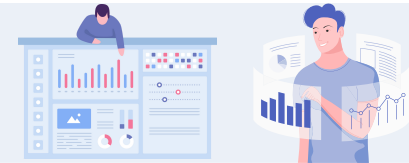# Skills Transferability Matrix

FOCAL Initiative

Information System Specialists

Information System Specialists assist businesses in drawing out maximum potential from the computer hardware and software, and networking infrastructure used in their operations. They must have proficiency in skills such as programming, data management and analysis, and quality assurance to carry out tasks such as infrastructure analysis and organizational information technology policy development. This equips Information System Specialists to succeed in many other information technology roles, from technician roles to software and hardware development.

Skills

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

1. Reading Comprehension
2. Complex Problem Solving
3. Critical Thinking
4. Monitoring
5. Systems Analysis

Technical Knowledge

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

1. Database management system software
2. Back-up or archival software
3. Requirements analysis and system architecture software
4. Metadata management software
5. Data mining software

Tasks

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

1. Compile technical information or documentation.
2. Develop computer or information security policies or procedures.
3. Recommend changes to improve computer or information systems.
4. Implement security measures for computer or information systems.
5. Create databases to store electronic data.

Abilities

Abilities refer to the innate faculties that allow workers to carry out tasks and activities. The following are the top abilities that database information system specialists possess:

1. Written and Oral Comprehension and Expression
2. Problem Sensitivity
3. Deductive and Inductive Reasoning
4. Information Ordering
5. Fluency of Ideas

Skills Transferability Matrix

FOCAL Initiative

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.

Information Systems Specialists

Occupations	Skills	Technical Knowledge	Tasks	Abilities	Total
Information systems testing technicians	90%	85%	47%	93%	79%
Computer network technicians	86%	84%	26%	88%	71%
Database analysts and data administrators	90%	77%	25%	91%	71%
Computer engineers (except software engineers and designers)	88%	77%	19%	90%	68%
Web designers and developers	84%	66%	27%	87%	66%
Computer programmers and interactive media developers	80%	67%	20%	89%	64%
Computer and information systems managers	78%	63%	0%	92%	58%
Software engineers and designers	81%	42%	16%	89%	57%
Industrial and manufacturing engineers	86%	34%	2%	88%	52%
Electrical and electronics engineers	87%	32%	0%	88%	52%
Industrial engineering and manufacturing technologists and technicians	87%	30%	0%	79%	49%
Inspectors in public/environmental health and occupational health and safety	85%	20%	0%	88%	48%
Mechanical engineering technologists and technicians	82%	33%	0%	76%	48%
Metallurgical and materials engineers	83%	19%	0%	85%	47%
Electrical and electronics engineering technologists and technicians	76%	33%	0%	73%	45%

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 information system specialists 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 information system specialists. Lower or no transferability areas are marked in red. Information system specialists have a high degree of transferability with information system testing and computer testing technicians, as their area of specialty is close. The use and knowledge of programming, networking and systems can help information system specialists transfer to information technology roles beyond information systems, with observed transferability to web development, software engineering and media development. Outside of information systems and computer technology loose transferability is observed with various technicians, technologist and engineering roles, indicating that transferability out of their specialty area may come with challenges, such as long education or certification time.

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