



TORQ Analysis of Industrial Production Managers to Production, Planning, and Expediting Clerks

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Industrial Production Managers	11-3051.00	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

TORQ RESULTS											
Grand TORQ:					91						
Ability TORQ		Skills TORQ		Knowledge TORQ							
Level	98	Level	92	Level	83						
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!				Computers and Electronics	70	37	72
LEVEL and IMPT (IMPORTANCE) refer to the Target Production, Planning, and Expediting Clerks. GAP refers to level difference between Industrial Production Managers and Production, Planning, and Expediting Clerks.											

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Industrial Production Managers	Production, Planning, and Expediting Clerks	Importance
Written Comprehension	60	51	72
Oral Comprehension	62	55	68
Oral Expression	64	53	68
Written Expression	59	50	68
Near Vision	55	50	65
Problem Sensitivity	62	46	62
Speech Recognition	50	44	62
Inductive Reasoning	59	44	59
Speech Clarity	46	44	59
Deductive Reasoning	64	48	56
Information Ordering	59	44	56
Category Flexibility	53	41	50

Selective Attention	41 	37 	50 
Skill Level Comparison - Abilities with importance scores over 69			
Description	Industrial Production Managers	Production, Planning, and Expediting Clerks	Importance
Knowledge Level Comparison - Knowledge with importance scores over 69			
Description	Industrial Production Managers	Production, Planning, and Expediting Clerks	Importance
Computers and Electronics	33 	70 	72 

Experience & Education Comparison					
Related Work Experience Comparison			Required Education Level Comparison		
Description	Industrial Production Managers	Production, Planning, and Expediting Clerks	Description	Industrial Production Managers	Production, Planning, and Expediting Clerks
10+ years	0% 	5% 	Doctoral	0% 	0% 
8-10 years	0% 	0% 	Professional Degree	0% 	0% 
6-8 years	28% 	4% 	Post-Masters Cert	0% 	0% 
4-6 years	18% 	21% 	Master's Degree	1% 	4% 
2-4 years	42% 	19% 	Post-Bachelor Cert	4% 	0% 
1-2 years	0% 	9% 	Bachelors	18% 	12% 
6-12 months	7% 	34% 	AA or Equiv	16% 	20% 
3-6 months	0% 	1% 	Some College	12% 	10% 
1-3 months	0% 	1% 	Post-Secondary Certificate	26% 	7% 
0-1 month	0% 	0% 	High School Diploma or GED	20% 	44% 
None	1% 	2% 	No HSD or GED	0% 	0% 
Industrial Production Managers			Production, Planning, and Expediting Clerks		
Most Common Educational/Training Requirement:					
Work experience in a related occupation			Short-term on-the-job training		
Job Zone Comparison					
4 - Job Zone Four: Considerable Preparation Needed			2 - Job Zone Two: Some Preparation Needed		
<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>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.</p>		
<p>Most of these occupations require a four - year bachelor's degree, but some do not.</p>			<p>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.</p>		
<p>Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.</p>			<p>Employees in these occupations need anywhere from a few months to one year of working with experienced employees.</p>		

Tasks	
Industrial Production Managers	Production, Planning, and Expediting Clerks
Core Tasks	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.
- Guiding, Directing, and Motivating Subordinates - Providing guidance and direction to subordinates, including setting performance standards and monitoring performance.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Coordinating the Work and Activities of Others - Getting members of a group to work together to accomplish tasks.

Specific Tasks

Occupation Specific Tasks:

- Coordinate and recommend procedures for facility and equipment maintenance or modification, including the replacement of machines.
- Develop and implement production tracking and quality control systems, analyzing production, quality control, maintenance, and other operational reports, to detect production problems.
- Develop budgets and approve expenditures for supplies, materials, and human resources, ensuring that materials, labor and equipment are used efficiently to meet production targets.
- Direct and coordinate production, processing, distribution, and marketing activities of industrial organization.
- Hire, train, evaluate, and discharge staff, and resolve personnel grievances.
- Initiate and coordinate inventory and cost control programs.
- Institute employee suggestion or involvement programs.
- Maintain current knowledge of the quality control field, relying on current literature pertaining to materials use, technological advances, and statistical studies.
- Negotiate materials prices with suppliers.
- Prepare and maintain production reports and personnel records.
- Review operations and confer with technical or administrative staff to resolve production or processing problems.
- Review plans and confer with research and support staff to develop new products and processes.
- Review processing schedules and production orders to make decisions

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.
- 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.



concerning inventory requirements, staffing requirements, work procedures, and duty assignments, considering budgetary limitations and time constraints.

- Set and monitor product standards, examining samples of raw products or directing testing during processing, to ensure finished products are of prescribed quality.

Detailed Tasks

Detailed Work Activities:

- analyze financial data
- analyze operational or management reports or records
- assign work to staff or employees
- communicate technical information
- compute product or materials test results
- conduct meetings with staff to ensure production objectives are met
- conduct or attend staff meetings
- conduct research on work-related topics
- coordinate production maintenance activities
- coordinate production materials, activities or processes
- design manufacturing processes or methods
- determine factors affecting production processes
- develop budgets
- develop maintenance schedules
- develop management control systems
- develop plans for programs or projects
- develop policies, procedures, methods, or standards
- develop staffing plan
- direct and coordinate activities of workers or staff
- establish production schedule
- estimate time or cost for installation, repair, or construction projects
- evaluate manufacturing or processing systems
- follow manufacturing methods or techniques
- hire, discharge, transfer, or promote workers
- inspect or test materials to verify safety standards or ensure meeting of specifications
- maintain or repair industrial or related equipment/machinery
- maintain records, reports, or files
- maintain safe work environment
- make decisions
- manage industrial projects
- negotiate business contracts
- oversee execution of organizational or program policies
- perform safety inspections in industrial, manufacturing or repair setting

- 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 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



- perform safety inspections in manufacturing or industrial setting
- plan or organize work
- read technical drawings
- resolve personnel problems or grievances
- schedule work to meet deadlines
- supervise production workers
- supervise quality control workers
- understand technical operating, service or repair manuals
- use inventory control procedures
- use long or short term production planning techniques
- use negotiation techniques
- use oral or written communication techniques
- use technical information in manufacturing or industrial activities

Technology - Examples

Accounting software

- Intuit QuickBooks Manufacturing & Wholesale software

Calendar and scheduling software

- Computer integrated manufacturing CIM software
- WorkSchedule software

Data base user interface and query software

- Database software

Document management software

- QUMAS software

Electronic mail software

- Microsoft Outlook

Enterprise resource planning ERP software

- Enterprise resource planning ERP software

Facilities management software

- ABB Optimize software
- Plant management software

Financial analysis software

- Financial planning software

Human resources software

- Clockware software
- Computer integrated manufacturing CIM time manager software
- Employee performance management software

Industrial control software

Accounting software

- Peachtree Premium Accounting for Manufacturing

Analytical or scientific software

- KAPES software
- Micro Estimating FabPlan
- MFI 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

- 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 ABMS
- iCode Everest
- RyTech Inventory Control Software

Materials requirements planning logistics and supply chain software

- ABB Production Planning software
- ADi SmartBOL



- Citect IIM
- CitectSCADA Reports
- CitectSCADA software
- Industrial production manager and stock control software
- Marel production system MPS software
- Prosys software
- Statistical process control software
- Wonderware DT Analyst Plant Productivity Improvement Software

Inventory management software

- Computer integrated manufacturing CIM warehouse shipping manager software
- SAP inventory software

Office suite software

- interBiz BizWorks
- Microsoft Office

Presentation software

- Microsoft PowerPoint

Project management software

- Scadex timecard20

Spreadsheet software

- Microsoft Excel

Word processing software

- CorVu software
- IBM Rational ClearQuest
- Microsoft Word

Tools - Examples

- Desktop computers
- Notebook computers
- Personal computers
- Personal digital assistants PDA
- Scanners
- Tablet computers

- 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 Easy Lean
- 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

Labor Market Comparison

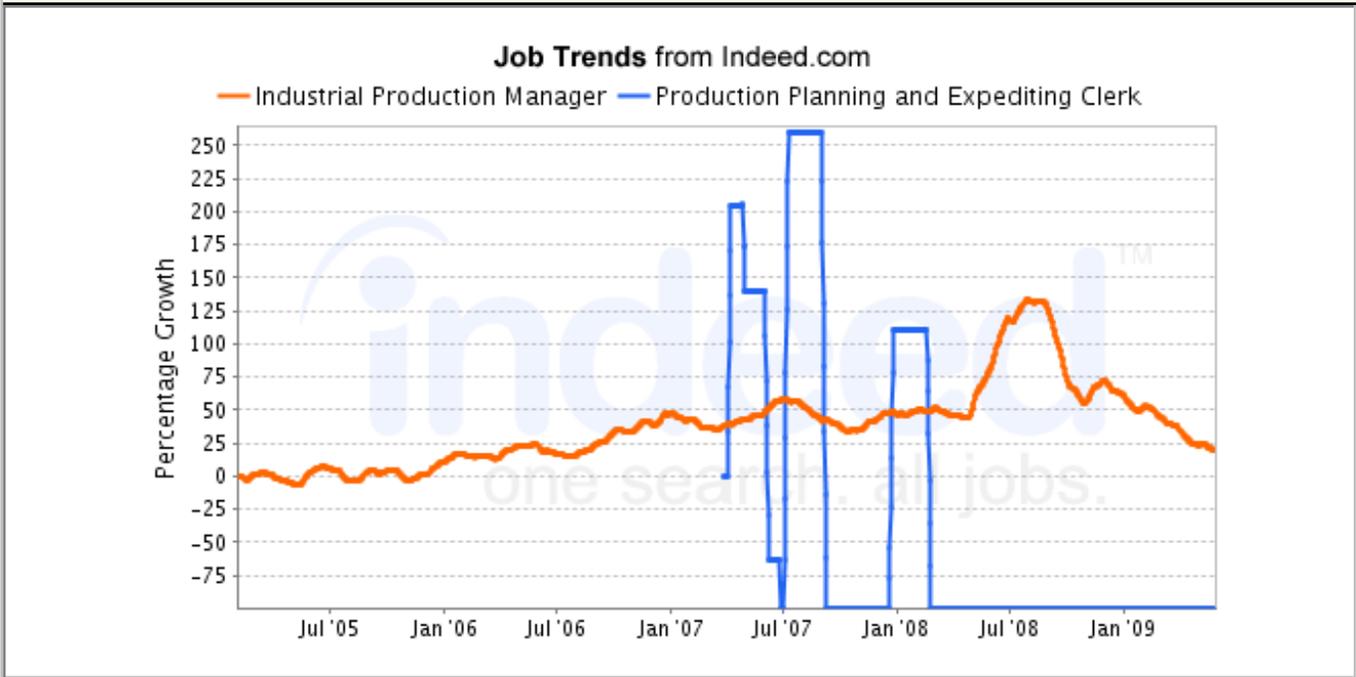
Maine Department of Labor.

