible markup language XML

- Microsoft .NET Framework

- Microsoft Visual Basic

- Microsoft Visual Basic Scripting Edition VBScript

- Microsoft Visual Studio

Electronic mail software

- Linux-based email software

- Microsoft Outlook

- Pegasus software

- QUALCOMM Eudora

Enterprise resource planning ERP software

- Enterprise resource planning ERP software

- Microsoft Dynamics AX

- Microsoft Dynamics NAV

- Oracle E-Business Suite

- Oracle JD Edwards OneWorld

Filesystem software

- Ftp program software

- Samba



- Symantec Veritas File System

- Symantec Veritas Volume Manager

Financial analysis software

- Financial planning software

Graphical user interface development software

- Tk software

Graphics or photo imaging software

- Graphics editor software

- Graphics software

Helpdesk or call center software

- Help desk software

Internet browser software

- Microsoft Internet Explorer

- Netscape Navigator

- Web browser software

LAN software

- LAN software

Network connectivity terminal emulation software

- Telnet programs software

- Zephyr EXTRA! Terminal Emulation

Network monitoring software

- Dartware InterMapper

- Performance monitoring tools

Network operation system software

- Microsoft Windows NT

- Novell network software

Network security and virtual private network VPN equipment software

- Firewall software

Object or component oriented development software

- Borland Paradox

- C++

- Practical extraction and reporting language Perl

- Sun Microsystems Java

Object oriented data base management software

- Microsoft Visual FoxPro



Office suite software

- Corel Office Suite
- Microsoft Office
- Sun Microsystems StarOffice

Operating system software

- Apple Macintosh OS/X
- Microsoft Windows
- Novell Linux
- UNIX

Platform interconnectivity software

- IBM iSeries Access

Portal server software

- iPlanet Web Server software
- Plumtree software

Presentation software

- Apple iWork Keynote
- Microsoft PowerPoint

Project management software

- Microsoft Project

Spreadsheet software

- Apple iWork Numbers
- Microsoft Excel

WAN switching software and firmware

- Cisco WAN Manager

Web page creation and editing software

- Microsoft Front Page
- Web authoring software

Web platform development software

- Adobe Systems Adobe Flex
- Dynamic hypertext markup language DHTML
- Hypertext markup language HTML
- JavaScript
- Microsoft Active Server Pages ASP
- PHP: Hypertext Preprocessor
- Ruby on Rails
- Scripting languages



Wireless software

- Mobile wireless network infrastructure software

Word processing software

- Apple iWork Pages
- Microsoft Word

Tools - Examples

- Access servers
- Computer servers
- Computer tool kits
- Inkjet Printers
- Fax Machines
- Floppy drives
- Hard disk drives
- Workstations
- Robot automation tool
- Computer printers
- Mainframe computers
- Network analyzers
- Network interface cards NIC
- Routers
- Switches
- Industry standard architecture/peripheral component interconnect ISA/PCI cards
- Personal computers
- Photocopiers
- Print servers
- Punchdown tools
- Screwdrivers
- Teleconferencing equipment

Labor Market Comparison

Labor Market Comparison			
Description	Computer and Information Systems Managers	Purchasing Agents, Except Wholesale, Retail, and Farm Products	Difference



Median Wage	\$ 83,130	\$ 45,210	\$(37,920)
10th Percentile Wage	\$ 48,990	\$ 31,440	\$(17,550)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$110,520	\$ 57,570	\$(52,950)
90th Percentile Wage	\$136,110	\$ 72,070	\$(64,040)
Mean Wage	\$ 88,660	\$ 48,120	\$(40,540)
Total Employment - 2007	870	920	50
Employment Base - 2006	873	995	122
Projected Employment - 2016	940	974	34
Projected Job Growth - 2006-2016	7.7 %	-2.1 %	-9.8 %
Projected Annual Openings - 2006-2016	21	21	0

National Job Posting Trends

Trend for Computer and Information Systems Managers

Trend for Purchasing Agents, Except Wholesale, Retail, and Farm Products

Job Trends from Indeed.com

Information Systems Manager — Purchasing Agent



Data from [Indeed](http://Indeed.com)

**Recommended Programs****Purchasing, Procurement and Contracts Management**

Purchasing, Procurement/Acquisitions and Contracts Management. A program that prepares individuals to manage and/or administer the processes by which a firm or organization contracts for goods and services to support its operations, as well as contracts it to sell to other firms or organizations. Includes instruction in contract law, negotiations, buying procedures, government contracting, cost and price analysis, vendor relations, contract administration, auditing and inspection, relations with other firm departments, and applications to special areas such as high-technology systems, international purchasing, and construction.

No schools available for the program

Sales, Distribution, and Marketing Operations, General

Sales, Distribution, and Marketing Operations, General. A program that focuses on the general process and techniques of direct wholesale and retail buying and selling operations and introduces individuals to related careers. Includes instruction in the principles of entrepreneurial economics, basic sales skills, the distribution channels for goods and services, and supervised practical application experiences.

No schools available for the program

Maine Statewide Labor Pool for Computer and Information Systems Managers

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
11-3021.00	Computer and Information Systems Managers	100	5	870	\$83,130.00	\$0.00	8%	21
13-1023.00	Purchasing Agents, Except Wholesale, Retail, and Farm Products	90	3	920	\$45,210.00	(\$37,920.00)	-2%	21
13-2031.00	Budget Analysts	90	4	170	\$57,290.00	(\$25,840.00)	3%	5
43-3061.00	Procurement Clerks	89	3	0	\$33,300.00	(\$49,830.00)	-2%	5
15-1061.00	Database Administrators	88	4	300	\$60,260.00	(\$22,870.00)	20%	11
43-5061.00	Production, Planning, and Expediting Clerks	88	2	1,320	\$38,490.00	(\$44,640.00)	-1%	35
13-2061.00	Financial Examiners	87	4	120	\$55,110.00	(\$28,020.00)	3%	2
13-2011.01	Accountants	87	4	3,250	\$48,110.00	(\$35,020.00)	11%	113
13-2051.00	Financial Analysts	87	4	210	\$71,380.00	(\$11,750.00)	10%	4
43-9011.00	Computer Operators	87	3	230	\$33,120.00	(\$50,010.00)	-30%	4
43-4031.02	Municipal Clerks	86	3	1,190	\$27,650.00	(\$55,480.00)	9%	37
27-3042.00	Technical Writers	86	4	50	\$46,060.00	(\$37,070.00)	-8%	2
43-3051.00	Payroll and Timekeeping Clerks	86	3	650	\$30,470.00	(\$52,660.00)	-3%	17



43-6011.00	Executive Secretaries and Administrative Assistants	86	3	3,330	\$38,830.00	(\$44,300.00)	6%	76
43-3011.00	Bill and Account Collectors	86	3	1,590	\$29,770.00	(\$53,360.00)	11%	41

Maine Statewide Promotion Opportunities for Purchasing Agents, Except Wholesale, Retail, and Farm Products

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
13-1023.00	Purchasing Agents, Except Wholesale, Retail, and Farm Products	100	3	920	\$45,210.00	\$0.00	-2%	21
19-3021.00	Market Research Analysts	88	4	200	\$49,960.00	\$4,750.00	3%	2
13-2031.00	Budget Analysts	88	4	170	\$57,290.00	\$12,080.00	3%	5
13-2053.00	Insurance Underwriters	87	3	460	\$56,090.00	\$10,880.00	-1%	12
13-2072.00	Loan Officers	87	3	1,450	\$49,380.00	\$4,170.00	9%	29
13-2061.00	Financial Examiners	87	4	120	\$55,110.00	\$9,900.00	3%	2
13-2051.00	Financial Analysts	86	4	210	\$71,380.00	\$26,170.00	10%	4
11-3031.02	Financial Managers, Branch or Department	85	4	2,440	\$67,670.00	\$22,460.00	7%	58
11-9131.00	Postmasters and Mail Superintendents	85	3	420	\$55,200.00	\$9,990.00	-5%	10
13-1031.01	Claims Examiners, Property and Casualty Insurance	85	3	1,570	\$49,360.00	\$4,150.00	3%	44
19-3011.00	Economists	85	5	50	\$49,150.00	\$3,940.00	2%	2
13-2011.01	Accountants	85	4	3,250	\$48,110.00	\$2,900.00	11%	113
13-2052.00	Personal Financial Advisors	85	3	360	\$94,100.00	\$48,890.00	10%	13
41-3031.01	Sales Agents, Securities and Commodities	85	4	0	\$65,230.00	\$20,020.00	5%	33
41-3031.02	Sales Agents, Financial Services	85	4	0	\$65,230.00	\$20,020.00	5%	33

Top Industries for Purchasing Agents, Except Wholesale, Retail, and Farm Products

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
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Federal government, excluding postal service	919999	10.28%	29,560	25,150	-14.92%
Management of companies and enterprises	551100	5.53%	15,900	18,329	15.28%
Local government, excluding education and hospitals	939300	3.35%	9,635	9,742	1.10%
Aerospace product and parts manufacturing	336400	3.31%	9,512	9,688	1.84%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	2.84%	8,165	7,817	-4.26%
General medical and surgical hospitals, public and private	622100	2.53%	7,263	8,041	10.71%
Semiconductor and other electronic component manufacturing	334400	2.09%	6,016	5,258	-12.59%
State government, excluding education and hospitals	929200	1.78%	5,122	4,524	-11.68%
Advertising and related services	541800	1.59%	4,581	5,169	12.83%
Research and development in the physical, engineering, and life sciences	541710	1.56%	4,481	4,781	6.69%
Computer systems design and related services	541500	1.54%	4,441	5,396	21.51%
Colleges, universities, and professional schools, public and private	611300	1.53%	4,385	4,906	11.87%
Residential building construction	236100	1.52%	4,362	4,421	1.35%
Motor vehicle parts manufacturing	336300	1.47%	4,234	3,034	-28.35%
Other general purpose machinery manufacturing	333900	1.41%	4,052	3,292	-18.76%

Top Industries for Computer and Information Systems Managers

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Computer systems design and related services	541500	14.81%	39,043	52,715	35.02%
Management of companies and enterprises	551100	8.70%	22,949	26,455	15.28%
Colleges, universities, and professional schools, public and private	611300	3.91%	10,304	11,527	11.87%
Data processing, hosting, and related services	518200	3.22%	8,482	11,466	35.19%
Local government, excluding education and hospitals	939300	3.00%	7,911	8,887	12.34%
Software publishers	511200	2.91%	7,673	9,880	28.76%
Depository credit intermediation	522100	2.88%	7,605	7,754	1.95%
Professional and commercial equipment and supplies merchant wholesalers	423400	2.66%	7,015	8,177	16.57%
Management, scientific, and technical consulting services	541600	2.53%	6,676	11,917	78.52%
State government, excluding education and hospitals	929200	2.32%	6,115	6,001	-1.87%



Securities and commodity contracts, brokerages, and exchanges	5231-2	2.05%	5,406	7,985	47.69%
Research and development in the physical, engineering, and life sciences	541710	2.03%	5,358	5,716	6.69%
General medical and surgical hospitals, public and private	622100	1.93%	5,088	5,632	10.71%
Federal government, excluding postal service	919999	1.53%	4,026	3,806	-5.47%
Accounting, tax preparation, bookkeeping, and payroll services	541200	1.51%	3,987	4,728	18.60%



TORO Analysis of Computer and Information Systems Managers to Budget Analysts

INPUT SECTION:

Transfer	Title	O*NET	Filters		
From Title:	Computer and Information Systems Managers	11-3021.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Budget Analysts	13-2031.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

OUTPUT SECTION:

Grand TORQ:



90

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	93	Level	89	Level	88

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Number Facility	51	28	62	Mathematics	76	13	79	English Language	66	12	78
Mathematical Reasoning	48	14	65	Management of Financial Resources	74	7	89	Economics and Accounting	67	10	69
Speech Clarity	48	4	65	Learning Strategies	65	6	73				
Speech Recognition	53	3	65	Time Management	68	4	78				
Perceptual Speed	37	3	53	Speaking	66	3	82				
Near Vision	64	2	62	Active Learning	72	3	77				
				Reading Comprehension	70	3	73				
				Active Listening	71	1	76				

LEVEL and IMPT (IMPORTANCE) refer to the Target Budget Analysts. GAP refers to level difference between Computer and Information Systems Managers and Budget Analysts.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Computer and Information Systems Managers	Budget Analysts	Importance
Problem Sensitivity	64	53	78
Oral Comprehension	71	59	72

Written Comprehension	69	60	72
Oral Expression	69	59	68
Deductive Reasoning	69	60	68
Inductive Reasoning	62	55	68
Information Ordering	59	50	68
Mathematical Reasoning	34	48	65
Speech Recognition	50	53	65
Speech Clarity	44	48	65
Category Flexibility	55	51	62
Number Facility	23	51	62
Near Vision	62	64	62
Written Expression	59	53	56
Selective Attention	44	39	56
Fluency of Ideas	53	46	53
Perceptual Speed	34	37	53

Skill Level Comparison - Abilities with importance scores over 69

Description	Computer and Information Systems Managers	Budget Analysts	Importance
Management of Financial Resources	67	74	89
Critical Thinking	73	73	84
Writing	66	63	82
Speaking	63	66	82
Complex Problem Solving	68	68	82
Mathematics	63	76	79
Coordination	72	69	79
Judgment and Decision Making	68	65	78
Time Management	64	68	78
Active Learning	69	72	77
Active Listening	70	71	76
Social Perceptiveness	61	60	74
Reading Comprehension	67	70	73
Learning Strategies	59	65	73



Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Computer and Information Systems Managers	Budget Analysts	Importance
English Language	54	66	78
Economics and Accounting	57	67	69
Computers and Electronics	82	64	69

Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Computer and Information Systems Managers	Budget Analysts	Description	Computer and Information Systems Managers	Budget Analysts
10+ years	32%	0%	Doctoral	0%	0%
8-10 years	1%	0%	Professional Degree	0%	0%
6-8 years	1%	1%	Post-Masters Cert	0%	0%
4-6 years	37%	2%	Master's Degree	0%	6%
2-4 years	21%	32%	Post-Bachelor Cert	0%	0%
1-2 years	0%	44%	Bachelors	61%	90%
6-12 months	5%	16%	AA or Equiv	6%	1%
3-6 months	0%	0%	Some College	0%	1%
1-3 months	0%	0%	Post-Secondary Certificate	15%	0%
0-1 month	0%	0%	High School Diploma or GED	15%	0%
None	0%	1%	No HSD or GED	0%	0%

Computer and Information Systems Managers

Budget Analysts

Most Common Educational/Training Requirement:

Bachelor's or higher degree, plus work experience

Bachelor's degree

Job Zone Comparison

5 - Job Zone Five: Extensive Preparation Needed

Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.

