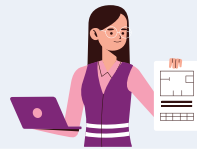


Engineering Managers



Engineering Managers, while proficient and well-versed in engineering concepts and technologies, typically engage less in hands-on technical tasks. Their managerial role necessitates a greater focus on conveying information to team members, managing projects, and engaging with stakeholders. This versatility of skills enables them to function not only in engineering and science-related fields, but also in business roles, such as project and senior management jobs.

Skills

Skills are developed through training and experience, and are the practical proficiencies someone possesses. The following are top key skills engineering managers employ in their work:

1. Complex Problem Solving
2. Judgement & Decision Making
3. Coordination
4. Mathematics
5. Speaking, Reading & Writing

Tasks

Tasks are the assigned duties that an occupational group performs in their daily work. The following are the tasks engineering managers most regularly encounter:

1. Prepare financial documents, reports, or budgets.
2. Communicate organizational information to customers or other stakeholders.
3. Analyze data to determine project feasibility.
4. Negotiate project specifications.
5. Identify environmental concerns.

Technical Knowledge

Technical Knowledge is the understanding of theory and utility of modern tools in a work environment. The following tools are used by engineering managers regularly:

1. Business intelligence and data analysis software
2. Enterprise resource planning software
3. Project management software
4. Materials requirements planning logistics and supply chain software
5. Industrial control software

Abilities

Abilities refer to the innate faculties that allow workers to carry out tasks and activities. The following are the top abilities that engineering managers possess:

1. Speech Clarity
2. Problem Sensitivity
3. Written & Oral Expression
4. Inductive & Deductive Reasoning
5. Mathematical Reasoning

Skills Transferability Matrix

FOCAL's Skills Transferability Matrices analyze the transferability of an occupation across a multitude of other occupations on the basis of similarities in **skills, technical knowledge, tasks, and abilities** as outlined by the O*Net database. It aims to show workers how to leverage their skill set in changing occupations, planning a career path, and transitioning to other industries. It also assists policy makers and educators address changing skill sets and areas of opportunity for workforce entrants in developing industries. Employers can also use this tool in reskilling or upskilling workers to circumvent skills shortages, and reduce the hiring and training challenges.

Engineering Managers					
Occupations	Skills	Technology	Tasks	Abilities	Total
Architecture and science managers	92%	100%	97%	92%	95%
Senior managers - trade, broadcasting and other services, n.e.c.	82%	88%	30%	88%	72%
Computer and information systems managers	85%	71%	17%	88%	65%
Administrators - post-secondary education and vocational training	86%	51%	31%	85%	63%
Construction managers	86%	46%	24%	86%	60%
Home building and renovation managers	86%	46%	24%	86%	60%
Manufacturing managers	86%	51%	12%	87%	59%
Other professional engineers, n.e.c.	80%	63%	0%	89%	58%
Physicists and astronomers	81%	59%	0%	91%	58%
Human resources managers	84%	46%	15%	85%	58%
Civil engineers	86%	54%	0%	90%	57%
Landscape architects	87%	29%	0%	89%	52%
Meteorologists and climatologists	82%	29%	0%	90%	50%
Supervisors, electrical products manufacturing	80%	41%	0%	77%	50%
Production logistics co-ordinators	67%	41%	0%	75%	46%

After scanning over 2,600 skills, technical competencies, tasks, and abilities of each of the 500 occupations as defined by the National Occupational Classification (NOC) system, a skills transferability matrix for mechanical engineers is produced. In the matrix above, a high score is highlighted in green and indicates the high transferability potential of an attribute of an occupation with that of engineering managers. Lower or no transferability areas are marked in red. Engineering managers were found to share transferable attributes with other managerial occupations such as architecture and science managers, computer and information system managers and senior managers in trade and other services. Engineering managers share the closest match in all criteria with architecture and science managers, however possess some transferable skills and abilities with occupations such as landscape architects, and meteorologists and climatologists.

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