Description	Industrial Production Managers	Production, Planning, and Expediting Clerks	Difference
Median Wage	\$ 72,560	\$ 38,490	\$(34,070)
10th Percentile Wage	\$ 44,130	\$ 27,320	\$(16,810)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 93,880	\$ 47,000	\$(46,880)
90th Percentile Wage	\$118,880	\$ 57,580	\$(61,300)
Mean Wage	\$ 77,130	\$ 40,730	\$(36,400)
Total Employment - 2020	690	1,320	630
Employment Base - 2006	695	1,287	592
Projected Employment - 2029	614	1,279	665
Projected Job Growth - 2006-2029	-11.7 %	-0.6 %	11.0 %
Projected Annual Openings - 2006-2029	24	35	11
Special			

Special Occupations:  Maine High Wage - In Demand

National Job Posting Trends

Trend for Industrial Production Managers and Production, Planning, and Expediting Clerks



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

Programs

Related 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 information on schools for the program

Maine Statewide Promotion Opportunities for Industrial Production Managers



O* NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
11-3051.00	Industrial Production Managers	100	4	690	\$72,560.00	\$0.00	-12%	24	★
11-3061.00	Purchasing Managers	87	4	330	\$72,560.00	\$0.00	2%	11	★
11-1021.00	General and Operations Managers	86	4	8,490	\$77,050.00	\$4,490.00	-5%	209	
11-2022.00	Sales Managers	84	4	1,310	\$72,720.00	\$160.00	3%	32	
11-3021.00	Computer and Information Systems Managers	82	5	870	\$83,130.00	\$10,570.00	8%	21	
11-9121.00	Natural Sciences Managers	80	5	180	\$79,810.00	\$7,250.00	8%	5	
13-2052.00	Personal Financial Advisors	80	3	360	\$94,100.00	\$21,540.00	10%	13	
11-9041.00	Engineering Managers	80	5	720	\$91,030.00	\$18,470.00	-2%	14	
11-1011.00	Chief Executives	80	5	750	\$102,290.00	\$29,730.00	-6%	25	
17-2121.02	Marine Architects	80	4	60	\$75,520.00	\$2,960.00	-9%	1	
11-2021.00	Marketing Managers	79	4	570	\$74,560.00	\$2,000.00	7%	17	
17-2072.00	Electronics Engineers, Except Computer	78	4	210	\$76,420.00	\$3,860.00	-26%	4	
25-1063.00	Economics Teachers, Postsecondary	77	5	80	\$73,830.00	\$1,270.00	11%	2	
17-2071.00	Electrical Engineers	77	4	260	\$73,050.00	\$490.00	-10%	6	
23-1011.00	Lawyers	77	5	1,910	\$80,120.00	\$7,560.00	6%	73	★

Special Occupations: ★ Maine High Wage - In Demand

Top Industries for Production, Planning, and Expediting Clerks

Industry	NAICS	% of 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 Industrial Production Managers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Plastics product manufacturing	326100	4.29%	6,750	7,155	6.00%
Management of companies and enterprises	551100	3.66%	5,764	6,644	15.28%
Motor vehicle parts manufacturing	336300	3.37%	5,300	4,220	-20.39%
Printing and related support activities	323100	3.31%	5,207	4,126	-20.77%
Aerospace product and parts manufacturing	336400	3.05%	4,798	4,887	1.84%
Semiconductor and other electronic component manufacturing	334400	3.05%	4,802	4,197	-12.59%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	2.76%	4,338	4,153	-4.26%
Architectural and structural metals manufacturing	332300	2.69%	4,230	4,518	6.80%
Pharmaceutical and medicine manufacturing	325400	2.47%	3,879	4,888	26.03%
Converted paper product manufacturing	322200	2.19%	3,451	2,896	-16.08%
Self-employed workers, primary job	000601	2.01%	3,162	3,369	6.54%
Other general purpose machinery manufacturing	333900	1.92%	3,019	2,725	-9.73%
Machine shops	332710	1.86%	2,924	2,419	-17.28%
Medical equipment and supplies manufacturing	339100	1.85%	2,908	2,974	2.29%
Other fabricated metal product manufacturing	332900	1.69%	2,656	2,354	-11.39%



TORQ Analysis of Industrial Production Managers to Cost Estimators

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Industrial Production Managers	11-3051.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Cost Estimators	13-1051.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS					
Grand TORQ:					91
Ability TORQ		Skills TORQ		Knowledge TORQ	
Level	97	Level	90	Level	87

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	14	56	Installation	41	14	72	No Knowledge Upgrades Required!			
Near Vision	66	11	68	Writing	66	11	76				
Oral Comprehension	67	5	81	Mathematics	69	7	82				
Written Comprehension	64	4	68	Active Listening	73	5	88				
Mathematical Reasoning	57	4	68	Reading Comprehension	70	3	87				
Oral Expression	67	3	75								
Speech Clarity	48	2	68								
Information Ordering	60	1	72								

LEVEL and IMPT (IMPORTANCE) refer to the Target Cost Estimators. GAP refers to level difference between Industrial Production Managers and Cost Estimators.

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Industrial Production Managers	Cost Estimators	Importance
Oral Comprehension	62 	67 	81 
Oral Expression	64 	67 	75 
Information Ordering	59 	60 	72 



Written Comprehension	60	64	68
Deductive Reasoning	64	60	68
Inductive Reasoning	59	59	68
Mathematical Reasoning	53	57	68
Near Vision	55	66	68
Speech Recognition	50	48	68
Speech Clarity	46	48	68
Written Expression	59	57	65
Problem Sensitivity	62	50	65
Category Flexibility	53	53	62
Number Facility	46	60	56
Fluency of Ideas	51	51	53
Originality	55	51	53
Selective Attention	41	37	53

Skill Level Comparison - Abilities with importance scores over 69

Description	Industrial Production Managers	Cost Estimators	Importance
Active Listening	68	73	88
Reading Comprehension	67	70	87
Mathematics	62	69	82
Writing	55	66	76
Installation	27	41	72

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Industrial Production Managers	Cost Estimators	Importance
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Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Industrial Production Managers	Cost Estimators	Description	Industrial Production Managers	Cost Estimators
10+ years	0%	8%	Doctoral	0%	0%
8-10 years	0%	4%	Professional Degree	0%	0%
6-8 years	28%	9%	Post-Masters Cert	0%	0%
4-6 years	18%	4%	Master's Degree	1%	12%
2-4 years	42%	15%	Post-Bachelor Cert	4%	0%
1-2 years	0%	8%	Bachelors	18%	19%
6-12 months	7%	27%	AA or Equiv	16%	8%
3-6 months	0%	11%	Some College	12%	10%
1-3 months	0%	4%	Post-Secondary Certificate	26%	9%
0-1 month	0%	0%	High School Diploma or GED	20%	40%
None	1%	4%			



No HSD or GED

0%

0%

Industrial Production Managers	Cost Estimators
Most Common Educational/Training Requirement:	
Work experience in a related occupation	Work experience in a related occupation
Job Zone Comparison	
4 - Job Zone Four: Considerable Preparation Needed	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.	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.	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.	Employees in these occupations usually need several years of work-related experience, on-the-job training, and/or vocational training.

Tasks

Industrial Production Managers	Cost Estimators
Core Tasks	Core Tasks
<p>Generalized Work Activities:</p> <ul style="list-style-type: none"> • 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. • Guiding, Directing, and Motivating Subordinates - Providing guidance and direction to subordinates, including setting performance standards and monitoring performance. • Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems. • Coordinating the Work and Activities of Others- Getting members of a group to work together to accomplish tasks. 	<p>Generalized Work Activities:</p> <ul style="list-style-type: none"> • 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. • Scheduling Work and Activities - Scheduling events, programs, and activities, as well as the work of others. • 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. • Establishing and Maintaining Interpersonal Relationships - Developing constructive and cooperative working relationships with others, and maintaining them over time.
Specific Tasks	Specific Tasks
<p>Occupation Specific Tasks:</p> <ul style="list-style-type: none"> • Coordinate and recommend procedures for facility and equipment maintenance or modification, including the replacement of machines. • Develop and implement production tracking and quality control systems, analyzing production, quality control, maintenance, and other operational reports, to detect production problems. • Develop budgets and approve expenditures for supplies, materials, and human resources, ensuring that materials, labor and equipment are used efficiently to meet production targets. 	<p>Occupation Specific Tasks:</p> <ul style="list-style-type: none"> • Analyze blueprints and other documentation to prepare time, cost, materials, and labor estimates. • Assess cost effectiveness of products, projects or services, tracking actual costs relative to bids as the project develops. • Conduct special studies to develop and establish standard hour and related cost data or to effect cost reduction. • Confer with engineers, architects, owners, contractors and subcontractors on changes and adjustments to cost estimates.



- Direct and coordinate production, processing, distribution, and marketing activities of industrial organization.
- Hire, train, evaluate, and discharge staff, and resolve personnel grievances.
- Initiate and coordinate inventory and cost control programs.
- Institute employee suggestion or involvement programs.
- Maintain current knowledge of the quality control field, relying on current literature pertaining to materials use, technological advances, and statistical studies.
- Negotiate materials prices with suppliers.
- Prepare and maintain production reports and personnel records.
- Review operations and confer with technical or administrative staff to resolve production or processing problems.
- Review plans and confer with research and support staff to develop new products and processes.
- Review processing schedules and production orders to make decisions concerning inventory requirements, staffing requirements, work procedures, and duty assignments, considering budgetary limitations and time constraints.
- Set and monitor product standards, examining samples of raw products or directing testing during processing, to ensure finished products are of prescribed quality.

Detailed Tasks

Detailed Work Activities:

- analyze financial data
- analyze operational or management reports or records
- assign work to staff or employees
- communicate technical information
- compute product or materials test results
- conduct meetings with staff to ensure production objectives are met
- conduct or attend staff meetings
- conduct research on work-related topics
- coordinate production maintenance activities
- coordinate production materials, activities or processes
- design manufacturing processes or methods
- determine factors affecting production processes
- develop budgets
- develop maintenance schedules
- develop management control systems
- develop plans for programs or projects
- develop policies, procedures, methods, or standards
- develop staffing plan

- Consult with clients, vendors, personnel in other departments or construction foremen to discuss and formulate estimates and resolve issues.
- Establish and maintain tendering process, and conduct negotiations.
- Prepare and maintain a directory of suppliers, contractors and subcontractors.
- Prepare cost and expenditure statements and other necessary documentation at regular intervals for the duration of the project.
- Prepare estimates for use in selecting vendors or subcontractors.
- Prepare estimates used by management for purposes such as planning, organizing, and scheduling work.
- Review material and labor requirements to decide whether it is more cost-effective to produce or purchase components.
- Set up cost monitoring and reporting systems and procedures.
- Visit site and record information about access, drainage and topography, and availability of services such as water and electricity.

Detailed Tasks

Detailed Work Activities:

- advise clients on financial matters
- analyze budgets
- analyze financial data
- analyze technical data, designs, or preliminary specifications
- bid engineering, construction or extraction projects
- compile data for financial reports
- compute cost estimates of construction or engineering projects
- compute financial data
- confer with vendors
- convert design specifications to cost estimates
- estimate cost for engineering projects
- estimate materials or labor requirements
- estimate production costs
- estimate time needed for project
- estimate time or cost for installation, repair, or construction projects
- evaluate material specifications
- identify supplier with best bid
- interpret maps for architecture, construction, or engineering project
- monitor operational budget
- negotiate business contracts
- prepare cost estimates
- prepare financial reports
- prepare periodic reports comparing



- direct and coordinate activities of workers or staff
- establish production schedule
- estimate time or cost for installation, repair, or construction projects
- evaluate manufacturing or processing systems
- follow manufacturing methods or techniques
- hire, discharge, transfer, or promote workers
- inspect or test materials to verify safety standards or ensure meeting of specifications
- maintain or repair industrial or related equipment/machinery
- maintain records, reports, or files
- maintain safe work environment
- make decisions
- manage industrial projects
- negotiate business contracts
- oversee execution of organizational or program policies
- perform safety inspections in industrial, manufacturing or repair setting
- perform safety inspections in manufacturing or industrial setting
- plan or organize work
- read technical drawings
- resolve personnel problems or grievances
- schedule work to meet deadlines
- supervise production workers
- supervise quality control workers
- understand technical operating, service or repair manuals
- use inventory control procedures
- use long or short term production planning techniques
- use negotiation techniques
- use oral or written communication techniques
- use technical information in manufacturing or industrial activities

Technology - Examples

Accounting software

- Intuit QuickBooks Manufacturing & Wholesale software

Calendar and scheduling software

- Computer integrated manufacturing CIM software

- WorkSchedule software

Data base user interface and query software

- Database software

Document management software

- QUMAS software

Electronic mail software

budgeted costs to actual costs

- read blueprints
- read specifications
- understand construction specifications
- understand engineering data or reports
- understand technical operating, service or repair manuals
- use computers to enter, access and retrieve financial data
- use cost benefit analysis techniques
- use spreadsheet software
- use statistical cost estimation methods

Technology - Examples

Accounting software

- Choice Job Cost

- Cost accounting software

- CPR International GeneralCOST Estimator

- Intuit QuickBooks

- National Job Cost software

Analytical or scientific software

- Construction Management Software ProEst

- QSM SLIM

- Resources Calculations Incorporated SoftCost

- WinEstimator WinEst

Data base reporting software

- Business Objects Crystal Reports

- Software AG software

Electronic mail software

- Microsoft Outlook

Financial analysis software

- Cost estimation software

- CPR International Visual Estimator

- IBM Costimater

- Softstar Costar COCOMO II

Project management software

- Assured Software JPP

- Galorath SEER-SEM

- Sage Software Sage Master Builder

- Xactware Xactimate

Spreadsheet software



- Microsoft Outlook

Enterprise resource planning ERP software

- Enterprise resource planning ERP software

Facilities management software

- ABB Optimize software

- Plant management software

Financial analysis software

- Financial planning software

Human resources software

- Clockware software

- Computer integrated manufacturing CIM time manager software

- Employee performance management software

Industrial control software

- Citect IIM

- CitectSCADA Reports

- CitectSCADA software

- Industrial production manager and stock control software

- Marel production system MPS software

- Prosys software

- Statistical process control software

- Wonderware DT Analyst Plant Productivity Improvement Software

Inventory management software

- Computer integrated manufacturing CIM warehouse shipping manager software

- SAP inventory software

Office suite software

- interBiz BizWorks

- Microsoft Office

Presentation software

- Microsoft PowerPoint

Project management software

- Scadex timecard20

Spreadsheet software

- Microsoft Excel

Word processing software

- Apple AppleWorks

- Corel QuattroPro

- IBM Lotus 1-2-3

- Microsoft Excel

- Spreadsheet software

Word processing software

- Microsoft Word

Tools - Examples

- Desktop computers

- Notebook computers

- Personal computers

- Personal digital assistants PDA

- Scanners

- Tablet computers



- CorVu software
- IBM Rational ClearQuest
- Microsoft Word

Tools - Examples

- Desktop computers
- Notebook computers
- Personal computers
- Personal digital assistants PDA
- Scanners
- Tablet computers