A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

4 - Job Zone Four: Considerable Preparation Needed

A minimum of two to four years of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.

Most of these occupations require a four - year bachelor's degree, but some do not.

Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Tasks

Computer and Information Systems Managers

Budget Analysts

Core Tasks

Core Tasks



Generalized Work Activities:

- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
- Interpreting the Meaning of Information for Others - Translating or explaining what information means and how it can be used.
- Scheduling Work and Activities - Scheduling events, programs, and activities, as well as the work of others.

Specific Tasks

Occupation Specific Tasks:

- Assign and review the work of systems analysts, programmers, and other computer-related workers.
- Consult with users, management, vendors, and technicians to assess computing needs and system requirements.
- Control operational budget and expenditures.
- Develop and interpret organizational goals, policies, and procedures.
- Develop computer information resources, providing for data security and control, strategic computing, and disaster recovery.
- Direct daily operations of department, analyzing workflow, establishing priorities, developing standards and setting deadlines.
- Evaluate data processing proposals to assess project feasibility and requirements.
- Evaluate the organization's technology use and needs and recommend improvements, such as hardware and software upgrades.
- Manage backup, security and user help systems.
- Meet with department heads, managers, supervisors, vendors, and others, to solicit cooperation and resolve problems.
- Prepare and review operational reports or project progress reports.
- Purchase necessary equipment.
- Recruit, hire, train and supervise staff, or participate in staffing decisions.
- Review and approve all systems charts and programs prior to their implementation.

Generalized Work Activities:

- Analyzing Data or Information - Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Monitoring and Controlling Resources - Monitoring and controlling resources and overseeing the spending of money.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.

Specific Tasks

Occupation Specific Tasks:

- Analyze monthly department budgeting and accounting reports to maintain expenditure controls.
- Compile and analyze accounting records and other data to determine the financial resources required to implement a program.
- Consult with managers to ensure that budget adjustments are made in accordance with program changes.
- Direct the preparation of regular and special budget reports.
- Examine budget estimates for completeness, accuracy, and conformance with procedures and regulations.
- Interpret budget directives and establish policies for carrying out directives.
- Match appropriations for specific programs with appropriations for broader programs, including items for emergency funds.
- Perform cost-benefit analyses to compare operating programs, review financial requests, or explore alternative financing methods.
- Provide advice and technical assistance with cost analysis, fiscal allocation, and budget preparation.
- Review operating budgets to analyze trends affecting budget needs.
- Seek new ways to improve efficiency and increase profits.
- Summarize budgets and submit recommendations for the approval or disapproval of funds requests.
- Testify before examining and



- Review project plans to plan and coordinate project activity.
- Stay abreast of advances in technology.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- analyze operational or management reports or records
- analyze workflow
- assign work to staff or employees
- compile data for financial reports
- conduct or attend staff meetings
- confer with management or users
- confer with other departmental heads to coordinate activities
- consult with customers concerning needs
- consult with managerial or supervisory personnel
- determine customer needs
- develop computer performance standards
- develop policies, procedures, methods, or standards
- direct and coordinate activities of workers or staff
- estimate time needed for project
- evaluate computer system user requests or requirements
- examine expenditures to ensure activities are within budget
- follow data security procedures
- follow data storage procedures
- hire, discharge, transfer, or promote workers
- monitor operational budget
- order or purchase supplies, materials, or equipment
- oversee execution of organizational or program policies
- plan computer security measures
- plan or organize work
- prepare reports
- recommend software or hardware purchases
- revise or correct errors in computer programs, software, or systems
- test computer programs or systems
- use computer application flow charts
- use computer programming language
- use project management techniques
- work as a team member

Technology - Examples

Access software

- Citrix software

fund-granting activities, carrying and promoting the proposed budgets.

Detailed Tasks

Detailed Work Activities:

- advise clients on financial matters
- analyze budgets
- analyze financial data
- analyze financial information to project future revenues or expense
- compile data for financial reports
- compute financial data
- consult with managerial or supervisory personnel
- develop budgets
- develop or maintain budgeting databases
- make presentations on financial matters
- make revenue forecasts
- monitor operational budget
- prepare financial reports
- prepare periodic reports comparing budgeted costs to actual costs
- use accounting or bookkeeping software
- use computers to enter, access and retrieve financial data
- use cost benefit analysis techniques
- use spreadsheet software

Technology - Examples

Accounting software

- Accounting software
- Deltek Costpoint
- Hyperion Enterprise

Analytical or scientific software

- Statistical software

Data base reporting software

- Business Objects Crystal Reports

Data base user interface and query software

- Microsoft Access
- On line analytical processing OLAP software
- Relational database software
- Structured query language SQL

Data mining software

- Extract, transform, load ETL software

Development environment software

- Microsoft Visual Basic

Electronic mail software



• Mac HelpMate	• Email software
Accounting software	Enterprise resource planning ERP software
• Billing software	• Adaptive Planning
Administration software	• Budgeting, forecasting, and planning software
• SolarWinds software	• Business performance management BPM software
Application server software	• Cognos 8 Business Intelligence
• BEA WebLogic Server	• Cognos 8 Planning
• Microsoft Windows Server	• Enterprise resource planning ERP software
Backup or archival software	• Everest Software Advanced
• Backup and archival software	• Extensity MPC
Calendar and scheduling software	• FRx Software Microsoft Forecaster
• Microsoft Entourage	• Lilly Software Associates VISUAL Enterprise
Charting software	• Microsoft Dynamics GP
• Microsoft Office Visio	• NetSuite NetERP
Compliance software	• Open Systems TRAVERSE software
• SOX COBIT	• Oracle PeopleSoft Enterprise software
Customer relationship management CRM software	• OutlookSoft
• ACT! software	• Revelwood Business Performance Management software
• Customer relationship management CRM software	• Sage Software Accpac ERP
• Microsoft Dynamics CRM	• Sage Software Active Planner
• Performance Solutions Technology ManagePro	• Sage Software MAS 200 ERP
• Provisioning software	• Sage Software MAS 90 ERP
• Siebel Server Sync	• SAP Business One
Data base management system software	Financial analysis software
• AlphaFour software	• Budget monitoring systems
• Database management software	• Financial reporting software
• Microsoft Access	• Microsoft FRx
• Microsoft SQL Server	• Oracle Corporate Performance Management CPM software
• Oracle software	• Satori Group proCube software
Data base user interface and query software	Graphics or photo imaging software
• Structured query language SQL	• Graphics software
Desktop publishing software	Human resources software
• Adobe Systems Adobe Distiller	
• Desktop publishing software	
Development environment software	



- Assembler

- Borland Delphi software

- C

- Common business oriented language COBOL

- Extensible markup language XML

- Microsoft .NET Framework

- Microsoft Visual Basic

- Microsoft Visual Basic Scripting Edition VBScript

- Microsoft Visual Studio

Electronic mail software

- Linux-based email software

- Microsoft Outlook

- Pegasus software

- QUALCOMM Eudora

Enterprise resource planning ERP software

- Enterprise resource planning ERP software

- Microsoft Dynamics AX

- Microsoft Dynamics NAV

- Oracle E-Business Suite

- Oracle JD Edwards OneWorld

Filesystem software

- Ftp program software

- Samba

- Symantec Veritas File System

- Symantec Veritas Volume Manager

Financial analysis software

- Financial planning software

Graphical user interface development software

- Tk software

Graphics or photo imaging software

- Graphics editor software

- Graphics software

Helpdesk or call center software

- Help desk software

Internet browser software

- Human resources management system software

- Ultimate Software UltiPro Workforce Management

Object or component oriented development software

- Microsoft Visual Basic.NET

Presentation software

- Microsoft PowerPoint

- Presentation software

Spreadsheet software

- Microsoft Excel

- Spreadsheet software

Time accounting software

- Payroll software

- Time and attendance software

- Valiant Vantage

Word processing software

- Microsoft Word

- Word processing software

Tools - Examples

- Desktop computers

- Laser printers

- Notebook computers

- Personal computers



- Microsoft Internet Explorer

- Netscape Navigator

- Web browser software

LAN software

- LAN software

Network connectivity terminal emulation software

- Telnet programs software

- Zephyr EXTRA! Terminal Emulation

Network monitoring software

- Dartware InterMapper

- Performance monitoring tools

Network operation system software

- Microsoft Windows NT

- Novell network software

Network security and virtual private network VPN equipment software

- Firewall software

Object or component oriented development software

- Borland Paradox

- C++

- Practical extraction and reporting language Perl

- Sun Microsystems Java

Object oriented data base management software

- Microsoft Visual FoxPro

Office suite software

- Corel Office Suite

- Microsoft Office

- Sun Microsystems StarOffice

Operating system software

- Apple Macintosh OS/X

- Microsoft Windows

- Novell Linux

- UNIX

Platform interconnectivity software

- IBM iSeries Access



Portal server software

- iPlanet Web Server software
- Plumtree software

Presentation software

- Apple iWork Keynote
- Microsoft PowerPoint

Project management software

- Microsoft Project

Spreadsheet software

- Apple iWork Numbers
- Microsoft Excel

WAN switching software and firmware

- Cisco WAN Manager

Web page creation and editing software

- Microsoft Front Page
- Web authoring software

Web platform development software

- Adobe Systems Adobe Flex
- Dynamic hypertext markup language DHTML
- Hypertext markup language HTML
- JavaScript
- Microsoft Active Server Pages ASP
- PHP: Hypertext Preprocessor
- Ruby on Rails
- Scripting languages

Wireless software

- Mobile wireless network infrastructure software

Word processing software

- Apple iWork Pages
- Microsoft Word

Tools - Examples

- Access servers
- Computer servers
- Computer tool kits
- Inkjet Printers
- Fax Machines



- Floppy drives
- Hard disk drives
- Workstations
- Robot automation tool
- Computer printers
- Mainframe computers
- Network analyzers
- Network interface cards NIC
- Routers
- Switches
- Industry standard architecture/peripheral component interconnect ISA/PCI cards
- Personal computers
- Photocopiers
- Print servers
- Punchdown tools
- Screwdrivers
- Teleconferencing equipment

Labor Market Comparison

Description	Computer and Information Systems Managers	Budget Analysts	Difference
Median Wage	\$ 83,130	\$ 57,290	\$(25,840)
10th Percentile Wage	\$ 48,990	\$ 39,480	\$(9,510)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$110,520	\$ 67,800	\$(42,720)
90th Percentile Wage	\$136,110	\$ 78,930	\$(57,180)
Mean Wage	\$ 88,660	\$ 57,690	\$(30,970)
Total Employment - 2007	870	170	-700
Employment Base - 2006	873	163	-710
Projected Employment - 2016	940	168	-772
Projected Job Growth - 2006-2016	7.7 %	3.1 %	-4.6 %

Projected Annual Openings -
2006-2016

21

5

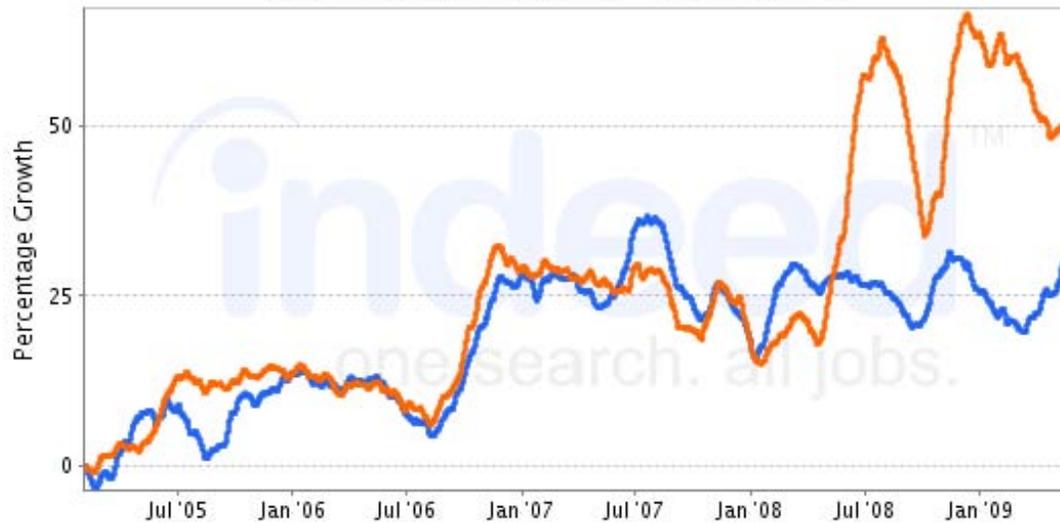
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National Job Posting Trends

Trend for Computer and Information Systems Managers

Trend for
Budget
Analysts**Job Trends from Indeed.com**

— Information Systems Manager — Budget Analyst

Data from [Indeed](http://Indeed.com)**Recommended Programs**

Accounting

Accounting. A program that prepares individuals to practice the profession of accounting and to perform related business functions. Includes instruction in accounting principles and theory, financial accounting, managerial accounting, cost accounting, budget control, tax accounting, legal aspects of accounting, auditing, reporting procedures, statement analysis, planning and consulting, business information systems, accounting research methods, professional standards and ethics, and applications to specific for-profit, public, and non-profit organizations.

Institution	Address	City	URL
University of Maine at Augusta	46 University Dr	Augusta	www.uma.maine.edu/
Beal College	99 Farm Road	Bangor	bealcollege.edu
Husson College	One College Circle	Bangor	www.husson.edu
Husson College	One College Circle	Bangor	www.husson.edu
University of Maine at Machias	9 O'Brien Ave	Machias	www.umm.maine.edu
University of Maine		Orono	www.umaine.edu/
Andover College	901 Washington Ave	Portland	WWW.ANDOVERCOLLEGE.edu
Andover College	901 Washington Ave	Portland	WWW.ANDOVERCOLLEGE.edu
University of Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu
University of Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu



University of Maine at Presque Isle	181 Main St	Presque Isle	www.umpi.maine.edu
Saint Josephs College	278 Whites Bridge Rd	Standish	www.sjcme.edu
Saint Josephs College	278 Whites Bridge Rd	Standish	www.sjcme.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu
York County Community College	112 College Drive	Wells	www.yccc.edu

Finance, General

Finance, General. A program that generally prepares individuals to plan, manage, and analyze the financial and monetary aspects and performance of business enterprises, banking institutions, or other organizations. Includes instruction in principles of accounting; financial instruments; capital planning; funds acquisition; asset and debt management; budgeting; financial analysis; and investments and portfolio management.

