Skills Transferability Matrix

Mechanical Engineering Technologists and Technicians

Technologists and Technicians in Mechanical Engineering perform technical services in the design, development, maintenance and troubleshooting of a wide variety of systems and machines from power generation to manufacturing. They possess a strong foundation in science, allowing them transferability into other professional science roles and roles demanding analytical and troubleshooting skills. These technologists and technicians have a wide scope of transferability, including some transferability to managerial positions.

Skills

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

1. Operations Monitoring
2. Critical Thinking
3. Operation and Control
4. Complex Problem Solving
5. Active Listening

Technical Knowledge

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

1. Analytical or scientific software
2. Computer-aided design and manufacturing software
3. Development environment software
4. Program testing software
5. Industrial control software

Tasks

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

1. Monitor operations to ensure compliance with safety or security policies or regulations.
2. Monitor operational procedures in technical environments to ensure conformance to standards.
3. Inspect work sites to identify potential environmental or safety hazards.
4. Test mechanical systems to ensure proper functioning.
5. Confer with technical personnel to prepare designs or operational plans.

Abilities

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

1. Deductive Reasoning
2. Near Vision
3. Problem Sensitivity
4. Oral Comprehension & Expression
5. Information Ordering

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.

Mechanical Engineering Technologists and Technicians

Occupations	Skills	Technology	Tasks	Abilities	Total
Electrical and electronics engineering technologists and technicians	88%	72%	45%	85%	73%
Chemical technologists and technicians	85%	69%	27%	88%	67%
Computer network technicians	86%	86%	0%	75%	62%
Civil engineering technologists and technicians	82%	55%	23%	84%	61%
Industrial engineering and manufacturing technologists and technicians	83%	69%	2%	84%	59%
Information systems testing technicians	77%	90%	0%	63%	57%
Database analysts and data administrators	75%	83%	0%	67%	56%
Contractors and supervisors, machining and metal forming trades	74%	66%	0%	85%	56%
Biological technologists and technicians	82%	48%	5%	88%	56%
Power engineers and power systems operators	87%	48%	0%	86%	55%
Aircraft mechanics and aircraft inspectors	86%	41%	0%	86%	53%
Engineer officers, water transport	85%	41%	1%	84%	53%
Aircraft instrument, electrical and avionics mechanics, technicians and inspectors	84%	38%	0%	84%	52%
Broadcast technicians	89%	28%	0%	83%	50%
Medical laboratory technologists	85%	24%	0%	85%	49%

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 engineering technologists and technicians 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 technologists and technicians. Lower or no transferability areas are marked in red. Mechanical engineering technologists and technicians possess a diverse set of skills due to the flexibility required of their roles. High transferability with other professional science occupations, particularly other technologists and technicians is observed. Transferability outside of technologist or technician roles is limited, but a trend shows that moderate transferability exists to roles in information systems and computer technology, however low task transferability indicates this may include long education or certification times. Transferability is observed to roles in management, with moderate transferability to contracting and supervision in metal forming trades.

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