Labor Market Comparison

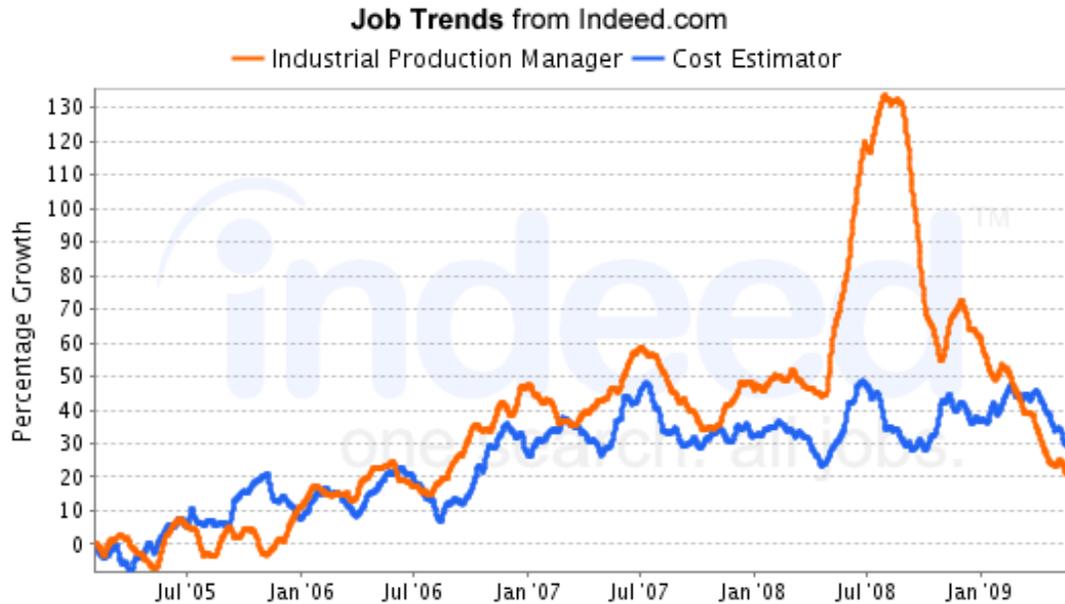
Maine Department of Labor.

Description	Industrial Production Managers	Cost Estimators	Difference
Median Wage	\$ 72,560	\$ 44,990	\$(27,570)
10th Percentile Wage	\$ 44,130	\$ 30,880	\$(13,250)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 93,880	\$ 58,820	\$(35,060)
90th Percentile Wage	\$118,880	\$ 76,320	\$(42,560)
Mean Wage	\$ 77,130	\$ 49,830	\$(27,300)
Total Employment - 2020	690	750	60
Employment Base - 2006	695	751	56
Projected Employment - 2029	614	853	239
Projected Job Growth - 2006-2029	-11.7 %	13.6 %	25.2 %
Projected Annual Openings - 2006-2029	24	25	1
Special	★	★	

Special Occupations: ★ Maine High Wage - In Demand

National Job Posting Trends

Trend for Industrial Production Managers and Cost Estimators

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

Programs

Related Programs

Business Administration and Management, General

Business Administration and Management, General. A program that generally prepares individuals to plan, organize, direct, and control the functions and processes of a firm or organization. Includes instruction in management theory, human resources management and behavior, accounting and other quantitative methods, purchasing and logistics, organization and production, marketing, and business decision-making.

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
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/
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Husson College	One College Circle	Bangor	www.husson.edu
Husson College	One College Circle	Bangor	www.husson.edu
Husson College	One College Circle	Bangor	www.husson.edu
Beal College	99 Farm Road	Bangor	bealcollege.edu
University of New England	11 Hills Beach Rd	Biddeford	WWW.UNE.EDU
Washington County Community College	One College Drive	Calais	www.wccc.me.edu
University of Maine at Machias	9 O'Brien Ave	Machias	www.umm.maine.edu
University of Maine		Orono	www.umaine.edu/



University of Maine		Orono	www.umaine.edu/
University of Maine		Orono	www.umaine.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 Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu
University of Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu
Southern Maine Community College	2 Fort Road	South Portland	www.smccME.edu
Southern Maine Community College	2 Fort Road	South Portland	www.smccME.edu
Saint Josephs College	278 Whites Bridge Rd	Standish	www.sjcme.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
Thomas College	180 W River Rd	Waterville	www.thomas.edu
York County Community College	112 College Drive	Wells	www.yccc.edu

Business/Commerce, General

Business/Commerce, General. A program that focuses on the general study of business, including the processes of interchanging goods and services (buying, selling and producing), business organization, and accounting as used in profit-making and nonprofit public and private institutions and agencies. The programs may prepare individuals to apply business principles and techniques in various occupational settings.

Institution	Address	City	URL
Beal College	99 Farm Road	Bangor	bealcollege.edu
University of Maine at Farmington	224 Main St	Farmington	www.umf.maine.edu
University of Maine at Fort Kent	23 University Drive	Fort Kent	www.umfk.maine.edu
University of Maine at Presque Isle	181 Main St	Presque Isle	www.umpi.maine.edu
University of Maine at Presque Isle	181 Main St	Presque Isle	www.umpi.maine.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu

Construction Engineering



Construction Engineering. A program that prepares individuals to apply scientific, mathematical, and management principles to the planning, design, and building of facilities and structures. Includes instruction in civil engineering, structural principles, site analysis, computer-assisted design, geology, evaluation and testing, materials, contracting, project management, graphic communications, and applicable laws and regulations.

No information on schools for the program

Construction Engineering Technology/Technician

Construction Engineering Technology/Technician. A program that prepares individuals to apply basic engineering principles and technical skills in support of engineers, engineering contractors and other professionals engaged in the construction of buildings and related structures. Includes instruction in basic structural engineering principles and construction techniques, building site inspection, site supervision, construction personnel supervision, plan and specification interpretation, supply logistics and procurement, applicable building codes, 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
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu

Manufacturing Engineering

Manufacturing Engineering. A program that prepares individuals to apply scientific and mathematical principles to the design, development, and implementation of manufacturing systems. Includes instruction in materials science and engineering, manufacturing processes, process engineering, assembly and product engineering, manufacturing systems design, and manufacturing competitiveness.

No information on schools for the program

Materials Engineering

Materials Engineering. A program that prepares individuals to apply mathematical and materials science principles to the design, development and operational evaluation of materials and related processes used in manufacturing in a wide variety of settings; the synthesis of new industrial materials, including marrying and bonding composites; analysis of materials requirements and specifications; and related problems of system design dependent on materials factors.

No information on schools for the program

Mechanical Engineering

Mechanical Engineering. A program that prepares individuals to apply mathematical and scientific principles to the design, development and operational evaluation of physical systems used in manufacturing and end-product systems used for specific uses, including machine tools, jigs and other manufacturing equipment; stationary power units and appliances; engines; self-propelled vehicles; housings and containers; hydraulic and electric systems for controlling movement; and the integration of computers and remote control with operating systems.

Institution	Address	City	URL
University of Maine		Orono	www.umaine.edu/
University of Maine		Orono	www.umaine.edu/
University of Maine		Orono	www.umaine.edu/
University of Maine		Orono	www.umaine.edu/

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 information on schools for the program

Maine Statewide Promotion Opportunities for Industrial Production Managers

O* NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
11-3051.00	Industrial Production Managers	100	4	690	\$72,560.00	\$0.00	-12%	24	★
11-3061.00	Purchasing Managers	87	4	330	\$72,560.00	\$0.00	2%	11	★
11-1021.00	General and Operations Managers	86	4	8,490	\$77,050.00	\$4,490.00	-5%	209	
11-2022.00	Sales Managers	84	4	1,310	\$72,720.00	\$160.00	3%	32	
11-3021.00	Computer and Information Systems Managers	82	5	870	\$83,130.00	\$10,570.00	8%	21	
11-9121.00	Natural Sciences Managers	80	5	180	\$79,810.00	\$7,250.00	8%	5	
11-1011.00	Chief Executives	80	5	750	\$102,290.00	\$29,730.00	-6%	25	
17-2121.02	Marine Architects	80	4	60	\$75,520.00	\$2,960.00	-9%	1	
11-9041.00	Engineering Managers	80	5	720	\$91,030.00	\$18,470.00	-2%	14	
13-2052.00	Personal Financial Advisors	80	3	360	\$94,100.00	\$21,540.00	10%	13	
11-2021.00	Marketing Managers	79	4	570	\$74,560.00	\$2,000.00	7%	17	
17-2072.00	Electronics Engineers, Except Computer	78	4	210	\$76,420.00	\$3,860.00	-26%	4	
25-1063.00	Economics Teachers, Postsecondary	77	5	80	\$73,830.00	\$1,270.00	11%	2	
17-2071.00	Electrical Engineers	77	4	260	\$73,050.00	\$490.00	-10%	6	
23-1011.00	Lawyers	77	5	1,910	\$80,120.00	\$7,560.00	6%	73	★



Special Occupations: ★ Maine High Wage - In Demand

Top Industries for Cost Estimators

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Nonresidential building construction	236200	9.42%	20,828	25,214	21.06%
Residential building construction	236100	8.88%	19,639	23,893	21.66%
Plumbing, heating, and air-conditioning contractors	238220	7.50%	16,592	20,243	22.00%
Electrical contractors	238210	7.22%	15,964	18,085	13.29%
Other specialty trade contractors	238900	5.27%	11,641	13,900	19.41%
Automotive body, paint, interior, and glass repair	811120	3.78%	8,358	10,543	26.14%
Drywall and insulation contractors	238310	3.11%	6,882	7,931	15.24%
Printing and related support activities	323100	2.68%	5,921	5,068	-14.40%
Architectural and structural metals manufacturing	332300	2.56%	5,662	6,533	15.39%
Roofing contractors	238160	2.41%	5,338	6,735	26.16%
Highway, street, and bridge construction	237300	2.38%	5,266	6,125	16.32%
Painting and wall covering contractors	238320	2.03%	4,489	5,397	20.22%
Building material and supplies dealers	444100	1.92%	4,252	5,870	38.06%
Automobile dealers	441100	1.49%	3,290	4,032	22.56%
Poured concrete foundation and structure contractors	238110	1.46%	3,228	3,932	21.79%

Top Industries for Industrial Production Managers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Plastics product manufacturing	326100	4.29%	6,750	7,155	6.00%
Management of companies and enterprises	551100	3.66%	5,764	6,644	15.28%
Motor vehicle parts manufacturing	336300	3.37%	5,300	4,220	-20.39%
Printing and related support activities	323100	3.31%	5,207	4,126	-20.77%
Aerospace product and parts manufacturing	336400	3.05%	4,798	4,887	1.84%
Semiconductor and other electronic component manufacturing	334400	3.05%	4,802	4,197	-12.59%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	2.76%	4,338	4,153	-4.26%
Architectural and structural metals manufacturing	332300	2.69%	4,230	4,518	6.80%
Pharmaceutical and medicine manufacturing	325400	2.47%	3,879	4,888	26.03%

Converted paper product manufacturing	322200	2.19%	3,451	2,896	-16.08%
Self-employed workers, primary job	000601	2.01%	3,162	3,369	6.54%
Other general purpose machinery manufacturing	333900	1.92%	3,019	2,725	-9.73%
Machine shops	332710	1.86%	2,924	2,419	-17.28%
Medical equipment and supplies manufacturing	339100	1.85%	2,908	2,974	2.29%
Other fabricated metal product manufacturing	332900	1.69%	2,656	2,354	-11.39%



TORQ Analysis of Industrial Production Managers to First-Line Supervisors/Managers of Production and Operating Workers

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Industrial Production Managers	11-3051.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	First-Line Supervisors/Managers of Production and Operating Workers	51-1011.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS											
Grand TORQ:					91						
Ability TORQ		Skills TORQ		Knowledge TORQ							
Level	92	Level	87	Level	95						
Gaps To Narrow if Possible			Upgrade These Skills		Knowledge to Add						
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Flexibility of Closure	44	3	50	Instructing	63	4	75	No Knowledge Upgrades Required!			
Speech Clarity	48	2	65								
<p>LEVEL and IMPT (IMPORTANCE) refer to the Target First-Line Supervisors/Managers of Production and Operating Workers. GAP refers to level difference between Industrial Production Managers and First-Line Supervisors/Managers of Production and Operating Workers.</p>											