Institution	Address	City	URL
Husson College	One College Circle	Bangor	www.husson.edu
Saint Josephs College	278 Whites Bridge Rd	Standish	www.sjcme.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu

Public Finance

Public Finance. A program that prepares individuals to manage the financial assets and budgets of public sector organizations. Includes instruction in public trusts and investments; the laws and procedures used to plan, prepare and administer public agency budgets; and the preparation and analysis of public budget projections and policies.

No schools available for the program

Maine Statewide Labor Pool for Computer and Information Systems Managers

O* NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
11-3021.00	Computer and Information Systems Managers	100	5	870	\$83,130.00	\$0.00	8%	21
13-1023.00	Purchasing Agents, Except Wholesale, Retail, and Farm Products	90	3	920	\$45,210.00	(\$37,920.00)	-2%	21
13-2031.00	Budget Analysts	90	4	170	\$57,290.00	(\$25,840.00)	3%	5
43-3061.00	Procurement Clerks	89	3	0	\$33,300.00	(\$49,830.00)	-2%	5
15-1061.00	Database Administrators	88	4	300	\$60,260.00	(\$22,870.00)	20%	11
43-5061.00	Production, Planning, and Expediting Clerks	88	2	1,320	\$38,490.00	(\$44,640.00)	-1%	35
13-2061.00	Financial Examiners	87	4	120	\$55,110.00	(\$28,020.00)	3%	2



13-2011.01	Accountants	87	4	3,250	\$48,110.00	(\$35,020.00)	11%	113
13-2051.00	Financial Analysts	87	4	210	\$71,380.00	(\$11,750.00)	10%	4
43-9011.00	Computer Operators	87	3	230	\$33,120.00	(\$50,010.00)	-30%	4
43-4031.02	Municipal Clerks	86	3	1,190	\$27,650.00	(\$55,480.00)	9%	37
27-3042.00	Technical Writers	86	4	50	\$46,060.00	(\$37,070.00)	-8%	2
43-3051.00	Payroll and Timekeeping Clerks	86	3	650	\$30,470.00	(\$52,660.00)	-3%	17
43-6011.00	Executive Secretaries and Administrative Assistants	86	3	3,330	\$38,830.00	(\$44,300.00)	6%	76
43-3011.00	Bill and Account Collectors	86	3	1,590	\$29,770.00	(\$53,360.00)	11%	41

Maine Statewide Promotion Opportunities for Budget Analysts

O* NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
13-2031.00	Budget Analysts	100	4	170	\$57,290.00	\$0.00	3%	5
13-2051.00	Financial Analysts	91	4	210	\$71,380.00	\$14,090.00	10%	4
11-3031.01	Treasurers and Controllers	90	5	2,440	\$67,670.00	\$10,380.00	7%	58
13-2052.00	Personal Financial Advisors	87	3	360	\$94,100.00	\$36,810.00	10%	13
11-3031.02	Financial Managers, Branch or Department	87	4	2,440	\$67,670.00	\$10,380.00	7%	58
11-3041.00	Compensation and Benefits Managers	86	3	200	\$68,560.00	\$11,270.00	2%	5
41-3031.01	Sales Agents, Securities and Commodities	86	4	0	\$65,230.00	\$7,940.00	5%	33
41-3031.02	Sales Agents, Financial Services	86	4	0	\$65,230.00	\$7,940.00	5%	33
25-1063.00	Economics Teachers, Postsecondary	85	5	80	\$73,830.00	\$16,540.00	11%	2
11-2031.00	Public Relations Managers	84	4	290	\$71,020.00	\$13,730.00	9%	10
13-1081.00	Logisticians	83	4	190	\$59,120.00	\$1,830.00	4%	4
11-2022.00	Sales Managers	82	4	1,310	\$72,720.00	\$15,430.00	3%	32



11-3021.00	Computer and Information Systems Managers	82	5	870	\$83,130.00	\$25,840.00	8%	21
11-9033.00	Education Administrators, Postsecondary	81	5	600	\$58,090.00	\$800.00	7%	21
23-1011.00	Lawyers	81	5	1,910	\$80,120.00	\$22,830.00	6%	73

Top Industries for Budget Analysts

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Federal government, excluding postal service	919999	22.38%	13,843	13,086	-5.47%
Local government, excluding education and hospitals	939300	11.22%	6,942	7,799	12.34%
State government, excluding education and hospitals	929200	10.17%	6,292	6,175	-1.87%
Colleges, universities, and professional schools, public and private	611300	9.30%	5,754	6,437	11.87%
Management of companies and enterprises	551100	6.44%	3,983	4,591	15.28%
Aerospace product and parts manufacturing	336400	4.39%	2,716	2,766	1.84%
Elementary and secondary schools, public and private	611100	2.92%	1,806	1,903	5.38%
Management, scientific, and technical consulting services	541600	2.77%	1,714	3,060	78.52%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	2.74%	1,693	1,621	-4.26%
Computer systems design and related services	541500	2.24%	1,385	1,870	35.02%
General medical and surgical hospitals, public and private	622100	1.63%	1,009	1,117	10.71%
Research and development in the physical, engineering, and life sciences	541710	1.54%	953	1,016	6.69%
Wired telecommunications carriers	517100	0.99%	614	482	-21.49%
Accounting, tax preparation, bookkeeping, and payroll services	541200	0.98%	606	719	18.60%
Junior colleges, public and private	611200	0.82%	510	563	10.49%

Top Industries for Computer and Information Systems Managers

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Computer systems design and related services	541500	14.81%	39,043	52,715	35.02%
Management of companies and enterprises	551100	8.70%	22,949	26,455	15.28%
Colleges, universities, and professional schools, public and private	611300	3.91%	10,304	11,527	11.87%



Data processing, hosting, and related services	518200	3.22%	8,482	11,466	35.19%
Local government, excluding education and hospitals	939300	3.00%	7,911	8,887	12.34%
Software publishers	511200	2.91%	7,673	9,880	28.76%
Depository credit intermediation	522100	2.88%	7,605	7,754	1.95%
Professional and commercial equipment and supplies merchant wholesalers	423400	2.66%	7,015	8,177	16.57%
Management, scientific, and technical consulting services	541600	2.53%	6,676	11,917	78.52%
State government, excluding education and hospitals	929200	2.32%	6,115	6,001	-1.87%
Securities and commodity contracts, brokerages, and exchanges	5231-2	2.05%	5,406	7,985	47.69%
Research and development in the physical, engineering, and life sciences	541710	2.03%	5,358	5,716	6.69%
General medical and surgical hospitals, public and private	622100	1.93%	5,088	5,632	10.71%
Federal government, excluding postal service	919999	1.53%	4,026	3,806	-5.47%
Accounting, tax preparation, bookkeeping, and payroll services	541200	1.51%	3,987	4,728	18.60%



TORO Analysis of Computer and Information Systems Managers to Financial Examiners

INPUT SECTION:

Transfer	Title	O*NET	Filters		
From Title:	Computer and Information Systems Managers	11-3021.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Financial Examiners	13-2061.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

OUTPUT SECTION:

Grand TORQ:

87

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	92	Level	89	Level	81

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Number Facility	60	37	62	Monitoring	76	11	78	Law and Government	61	26	74
Mathematical Reasoning	53	19	62	Reading Comprehension	73	6	89	English Language	66	12	80
Speed of Closure	48	11	59	Learning Strategies	66	7	71	Economics and Accounting	68	11	75
Perceptual Speed	42	8	59	Time Management	66	2	71				
Speech Clarity	50	6	68	Writing	67	1	74				
Speech Recognition	53	3	75								
Fluency of Ideas	55	2	59								
Written Expression	60	1	68								

LEVEL and IMPT (IMPORTANCE) refer to the Target Financial Examiners. GAP refers to level difference between Computer and Information Systems Managers and Financial Examiners.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Computer and Information Systems Managers	Financial Examiners	Importance
Written Comprehension	69	64	81
Problem Sensitivity	64	64	81



Deductive Reasoning	69	67	81
Inductive Reasoning	62	62	78
Oral Comprehension	71	64	75
Oral Expression	69	66	75
Information Ordering	59	57	75
Near Vision	62	62	75
Speech Recognition	50	53	75
Written Expression	59	60	68
Speech Clarity	44	50	68
Category Flexibility	55	50	65
Originality	59	50	62
Mathematical Reasoning	34	53	62
Number Facility	23	60	62
Fluency of Ideas	53	55	59
Speed of Closure	37	48	59
Perceptual Speed	34	42	59
Selective Attention	44	41	59
Flexibility of Closure	48	48	56

Skill Level Comparison - Abilities with importance scores over 69

Description	Computer and Information Systems Managers	Financial Examiners	Importance
Reading Comprehension	67	73	89
Active Listening	70	69	82
Monitoring	65	76	78
Critical Thinking	73	67	77
Writing	66	67	74
Active Learning	69	67	72
Learning Strategies	59	66	71
Time Management	64	66	71

Knowledge Level Comparison - Knowledge with importance scores over 69



Description	Computer and Information Systems Managers	Financial Examiners	Importance
English Language	54	66	80
Economics and Accounting	57	68	75
Law and Government	35	61	74

Experience & Education Comparison					
Related Work Experience Comparison			Required Education Level Comparison		
Description	Computer and Information Systems Managers	Financial Examiners	Description	Computer and Information Systems Managers	Financial Examiners
10+ years	32%	2%	Doctoral	0%	0%
8-10 years	1%	0%	Professional Degree	0%	2%
6-8 years	1%	0%	Post-Masters Cert	0%	0%
4-6 years	37%	29%	Master's Degree	0%	0%
2-4 years	21%	47%	Post-Bachelor Cert	0%	10%
1-2 years	0%	13%	Bachelors	61%	81%
6-12 months	5%	6%	AA or Equiv	6%	0%
3-6 months	0%	0%	Some College	0%	2%
1-3 months	0%	0%	Post-Secondary Certificate	15%	0%
0-1 month	0%	0%	High School Diploma or GED	15%	2%
None	0%	0%	No HSD or GED	0%	0%
Computer and Information Systems Managers			Financial Examiners		
Most Common Educational/Training Requirement:					
Bachelor's or higher degree, plus work experience			Bachelor's degree		
Job Zone Comparison					
<p>5 - Job Zone Five: Extensive Preparation Needed</p> <p>Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.</p> <p>A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).</p> <p>Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.</p>			<p>4 - Job Zone Four: Considerable Preparation Needed</p> <p>A minimum of two to four years of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.</p> <p>Most of these occupations require a four - year bachelor's degree, but some do not.</p> <p>Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.</p>		

Tasks	
Computer and Information Systems Managers	Financial Examiners
Core Tasks	Core Tasks



Generalized Work Activities:

- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
- Interpreting the Meaning of Information for Others - Translating or explaining what information means and how it can be used.
- Scheduling Work and Activities - Scheduling events, programs, and activities, as well as the work of others.

Specific Tasks

Occupation Specific Tasks:

- Assign and review the work of systems analysts, programmers, and other computer-related workers.
- Consult with users, management, vendors, and technicians to assess computing needs and system requirements.
- Control operational budget and expenditures.
- Develop and interpret organizational goals, policies, and procedures.
- Develop computer information resources, providing for data security and control, strategic computing, and disaster recovery.
- Direct daily operations of department, analyzing workflow, establishing priorities, developing standards and setting deadlines.
- Evaluate data processing proposals to assess project feasibility and requirements.
- Evaluate the organization's technology use and needs and recommend improvements, such as hardware and software upgrades.
- Manage backup, security and user help systems.
- Meet with department heads, managers, supervisors, vendors, and others, to solicit cooperation and resolve problems.
- Prepare and review operational reports or project progress reports.
- Purchase necessary equipment.
- Recruit, hire, train and supervise staff, or participate in staffing decisions.
- Review and approve all systems charts and programs prior to their implementation.

Generalized Work Activities:

- Evaluating Information to Determine Compliance with Standards - Using relevant information and individual judgment to determine whether events or processes comply with laws, regulations, or standards.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Analyzing Data or Information - Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
- Organizing, Planning, and Prioritizing Work - Developing specific goals and plans to prioritize, organize, and accomplish your work.

Specific Tasks

Occupation Specific Tasks:

- Confer with officials of real estate, securities, or financial institution industries in order to exchange views and discuss issues or pending cases.
- Direct and participate in formal and informal meetings with bank directors, trustees, senior management, counsels, outside accountants and consultants in order to gather information and discuss findings.
- Establish guidelines for procedures and policies that comply with new and revised regulations, and direct their implementation.
- Evaluate data processing applications for institutions under examination in order to develop recommendations for coordinating existing systems with examination procedures.
- Examine the minutes of meetings of directors, stockholders and committees in order to investigate the specific authority extended at various levels of management.
- Investigate activities of institutions in order to enforce laws and regulations and to ensure legality of transactions and operations or financial solvency.
- Plan, supervise, and review work of assigned subordinates.
- Prepare reports, exhibits and other supporting schedules that detail an institution's safety and soundness, compliance with laws and regulations, and recommended solutions to questionable financial conditions.
- Recommend actions to ensure compliance



- Review project plans to plan and coordinate project activity.
- Stay abreast of advances in technology.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- analyze operational or management reports or records
- analyze workflow
- assign work to staff or employees
- compile data for financial reports
- conduct or attend staff meetings
- confer with management or users
- confer with other departmental heads to coordinate activities
- consult with customers concerning needs
- consult with managerial or supervisory personnel
- determine customer needs
- develop computer performance standards
- develop policies, procedures, methods, or standards
- direct and coordinate activities of workers or staff
- estimate time needed for project
- evaluate computer system user requests or requirements
- examine expenditures to ensure activities are within budget
- follow data security procedures
- follow data storage procedures
- hire, discharge, transfer, or promote workers
- monitor operational budget
- order or purchase supplies, materials, or equipment
- oversee execution of organizational or program policies
- plan computer security measures
- plan or organize work
- prepare reports
- recommend software or hardware purchases
- revise or correct errors in computer programs, software, or systems
- test computer programs or systems
- use computer application flow charts
- use computer programming language
- use project management techniques
- work as a team member

Technology - Examples

Access software

with laws and regulations, or to protect solvency of institutions.