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Industrial Production Managers	First-Line Supervisors/Managers of Production and Operating Workers	Importance
Oral Expression	64	57	78
Oral Comprehension	62	55	75
Problem Sensitivity	62	48	75
Written Comprehension	60	53	68
Speech Recognition	50	46	65
Speech Clarity	46	48	65
Deductive Reasoning	64	53	62
Written Expression	59	53	59
Inductive Reasoning	59	51	59



Near Vision	55	48	59
Originality	55	50	53
Information Ordering	59	50	53
Category Flexibility	53	42	53
Fluency of Ideas	51	48	50
Flexibility of Closure	41	44	50
Perceptual Speed	48	42	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Industrial Production Managers	First-Line Supervisors/Managers of Production and Operating Workers	Importance
Instructing	59	63	75

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Industrial Production Managers	First-Line Supervisors/Managers of Production and Operating Workers	Importance
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Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Industrial Production Managers	First-Line Supervisors/Managers of Production and Operating Workers	Description	Industrial Production Managers	First-Line Supervisors/Managers of Production and Operating Workers
10+ years	0%	2%	Doctoral	0%	0%
8-10 years	0%	5%	Professional Degree	0%	0%
6-8 years	28%	12%	Post-Masters Cert	0%	0%
4-6 years	18%	11%	Master's Degree	1%	0%
2-4 years	42%	33%	Post-Bachelor Cert	4%	1%
1-2 years	0%	21%	Bachelors	18%	13%
6-12 months	7%	3%	AA or Equiv	16%	17%
3-6 months	0%	2%	Some College	12%	17%
1-3 months	0%	3%	Post-Secondary Certificate	26%	20%
0-1 month	0%	0%	High School Diploma or GED	20%	26%
None	1%	4%	No HSD or GED	0%	3%

Industrial Production Managers

First-Line Supervisors/Managers of Production and Operating Workers

Most Common Educational/Training Requirement:

Work experience in a related occupation

Work experience in a related occupation

Job Zone Comparison

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.

3 - Job Zone Three: Medium Preparation Needed

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 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.

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

Industrial Production Managers

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.
- Guiding, Directing, and Motivating Subordinates - Providing guidance and direction to subordinates, including setting performance standards and monitoring performance.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Coordinating the Work and Activities of Others- Getting members of a group to work together to accomplish tasks.

Specific Tasks

Occupation Specific Tasks:

- Coordinate and recommend procedures for facility and equipment maintenance or modification, including the replacement of machines.
- Develop and implement production tracking and quality control systems, analyzing production, quality control, maintenance, and other operational reports, to detect production problems.
- Develop budgets and approve expenditures for supplies, materials, and human resources, ensuring that materials, labor and equipment are used efficiently to meet production targets.
- Direct and coordinate production, processing, distribution, and marketing activities of industrial organization.
- Hire, train, evaluate, and discharge staff, and resolve personnel grievances.
- Initiate and coordinate inventory and cost control programs.
- Institute employee suggestion or involvement programs.
- Maintain current knowledge of the quality control field, relying on current literature pertaining to materials use, technological

First-Line Supervisors/Managers of Production and Operating Workers

Core Tasks

Generalized Work Activities:

- Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person.
- Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems.
- Coordinating the Work and Activities of Others- Getting members of a group to work together to accomplish tasks.
- Guiding, Directing, and Motivating Subordinates - Providing guidance and direction to subordinates, including setting performance standards and monitoring performance.
- Getting Information - Observing, receiving, and otherwise obtaining information from all relevant sources.

Specific Tasks

Occupation Specific Tasks:

- Calculate labor and equipment requirements and production specifications, using standard formulas.
- Confer with management or subordinates to resolve worker problems, complaints, or grievances.
- Confer with other supervisors to coordinate operations and activities within or between departments.
- Demonstrate equipment operations and work and safety procedures to new employees, or assign employees to experienced workers for training.
- Determine standards, budgets, production goals, and rates, based on company policies, equipment and labor availability, and workloads.
- Direct and coordinate the activities of employees engaged in the production or processing of goods, such as inspectors, machine setters, and fabricators.
- Enforce safety and sanitation regulations.
- Inspect materials, products, or equipment to detect defects or malfunctions.
- Interpret specifications, blueprints, job



pertaining to materials use, technological advances, and statistical studies.

- Negotiate materials prices with suppliers.
- Prepare and maintain production reports and personnel records.
- Review operations and confer with technical or administrative staff to resolve production or processing problems.
- Review plans and confer with research and support staff to develop new products and processes.
- Review processing schedules and production orders to make decisions concerning inventory requirements, staffing requirements, work procedures, and duty assignments, considering budgetary limitations and time constraints.
- Set and monitor product standards, examining samples of raw products or directing testing during processing, to ensure finished products are of prescribed quality.

Detailed Tasks

Detailed Work Activities:

- analyze financial data
- analyze operational or management reports or records
- assign work to staff or employees
- communicate technical information
- compute product or materials test results
- conduct meetings with staff to ensure production objectives are met
- conduct or attend staff meetings
- conduct research on work-related topics
- coordinate production maintenance activities
- coordinate production materials, activities or processes
- design manufacturing processes or methods
- determine factors affecting production processes
- develop budgets
- develop maintenance schedules
- develop management control systems
- develop plans for programs or projects
- develop policies, procedures, methods, or standards
- develop staffing plan
- direct and coordinate activities of workers or staff
- establish production schedule
- estimate time or cost for installation, repair, or construction projects
- evaluate manufacturing or processing systems
- follow manufacturing methods or techniques
- hire, discharge, transfer, or promote workers
- inspect or test materials to verify safety

orders, and company policies and procedures for workers.

- Maintain operations data such as time, production, and cost records, and prepare management reports of production results.
- Observe work, and monitor gauges, dials, and other indicators to ensure that operators conform to production or processing standards.
- Plan and develop new products and production processes.
- Plan and establish work schedules, assignments, and production sequences to meet production goals.
- Read and analyze charts, work orders, production schedules, and other records and reports, in order to determine production requirements and to evaluate current production estimates and outputs.
- Recommend or implement measures to motivate employees and to improve production methods, equipment performance, product quality, or efficiency.
- Recommend personnel actions such as hirings and promotions.
- Requisition materials, supplies, equipment parts, or repair services.
- Set up and adjust machines and equipment.

Detailed Tasks

Detailed Work Activities:

- adjust production equipment/machinery setup
- analyze operational or management reports or records
- assign work to staff or employees
- communicate technical information
- compute production, construction, or installation specifications
- conduct or attend staff meetings
- confer with other departmental heads to coordinate activities
- consult with managerial or supervisory personnel
- coordinate production materials, activities or processes
- demonstrate or explain assembly or use of equipment
- determine factors affecting production processes
- develop maintenance schedules
- direct and coordinate activities of workers or staff
- establish employee performance standards
- estimate materials or labor requirements
- examine products or work to verify conformance to specifications
- explain rules, policies or regulations
- explain work orders, specifications, or work



standards or ensure meeting of specifications

- maintain or repair industrial or related equipment/machinery
- maintain records, reports, or files
- maintain safe work environment
- make decisions
- manage industrial projects
- negotiate business contracts
- oversee execution of organizational or program policies
- perform safety inspections in industrial, manufacturing or repair setting
- perform safety inspections in manufacturing or industrial setting
- plan or organize work
- read technical drawings
- resolve personnel problems or grievances
- schedule work to meet deadlines
- supervise production workers
- supervise quality control workers
- understand technical operating, service or repair manuals
- use inventory control procedures
- use long or short term production planning techniques
- use negotiation techniques
- use oral or written communication techniques
- use technical information in manufacturing or industrial activities

Technology - Examples

Accounting software

- Intuit QuickBooks Manufacturing & Wholesale software

Calendar and scheduling software

- Computer integrated manufacturing CIM software
- WorkSchedule software

Data base user interface and query software

- Database software

Document management software

- QUMAS software

Electronic mail software

- Microsoft Outlook

Enterprise resource planning ERP software

- Enterprise resource planning ERP software

Facilities management software

- ABB Optimize software
- Plant management software

techniques to workers

- maintain file of job openings
- maintain inventory of office equipment or furniture
- maintain job descriptions
- maintain production or work records
- maintain records, reports, or files
- manage inventories or supplies
- modify work procedures or processes to meet deadlines
- monitor production machinery/equipment operation to detect problems
- monitor worker performance
- motivate workers to achieve work goals
- orient new employees
- oversee work progress to verify safety or conformance to standards
- prepare or maintain employee records
- prepare reports
- read blueprints
- read technical drawings
- read work order, instructions, formulas, or processing charts
- recommend improvements to work methods or procedures
- requisition stock, materials, supplies or equipment
- resolve or assist workers to resolve work problems
- resolve personnel problems or grievances
- schedule activities, classes, or events
- schedule employee work hours
- set up production equipment or machinery
- understand second language
- understand technical operating, service or repair manuals
- use oral or written communication techniques

Technology - Examples

Data base user interface and query software

- Database software
- Oracle software

Electronic mail software

- Email software
- IBM Lotus Notes
- Microsoft Outlook

Enterprise resource planning ERP software

- Bowen & Groves M1 ERP
- Capterra Enterprise Resource Planning



Financial analysis software

- Financial planning software

Human resources software

- Clockware software
- Computer integrated manufacturing CIM time manager software
- Employee performance management software

Industrial control software

- Citect IIM
- CitectSCADA Reports
- CitectSCADA software
- Industrial production manager and stock control software
- Marel production system MPS software
- Prosys software
- Statistical process control software
- Wonderware DT Analyst Plant Productivity Improvement Software

Inventory management software

- Computer integrated manufacturing CIM warehouse shipping manager software
- SAP inventory software

Office suite software

- interBiz BizWorks
- Microsoft Office

Presentation software

- Microsoft PowerPoint

Project management software

- Scadex timecard20

Spreadsheet software

- Microsoft Excel

Word processing software

- CorVu software
- IBM Rational ClearQuest
- Microsoft Word

Tools - Examples

- Desktop computers
- Notebook computers

- Encompix ERP

- Epicor Vantage ERP

- Epicor Vista ERP

- Giraffe Production Systems software

- Intacct ERP software

- Made2Manage software

- Microsoft Axapta

- NetSuite NetERP

- Resource planning software

- Retain Resource Planning

- SAP Business One

- SAP software

- SYSPRO software

- Technology Group International Enterprise 21 ERP

Human resources software

- GHG electronic employee management suite eEMS software

Internet browser software

- Netscape software

Inventory management software

- Inventory management software

Materials requirements planning logistics and supply chain software

- Integrated materials management systems

- Materials management software

- QA Software QMS Materials Management

Office suite software

- Microsoft Office

Presentation software

- Microsoft PowerPoint

Project management software

- Microsoft Total Quality Control Management

- Total quality management TQM software

Spreadsheet software

- Microsoft Excel

- Spreadsheet software

Time accounting software



- Personal computers

- Personal digital assistants PDA

- Scanners

- Tablet computers

- Kronos Workforce Timekeeper

- Timekeeping software

- Work Technology WorkTech Time

Word processing software

- Microsoft Word

- Word processing software

Tools - Examples

- Desktop computers

- Personal protective clothing

- Laser printers

- Notebook computers

- Personal computers

- Respirators

- Safety glasses

- Protective shoes

- Laser scanners

- Operator terminals

Labor Market Comparison

Maine Department of Labor.

Description	Industrial Production Managers	First-Line Supervisors/Managers of Production and Operating Workers	Difference
Median Wage	\$ 72,560	\$ 45,510	\$(27,050)
10th Percentile Wage	\$ 44,130	\$ 28,000	\$(16,130)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 93,880	\$ 58,890	\$(34,990)
90th Percentile Wage	\$118,880	\$ 73,810	\$(45,070)
Mean Wage	\$ 77,130	\$ 48,010	\$(29,120)
Total Employment - 2020	690	3,750	3,060
Employment Base - 2006	695	3,893	3,198
Projected Employment - 2029	614	3,745	3,131
Projected Job Growth - 2006-2029	-11.7 %	-3.8 %	7.9 %



Projected Annual Openings - 2006-2029	24	65	41
Special	★		
Special Occupations:	★ Maine High Wage - In Demand		

National Job Posting Trends

Trend for Industrial Production Managers and First-Line Supervisors/Managers of Production and Operating Workers



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

Programs

Related Programs

Operations Management and Supervision

Operations Management and Supervision. A program that prepares individuals to manage and direct the physical and/or technical functions of a firm or organization, particularly those relating to development, production, and manufacturing. Includes instruction in principles of general management, manufacturing and production systems, plant management, equipment maintenance management, production control, industrial labor relations and skilled trades supervision, strategic manufacturing policy, systems analysis, productivity analysis and cost control, and materials planning.

No information on schools for the program

Maine Statewide Promotion Opportunities for Industrial Production Managers

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
11-3051.00	Industrial Production Managers	100	4	690	\$72,560.00	\$0.00	-12%	24	★



11-3061.00	Purchasing Managers	87	4	330	\$72,560.00	\$0.00	2%	11	★
11-1021.00	General and Operations Managers	86	4	8,490	\$77,050.00	\$4,490.00	-5%	209	
11-2022.00	Sales Managers	84	4	1,310	\$72,720.00	\$160.00	3%	32	
11-3021.00	Computer and Information Systems Managers	82	5	870	\$83,130.00	\$10,570.00	8%	21	
11-9121.00	Natural Sciences Managers	80	5	180	\$79,810.00	\$7,250.00	8%	5	
11-1011.00	Chief Executives	80	5	750	\$102,290.00	\$29,730.00	-6%	25	
17-2121.02	Marine Architects	80	4	60	\$75,520.00	\$2,960.00	-9%	1	
11-9041.00	Engineering Managers	80	5	720	\$91,030.00	\$18,470.00	-2%	14	
13-2052.00	Personal Financial Advisors	80	3	360	\$94,100.00	\$21,540.00	10%	13	
11-2021.00	Marketing Managers	79	4	570	\$74,560.00	\$2,000.00	7%	17	
17-2072.00	Electronics Engineers, Except Computer	78	4	210	\$76,420.00	\$3,860.00	-26%	4	
25-1063.00	Economics Teachers, Postsecondary	77	5	80	\$73,830.00	\$1,270.00	11%	2	
17-2071.00	Electrical Engineers	77	4	260	\$73,050.00	\$490.00	-10%	6	
23-1011.00	Lawyers	77	5	1,910	\$80,120.00	\$7,560.00	6%	73	★

Special Occupations: ★ Maine High Wage - In Demand

Top Industries for First-Line Supervisors/Managers of Production and Operating Workers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Plastics product manufacturing	326100	4.03%	28,154	29,844	6.00%
Printing and related support activities	323100	3.61%	25,224	19,985	-20.77%
Motor vehicle parts manufacturing	336300	3.08%	21,518	17,131	-20.39%
Architectural and structural metals manufacturing	332300	2.52%	17,595	18,792	6.80%
Self-employed workers, primary job	000601	2.40%	16,779	17,876	6.54%



Grocery stores	445100	2.37%	16,559	18,067	9.11%
Animal slaughtering and processing	311600	2.24%	15,642	17,851	14.13%
Local government, excluding education and hospitals	939300	2.07%	14,471	16,257	12.34%
Machine shops	332710	1.99%	13,948	11,538	-17.28%
Converted paper product manufacturing	322200	1.89%	13,212	11,088	-16.08%
Semiconductor and other electronic component manufacturing	334400	1.88%	13,126	11,473	-12.59%
Drycleaning and laundry services	812300	1.75%	12,216	12,217	0.01%
Other wood product manufacturing	321900	1.64%	11,463	10,802	-5.77%
Other fabricated metal product manufacturing	332900	1.57%	10,950	9,702	-11.39%
Other general purpose machinery manufacturing	333900	1.41%	9,879	8,918	-9.73%

Top Industries for Industrial Production Managers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Plastics product manufacturing	326100	4.29%	6,750	7,155	6.00%
Management of companies and enterprises	551100	3.66%	5,764	6,644	15.28%
Motor vehicle parts manufacturing	336300	3.37%	5,300	4,220	-20.39%
Printing and related support activities	323100	3.31%	5,207	4,126	-20.77%
Aerospace product and parts manufacturing	336400	3.05%	4,798	4,887	1.84%
Semiconductor and other electronic component manufacturing	334400	3.05%	4,802	4,197	-12.59%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	2.76%	4,338	4,153	-4.26%
Architectural and structural metals manufacturing	332300	2.69%	4,230	4,518	6.80%
Pharmaceutical and medicine manufacturing	325400	2.47%	3,879	4,888	26.03%
Converted paper product manufacturing	322200	2.19%	3,451	2,896	-16.08%
Self-employed workers, primary job	000601	2.01%	3,162	3,369	6.54%
Other general purpose machinery manufacturing	333900	1.92%	3,019	2,725	-9.73%
Machine shops	332710	1.86%	2,924	2,419	-17.28%
Medical equipment and supplies manufacturing	339100	1.85%	2,908	2,974	2.29%
Other fabricated metal product manufacturing	332900	1.69%	2,656	2,354	-11.39%



TORQ Analysis of Industrial Production Managers to Storage and Distribution Managers

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Industrial Production Managers	11-3051.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Storage and Distribution Managers	11-3071.02	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS											
Grand TORQ:					91						
Ability TORQ		Skills TORQ		Knowledge TORQ							
Level	94	Level	94	Level	84						
Gaps To Narrow if Possible			Upgrade These Skills			Knowledge to Add					
Ability	Level	Gap	Impt	Skill	Level	Gap	Impt	Knowledge	Level	Gap	Impt
Speech Clarity	51	5	75	Negotiation	66	10	76	Customer and Personal Service	71	12	81
Selective Attention	44	3	53	Management of Personnel Resources	68	7	80				
Speech Recognition	51	1	75	Active Learning	68	5	78				
<p>LEVEL and IMPT (IMPORTANCE) refer to the Target Storage and Distribution Managers. GAP refers to level difference between Industrial Production Managers and Storage and Distribution Managers.</p>											

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Industrial Production Managers	Storage and Distribution Managers	Importance
Oral Comprehension	62	57	75
Oral Expression	64	57	75
Speech Recognition	50	51	75
Speech Clarity	46	51	75
Problem Sensitivity	62	51	72
Deductive Reasoning	64	50	65
Inductive Reasoning	59	46	65
Near Vision	55	53	65



Written Comprehension	60	55	62
Information Ordering	59	48	59
Category Flexibility	53	51	59
Written Expression	59	50	56
Fluency of Ideas	51	46	53
Selective Attention	41	44	53
Originality	55	42	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Industrial Production Managers	Storage and Distribution Managers	Importance
Management of Personnel Resources	61	68	80
Active Learning	63	68	78
Negotiation	56	66	76

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Industrial Production Managers	Storage and Distribution Managers	Importance
Customer and Personal Service	59	71	81

Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Industrial Production Managers	Storage and Distribution Managers	Description	Industrial Production Managers	Storage and Distribution Managers
10+ years	0%	7%	Doctoral	0%	0%
8-10 years	0%	19%	Professional Degree	0%	0%
6-8 years	28%	2%	Post-Masters Cert	0%	0%
4-6 years	18%	3%	Master's Degree	1%	0%
2-4 years	42%	58%	Post-Bachelor Cert	4%	0%
1-2 years	0%	0%	Bachelors	18%	38%
6-12 months	7%	2%	AA or Equiv	16%	3%
3-6 months	0%	0%	Some College	12%	13%
1-3 months	0%	0%	Post-Secondary Certificate	26%	0%
0-1 month	0%	0%	High School Diploma or GED	20%	43%
None	1%	0%	No HSD or GED	0%	0%

Industrial Production Managers

Storage and Distribution Managers

Most Common Educational/Training Requirement:

Work experience in a related occupation

Work experience in a related occupation

Job Zone Comparison

4 - Job Zone Four: Considerable Preparation Needed

3 - Job Zone Three: Medium 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.	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 of these occupations require a four - year bachelor's degree, but some do not.	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 several years of work-related experience, on-the-job training, and/or vocational training.	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

Industrial Production Managers	Storage and Distribution Managers
<p style="text-align: center;">Core Tasks</p> <hr/> <p>Generalized Work Activities:</p> <ul style="list-style-type: none"> • 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. • Guiding, Directing, and Motivating Subordinates - Providing guidance and direction to subordinates, including setting performance standards and monitoring performance. • Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems. • Coordinating the Work and Activities of Others- Getting members of a group to work together to accomplish tasks. 	<p style="text-align: center;">Core Tasks</p> <hr/> <p>Generalized Work Activities:</p> <ul style="list-style-type: none"> • Communicating with Supervisors, Peers, or Subordinates - Providing information to supervisors, co-workers, and subordinates by telephone, in written form, e-mail, or in person. • Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems. • 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. • Organizing, Planning, and Prioritizing Work - Developing specific goals and plans to prioritize, organize, and accomplish your work.
<p style="text-align: center;">Specific Tasks</p> <hr/> <p>Occupation Specific Tasks:</p> <ul style="list-style-type: none"> • Coordinate and recommend procedures for facility and equipment maintenance or modification, including the replacement of machines. • Develop and implement production tracking and quality control systems, analyzing production, quality control, maintenance, and other operational reports, to detect production problems. • Develop budgets and approve expenditures for supplies, materials, and human resources, ensuring that materials, labor and equipment are used efficiently to meet production targets. • Direct and coordinate production, processing, distribution, and marketing activities of industrial organization. • Hire, train, evaluate, and discharge staff, and resolve personnel grievances. • Initiate and coordinate inventory and cost control programs. 	<p style="text-align: center;">Specific Tasks</p> <hr/> <p>Occupation Specific Tasks:</p> <ul style="list-style-type: none"> • Advise sales and billing departments of transportation charges for customers' accounts. • Arrange for necessary shipping documentation, and contact customs officials to effect release of shipments. • Arrange for storage facilities when required. • Confer with department heads to coordinate warehouse activities, such as production, sales, records control, and purchasing. • Develop and document standard and emergency operating procedures for receiving, handling, storing, shipping, or salvaging products or materials. • Develop and implement plans for facility modification or expansion, such as equipment purchase or changes in space allocation or structural design. • Evaluate freight costs and the inventory



- Institute employee suggestion or involvement programs.
- Maintain current knowledge of the quality control field, relying on current literature pertaining to materials use, technological advances, and statistical studies.
- Negotiate materials prices with suppliers.
- Prepare and maintain production reports and personnel records.
- Review operations and confer with technical or administrative staff to resolve production or processing problems.
- Review plans and confer with research and support staff to develop new products and processes.
- Review processing schedules and production orders to make decisions concerning inventory requirements, staffing requirements, work procedures, and duty assignments, considering budgetary limitations and time constraints.
- Set and monitor product standards, examining samples of raw products or directing testing during processing, to ensure finished products are of prescribed quality.

Detailed Tasks

Detailed Work Activities:

- analyze financial data
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- communicate technical information
- compute product or materials test results
- conduct meetings with staff to ensure production objectives are met
- conduct or attend staff meetings
- conduct research on work-related topics
- coordinate production maintenance activities
- coordinate production materials, activities or processes
- design manufacturing processes or methods
- determine factors affecting production processes
- develop budgets
- develop maintenance schedules
- develop management control systems
- develop plans for programs or projects
- develop policies, procedures, methods, or standards
- develop staffing plan
- direct and coordinate activities of workers or staff
- establish production schedule
- estimate time or cost for installation, repair, or construction projects
- evaluate manufacturing or processing systems

costs associated with transit times to ensure that costs are appropriate.

- Evaluate locations for new warehouses and distribution networks to determine their potential usefulness.
- Examine invoices and shipping manifests for conformity to tariff and customs regulations.
- Examine products or materials to estimate quantities or weight and type of container required for storage or transport.
- Inspect physical conditions of warehouses, vehicle fleets and equipment, and order testing, maintenance, repair, or replacement as necessary.
- Interview, select, and train warehouse and supervisory personnel.
- Issue shipping instructions and provide routing information to ensure that delivery times and locations are coordinated.
- Negotiate with carriers, warehouse operators and insurance company representatives for services and preferential rates.
- Participate in setting transportation and service rates.
- Plan, develop, and implement warehouse safety and security programs and activities.
- Prepare and manage departmental budgets.
- Prepare or direct preparation of correspondence, reports, and operations, maintenance, and safety manuals.
- Respond to customers' or shippers' questions and complaints regarding storage and distribution services.
- Review invoices, work orders, consumption reports, and demand forecasts to estimate peak delivery periods and to issue work assignments.
- Schedule and monitor air or surface pickup, delivery, or distribution of products or materials.
- Supervise the activities of workers engaged in receiving, storing, testing, and shipping products or materials.
- Track and trace goods while they are en route to their destinations, expediting orders when necessary.