- Resolve problems concerning the overall financial integrity of banking institutions including loan investment portfolios, capital, earnings, and specific or large troubled accounts.
- Review and analyze new, proposed, or revised laws, regulations, policies, and procedures in order to interpret their meaning and determine their impact.
- Review applications for mergers, acquisitions, establishment of new institutions, acceptance in Federal Reserve System, or registration of securities sales in order to determine their public interest value and conformance to regulations, and recommend acceptance or rejection.
- Review audit reports of internal and external auditors in order to monitor adequacy of scope of reports or to discover specific weaknesses in internal routines.
- Review balance sheets, operating income and expense accounts, and loan documentation in order to confirm institution assets and liabilities.
- Train other examiners in the financial examination process.
- Verify and inspect cash reserves, assigned collateral, and bank-owned securities in order to check internal control procedures.

Detailed Tasks

Detailed Work Activities:

- analyze financial data
- approve or disallow application or license
- conduct financial investigations
- conduct training for personnel
- confer with authorities or community groups
- confer with management or users
- confer with other departmental heads to coordinate activities
- coordinate employee continuing education programs
- develop policies, procedures, methods, or standards
- direct and coordinate activities of workers or staff
- direct and coordinate financial activities
- direct implementation of new procedures, policies, or programs
- enforce laws, ordinances, or regulations
- examine documents for completeness, accuracy, or conformance to standards
- explain government laws or regulations
- gather relevant financial data



• Citrix software
• Mac HelpMate
Accounting software
• Billing software
Administration software
• SolarWinds software
Application server software
• BEA WebLogic Server
• Microsoft Windows Server
Backup or archival software
• Backup and archival software
Calendar and scheduling software
• Microsoft Entourage
Charting software
• Microsoft Office Visio
Compliance software
• SOX COBIT
Customer relationship management CRM software
• ACT! software
• Customer relationship management CRM software
• Microsoft Dynamics CRM
• Performance Solutions Technology ManagePro
• Provisioning software
• Siebel Server Sync
Data base management system software
• AlphaFour software
• Database management software
• Microsoft Access
• Microsoft SQL Server
• Oracle software
Data base user interface and query software
• Structured query language SQL
Desktop publishing software
• Adobe Systems Adobe Distiller
• Desktop publishing software
Development environment software

- interpret laws or legislation
- make presentations
- note discrepancies in financial records
- oversee execution of organizational or program policies
- perform general financial analysis
- plan scientific research or investigative studies
- prepare audit reports or recommendations
- prepare correspondence relating to financial discrepancies
- prepare financial reports
- prepare instruction manuals
- recommend action to ensure compliance
- review laws
- use computers to enter, access and retrieve financial data
- use government regulations
- use knowledge of investigation techniques
- use knowledge of relevant laws
- use oral or written communication techniques
- verify investigative information

Technology - Examples
Compliance software
• Financial compliance software
• NILS INSource
• ODEN Insurance Services State Rules & Regulations
• Oversight Systems software
• System for Electronic Rate and Form Filing SERFF
Data base user interface and query software
• Microsoft Access
Financial analysis software
• ACL Business Assurance Analytics software
• Auditing software
• Financial transaction analysis software
• General Examination System GENESYS
• PricewaterhouseCoopers TeamMate
Information retrieval or search software
• LexisNexis software
• Westlaw
Internet browser software
• Web browser software



- Assembler
- Borland Delphi software
- C
- Common business oriented language COBOL
- Extensible markup language XML
- Microsoft .NET Framework
- Microsoft Visual Basic
- Microsoft Visual Basic Scripting Edition VBScript
- Microsoft Visual Studio

Electronic mail software

- Linux-based email software
- Microsoft Outlook
- Pegasus software
- QUALCOMM Eudora

Enterprise resource planning ERP software

- Enterprise resource planning ERP software
- Microsoft Dynamics AX
- Microsoft Dynamics NAV
- Oracle E-Business Suite
- Oracle JD Edwards OneWorld

Filesystem software

- Ftp program software
- Samba
- Symantec Veritas File System
- Symantec Veritas Volume Manager

Financial analysis software

- Financial planning software

Graphical user interface development software

- Tk software

Graphics or photo imaging software

- Graphics editor software
- Graphics software

Helpdesk or call center software

- Help desk software

Internet browser software

- web browser software

Presentation software

- Presentation software

Project management software

- Investigation management software
- Microsoft Project

Spreadsheet software

- Microsoft Excel
- Spreadsheet software

Word processing software

- Microsoft Word
- Word processing software

Tools - Examples

- Adding machines
- Desktop computers
- Notebook computers
- Personal computers



- Microsoft Internet Explorer

- Netscape Navigator

- Web browser software

LAN software

- LAN software

Network connectivity terminal emulation software

- Telnet programs software

- Zephyr EXTRA! Terminal Emulation

Network monitoring software

- Dartware InterMapper

- Performance monitoring tools

Network operation system software

- Microsoft Windows NT

- Novell network software

Network security and virtual private network VPN equipment software

- Firewall software

Object or component oriented development software

- Borland Paradox

- C++

- Practical extraction and reporting language Perl

- Sun Microsystems Java

Object oriented data base management software

- Microsoft Visual FoxPro

Office suite software

- Corel Office Suite

- Microsoft Office

- Sun Microsystems StarOffice

Operating system software

- Apple Macintosh OS/X

- Microsoft Windows

- Novell Linux

- UNIX

Platform interconnectivity software

- IBM iSeries Access



Portal server software

- iPlanet Web Server software
- Plumtree software

Presentation software

- Apple iWork Keynote
- Microsoft PowerPoint

Project management software

- Microsoft Project

Spreadsheet software

- Apple iWork Numbers
- Microsoft Excel

WAN switching software and firmware

- Cisco WAN Manager

Web page creation and editing software

- Microsoft Front Page
- Web authoring software

Web platform development software

- Adobe Systems Adobe Flex
- Dynamic hypertext markup language DHTML
- Hypertext markup language HTML
- JavaScript
- Microsoft Active Server Pages ASP
- PHP: Hypertext Preprocessor
- Ruby on Rails
- Scripting languages

Wireless software

- Mobile wireless network infrastructure software

Word processing software

- Apple iWork Pages
- Microsoft Word

Tools - Examples

- Access servers
- Computer servers
- Computer tool kits
- Inkjet Printers
- Fax Machines



- Floppy drives
- Hard disk drives
- Workstations
- Robot automation tool
- Computer printers
- Mainframe computers
- Network analyzers
- Network interface cards NIC
- Routers
- Switches
- Industry standard architecture/peripheral component interconnect ISA/PCI cards
- Personal computers
- Photocopiers
- Print servers
- Punchdown tools
- Screwdrivers
- Teleconferencing equipment

Labor Market Comparison

Description	Computer and Information Systems Managers	Financial Examiners	Difference
Median Wage	\$ 83,130	\$ 55,110	\$(28,020)
10th Percentile Wage	\$ 48,990	\$ 36,750	\$(12,240)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$110,520	\$ 71,670	\$(38,850)
90th Percentile Wage	\$136,110	\$ 82,820	\$(53,290)
Mean Wage	\$ 88,660	\$ 58,060	\$(30,600)
Total Employment - 2007	870	120	-750
Employment Base - 2006	873	116	-757
Projected Employment - 2016	940	120	-820



Projected Job Growth - 2006-2016	7.7 %	3.5 %	-4.2 %
Projected Annual Openings - 2006-2016	21	2	-19

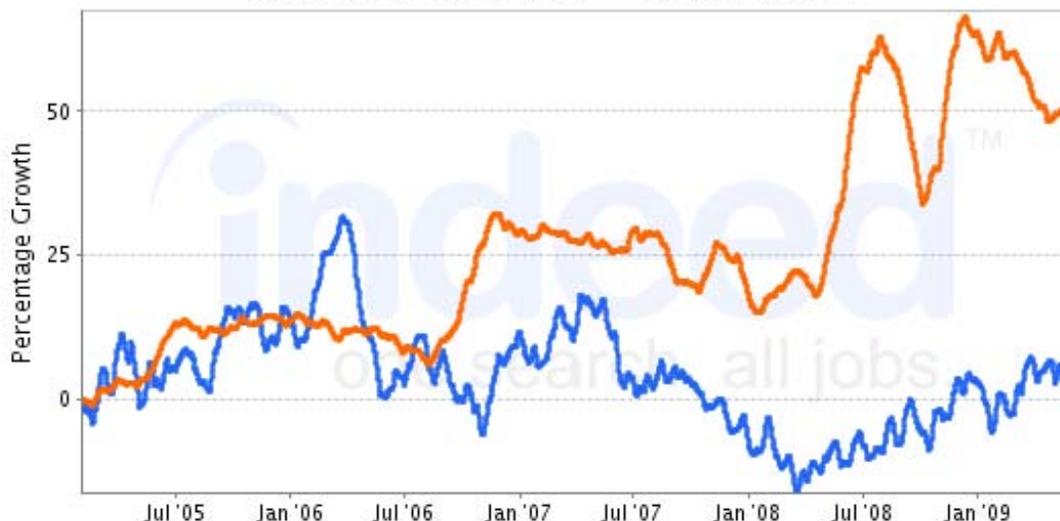
National Job Posting Trends

Trend for Computer and Information Systems Managers

Trend for
Financial
Examiners

Job Trends from Indeed.com

— Information Systems Manager — Financial Examiner

Data from [Indeed](#)

Recommended Programs

Occupational Safety and Health Tech./Technician

Occupational Safety and Health Technology/Technician. A program that prepares individuals to apply basic engineering principles and technical skills in support of engineers and other professionals engaged in maintaining job-related health and safety standards. Includes instruction in safety engineering principles, inspection and monitoring procedures, testing and sampling procedures, laboratory techniques, applications to specific work environments, and report preparation.

Institution	Address	City	URL
Central Maine Community College	1250 Turner St	Auburn	www.cmcc.edu
Central Maine Community College	1250 Turner St	Auburn	www.cmcc.edu

Accounting

Accounting. A program that prepares individuals to practice the profession of accounting and to perform related business functions. Includes instruction in accounting principles and theory, financial accounting, managerial accounting, cost accounting, budget control, tax accounting, legal aspects of accounting, auditing, reporting procedures, statement analysis, planning and consulting, business information systems, accounting research methods, professional standards and ethics, and applications to specific for-profit, public, and non-profit organizations.

Institution	Address	City	URL
University of Maine at Augusta	46 University Dr	Augusta	www.uma.maine.edu/
Beal College	99 Farm Road	Bangor	bealcollege.edu



Husson College	One College Circle	Bangor	www.husson.edu
Husson College	One College Circle	Bangor	www.husson.edu
University of Maine at Machias	9 O'Brien Ave	Machias	www.umm.maine.edu
University of Maine		Orono	www.umaine.edu/
Andover College	901 Washington Ave	Portland	WWW.ANDOVERCOLLEGE.edu
Andover College	901 Washington Ave	Portland	WWW.ANDOVERCOLLEGE.edu
University of Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu
University of Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu
University of Maine at Presque Isle	181 Main St	Presque Isle	www.umpi.maine.edu
Saint Josephs College	278 Whites Bridge Rd	Standish	www.sjcme.edu
Saint Josephs College	278 Whites Bridge Rd	Standish	www.sjcme.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu
York County Community College	112 College Drive	Wells	www.yccc.edu

Taxation

Taxation. A program that prepares individuals to provide tax advice and management services to individuals and corporations. Includes instruction in tax law and regulations, tax record systems, individual and corporate income taxation, tax planning, partnerships and fiduciary relationships, estates and trusts, property depreciation, capital gains and losses, dispositions, transfers, liquidity, valuation, and applications to specific tax problems.

Institution	Address	City	URL
Thomas College	180 W River Rd	Waterville	www.thomas.edu

Maine Statewide Labor Pool for Computer and Information Systems Managers

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
11-3021.00	Computer and Information Systems Managers	100	5	870	\$83,130.00	\$0.00	8%	21
13-1023.00	Purchasing Agents, Except Wholesale, Retail, and Farm Products	90	3	920	\$45,210.00	(\$37,920.00)	-2%	21
13-2031.00	Budget Analysts	90	4	170	\$57,290.00	(\$25,840.00)	3%	5
43-3061.00	Procurement Clerks	89	3	0	\$33,300.00	(\$49,830.00)	-2%	5
15-1061.00	Database Administrators	88	4	300	\$60,260.00	(\$22,870.00)	20%	11



43-5061.00	Production, Planning, and Expediting Clerks	88	2	1,320	\$38,490.00	(\$44,640.00)	-1%	35
13-2061.00	Financial Examiners	87	4	120	\$55,110.00	(\$28,020.00)	3%	2
43-9011.00	Computer Operators	87	3	230	\$33,120.00	(\$50,010.00)	-30%	4
13-2011.01	Accountants	87	4	3,250	\$48,110.00	(\$35,020.00)	11%	113
13-2051.00	Financial Analysts	87	4	210	\$71,380.00	(\$11,750.00)	10%	4
43-6011.00	Executive Secretaries and Administrative Assistants	86	3	3,330	\$38,830.00	(\$44,300.00)	6%	76
27-3042.00	Technical Writers	86	4	50	\$46,060.00	(\$37,070.00)	-8%	2
43-3051.00	Payroll and Timekeeping Clerks	86	3	650	\$30,470.00	(\$52,660.00)	-3%	17
43-4031.02	Municipal Clerks	86	3	1,190	\$27,650.00	(\$55,480.00)	9%	37
43-3011.00	Bill and Account Collectors	86	3	1,590	\$29,770.00	(\$53,360.00)	11%	41

Maine Statewide Promotion Opportunities for Financial Examiners

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
13-2061.00	Financial Examiners	100	4	120	\$55,110.00	\$0.00	3%	2
13-2051.00	Financial Analysts	93	4	210	\$71,380.00	\$16,270.00	10%	4
13-2053.00	Insurance Underwriters	91	3	460	\$56,090.00	\$980.00	-1%	12
13-2031.00	Budget Analysts	91	4	170	\$57,290.00	\$2,180.00	3%	5
13-2052.00	Personal Financial Advisors	90	3	360	\$94,100.00	\$38,990.00	10%	13
11-3031.02	Financial Managers, Branch or Department	90	4	2,440	\$67,670.00	\$12,560.00	7%	58
11-3031.01	Treasurers and Controllers	90	5	2,440	\$67,670.00	\$12,560.00	7%	58
41-3031.01	Sales Agents, Securities and Commodities	90	4	0	\$65,230.00	\$10,120.00	5%	33
11-3041.00	Compensation and Benefits Managers	89	3	200	\$68,560.00	\$13,450.00	2%	5
41-3031.02	Sales Agents, Financial Services	89	4	0	\$65,230.00	\$10,120.00	5%	33
11-2031.00	Public Relations Managers	89	4	290	\$71,020.00	\$15,910.00	9%	10



25-1063.00	Economics Teachers, Postsecondary	87	5	80	\$73,830.00	\$18,720.00	11%	2
41-1012.00	First-Line Supervisors/Managers of Non-Retail Sales Workers	87	4	930	\$55,220.00	\$110.00	-1%	19
25-1011.00	Business Teachers, Postsecondary	87	5	230	\$56,500.00	\$1,390.00	13%	7
23-1011.00	Lawyers	87	5	1,910	\$80,120.00	\$25,010.00	6%	73

Top Industries for Financial Examiners

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Federal government, excluding postal service	919999	22.55%	5,771	5,455	-5.47%
State government, excluding education and hospitals	929200	13.89%	3,554	3,488	-1.87%
Depository credit intermediation	522100	13.59%	3,476	3,544	1.95%
Securities and commodity contracts, brokerages, and exchanges	5231-2	7.56%	1,934	2,772	43.28%
Other nondepository credit intermediation, including real estate credit and consumer lending	522290	6.44%	1,647	1,975	19.92%
Other financial investment activities	523900	5.74%	1,469	2,070	40.93%
Monetary authorities - central bank	521100	5.58%	1,429	1,508	5.55%
Management of companies and enterprises	551100	5.20%	1,332	1,535	15.28%
Activities related to credit intermediation	522300	1.82%	466	603	29.48%
Direct insurance (except life, health, and medical) carriers	524120	1.68%	431	451	4.52%
Management, scientific, and technical consulting services	541600	1.56%	399	712	78.52%
Local government, excluding education and hospitals	939300	1.08%	277	312	12.34%
Other insurance related activities	524290	0.72%	186	222	19.53%
Data processing, hosting, and related services	518200	0.49%	126	170	35.19%
Colleges, universities, and professional schools, public and private	611300	0.46%	118	132	11.87%

Top Industries for Computer and Information Systems Managers

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Computer systems design and related services	541500	14.81%	39,043	52,715	35.02%
Management of companies and enterprises	551100	8.70%	22,949	26,455	15.28%



Colleges, universities, and professional schools, public and private	611300	3.91%	10,304	11,527	11.87%
Data processing, hosting, and related services	518200	3.22%	8,482	11,466	35.19%
Local government, excluding education and hospitals	939300	3.00%	7,911	8,887	12.34%
Software publishers	511200	2.91%	7,673	9,880	28.76%
Depository credit intermediation	522100	2.88%	7,605	7,754	1.95%
Professional and commercial equipment and supplies merchant wholesalers	423400	2.66%	7,015	8,177	16.57%
Management, scientific, and technical consulting services	541600	2.53%	6,676	11,917	78.52%
State government, excluding education and hospitals	929200	2.32%	6,115	6,001	-1.87%
Securities and commodity contracts, brokerages, and exchanges	5231-2	2.05%	5,406	7,985	47.69%
Research and development in the physical, engineering, and life sciences	541710	2.03%	5,358	5,716	6.69%
General medical and surgical hospitals, public and private	622100	1.93%	5,088	5,632	10.71%
Federal government, excluding postal service	919999	1.53%	4,026	3,806	-5.47%
Accounting, tax preparation, bookkeeping, and payroll services	541200	1.51%	3,987	4,728	18.60%



TORQ Analysis of Computer and Information Systems Managers to Database Administrators

INPUT SECTION:

Transfer	Title	O* NET	Filters		
From Title:	Computer and Information Systems Managers	11-3021.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Database Administrators	15-1061.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

OUTPUT SECTION:

Grand TORQ:

88

Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	88	Level	85	Level	90

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Finger Dexterity	46	30	53	Troubleshooting	74	17	76	Computers and Electronics	85	3	81
Far Vision	48	27	50								
Mathematical Reasoning	50	16	56								
Visualization	57	13	56								
Perceptual Speed	46	12	56								
Flexibility of Closure	55	7	68								
Speech Clarity	50	6	65								
Selective Attention	50	6	59								
Fluency of Ideas	57	4	65								
Category Flexibility	57	2	65								

LEVEL and IMPT (IMPORTANCE) refer to the Target Database Administrators. GAP refers to level difference between Computer and Information Systems Managers and Database Administrators.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Computer and Information Systems Managers	Database Administrators	Importance
Problem Sensitivity	64	60	84



Deductive Reasoning	69	59	81
Information Ordering	59	57	81
Inductive Reasoning	62	55	78
Written Comprehension	69	69	75
Near Vision	62	60	75
Oral Comprehension	71	60	72
Oral Expression	69	64	72
Originality	59	57	72
Flexibility of Closure	48	55	68
Written Expression	59	57	65
Fluency of Ideas	53	57	65
Category Flexibility	55	57	65
Speech Clarity	44	50	65
Selective Attention	44	50	59
Speech Recognition	50	50	59
Mathematical Reasoning	34	50	56
Perceptual Speed	34	46	56
Visualization	44	57	56
Finger Dexterity	16	46	53
Far Vision	21	48	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Computer and Information Systems Managers	Database Administrators	Importance
Active Learning	69	64	78
Troubleshooting	57	74	76
Critical Thinking	73	65	72
Active Listening	70	68	69
Coordination	72	62	69

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Computer and Information Systems Managers	Database Administrators	Importance
Computers and Electronics	82	85	81



Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Computer and Information Systems Managers	Database Administrators	Description	Computer and Information Systems Managers	Database Administrators
10+ years	32%	0%	Doctoral	0%	0%
8-10 years	1%	14%	Professional Degree	0%	0%
6-8 years	1%	14%	Post-Masters Cert	0%	0%
4-6 years	37%	31%	Master's Degree	0%	1%
2-4 years	21%	23%	Post-Bachelor Cert	0%	0%
1-2 years	0%	4%	Bachelors	61%	50%
6-12 months	5%	5%	AA or Equiv	6%	3%
3-6 months	0%	5%	Some College	0%	41%
1-3 months	0%	0%	Post-Secondary Certificate	15%	0%
0-1 month	0%	0%	High School Diploma or GED	15%	3%
None	0%	0%	No HSD or GED	0%	0%

Computer and Information Systems Managers

Database Administrators

Most Common Educational/Training Requirement:

Bachelor's or higher degree, plus work experience

Bachelor's degree

Job Zone Comparison

5 - Job Zone Five: Extensive Preparation Needed

Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.

A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

4 - Job Zone Four: Considerable Preparation Needed

A minimum of two to four years of work-related skill, knowledge, or experience is needed for these occupations. For example, an accountant must complete four years of college and work for several years in accounting to be considered qualified.

Most of these occupations require a four - year bachelor's degree, but some do not.

Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Tasks

Computer and Information Systems Managers

Core Tasks

Generalized Work Activities:

- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Identifying Objects, Actions, and Events -

Database Administrators

Core Tasks

Generalized Work Activities:

- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Processing Information - Compiling, coding, categorizing, calculating, tabulating, auditing, or verifying information or data.



Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

- Interpreting the Meaning of Information for Others - Translating or explaining what information means and how it can be used.
- Scheduling Work and Activities - Scheduling events, programs, and activities, as well as the work of others.

Specific Tasks

Occupation Specific Tasks:

- Assign and review the work of systems analysts, programmers, and other computer-related workers.
- Consult with users, management, vendors, and technicians to assess computing needs and system requirements.
- Control operational budget and expenditures.
- Develop and interpret organizational goals, policies, and procedures.
- Develop computer information resources, providing for data security and control, strategic computing, and disaster recovery.
- Direct daily operations of department, analyzing workflow, establishing priorities, developing standards and setting deadlines.
- Evaluate data processing proposals to assess project feasibility and requirements.
- Evaluate the organization's technology use and needs and recommend improvements, such as hardware and software upgrades.
- Manage backup, security and user help systems.
- Meet with department heads, managers, supervisors, vendors, and others, to solicit cooperation and resolve problems.
- Prepare and review operational reports or project progress reports.
- Purchase necessary equipment.
- Recruit, hire, train and supervise staff, or participate in staffing decisions.
- Review and approve all systems charts and programs prior to their implementation.
- Review project plans to plan and coordinate project activity.
- Stay abreast of advances in technology.

Detailed Tasks

- Analyzing Data or Information - Identifying the underlying principles, reasons, or facts of information by breaking down information or data into separate parts.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.

Specific Tasks

Occupation Specific Tasks:

- Approve, schedule, plan, and supervise the installation and testing of new products and improvements to computer systems such as the installation of new databases.
- Develop data model describing data elements and how they are used, following procedures and using pen, template or computer software.
- Develop methods for integrating different products so they work properly together such as customizing commercial databases to fit specific needs.
- Develop standards and guidelines to guide the use and acquisition of software and to protect vulnerable information.
- Establish and calculate optimum values for database parameters, using manuals and calculator.
- Identify and evaluate industry trends in database systems to serve as a source of information and advice for upper management.
- Modify existing databases and database management systems or direct programmers and analysts to make changes.
- Plan, coordinate and implement security measures to safeguard information in computer files against accidental or unauthorized damage, modification or disclosure.
- Review procedures in database management system manuals for making changes to database.
- Review project requests describing database user needs to estimate time and cost required to accomplish project.
- Review workflow charts developed by programmer analyst to understand tasks computer will perform, such as updating



Detailed Work Activities:

- adhere to safety procedures
- analyze operational or management reports or records
- analyze workflow
- assign work to staff or employees
- compile data for financial reports
- conduct or attend staff meetings
- confer with management or users
- confer with other departmental heads to coordinate activities
- consult with customers concerning needs
- consult with managerial or supervisory personnel
- determine customer needs
- develop computer performance standards
- develop policies, procedures, methods, or standards
- direct and coordinate activities of workers or staff
- estimate time needed for project
- evaluate computer system user requests or requirements
- examine expenditures to ensure activities are within budget
- follow data security procedures
- follow data storage procedures
- hire, discharge, transfer, or promote workers
- monitor operational budget
- order or purchase supplies, materials, or equipment
- oversee execution of organizational or program policies
- plan computer security measures
- plan or organize work
- prepare reports
- recommend software or hardware purchases
- revise or correct errors in computer programs, software, or systems
- test computer programs or systems
- use computer application flow charts
- use computer programming language
- use project management techniques
- work as a team member

Technology - Examples

Access software

- Citrix software

- Mac HelpMate

Accounting software

computer time periods, such as updating records.

- Revise company definition of data as defined in data dictionary.
- Select and enter codes to monitor database performance and to create production database.
- Specify users and user access levels for each segment of database.
- Test programs or databases, correct errors and make necessary modifications.
- Train users and answer questions.
- Work as part of a project team to coordinate database development and determine project scope and limitations.
- Write and code logical and physical database descriptions and specify identifiers of database to management system or direct others in coding descriptions.

Detailed Tasks

Detailed Work Activities:

- adjust computer operation system
- analyze programs using workflow chart or diagram
- communicate technical information
- confer with personnel to discuss security violations or programming
- design data security systems
- develop computer performance standards
- develop management control systems
- develop mathematical simulation models
- develop or maintain budgeting databases
- develop or maintain databases
- develop records management system
- develop tables depicting data
- establish and maintain relationships with team members
- estimate time needed for project
- evaluate computer system user requests or requirements
- follow data security procedures
- follow data storage procedures
- implement computer system changes
- install computer programs
- install hardware, software, or peripheral equipment
- install security measures
- maintain client-server database
- maintain or repair computers or related equipment
- monitor computer operation
- operate computer networks
- plan computer security measures
- prepare cost estimates



• Billing software
Administration software
• SolarWinds software
Application server software
• BEA WebLogic Server
• Microsoft Windows Server
Backup or archival software
• Backup and archival software
Calendar and scheduling software
• Microsoft Entourage
Charting software
• Microsoft Office Visio
Compliance software
• SOX COBIT
Customer relationship management CRM software
• ACT! software
• Customer relationship management CRM software
• Microsoft Dynamics CRM
• Performance Solutions Technology ManagePro
• Provisioning software
• Siebel Server Sync
Data base management system software
• AlphaFour software
• Database management software
• Microsoft Access
• Microsoft SQL Server
• Oracle software
Data base user interface and query software
• Structured query language SQL
Desktop publishing software
• Adobe Systems Adobe Distiller
• Desktop publishing software
Development environment software
• Assembler
• Borland Delphi software

- prepare cost estimates
- prepare instruction manuals
- program mainframe computer
- provide technical computer training
- provide technical support to computer users
- revise or correct errors in computer programs, software, or systems
- test computer programs or systems
- understand computer equipment operating manuals
- use computer application flow charts
- use computer networking technology
- use computer programming language
- use computers to enter, access or retrieve data
- use geographical information system (GIS) software
- use interpersonal communication techniques
- use knowledge of mainframe computers
- use mathematical or statistical methods to identify or analyze problems
- use object-oriented computer programming techniques
- use project management techniques
- use relational database software
- use spreadsheet software
- use structural analysis techniques to analyze computer systems
- use word processing or desktop publishing software
- work as a team member
- write administrative procedures services manual
- write computer software, programs, or code
- write documentation for computer programming

Technology - Examples
Access software
• Access management software
Analytical or scientific software
• Test data generator software
Application server software
• IBM WebSphere
Backup or archival software
• Acronis Recovery Expert
• Backup and archival software
• BMC Catalog Manager



- C
- Common business oriented language COBOL
- Extensible markup language XML
- Microsoft .NET Framework
- Microsoft Visual Basic
- Microsoft Visual Basic Scripting Edition VBScript
- Microsoft Visual Studio

Electronic mail software

- Linux-based email software
- Microsoft Outlook
- Pegasus software
- QUALCOMM Eudora

Enterprise resource planning ERP software

- Enterprise resource planning ERP software
- Microsoft Dynamics AX
- Microsoft Dynamics NAV
- Oracle E-Business Suite
- Oracle JD Edwards OneWorld

Filesystem software

- Ftp program software
- Samba
- Symantec Veritas File System
- Symantec Veritas Volume Manager