Detailed Tasks

Detailed Work Activities:

- adhere to safety procedures
- analyze operational or management reports or records
- analyze organizational operating practices or procedures
- answer customer or public inquiries
- arrange delivery schedules
- assign work to staff or employees
- call on customers to solicit new business
- communicate technical information



systems

- follow manufacturing methods or techniques
- hire, discharge, transfer, or promote workers
- inspect or test materials to verify safety standards or ensure meeting of specifications
- maintain or repair industrial or related equipment/machinery
- maintain records, reports, or files
- maintain safe work environment
- make decisions
- manage industrial projects
- negotiate business contracts
- oversee execution of organizational or program policies
- perform safety inspections in industrial, manufacturing or repair setting
- perform safety inspections in manufacturing or industrial setting
- plan or organize work
- read technical drawings
- resolve personnel problems or grievances
- schedule work to meet deadlines
- supervise production workers
- supervise quality control workers
- understand technical operating, service or repair manuals
- use inventory control procedures
- use long or short term production planning techniques
- use negotiation techniques
- use oral or written communication techniques
- use technical information in manufacturing or industrial activities

Technology - Examples

Accounting software

- Intuit QuickBooks Manufacturing & Wholesale software

Calendar and scheduling software

- Computer integrated manufacturing CIM software
- WorkSchedule software

Data base user interface and query software

- Database software

Document management software

- QUMAS software

Electronic mail software

- Microsoft Outlook

Enterprise resource planning ERP software

- Enterprise resource planning ERP software

Facilities management software

- conduct or attend staff meetings
- confer with other departmental heads to coordinate activities
- develop maintenance schedules
- develop policies, procedures, methods, or standards
- develop safety regulations
- direct and coordinate activities of workers or staff
- ensure compliance with government regulations
- evaluate information from employment interviews
- evaluate performance of employees or contract personnel
- examine documents for completeness, accuracy, or conformance to standards
- hire, discharge, transfer, or promote workers
- inspect products or systems for regulatory compliance
- inspect property to determine damages
- interview job applicants
- investigate customer complaints
- maintain safe work environment
- measure, weigh, or count products or materials
- monitor facilities or equipment
- negotiate business contracts
- orient new employees
- oversee execution of organizational or program policies
- prepare reports
- provide customer service
- purchase property management or maintenance equipment or supplies
- resolve customer or public complaints
- schedule air or surface pickup, delivery, or distribution of product
- schedule facility or property maintenance
- schedule work to meet deadlines
- use conflict resolution techniques
- use negotiation techniques
- use oral or written communication techniques
- use weighing or measuring devices in transportation
- write administrative procedures services manual
- write business correspondence

Technology - Examples

Analytical or scientific software

- Integrated Decision Support Netwise Enterprise
- Integrated Decision Support Netwise Frontline
- QUALCOMM QTRACS



- ABB Optimize software

- Plant management software

Financial analysis software

- Financial planning software

Human resources software

- Clockware software

- Computer integrated manufacturing CIM time manager software

- Employee performance management software

Industrial control software

- Citect IIM

- CitectSCADA Reports

- CitectSCADA software

- Industrial production manager and stock control software

- Marel production system MPS software

- Prosys software

- Statistical process control software

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- Microsoft Office

Presentation software

- Microsoft PowerPoint

Project management software

- Scadex timecard20

Spreadsheet software

- Microsoft Excel

Word processing software

- CorVu software

- IBM Rational ClearQuest

- Microsoft Word

Tools - Examples

- QUALCOMM ViaWeb

Compliance software

- Scanlon Associates LogPak

Data base user interface and query software

- Microsoft Access

Electronic mail software

- Microsoft Outlook

Enterprise resource planning ERP software

- Enterprise resource planning ERP software

Graphics or photo imaging software

- Graphics software

Inventory management software

- Aljex Inventory

- DSA Foxware Warehouse Management

- International Business Systems software

- Logility Voyager WarehousePRO

- MRA Technologies MRATrack Warehouse Management System

- Sentai Pinpoint

Label making software

- ABOL Manifest Systems

Materials requirements planning logistics and supply chain software

- Cadre Technologies Cadence Warehouse Management System

- Catalyst International CatalystConnect

- IBM i2 Transportation Manager

- Integrated Decision Support Corporation Netwise Supply Chain

- Integrated Decision Support Corporation Swap Advice

- IntelliTrack Warehouse Management System

- Radio Beacon WMS

- RedPrairie DLx Warehouse

- SSA Global Warehouse Management System WMS

- Supply chain event management software

- TECSYS EliteSeries

- TECSYS PointForce Enterprise



- Desktop computers
- Notebook computers
- Personal computers
- Personal digital assistants PDA
- Scanners
- Tablet computers

- Office suite software
 - Microsoft Office
- Presentation software
 - Microsoft PowerPoint
- Project management software
 - HighJump Software Warehouse Advantage
 - Infosite Technologies DM Warehousing
 - Sentai WarehouseTrac
- Spreadsheet software
 - Spreadsheet software
- Time accounting software
 - WorkForce Software EmpCenter Time and Attendance
- Word processing software
 - Word processing software

Tools - Examples

- Barcoding labels
- Barcoding scanners
- Desktop computers
- Digital cameras
- Forklifts
- Wireless communication and satellite positioning tools
- Cell phones
- Laptop computers
- Personal computers
- Personal digital assistants PDA
- Radio frequency handheld terminals
- Radio frequency identification RFID devices
- Global positioning systems GPS

Labor Market Comparison

Maine Department of Labor.

Description	Industrial Production Managers	Storage and Distribution Managers	Difference
Median Wage	\$ 72,560	\$ 62,270	\$(10,290)

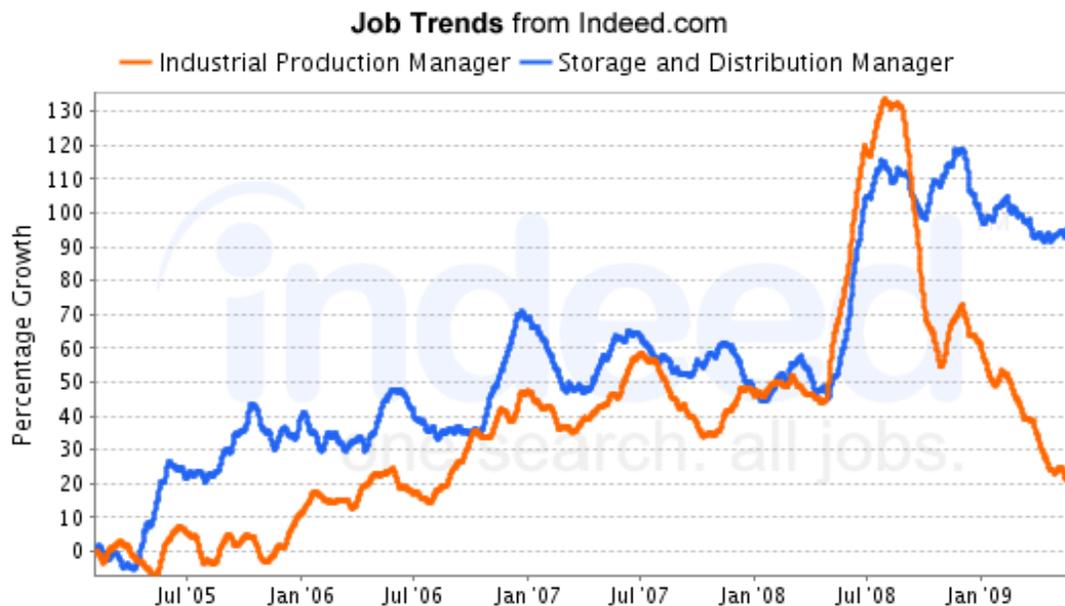


10th Percentile Wage	\$ 44,130	\$ 40,840	\$ (3,290)
25th Percentile Wage	N/A	N/A	N/A
75th Percentile Wage	\$ 93,880	\$ 82,310	\$ (11,570)
90th Percentile Wage	\$118,880	\$102,600	\$ (16,280)
Mean Wage	\$ 77,130	\$ 68,620	\$ (8,510)
Total Employment - 2020	690	710	20
Employment Base - 2006	695	701	6
Projected Employment - 2029	614	736	122
Projected Job Growth - 2006-2029	-11.7 %	5.0 %	16.6 %
Projected Annual Openings - 2006-2029	24	25	1
Special	★	★	

Special Occupations: ★ Maine High Wage - In Demand

National Job Posting Trends

Trend for Industrial Production Managers and Storage and Distribution Managers



Data from [Indeed](#)

Programs

Related Programs

Aeronautics/Aviation/Aerospace Science and Technology, General



Aeronautics/Aviation/Aerospace Science and Technology, General. A program that focuses on the general study of aviation and the aviation industry, including in-flight and ground support operations. Includes instruction in the technical, business, and general aspects of air transportation systems.

No information on schools for the program

Aviation Management

Aviation/Airway Management and Operations. A program that prepares individuals to apply technical knowledge and skills to the management of aviation industry operations and services. Includes instruction in airport operations, ground traffic direction, ground support and flightline operations, passenger and cargo operations, flight safety and security operations, aviation industry regulation, and related business aspects of managing aviation enterprises.

No information on schools for the program

Business Administration and Management, General

Business Administration and Management, General. A program that generally prepares individuals to plan, organize, direct, and control the functions and processes of a firm or organization. Includes instruction in management theory, human resources management and behavior, accounting and other quantitative methods, purchasing and logistics, organization and production, marketing, and business decision-making.

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
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/
Eastern Maine Community College	354 Hogan Rd	Bangor	www.emcc.edu
Husson College	One College Circle	Bangor	www.husson.edu
Husson College	One College Circle	Bangor	www.husson.edu
Husson College	One College Circle	Bangor	www.husson.edu
Beal College	99 Farm Road	Bangor	bealcollege.edu
University of New England	11 Hills Beach Rd	Biddeford	WWW.UNE.EDU
Washington County Community College	One College Drive	Calais	www.wccc.me.edu
University of Maine at Machias	9 O'Brien Ave	Machias	www.umm.maine.edu
University of Maine		Orono	www.umaine.edu/
University of Maine		Orono	www.umaine.edu/
University of Maine		Orono	www.umaine.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 Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu
University of Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu
Northern Maine Community College	33 Edgemont Dr	Presque Isle	www.nmcc.edu



Southern Maine Community College	2 Fort Road	South Portland	www.smccME.edu
Southern Maine Community College	2 Fort Road	South Portland	www.smccME.edu
Saint Josephs College	278 Whites Bridge Rd	Standish	www.sjcme.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
Thomas College	180 W River Rd	Waterville	www.thomas.edu
York County Community College	112 College Drive	Wells	www.yccc.edu

Business/Commerce, General

Business/Commerce, General. A program that focuses on the general study of business, including the processes of interchanging goods and services (buying, selling and producing), business organization, and accounting as used in profit-making and nonprofit public and private institutions and agencies. The programs may prepare individuals to apply business principles and techniques in various occupational settings.

Institution	Address	City	URL
Beal College	99 Farm Road	Bangor	bealcollege.edu
University of Maine at Farmington	224 Main St	Farmington	www.umf.maine.edu
University of Maine at Fort Kent	23 University Drive	Fort Kent	www.umfk.maine.edu
University of Maine at Presque Isle	181 Main St	Presque Isle	www.umpi.maine.edu
University of Maine at Presque Isle	181 Main St	Presque Isle	www.umpi.maine.edu
Thomas College	180 W River Rd	Waterville	www.thomas.edu

Logistics and Materials Management

Logistics and Materials Management. A program that prepares individuals to manage and coordinate all logistical functions in an enterprise, ranging from acquisitions to receiving and handling, through internal allocation of resources to operations units, to the handling and delivery of output. Includes instruction in acquisitions and purchasing, inventory control, storage and handling, just-in-time manufacturing, logistics planning, shipping and delivery management, transportation, quality control, resource estimation and allocation, and budgeting.

No information on schools for the program

Public Administration

Public Administration. A program that prepares individuals to serve as managers in the executive arm of local, state, and federal government; and that focuses on the systematic study of executive organization and management. Includes instruction in the roles, development, and principles of public administration; the management of public policy; executive-legislative relations; public budgetary processes and financial management; administrative law; public personnel management; professional ethics; and research methods.

Institution	Address	City	URL
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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 Fort Kent	23 University Drive	Fort Kent	www.umfk.maine.edu
University of Maine		Orono	www.umaine.edu/
University of Maine		Orono	www.umaine.edu/
University of Maine		Orono	www.umaine.edu/
University of Maine		Orono	www.umaine.edu/

Public Administration and Services, Other

Public Administration and Social Service Professions, Other. Any instructional program in public administration and services not listed above.