Financial analysis software

- Financial planning software

Graphical user interface development software

- Tk software

Graphics or photo imaging software

- Graphics editor software
- Graphics software

Helpdesk or call center software

- Help desk software

Internet browser software

- Microsoft Internet Explorer
- Netscape Navigator

- BMC Recovery Manager RMAN

- Database cloning software

- Hewlett-Packard HP Omniback II

- IBM ADSTAR

- Legato NetWorker

- Oracle Data Guard

- Storage management software

- Systems and data disaster recovery software

- VERITAS NetBackup

Clustering software

- Cluster server software
- Oracle Real Application Cluster RAC

Computer based training software

- Computer based training software

Configuration management software

- Deployment software

Data base management system software

- BMC Change Manager
- Catalog navigation software
- Concurrency control software
- Data definition language DDL
- Data manipulation language DML
- Data transformation services DTS software
- Database design software
- Database management software
- Embarcadero Technologies DBArtisan
- IBM DB2
- Index tuning software
- Microsoft SQL Server
- MySQL software
- Oracle DBMS
- Oracle Enterprise Manager
- Oracle procedural language/structured query language PL/SQL



- Web browser software

LAN software

- LAN software

Network connectivity terminal emulation software

- Telnet programs software

- Zephyr EXTRA! Terminal Emulation

Network monitoring software

- Dartware InterMapper

- Performance monitoring tools

Network operation system software

- Microsoft Windows NT

- Novell network software

Network security and virtual private network VPN equipment software

- Firewall software

Object or component oriented development software

- Borland Paradox

- C++

- Practical extraction and reporting language Perl

- Sun Microsystems Java

Object oriented data base management software

- Microsoft Visual FoxPro

Office suite software

- Corel Office Suite

- Microsoft Office

- Sun Microsystems StarOffice

Operating system software

- Apple Macintosh OS/X

- Microsoft Windows

- Novell Linux

- UNIX

Platform interconnectivity software

- IBM iSeries Access

Portal server software

- iPlanet Web Server software

- Plumtree software

- Quest Central

- Relational database management software

- Sybase Replication Server

- Sybase SQL Server

Data base reporting software

- Oracle Reports

- Oracle SQL Loader

- Oracle SQL Plus

- ReCrystallize Crystal Reports

Data base user interface and query software

- Database query language

- Structured query language SQL

Development environment software

- C

- Microsoft Visual Basic

- Microsoft Visual Basic Scripting Edition VBScript

- Prolog

- Restructured extended executor REXX

Enterprise application integration software

- Enterprise application integration EAI software

Enterprise resource planning ERP software

- Enterprise resource planning ERP software

- SAP software

Information retrieval or search software

- Data validation software

Metadata management software

- AllFusion ERwin Data Modeler

- Data dictionary software

- Data mapping software

- Data modeling software

- IBM Rational Data Architect

- Visual Paradigm DB Visual ARCHITECT

Network security or virtual private network VPN management software

- Database security software

Object or component oriented development software



Presentation software

- Apple iWork Keynote
- Microsoft PowerPoint

Project management software

- Microsoft Project

Spreadsheet software

- Apple iWork Numbers
- Microsoft Excel

WAN switching software and firmware

- Cisco WAN Manager

Web page creation and editing software

- Microsoft Front Page
- Web authoring software

Web platform development software

- Adobe Systems Adobe Flex
- Dynamic hypertext markup language DHTML
- Hypertext markup language HTML
- JavaScript
- Microsoft Active Server Pages ASP
- PHP: Hypertext Preprocessor
- Ruby on Rails
- Scripting languages

Wireless software

- Mobile wireless network infrastructure software

Word processing software

- Apple iWork Pages
- Microsoft Word

Tools - Examples

- Access servers
- Computer servers
- Computer tool kits
- Inkjet Printers
- Fax Machines
- Floppy drives
- Hard disk drives

- Microsoft Visual Basic .NET

- Microsoft Visual C# .NET

- Practical extraction and reporting language Perl

- Sun Microsystems Java

- Sybase PowerBuilder

Object oriented data base management software

- IBM Informix

- Object database management system ODBMS software

- PostgreSQL software

Operating system software

- DOS shell script
- Shell script

Presentation software

- Microsoft PowerPoint

Program testing software

- Computer Associates Log Analyzer
- Database testing software

Requirements analysis and system architecture software

- Database capacity planning software

Spreadsheet software

- Microsoft Excel

Storage networking software

- Storage area network SAN software

Transaction security and virus protection software

- Encryption software

Web platform development software

- Hypertext markup language HTML
- Oracle Designer

Word processing software

- Microsoft Word

Tools - Examples

- Desktop computers
- Redundant array of independent disks RAID systems
- Hard disk drives



- Workstations
- Robot automation tool
- Computer printers
- Mainframe computers
- Network analyzers
- Network interface cards NIC
- Routers
- Switches
- Industry standard architecture/peripheral component interconnect ISA/PCI cards
- Personal computers
- Photocopiers
- Print servers
- Punchdown tools
- Screwdrivers
- Teleconferencing equipment

- Mainframe computers
- Notebook computers
- Tape libraries

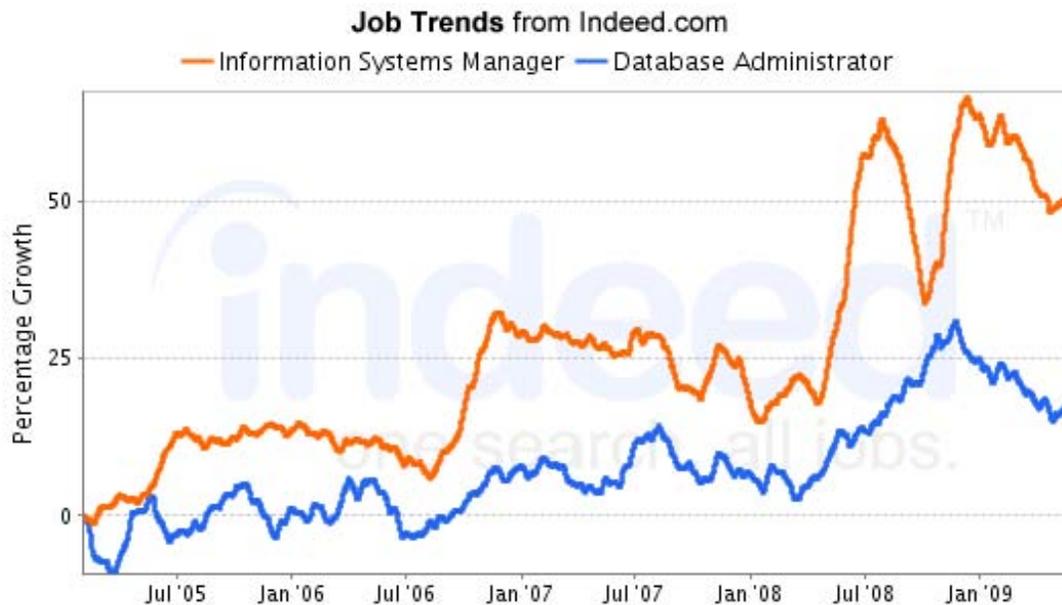
Labor Market Comparison

Description	Computer and Information Systems Managers	Database Administrators	Difference
Median Wage	\$ 83,130	\$ 60,260	\$(22,870)
10th Percentile Wage	\$ 48,990	\$ 36,360	\$(12,630)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$110,520	\$ 77,990	\$(32,530)
90th Percentile Wage	\$136,110	\$ 93,840	\$(42,270)
Mean Wage	\$ 88,660	\$ 61,700	\$(26,960)
Total Employment - 2007	870	300	-570
Employment Base - 2006	873	329	-544
Projected Employment - 2016	940	395	-545
Projected Job Growth - 2006-2016	7.7 %	20.1 %	12.4 %
Projected Annual Openings - 2006-2016	21	11	-10



National Job Posting Trends

Trend for Computer and Information Systems Managers

Trend for
Database
AdministratorsData from [Indeed](#)

Recommended Programs

Computer and Information Sciences, General

Computer and Information Sciences, General. A general program that focuses on computing, computer science, and information science and systems as part of a broad and/or interdisciplinary program. Such programs are undifferentiated as to title and content and are not to be confused with specific programs in computer science, information science, or related support services.

Institution	Address	City	URL
University of Maine at Augusta	46 University Dr	Augusta	www.uma.maine.edu/
University of Maine at Augusta	46 University Dr	Augusta	www.uma.maine.edu/
University of Maine at Augusta	46 University Dr	Augusta	www.uma.maine.edu/
Husson College	One College Circle	Bangor	www.husson.edu
Husson College	One College Circle	Bangor	www.husson.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu

Information Sciences and Systems

Information Science/Studies. A program that focuses on the theory, organization, and process of information collection, transmission, and utilization in traditional and electronic forms. Includes instruction in information classification and organization; information storage and processing; transmission, transfer, and signaling; communications and networking; systems planning and design; human interfacing and use analysis; database development; information policy analysis; and related aspects of hardware, software, economics, social factors, and capacity.

Institution	Address	City	URL
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Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Computer Systems Analysis/Analyst			
Computer Systems Analysis/Analyst. A program that prepares individuals to apply programming and systems analysis principles to the selection, implementation, and troubleshooting of customized computer and software installations across the life cycle. Includes instruction in computer hardware and software; compilation, composition, execution, and operating systems; low- and high-level languages and language programming; programming and debugging techniques; installation and maintenance testing and documentation; process and data flow analysis; user needs analysis and documentation; cost-benefit analysis; and specification design.			
No schools available for the program			
Data Modeling/Warehousing and Database Administration			
Data Modeling/Warehousing and Database Administration. A program that prepares individuals to design and manage the construction of databases and related software programs and applications, including the linking of individual data sets to create complex searchable databases (warehousing) and the use of analytical search tools (mining). Includes instruction in database theory, logic, and semantics; operational and warehouse modeling; dimensionality; attributes and hierarchies; data definition; technical architecture; access and security design; integration; formatting and extraction; data delivery; index design; implementation problems; planning and budgeting; and client and networking issues.			
No schools available for the program			
Computer and Information Systems Security			
Computer and Information Systems Security. A program that prepares individuals to assess the security needs of computer and network systems, recommend safeguard solutions, and manage the implementation and maintenance of security devices, systems, and procedures. Includes instruction in computer architecture, programming, and systems analysis; networking; telecommunications; cryptography; security system design; applicable law and regulations; risk assessment and policy analysis; contingency planning; user access issues; investigation techniques; and troubleshooting.			
No schools available for the program			
Management Information Systems and Business Data P			
Management Information Systems, General. A program that generally prepares individuals to provide and manage data systems and related facilities for processing and retrieving internal business information; select systems and train personnel; and respond to external data requests. Includes instruction in cost and accounting information systems, management control systems, personnel information systems, data storage and security, business systems networking, report preparation, computer facilities and equipment operation and maintenance, operator supervision and training, and management information systems policy and planning.			
Institution	Address	City	URL
Kennebec Valley Community College	92 Western Ave	Fairfield	www.kvcc.me.edu
Kennebec Valley Community College	92 Western Ave	Fairfield	www.kvcc.me.edu
Andover College	901 Washington Ave	Portland	WWW.ANDOVERCOLLEGE.edu
Andover College	901 Washington Ave	Portland	WWW.ANDOVERCOLLEGE.edu
York County Community College	112 College Drive	Wells	www.yccc.edu

Maine Statewide Labor Pool for Computer and Information Systems Managers

O* NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
11-3021.00	Computer and Information Systems Managers	100	5	870	\$83,130.00	\$0.00	8%	21



13-1023.00	Purchasing Agents, Except Wholesale, Retail, and Farm Products	90	3	920	\$45,210.00	(\$37,920.00)	-2%	21
13-2031.00	Budget Analysts	90	4	170	\$57,290.00	(\$25,840.00)	3%	5
43-3061.00	Procurement Clerks	89	3	0	\$33,300.00	(\$49,830.00)	-2%	5
15-1061.00	Database Administrators	88	4	300	\$60,260.00	(\$22,870.00)	20%	11
43-5061.00	Production, Planning, and Expediting Clerks	88	2	1,320	\$38,490.00	(\$44,640.00)	-1%	35
13-2061.00	Financial Examiners	87	4	120	\$55,110.00	(\$28,020.00)	3%	2
13-2011.01	Accountants	87	4	3,250	\$48,110.00	(\$35,020.00)	11%	113
13-2051.00	Financial Analysts	87	4	210	\$71,380.00	(\$11,750.00)	10%	4
43-9011.00	Computer Operators	87	3	230	\$33,120.00	(\$50,010.00)	-30%	4
43-4031.02	Municipal Clerks	86	3	1,190	\$27,650.00	(\$55,480.00)	9%	37
27-3042.00	Technical Writers	86	4	50	\$46,060.00	(\$37,070.00)	-8%	2
43-3051.00	Payroll and Timekeeping Clerks	86	3	650	\$30,470.00	(\$52,660.00)	-3%	17
43-6011.00	Executive Secretaries and Administrative Assistants	86	3	3,330	\$38,830.00	(\$44,300.00)	6%	76
43-3011.00	Bill and Account Collectors	86	3	1,590	\$29,770.00	(\$53,360.00)	11%	41

Maine Statewide Promotion Opportunities for Database Administrators

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
15-1061.00	Database Administrators	100	4	300	\$60,260.00	\$0.00	20%	11
15-1051.00	Computer Systems Analysts	88	4	1,650	\$69,340.00	\$9,080.00	20%	78
11-3031.02	Financial Managers, Branch or Department	86	4	2,440	\$67,670.00	\$7,410.00	7%	58
13-2051.00	Financial Analysts	84	4	210	\$71,380.00	\$11,120.00	10%	4
41-3031.01	Sales Agents, Securities and Commodities	84	4	0	\$65,230.00	\$4,970.00	5%	33



11-3021.00	Computer and Information Systems Managers	84	5	870	\$83,130.00	\$22,870.00	8%	21
41-3031.02	Sales Agents, Financial Services	84	4	0	\$65,230.00	\$4,970.00	5%	33
11-2022.00	Sales Managers	83	4	1,310	\$72,720.00	\$12,460.00	3%	32
11-2031.00	Public Relations Managers	83	4	290	\$71,020.00	\$10,760.00	9%	10
15-1031.00	Computer Software Engineers, Applications	83	4	1,060	\$63,750.00	\$3,490.00	30%	47
13-2052.00	Personal Financial Advisors	83	3	360	\$94,100.00	\$33,840.00	10%	13
11-3071.02	Storage and Distribution Managers	82	3	710	\$62,270.00	\$2,010.00	5%	25
15-1032.00	Computer Software Engineers, Systems Software	82	4	290	\$73,410.00	\$13,150.00	11%	8
11-3041.00	Compensation and Benefits Managers	81	3	200	\$68,560.00	\$8,300.00	2%	5
13-1111.00	Management Analysts	81	4	970	\$61,830.00	\$1,570.00	3%	44

Top Industries for Database Administrators

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Computer systems design and related services	541500	13.39%	15,987	23,684	48.14%
Management of companies and enterprises	551100	6.88%	8,212	10,387	26.49%
Colleges, universities, and professional schools, public and private	611300	5.07%	6,057	7,435	22.75%
Local government, excluding education and hospitals	939300	3.29%	3,932	4,847	23.26%
Management, scientific, and technical consulting services	541600	2.90%	3,460	6,778	95.88%
Federal government, excluding postal service	919999	2.57%	3,074	3,188	3.72%
Data processing, hosting, and related services	518200	2.54%	3,029	4,493	48.33%
Research and development in the physical, engineering, and life sciences	541710	2.29%	2,736	3,203	17.06%
Depository credit intermediation	522100	2.29%	2,731	3,056	11.87%
Employment services	561300	2.26%	2,694	3,740	38.87%
State government, excluding education and hospitals	929200	2.18%	2,605	2,805	7.67%



Software publishers	511200	1.94%	2,313	3,267	41.28%
Wired telecommunications carriers	517100	1.58%	1,889	1,627	-13.86%
Securities and commodity contracts, brokerages, and exchanges	5231-2	1.54%	1,844	2,978	61.44%
General medical and surgical hospitals, public and private	622100	1.53%	1,830	2,223	21.47%

Top Industries for Computer and Information Systems Managers

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Computer systems design and related services	541500	14.81%	39,043	52,715	35.02%
Management of companies and enterprises	551100	8.70%	22,949	26,455	15.28%
Colleges, universities, and professional schools, public and private	611300	3.91%	10,304	11,527	11.87%
Data processing, hosting, and related services	518200	3.22%	8,482	11,466	35.19%
Local government, excluding education and hospitals	939300	3.00%	7,911	8,887	12.34%
Software publishers	511200	2.91%	7,673	9,880	28.76%
Depository credit intermediation	522100	2.88%	7,605	7,754	1.95%
Professional and commercial equipment and supplies merchant wholesalers	423400	2.66%	7,015	8,177	16.57%
Management, scientific, and technical consulting services	541600	2.53%	6,676	11,917	78.52%
State government, excluding education and hospitals	929200	2.32%	6,115	6,001	-1.87%
Securities and commodity contracts, brokerages, and exchanges	5231-2	2.05%	5,406	7,985	47.69%
Research and development in the physical, engineering, and life sciences	541710	2.03%	5,358	5,716	6.69%
General medical and surgical hospitals, public and private	622100	1.93%	5,088	5,632	10.71%
Federal government, excluding postal service	919999	1.53%	4,026	3,806	-5.47%
Accounting, tax preparation, bookkeeping, and payroll services	541200	1.51%	3,987	4,728	18.60%



TORO Analysis of Computer and Information Systems Managers to Production, Planning, and Expediting Clerks

INPUT SECTION:

Transfer	Title	O*NET	Filters		
From Title:	Computer and Information Systems Managers	11-3021.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Production, Planning, and Expediting Clerks	43-5061.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

OUTPUT SECTION:

Grand TORQ:		88
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Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	91	Level	90	Level	82

Gaps To Narrow if Possible				Upgrade These Skills				Knowledge to Add			
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
No Critical Gaps Recorded!				No Skills Upgrade Required!				Customer and Personal Service	58	25	72
								Production and Processing	61	14	76

LEVEL and IMPT (IMPORTANCE) refer to the Target Production, Planning, and Expediting Clerks. GAP refers to level difference between Computer and Information Systems Managers and Production, Planning, and Expediting Clerks.

ASK ANALYSIS

Ability Level Comparison - Abilities with importance scores over 50

Description	Computer and Information Systems Managers	Production, Planning, and Expediting Clerks	Importance
Written Comprehension	69	51	72
Oral Comprehension	71	55	68
Oral Expression	69	53	68
Written Expression	59	50	68
Near Vision	62	50	65
Problem Sensitivity	64	46	62
Speech Recognition	50	44	62
Inductive Reasoning	62	44	59



Description	Computer and Information Systems Managers	Production, Planning, and Expediting Clerks	Importance
Speech Clarity	44	44	59
Deductive Reasoning	69	48	56
Information Ordering	59	44	56
Category Flexibility	55	41	50
Selective Attention	44	37	50
Skill Level Comparison - Abilities with importance scores over 69			
Description	Computer and Information Systems Managers	Production, Planning, and Expediting Clerks	Importance
Active Listening	70	65	79
Reading Comprehension	67	65	78
Coordination	72	67	74
Speaking	63	62	70
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Computer and Information Systems Managers	Production, Planning, and Expediting Clerks	Importance
Production and Processing	47	61	76
Customer and Personal Service	33	58	72
Computers and Electronics	82	61	70

Experience & Education Comparison					
Related Work Experience Comparison			Required Education Level Comparison		
Description	Computer and Information Systems Managers	Production, Planning, and Expediting Clerks	Description	Computer and Information Systems Managers	Production, Planning, and Expediting Clerks
10+ years	32%	5%	Doctoral	0%	0%
8-10 years	1%	0%	Professional Degree	0%	0%
6-8 years	1%	4%	Post-Masters Cert	0%	0%
4-6 years	37%	21%	Master's Degree	0%	4%
2-4 years	21%	19%	Post-Bachelor Cert	0%	0%
1-2 years	0%	9%	Bachelors	61%	12%
6-12 months	5%	34%	AA or Equiv	6%	20%
3-6 months	0%	1%	Some College	0%	10%
1-3 months	0%	1%	Post-Secondary Certificate	15%	7%
0-1 month	0%	0%	High School Diploma or GED	15%	44%
None	0%	2%	No HSD or GED	0%	0%
Computer and Information Systems Managers			Production, Planning, and Expediting Clerks		
Most Common Educational/Training Requirement:					
Bachelor's or higher degree, plus work experience			Short-term on-the-job training		



Job Zone Comparison

5 - Job Zone Five: Extensive Preparation Needed

Extensive skill, knowledge, and experience are needed for these occupations. Many require more than five years of experience. For example, surgeons must complete four years of college and an additional five to seven years of specialized medical training to be able to do their job.

A bachelor's degree is the minimum formal education required for these occupations. However, many also require graduate school. For example, they may require a master's degree, and some require a Ph.D., M.D., or J.D. (law degree).

Employees may need some on-the-job training, but most of these occupations assume that the person will already have the required skills, knowledge, work-related experience, and/or training.

2 - Job Zone Two: Some Preparation Needed

Some previous work-related skill, knowledge, or experience may be helpful in these occupations, but usually is not needed. For example, a teller might benefit from experience working directly with the public, but an inexperienced person could still learn to be a teller with little difficulty.

These occupations usually require a high school diploma and may require some vocational training or job-related course work. In some cases, an associate's or bachelor's degree could be needed.

Employees in these occupations need anywhere from a few months to one year of working with experienced employees.

Tasks

Computer and Information Systems Managers

Core Tasks

Generalized Work Activities:

- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Identifying Objects, Actions, and Events - Identifying information by categorizing, estimating, recognizing differences or similarities, and detecting changes in circumstances or events.
- Interpreting the Meaning of Information for Others - Translating or explaining what information means and how it can be used.
- Scheduling Work and Activities - Scheduling events, programs, and activities, as well as the work of others.

Specific Tasks

Occupation Specific Tasks:

- Assign and review the work of systems analysts, programmers, and other computer-related workers.
- Consult with users, management, vendors, and technicians to assess computing needs and system requirements.
- Control operational budget and expenditures.
- Develop and interpret organizational goals, policies, and procedures.
- Develop computer information resources, providing for data security and control, strategic computing, and disaster recovery.

Production, Planning, and Expediting Clerks

Core Tasks

Generalized Work Activities:

- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.
- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
- Organizing, Planning, and Prioritizing Work - Developing specific goals and plans to prioritize, organize, and accomplish your work.
- Monitor Processes, Materials, or Surroundings - Monitoring and reviewing information from materials, events, or the environment, to detect or assess problems.

Specific Tasks

Occupation Specific Tasks:

- Arrange for delivery, assembly, and distribution of supplies and parts in order to expedite flow of materials and meet production schedules.
- Calculate figures such as required amounts of labor and materials, manufacturing costs, and wages, using pricing schedules, adding machines, calculators, or computers.
- Compile and prepare documentation related to production sequences, transportation, personnel schedules, and purchase, maintenance, and repair orders.



- Direct daily operations of department, analyzing workflow, establishing priorities, developing standards and setting deadlines.
- Evaluate data processing proposals to assess project feasibility and requirements.
- Evaluate the organization's technology use and needs and recommend improvements, such as hardware and software upgrades.
- Manage backup, security and user help systems.
- Meet with department heads, managers, supervisors, vendors, and others, to solicit cooperation and resolve problems.
- Prepare and review operational reports or project progress reports.
- Purchase necessary equipment.
- Recruit, hire, train and supervise staff, or participate in staffing decisions.
- Review and approve all systems charts and programs prior to their implementation.
- Review project plans to plan and coordinate project activity.
- Stay abreast of advances in technology.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- analyze operational or management reports or records
- analyze workflow
- assign work to staff or employees
- compile data for financial reports
- conduct or attend staff meetings
- confer with management or users
- confer with other departmental heads to coordinate activities
- consult with customers concerning needs
- consult with managerial or supervisory personnel
- determine customer needs
- develop computer performance standards
- develop policies, procedures, methods, or standards
- direct and coordinate activities of workers or staff
- estimate time needed for project
- evaluate computer system user requests or requirements
- examine expenditures to ensure activities are within budget
- follow data security procedures
- follow data storage procedures
- hire, discharge, transfer, or promote workers

- compile information, such as production rates and progress, materials inventories, materials used, and customer information, so that status reports can be completed.
- Confer with department supervisors and other personnel to assess progress and discuss needed changes.
- Confer with establishment personnel, vendors, and customers to coordinate production and shipping activities, and to resolve complaints or eliminate delays.
- Contact suppliers to verify shipment details.
- Distribute production schedules and work orders to departments.
- Establish and prepare product construction directions and locations, and information on required tools, materials, and equipment, numbers of workers needed, and cost projections.
- Examine documents, materials, and products, and monitor work processes, in order to assess completeness, accuracy, and conformance to standards and specifications.
- Maintain files such as maintenance records, bills of lading, and cost reports.
- Plan production commitments and timetables for business units, specific programs, and/or jobs, using sales forecasts.
- Provide documentation and information to account for delays, difficulties, and changes to cost estimates.
- Record production data, including volume produced, consumption of raw materials, and quality control measures.
- Requisition and maintain inventories of materials and supplies necessary to meet production demands.
- Review documents such as production schedules, work orders, and staffing tables to determine personnel and materials requirements, and material priorities.
- Revise production schedules when required due to design changes, labor or material shortages, backlogs, or other interruptions, collaborating with management, marketing, sales, production, and engineering.

Detailed Tasks

Detailed Work Activities:

- arrange delivery schedules
- compile equipment operational data
- complete record of production
- confer with customer representatives
- confer with engineering, technical or manufacturing personnel
- confer with vendors
- coordinate production materials, activities



- monitor operational budget
- order or purchase supplies, materials, or equipment
- oversee execution of organizational or program policies
- plan computer security measures
- plan or organize work
- prepare reports
- recommend software or hardware purchases
- revise or correct errors in computer programs, software, or systems
- test computer programs or systems
- use computer application flow charts
- use computer programming language
- use project management techniques
- work as a team member

Technology - Examples

Access software

- Citrix software
- Mac HelpMate

Accounting software

- Billing software

Administration software

- SolarWinds software

Application server software

- BEA WebLogic Server
- Microsoft Windows Server

Backup or archival software

- Backup and archival software

Calendar and scheduling software

- Microsoft Entourage

Charting software

- Microsoft Office Visio

Compliance software

- SOX COBIT

Customer relationship management CRM software

- ACT! software
- Customer relationship management CRM software
- Microsoft Dynamics CRM
- Performance Solutions Technology ManagePro
- Provisioning software

or processes

- direct and coordinate activities of workers or staff
- estimate materials or labor requirements
- examine documents for completeness, accuracy, or conformance to standards
- examine products or work to verify conformance to specifications
- fill out business or government forms
- maintain inventory of office forms
- maintain records, reports, or files
- manage inventories or supplies
- monitor materials or supplies
- operate business machines
- provide customer service
- read work order, instructions, formulas, or processing charts
- relay information to proper officials
- requisition stock, materials, supplies or equipment
- use computers to enter, access or retrieve data
- use oral or written communication techniques

Technology - Examples

Accounting software

- Peachtree Premium Accounting for Manufacturing

Analytical or scientific software

- KAPES software
- Micro Estimating FabPlan

- MTI Systems Costimator JS

Calendar and scheduling software

- Workbrain Employee Scheduling

Data base reporting software

- InetSoft software
- Tuppas software

Enterprise resource planning ERP software

- Epicor Vantage
- Exact Software Macola ES
- Geac MPC Production
- Maynard PlanStaff Manager (enterprise resource planning ERP feature)
- MicroStrategy Report Services
- PRONTO XI
- SAP software



- Siebel Server Sync

Data base management system software

- AlphaFour software
- Database management software
- Microsoft Access
- Microsoft SQL Server
- Oracle software

Data base user interface and query software

- Structured query language SQL

Desktop publishing software

- Adobe Systems Adobe Distiller
- Desktop publishing software

Development environment software

- Assembler
- Borland Delphi software
- C
- Common business oriented language COBOL
- Extensible markup language XML
- Microsoft .NET Framework
- Microsoft Visual Basic
- Microsoft Visual Basic Scripting Edition VBScript
- Microsoft Visual Studio

Electronic mail software

- Linux-based email software
- Microsoft Outlook
- Pegasus software
- QUALCOMM Eudora

Enterprise resource planning ERP software

- Enterprise resource planning ERP software
- Microsoft Dynamics AX
- Microsoft Dynamics NAV
- Oracle E-Business Suite
- Oracle JD Edwards OneWorld