Institution	Address	City	URL
University of Southern Maine	96 Falmouth St	Portland	www.usm.maine.edu

Maine Statewide Promotion Opportunities for Industrial Production Managers

O*NET Code	Title	Grand TORQ	Job Zone	Employment	Median Wage	Difference	Growth	Annual Job Openings	Special
11-3051.00	Industrial Production Managers	100	4	690	\$72,560.00	\$0.00	-12%	24	★
11-3061.00	Purchasing Managers	87	4	330	\$72,560.00	\$0.00	2%	11	★
11-1021.00	General and Operations Managers	86	4	8,490	\$77,050.00	\$4,490.00	-5%	209	
11-2022.00	Sales Managers	84	4	1,310	\$72,720.00	\$160.00	3%	32	
11-3021.00	Computer and Information Systems Managers	82	5	870	\$83,130.00	\$10,570.00	8%	21	
11-9121.00	Natural Sciences Managers	80	5	180	\$79,810.00	\$7,250.00	8%	5	
11-9041.00	Engineering Managers	80	5	720	\$91,030.00	\$18,470.00	-2%	14	
11-1011.00	Chief Executives	80	5	750	\$102,290.00	\$29,730.00	-6%	25	
17-2121.02	Marine Architects	80	4	60	\$75,520.00	\$2,960.00	-9%	1	



13-2052.00	Personal Financial Advisors	80	3	360	\$94,100.00	\$21,540.00	10%	13	
11-2021.00	Marketing Managers	79	4	570	\$74,560.00	\$2,000.00	7%	17	
17-2072.00	Electronics Engineers, Except Computer	78	4	210	\$76,420.00	\$3,860.00	-26%	4	
25-1063.00	Economics Teachers, Postsecondary	77	5	80	\$73,830.00	\$1,270.00	11%	2	
17-2071.00	Electrical Engineers	77	4	260	\$73,050.00	\$490.00	-10%	6	
23-1011.00	Lawyers	77	5	1,910	\$80,120.00	\$7,560.00	6%	73	★

Special Occupations: ★ Maine High Wage - In Demand

Top Industries for Storage and Distribution Managers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Federal government, excluding postal service	919999	8.18%	7,687	7,267	-5.47%
General freight trucking	484100	7.31%	6,875	7,777	13.11%
Warehousing and storage	493100	5.90%	5,551	7,414	33.57%
Management of companies and enterprises	551100	5.66%	5,322	6,135	15.28%
Local government, excluding education and hospitals	939300	4.83%	4,542	5,102	12.34%
Couriers	492100	4.11%	3,862	4,150	7.46%
Grocery and related product wholesalers	424400	3.41%	3,203	3,503	9.35%
Freight transportation arrangement	488500	3.38%	3,180	4,031	26.76%
Specialized freight trucking	484200	2.57%	2,418	2,724	12.64%
Self-employed workers, primary job	000601	2.55%	2,400	2,557	6.54%
Rail transportation	482100	1.86%	1,751	1,507	-13.94%
Scheduled air transportation	481100	1.65%	1,553	1,715	10.41%
State government, excluding education and hospitals	929200	1.52%	1,429	1,402	-1.87%
Professional and commercial equipment and supplies merchant wholesalers	423400	1.13%	1,063	1,239	16.57%
Wholesale electronic markets and agents and brokers	425100	1.12%	1,055	1,197	13.48%

Top Industries for Industrial Production Managers



Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Plastics product manufacturing	326100	4.29%	6,750	7,155	6.00%
Management of companies and enterprises	551100	3.66%	5,764	6,644	15.28%
Motor vehicle parts manufacturing	336300	3.37%	5,300	4,220	-20.39%
Printing and related support activities	323100	3.31%	5,207	4,126	-20.77%
Aerospace product and parts manufacturing	336400	3.05%	4,798	4,887	1.84%
Semiconductor and other electronic component manufacturing	334400	3.05%	4,802	4,197	-12.59%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	2.76%	4,338	4,153	-4.26%
Architectural and structural metals manufacturing	332300	2.69%	4,230	4,518	6.80%
Pharmaceutical and medicine manufacturing	325400	2.47%	3,879	4,888	26.03%
Converted paper product manufacturing	322200	2.19%	3,451	2,896	-16.08%
Self-employed workers, primary job	000601	2.01%	3,162	3,369	6.54%
Other general purpose machinery manufacturing	333900	1.92%	3,019	2,725	-9.73%
Machine shops	332710	1.86%	2,924	2,419	-17.28%
Medical equipment and supplies manufacturing	339100	1.85%	2,908	2,974	2.29%
Other fabricated metal product manufacturing	332900	1.69%	2,656	2,354	-11.39%



TORQ Analysis of Industrial Production Managers to Industrial Engineering Technicians

ANALYSIS INPUT					
Transfer	Title	O*NET	Filters		
From Title:	Industrial Production Managers	11-3051.00	Abilities:	Importance Level: 50	Weight: 1
To Title:	Industrial Engineering Technicians	17-3026.00	Skills:	Importance Level: 69	Weight: 1
Labor Market Area:	Maine Statewide		Knowledge:	Importance Level: 69	Weight: 1

TORQ RESULTS											
Grand TORQ:							89				
Ability TORQ			Skills TORQ			Knowledge TORQ					
Level			97	Level			86	Level			84
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	14	53	Learning Strategies	63	5	71	Engineering and Technology	70	17	80
Selective Attention	48	7	65	Active Learning	66	3	69	Mathematics	72	17	71
Near Vision	60	5	68					English Language	62	13	69
Fluency of Ideas	55	4	53								
Speech Clarity	48	2	65								
Written Comprehension	62	2	59								
Perceptual Speed	50	2	50								
LEVEL and IMPT (IMPORTANCE) refer to the Target Industrial Engineering Technicians. GAP refers to level difference between Industrial Production Managers and Industrial Engineering Technicians.											

ASK ANALYSIS			
Ability Level Comparison - Abilities with importance scores over 50			
Description	Industrial Production Managers	Industrial Engineering Technicians	Importance
Oral Comprehension	62 	62 	68 
Problem Sensitivity	62 	55 	68 
Deductive Reasoning	64 	57 	68 
Inductive Reasoning	59 	55 	68 
Near Vision	55 	60 	68 
Oral Expression	64 	62 	65 



Selective Attention	41	48	65
Speech Clarity	46	48	65
Written Comprehension	60	62	59
Written Expression	59	57	59
Originality	55	51	59
Information Ordering	59	51	59
Category Flexibility	53	51	59
Speech Recognition	50	44	59
Mathematical Reasoning	53	51	56
Visualization	57	51	56
Fluency of Ideas	51	55	53
Number Facility	46	60	53
Far Vision	42	42	53
Perceptual Speed	48	50	50

Skill Level Comparison - Abilities with importance scores over 69

Description	Industrial Production Managers	Industrial Engineering Technicians	Importance
Learning Strategies	58	63	71
Active Learning	63	66	69

Knowledge Level Comparison - Knowledge with importance scores over 69

Description	Industrial Production Managers	Industrial Engineering Technicians	Importance
Engineering and Technology	53	70	80
Mathematics	55	72	71
English Language	49	62	69

Experience & Education Comparison

Related Work Experience Comparison			Required Education Level Comparison		
Description	Industrial Production Managers	Industrial Engineering Technicians	Description	Industrial Production Managers	Industrial Engineering Technicians
10+ years	0%	0%	Doctoral	0%	0%
8-10 years	0%	0%	Professional Degree	0%	0%
6-8 years	28%	12%	Post-Masters Cert	0%	0%
4-6 years	18%	64%	Master's Degree	1%	0%
2-4 years	42%	11%	Post-Bachelor Cert	4%	0%
1-2 years	0%	0%	Bachelors	18%	51%
6-12 months	7%	2%	AA or Equiv	16%	11%
3-6 months	0%	5%	Some College	12%	17%
1-3 months	0%	0%	Post-Secondary Certificate	26%	0%
0-1 month	0%	0%	High School Diploma or GED	20%	19%
None	1%	2%	No HSD or GED	0%	0%



Industrial Production Managers	Industrial Engineering Technicians
Most Common Educational/Training Requirement:	
Work experience in a related occupation	Associate degree
Job Zone Comparison	
4 - Job Zone Four: Considerable Preparation Needed	3 - Job Zone Three: Medium 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.	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 of these occupations require a four - year bachelor's degree, but some do not.	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 several years of work-related experience, on-the-job training, and/or vocational training.	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

Industrial Production Managers	Industrial Engineering Technicians
Core Tasks	Core Tasks
Generalized Work Activities:	Generalized Work Activities:
<ul style="list-style-type: none"> • 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. • Guiding, Directing, and Motivating Subordinates - Providing guidance and direction to subordinates, including setting performance standards and monitoring performance. • Making Decisions and Solving Problems - Analyzing information and evaluating results to choose the best solution and solve problems. • Coordinating the Work and Activities of Others- Getting members of a group to work together to accomplish tasks. 	<ul style="list-style-type: none"> • 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. • Establishing and Maintaining Interpersonal Relationships - Developing constructive and cooperative working relationships with others, and maintaining them over time. • Documenting/Recording Information - Entering, transcribing, recording, storing, or maintaining information in written or electronic/magnetic form. • Interacting With Computers - Using computers and computer systems (including hardware and software) to program, write software, set up functions, enter data, or process information.
Specific Tasks	Specific Tasks
Occupation Specific Tasks:	Occupation Specific Tasks:
<ul style="list-style-type: none"> • Coordinate and recommend procedures for facility and equipment maintenance or modification, including the replacement of machines. • Develop and implement production tracking and quality control systems, analyzing production, quality control, maintenance, and other operational reports, to detect production problems. • Develop budgets and approve expenditures for supplies, materials, and human resources, ensuring that materials, labor and equipment are used efficiently to meet production targets. • Direct and coordinate production, 	<ul style="list-style-type: none"> • Aid in planning work assignments in accordance with worker performance, machine capacity, production schedules, and anticipated delays. • Compile and evaluate statistical data to determine and maintain quality and reliability of products. • Evaluate data and write reports to validate or indicate deviations from existing standards. • Interpret engineering drawings, schematic diagrams, or formulas and confer with



processing, distribution, and marketing activities of industrial organization.

- Hire, train, evaluate, and discharge staff, and resolve personnel grievances.
- Initiate and coordinate inventory and cost control programs.
- Institute employee suggestion or involvement programs.
- Maintain current knowledge of the quality control field, relying on current literature pertaining to materials use, technological advances, and statistical studies.
- Negotiate materials prices with suppliers.
- Prepare and maintain production reports and personnel records.
- Review operations and confer with technical or administrative staff to resolve production or processing problems.
- Review plans and confer with research and support staff to develop new products and processes.
- Review processing schedules and production orders to make decisions concerning inventory requirements, staffing requirements, work procedures, and duty assignments, considering budgetary limitations and time constraints.
- Set and monitor product standards, examining samples of raw products or directing testing during processing, to ensure finished products are of prescribed quality.

Detailed Tasks

Detailed Work Activities:

- analyze financial data
- analyze operational or management reports or records
- assign work to staff or employees
- communicate technical information
- compute product or materials test results
- conduct meetings with staff to ensure production objectives are met
- conduct or attend staff meetings
- conduct research on work-related topics
- coordinate production maintenance activities
- coordinate production materials, activities or processes
- design manufacturing processes or methods
- determine factors affecting production processes
- develop budgets
- develop maintenance schedules
- develop management control systems
- develop plans for programs or projects
- develop policies, procedures, methods, or standards
- develop staffing plan
- direct and coordinate activities of workers

management or engineering staff to determine quality and reliability standards.

- Observe worker using equipment to verify that equipment is being operated and maintained according to quality assurance standards.
- Observe workers operating equipment or performing tasks to determine time involved and fatigue rate using timing devices.
- Prepare charts, graphs, and diagrams to illustrate workflow, routing, floor layouts, material handling, and machine utilization.
- Prepare graphs or charts of data or enter data into computer for analysis.
- Read worker logs, product processing sheets, and specification sheets, to verify that records adhere to quality assurance specifications.
- Recommend modifications to existing quality or production standards to achieve optimum quality within limits of equipment capability.
- Recommend revision to methods of operation, material handling, equipment layout, or other changes to increase production or improve standards.
- Record test data, applying statistical quality control procedures.
- Select products for tests at specified stages in production process, and test products for performance characteristics and adherence to specifications.
- Study time, motion, methods, and speed involved in maintenance, production, and other operations to establish standard production rate and improve efficiency.

Detailed Tasks

Detailed Work Activities:

- advise clients regarding engineering problems
- analyze effectiveness of safety systems or procedures
- analyze engineering design problems
- analyze technical data, designs, or preliminary specifications
- calculate engineering specifications
- communicate technical information
- compile numerical or statistical data
- conduct performance testing
- confer with engineering, technical or manufacturing personnel
- design manufacturing processes or methods
- develop safety regulations
- diagnose mechanical problems in machinery or equipment
- draw maps or charts
- estimate materials or labor requirements
- evaluate engineering data
- evaluate manufacturing or processing systems



- or staff
- establish production schedule
- estimate time or cost for installation, repair, or construction projects
- evaluate manufacturing or processing systems
- follow manufacturing methods or techniques
- hire, discharge, transfer, or promote workers
- inspect or test materials to verify safety standards or ensure meeting of specifications
- maintain or repair industrial or related equipment/machinery
- maintain records, reports, or files
- maintain safe work environment
- make decisions
- manage industrial projects
- negotiate business contracts
- oversee execution of organizational or program policies
- perform safety inspections in industrial, manufacturing or repair setting
- perform safety inspections in manufacturing or industrial setting
- plan or organize work
- read technical drawings
- resolve personnel problems or grievances
- schedule work to meet deadlines
- supervise production workers
- supervise quality control workers
- understand technical operating, service or repair manuals
- use inventory control procedures
- use long or short term production planning techniques
- use negotiation techniques
- use oral or written communication techniques
- use technical information in manufacturing or industrial activities

Technology - Examples

Accounting software

- Intuit QuickBooks Manufacturing & Wholesale software

Calendar and scheduling software

- Computer integrated manufacturing CIM software
- WorkSchedule software

Data base user interface and query software

- Database software

Document management software

- QUMAS software

Electronic mail software

- examine engineering documents for completeness or accuracy
- explain complex mathematical information
- follow statistical process control procedures
- improve test devices or techniques in manufacturing, industrial or engineering setting
- inspect facilities or equipment for regulatory compliance
- inspect manufactured products or materials
- perform safety inspections in industrial, manufacturing or repair setting
- prepare safety reports
- prepare technical reports or related documentation
- read blueprints
- read production layouts
- read technical drawings
- record test results, test procedures, or inspection data
- schedule employee work hours
- study time, motion, or work methods of workers
- test equipment as part of engineering projects or processes
- understand engineering data or reports
- understand service or repair manuals
- understand technical operating, service or repair manuals
- use drafting or mechanical drawing techniques
- use mathematical or statistical methods to identify or analyze problems
- use spreadsheet software
- use technical information in manufacturing or industrial activities
- use technical regulations for engineering problems

Technology - Examples

Analytical or scientific software

- ProModel software
- Statistical software

- Wilcox Associates PC-DMIS

Computer aided design CAD software

- Autodesk AutoCAD software
- SolidWorks CAD software

Computer aided manufacturing CAM software

- Computer aided manufacturing CAM software

Data base user interface and query software

- Data entry software



- Microsoft Outlook

Enterprise resource planning ERP software

- Enterprise resource planning ERP software

Facilities management software

- ABB Optimize software
- Plant management software

Financial analysis software

- Financial planning software

Human resources software

- Clockware software
- Computer integrated manufacturing CIM time manager software
- Employee performance management software

Industrial control software

- Citect IIM
- CitectSCADA Reports
- CitectSCADA software
- Industrial production manager and stock control software
- Marel production system MPS software
- Prosys software
- Statistical process control software

- Wonderware DT Analyst Plant Productivity Improvement Software

Inventory management software

- Computer integrated manufacturing CIM warehouse shipping manager software
- SAP inventory software

Office suite software

- interBiz BizWorks
- Microsoft Office

Presentation software

- Microsoft PowerPoint

Project management software

- Scadex timecard20

Spreadsheet software

- Microsoft Excel

Word processing software

- Microsoft Access

Graphics or photo imaging software

- Graphics software

Industrial control software

- Computerized numerical control CNC machine software
- Kinematic Engineering MicroMeasure IV

Office suite software

- Microsoft Office

Presentation software

- Microsoft PowerPoint

Spreadsheet software

- Microsoft Excel
- Spreadsheet software

Word processing software

- Microsoft Word
- Word processing software

Tools - Examples

- Vernier calipers
- Optical comparators
- Coordinate measuring machines CMM
- Video cameras
- Forklifts
- Gauge blocks
- Dial indicators
- Computerized numerical control CNC lathes
- Computerized numerical control CNC milling machines
- Toolmakers' microscopes
- Personal computers
- Plotter printers
- Scissor lifts



- CorVu software
- IBM Rational ClearQuest
- Microsoft Word

Tools - Examples

- Desktop computers
- Notebook computers
- Personal computers
- Personal digital assistants PDA
- Scanners
- Tablet computers

Labor Market Comparison

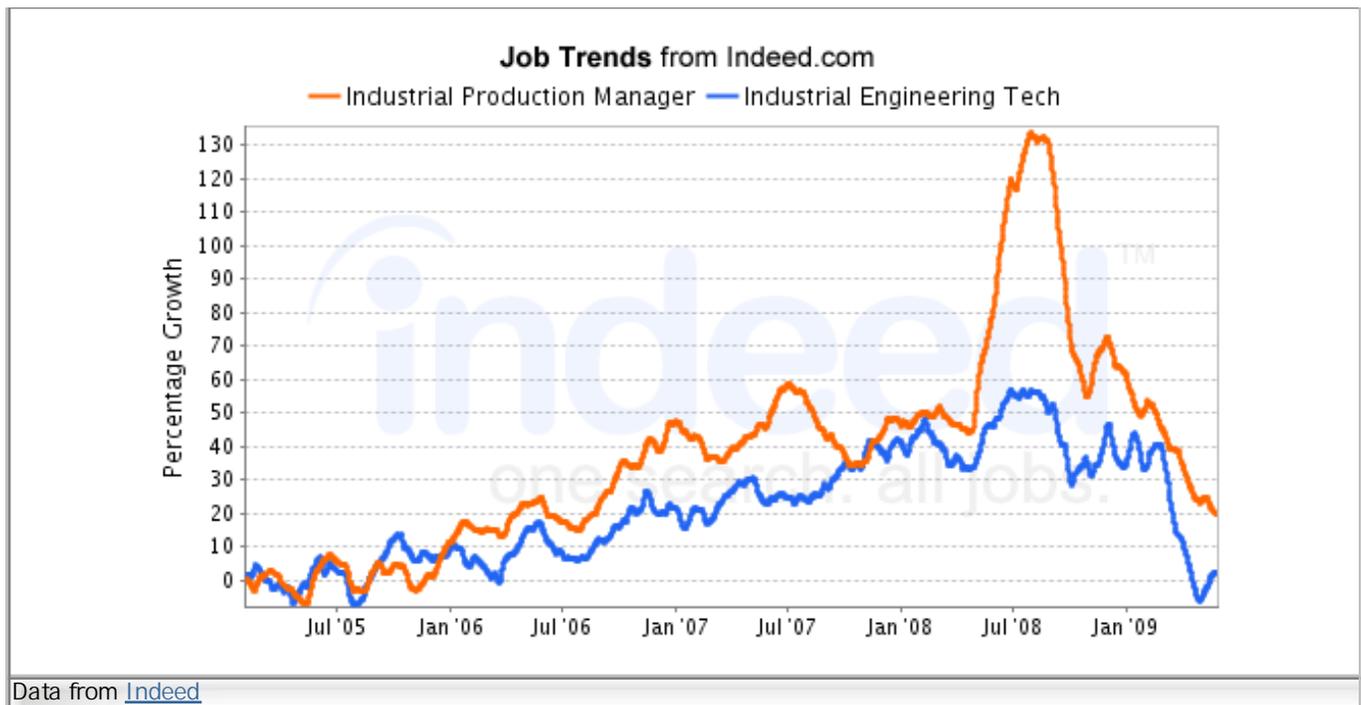
Maine Department of Labor.

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Projected Employment - 2029	614	400	-214
Projected Job Growth - 2006-2029	-11.7 %	5.5 %	17.2 %
Projected Annual Openings - 2006-2029	24	9	-15
Special	★	★	

Special Occupations: ★ Maine High Wage - In Demand

National Job Posting Trends

Trend for Industrial Production Managers and Industrial Engineering Technicians



Programs

No information on programs or the occupation.

Maine Statewide Promotion Opportunities for Industrial Production Managers

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11-3051.00	Industrial Production Managers	100	4	690	\$72,560.00	\$0.00	-12%	24	★
11-3061.00	Purchasing Managers	87	4	330	\$72,560.00	\$0.00	2%	11	★
11-1021.00	General and Operations Managers	86	4	8,490	\$77,050.00	\$4,490.00	-5%	209	
11-2022.00	Sales Managers	84	4	1,310	\$72,720.00	\$160.00	3%	32	
11-3021.00	Computer and Information Systems Managers	82	5	870	\$83,130.00	\$10,570.00	8%	21	
11-9121.00	Natural Sciences Managers	80	5	180	\$79,810.00	\$7,250.00	8%	5	
11-9041.00	Engineering Managers	80	5	720	\$91,030.00	\$18,470.00	-2%	14	
11-1011.00	Chief Executives	80	5	750	\$102,290.00	\$29,730.00	-6%	25	



17-2121.02	Marine Architects	80	4	60	\$75,520.00	\$2,960.00	-9%	1	
13-2052.00	Personal Financial Advisors	80	3	360	\$94,100.00	\$21,540.00	10%	13	
11-2021.00	Marketing Managers	79	4	570	\$74,560.00	\$2,000.00	7%	17	
17-2072.00	Electronics Engineers, Except Computer	78	4	210	\$76,420.00	\$3,860.00	-26%	4	
25-1063.00	Economics Teachers, Postsecondary	77	5	80	\$73,830.00	\$1,270.00	11%	2	
17-2071.00	Electrical Engineers	77	4	260	\$73,050.00	\$490.00	-10%	6	
23-1011.00	Lawyers	77	5	1,910	\$80,120.00	\$7,560.00	6%	73	★

Special Occupations: ★ Maine High Wage - In Demand

Top Industries for Industrial Engineering Technicians

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Aerospace product and parts manufacturing	336400	9.68%	7,251	8,124	12.03%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	5.69%	4,266	4,493	5.31%
Motor vehicle parts manufacturing	336300	5.60%	4,194	3,673	-12.42%
Data processing, hosting, and related services	518200	4.09%	3,062	4,554	48.71%
Pharmaceutical and medicine manufacturing	325400	3.14%	2,355	3,265	38.63%
Employment services	561300	2.17%	1,628	2,266	39.22%
Management of companies and enterprises	551100	2.03%	1,517	1,924	26.81%
Computer and peripheral equipment manufacturing	334100	1.97%	1,475	1,062	-28.00%
Research and development in the physical, engineering, and life sciences	541710	1.81%	1,354	1,589	17.36%
Ventilation, heating, air-conditioning, and commercial refrigeration equipment manufacturing	333400	1.80%	1,349	1,365	1.19%
Other general purpose machinery manufacturing	333900	1.72%	1,286	1,277	-0.70%
Plastics product manufacturing	326100	1.67%	1,251	1,459	16.60%
Federal government, excluding postal service	919999	1.59%	1,194	1,241	3.99%
Commercial and service industry machinery manufacturing	333300	1.29%	967	933	-3.51%
Agriculture, construction, and mining machinery manufacturing	333100	1.28%	959	985	2.71%



Top Industries for Industrial Production Managers

Industry	NAICS	% of Industry	Employment	Projected Employment	% Change
Plastics product manufacturing	326100	4.29%	6,750	7,155	6.00%
Management of companies and enterprises	551100	3.66%	5,764	6,644	15.28%
Motor vehicle parts manufacturing	336300	3.37%	5,300	4,220	-20.39%
Printing and related support activities	323100	3.31%	5,207	4,126	-20.77%
Aerospace product and parts manufacturing	336400	3.05%	4,798	4,887	1.84%
Semiconductor and other electronic component manufacturing	334400	3.05%	4,802	4,197	-12.59%
Navigational, measuring, electromedical, and control instruments manufacturing	334500	2.76%	4,338	4,153	-4.26%
Architectural and structural metals manufacturing	332300	2.69%	4,230	4,518	6.80%
Pharmaceutical and medicine manufacturing	325400	2.47%	3,879	4,888	26.03%
Converted paper product manufacturing	322200	2.19%	3,451	2,896	-16.08%
Self-employed workers, primary job	000601	2.01%	3,162	3,369	6.54%
Other general purpose machinery manufacturing	333900	1.92%	3,019	2,725	-9.73%
Machine shops	332710	1.86%	2,924	2,419	-17.28%
Medical equipment and supplies manufacturing	339100	1.85%	2,908	2,974	2.29%
Other fabricated metal product manufacturing	332900	1.69%	2,656	2,354	-11.39%

Industry & Occupational Data Sources

TORQ Results: The TORQ Scores is based upon an proprietary algorithm applied against Knowledge, Skills and Ability levels and importance derived from O*NET 12.

ASK Analysis, Experience & Education Levels and Tasks: O*Net 12

Labor Market Comparisons Occupational Projections data from Maine Department of Labor

National Posting Trends Indeed.com

Labor Pool & Promotions Opportunities: Occupational Projections data from Maine Department of Labor

Top Industries: Occupational Employment Statistics program (U.S. Bureau of Labor Statistics)