Filesystem software

- Ftp program software

- SYSPRO software

Financial analysis software

- Cost estimation software

Human resources software

- Maynard PlanStaff Manager (human resources feature)
- Questek Humanis

Industrial control software

- Honeywell Wintress PACNet

Inventory management software

- Accvision ABMIS
- iCode Everest
- RyTech Inventory Control Software

Materials requirements planning logistics and supply chain software

- ABB Production Planning software
- ADi SmartBOL
- Applied Software Technologies Asset Maintenance and Materials Management System
- Asprova software
- Bills of lading software
- Concept 3000 software
- Creo Synapse Upfront
- DM2 Bills of Lading Software
- eLading Bill of Lading Software
- Enterprise Logix software
- ERP INDUSTRIOS Material Planning
- Factory Edge MRP
- Giraffe Production Systems software
- Ingenious ProPlan
- Ingenious ProSched
- InteProc Material Requirements Planning
- Interwave Technology RS Bizware Scheduler
- Lamar Info Net
- LSA Visual DBR
- LSA Visual Easv Lean



- Samba

- Symantec Veritas File System

- Symantec Veritas Volume Manager

Financial analysis software

- Financial planning software

Graphical user interface development software

- Tk software

Graphics or photo imaging software

- Graphics editor software

- Graphics software

Helpdesk or call center software

- Help desk software

Internet browser software

- Microsoft Internet Explorer

- Netscape Navigator

- Web browser software

LAN software

- LAN software

Network connectivity terminal emulation software

- Telnet programs software

- Zephyr EXTRA! Terminal Emulation

Network monitoring software

- Dartware InterMapper

- Performance monitoring tools

Network operation system software

- Microsoft Windows NT

- Novell network software

Network security and virtual private network VPN equipment software

- Firewall software

Object or component oriented development software

- Borland Paradox

- C++

- Practical extraction and reporting language Perl

- Sun Microsystems Java

Object oriented data base management software

- Made2Manage Supply Chain Management

- Niku Clarity

- Oracle Flow Manufacturing

- Oracle Manufacturing Scheduling

- Pelion manufacturing process optimization MPO software

- Pivotal Z Prestige Scheduler

- PMC KanbanSIM

- Preactor APS

- Preactor Finite Capacity Scheduling

- Production scheduling and planning software

- RSS Solutions NaView

- Sage MAS 90

- Sage Timberline Office software

- Stratford Group INMASS/MRP

- Waterloo Hydrogeologic TACTIC

Procurement software

- Aestiva Purchase Order

Spreadsheet software

- Microsoft Excel

Time accounting software

- Work Technology WorkTech Time

- Workbrain Time and Attendance

Word processing software

- Microsoft Word

Tools - Examples

- Desktop computers

- Notebook computers

- Personal computers

- Scanners



- Microsoft Visual FoxPro

Office suite software

- Corel Office Suite

- Microsoft Office

- Sun Microsystems StarOffice

Operating system software

- Apple Macintosh OS/X

- Microsoft Windows

- Novell Linux

- UNIX

Platform interconnectivity software

- IBM iSeries Access

Portal server software

- iPlanet Web Server software

- Plumtree software

Presentation software

- Apple iWork Keynote

- Microsoft PowerPoint

Project management software

- Microsoft Project

Spreadsheet software

- Apple iWork Numbers

- Microsoft Excel

WAN switching software and firmware

- Cisco WAN Manager

Web page creation and editing software

- Microsoft Front Page

- Web authoring software

Web platform development software

- Adobe Systems Adobe Flex

- Dynamic hypertext markup language DHTML

- Hypertext markup language HTML

- JavaScript

- Microsoft Active Server Pages ASP

- PHP: Hypertext Preprocessor

- Ruby on Rails



- Scripting languages

Wireless software

- Mobile wireless network infrastructure software

Word processing software

- Apple iWork Pages
- Microsoft Word

Tools - Examples

- Access servers
- Computer servers
- Computer tool kits
- Inkjet Printers
- Fax Machines
- Floppy drives
- Hard disk drives
- Workstations
- Robot automation tool
- Computer printers
- Mainframe computers
- Network analyzers
- Network interface cards NIC
- Routers
- Switches
- Industry standard architecture/peripheral component interconnect ISA/PCI cards
- Personal computers
- Photocopiers
- Print servers
- Punchdown tools
- Screwdrivers
- Teleconferencing equipment

Labor Market Comparison



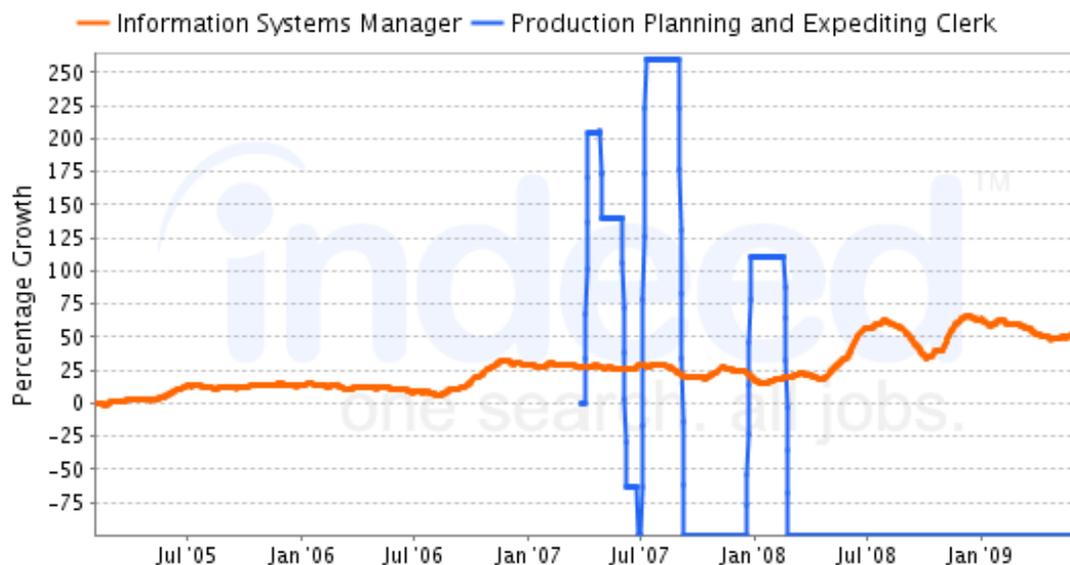
Description	Computer and Information Systems Managers	Production, Planning, and Expediting Clerks	Difference
Median Wage	\$ 83,130	\$ 38,490	\$(44,640)
10th Percentile Wage	\$ 48,990	\$ 27,320	\$(21,670)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$110,520	\$ 47,000	\$(63,520)
90th Percentile Wage	\$136,110	\$ 57,580	\$(78,530)
Mean Wage	\$ 88,660	\$ 40,730	\$(47,930)
Total Employment - 2007	870	1,320	450
Employment Base - 2006	873	1,287	414
Projected Employment - 2016	940	1,279	339
Projected Job Growth - 2006-2016	7.7 %	-0.6 %	-8.3 %
Projected Annual Openings - 2006-2016	21	35	14

National Job Posting Trends

Trend for Computer and Information Systems Managers

Trend for
Production,
Planning,
and
Expediting
Clerks

Job Trends from Indeed.com



Data from [Indeed](http://Indeed.com)

**Recommended Programs****General Office/Clerical and Typing Services**

General Office Occupations and Clerical Services. A program that prepares individuals to provide basic administrative support under the supervision of office managers, administrative assistants, secretaries, and other office personnel. Includes instruction in typing, keyboarding, filing, general business correspondence, office equipment operation, and communications skills.

Institution	Address	City	URL
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu

Parts, Warehousing, and Inventory Management Operations

Parts, Warehousing, and Inventory Management Operations. A program that prepares individuals to provide administrative, technical, and managerial support in the operation of warehouses, control of inventory, parts identification, and the performance of counter services for customers. Includes instruction in record-keeping, equipment operation, database entry, supply logistics, shop operations and math, and customer and supplier relations.

No schools available for the program

Maine Statewide Labor Pool for Computer and Information Systems Managers

O* NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
11-3021.00	Computer and Information Systems Managers	100	5	870	\$83,130.00	\$0.00	8%	21
13-1023.00	Purchasing Agents, Except Wholesale, Retail, and Farm Products	90	3	920	\$45,210.00	(\$37,920.00)	-2%	21
13-2031.00	Budget Analysts	90	4	170	\$57,290.00	(\$25,840.00)	3%	5
43-3061.00	Procurement Clerks	89	3	0	\$33,300.00	(\$49,830.00)	-2%	5
15-1061.00	Database Administrators	88	4	300	\$60,260.00	(\$22,870.00)	20%	11
43-5061.00	Production, Planning, and Expediting Clerks	88	2	1,320	\$38,490.00	(\$44,640.00)	-1%	35
13-2061.00	Financial Examiners	87	4	120	\$55,110.00	(\$28,020.00)	3%	2
13-2011.01	Accountants	87	4	3,250	\$48,110.00	(\$35,020.00)	11%	113
13-2051.00	Financial Analysts	87	4	210	\$71,380.00	(\$11,750.00)	10%	4
43-9011.00	Computer Operators	87	3	230	\$33,120.00	(\$50,010.00)	-30%	4
43-4031.02	Municipal Clerks	86	3	1,190	\$27,650.00	(\$55,480.00)	9%	37
43-6011.00	Executive Secretaries and Administrative Assistants	86	3	3,330	\$38,830.00	(\$44,300.00)	6%	76



43-3011.00	Bill and Account Collectors	86	3	1,590	\$29,770.00	(\$53,360.00)	11%	41
27-3042.00	Technical Writers	86	4	50	\$46,060.00	(\$37,070.00)	-8%	2
43-3051.00	Payroll and Timekeeping Clerks	86	3	650	\$30,470.00	(\$52,660.00)	-3%	17

Maine Statewide Promotion Opportunities for Production, Planning, and Expediting Clerks

O* NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings
43-5061.00	Production, Planning, and Expediting Clerks	100	2	1,320	\$38,490.00	\$0.00	-1%	35
43-4011.00	Brokerage Clerks	90	3	270	\$39,120.00	\$630.00	-13%	8
13-1023.00	Purchasing Agents, Except Wholesale, Retail, and Farm Products	90	3	920	\$45,210.00	\$6,720.00	-2%	21
13-2053.00	Insurance Underwriters	89	3	460	\$56,090.00	\$17,600.00	-1%	12
43-6011.00	Executive Secretaries and Administrative Assistants	89	3	3,330	\$38,830.00	\$340.00	6%	76
13-1072.00	Compensation, Benefits, and Job Analysis Specialists	87	4	770	\$43,900.00	\$5,410.00	8%	23
11-9131.00	Postmasters and Mail Superintendents	87	3	420	\$55,200.00	\$16,710.00	-5%	10
13-1051.00	Cost Estimators	87	4	750	\$44,990.00	\$6,500.00	14%	25
43-5011.00	Cargo and Freight Agents	87	2	170	\$40,360.00	\$1,870.00	5%	5
19-3021.00	Market Research Analysts	86	4	200	\$49,960.00	\$11,470.00	3%	2
11-3031.02	Financial Managers, Branch or Department	86	4	2,440	\$67,670.00	\$29,180.00	7%	58
11-9141.00	Property, Real Estate, and Community Association Managers	86	3	390	\$43,920.00	\$5,430.00	14%	19
13-1031.01	Claims Examiners, Property and Casualty Insurance	86	3	1,570	\$49,360.00	\$10,870.00	3%	44
13-2021.01	Assessors	86	3	390	\$41,840.00	\$3,350.00	8%	20
13-2041.00	Credit Analysts	86	4	230	\$38,740.00	\$250.00	-9%	9



Top Industries for Production, Planning, and Expediting Clerks

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Management of companies and enterprises	551100	3.08%	9,023	10,402	15.28%
Aerospace product and parts manufacturing	336400	2.55%	7,452	7,590	1.84%
Warehousing and storage	493100	2.49%	7,296	9,745	33.57%
Motor vehicle parts manufacturing	336300	2.48%	7,273	5,790	-20.39%
Postal service	491100	2.25%	6,581	6,700	1.80%
Advertising and related services	541800	2.10%	6,149	6,938	12.83%
Printing and related support activities	323100	2.06%	6,024	4,773	-20.77%
General medical and surgical hospitals, public and private	622100	2.02%	5,909	6,541	10.71%
Semiconductor and other electronic component manufacturing	334400	1.89%	5,527	4,831	-12.59%
Wired telecommunications carriers	517100	1.75%	5,133	4,030	-21.49%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	1.75%	5,130	4,912	-4.26%
Federal government, excluding postal service	919999	1.73%	5,061	4,784	-5.47%
Plastics product manufacturing	326100	1.67%	4,880	5,172	6.00%
Management, scientific, and technical consulting services	541600	1.63%	4,761	8,500	78.52%
Employment services	561300	1.27%	3,724	4,713	26.56%

Top Industries for Computer and Information Systems Managers

Industry	NAICS	% in Industry	Employment	Projected Employment	% Change
Computer systems design and related services	541500	14.81%	39,043	52,715	35.02%
Management of companies and enterprises	551100	8.70%	22,949	26,455	15.28%
Colleges, universities, and professional schools, public and private	611300	3.91%	10,304	11,527	11.87%
Data processing, hosting, and related services	518200	3.22%	8,482	11,466	35.19%
Local government, excluding education and hospitals	939300	3.00%	7,911	8,887	12.34%
Software publishers	511200	2.91%	7,673	9,880	28.76%
Depository credit intermediation	522100	2.88%	7,605	7,754	1.95%
Professional and commercial equipment and supplies merchant wholesalers	423400	2.66%	7,015	8,177	16.57%
Management, scientific, and technical consulting services	541600	2.53%	6,676	11,917	78.52%



State government, excluding education and hospitals	929200	2.32%	6,115	6,001	-1.87%
Securities and commodity contracts, brokerages, and exchanges	5231-2	2.05%	5,406	7,985	47.69%
Research and development in the physical, engineering, and life sciences	541710	2.03%	5,358	5,716	6.69%
General medical and surgical hospitals, public and private	622100	1.93%	5,088	5,632	10.71%
Federal government, excluding postal service	919999	1.53%	4,026	3,806	-5.47%
Accounting, tax preparation, bookkeeping, and payroll services	541200	1.51%	3,987	4,728	18.60%