

Engineering Assistant and Technicians

Occupational Family/Code – Science and Technology: SEA/SET

Profile created: 2004 11

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Occupation Summary	Selection of Competencies	Knowledge	Skills	Personal Attributes
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The contributions of Engineering Technicians and Assistants to the enhancement of environmental, recreational, agricultural and transportation infrastructure are enormous. The roles offer challenging employment and are accompanied by excellent retirement, dental and medical plans, as well as vacation, maternity, parental and sick leave.

There are numerous activities or specialties associated with the Engineering Assistant's/Technician's line of work, such as: material testing (asphalt products, soils, aggregates, water and associated products, gases); surveying (topographic, drainage studies, slope staking, setting line, curves, and grades), monitoring processes (effluent discharge, crushing operations); compiling test data; performing and interpreting statistical data, and communication or recommending required changes. The equipment used for testing, and collection of samples/data is maintained and repaired by these employees.

The Engineering Technician's responsibilities are very diverse. An entry-level position concentrates on the rudiments of fieldwork, ministerial procedures and recording methodology. Ideally, the technician would have a comprehensive practical and theoretical understanding of the engineering technician role before progressing to an Engineering Assistant position.

Engineering Assistant duties are somewhat similar, but greater emphasis is placed on the supervisory responsibility and accountability to project delivery. Engineering Assistants are in contact with landowners affected by project work, as well as other members of the public that may have questions or concerns. They provide assistance, direction and feedback to Technicians and contractors, and are responsible to ensure that work being performed on a daily basis adheres to contract specifications. Depending on the particular job, Engineering Assistants may be expected to prepare technical reports, purchase land/supplies/equipment, negotiate agreements, recruit and train staff, and ensure their staff follow Occupational Health & Safety regulations.

Engineering Technicians and Assistants can expect a significant amount of travel, overtime hours and working in isolated locations for extended periods of time. Regardless of the specific job title, both jobs are considered challenging and rewarding and can provide a solid practical and theoretical base for future studies or an honourable lifetime commitment to the maintenance of Saskatchewan's infrastructure.



Knowledge

Knowledge is the baseline of information acquired through work and life experiences, learning situations and formal education which enables an individual to perform from an informed perspective.

Acts/Regulations/ Legislation

- Knowledge of the tendering process, contracts, contract law and the application of specifications and standards. **(Bring/Learn)**
 - Knowledge of acts, codes, standards, regulations, agreements and procedures applicable to the occupation (e.g. road construction, parks facilities, infrastructure and buildings). **(Bring/Learn)**
 - Knowledge of workplace safety and/or traffic control procedures. **(Bring/Learn)**
 - Knowledge of agreements, policies, programs and procedures related to human resource management. **(Bring/Learn)**
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Theories/Principles

- Knowledge of physics and mathematical principles. **(Bring)**
- Knowledge of project management principles, practices and procedures. **(Bring/Learn)**
- Knowledge of engineering design theory and sound engineering practices/principles, such as surveying, drafting. **(Bring/Learn)**
- Knowledge of terminology, theories, principles and applied methodology applicable to the occupation. **(Bring/Learn)**
- Knowledge of geotechnical principles and standards. **(Bring/Learn)**
- Knowledge of facilities/infrastructure management principles and ministerial practices. **(Bring/Learn)**



Technical

- Knowledge of human resource management practices, including strategies to recruit, support and sustain a diverse workforce. **(Bring - Supervisor only/Learn)**
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- Knowledge of computer hardware and software applications. **(Bring)**
 - Knowledge of surveying and materials testing methods and procedures. **(Bring/Learn)**
 - Knowledge of provincial road infrastructure including provincial highways, rural municipal and urban municipal roads. **(Bring/Learn)**
 - Knowledge of physical, chemical and biological quality parameters and their environmental significance. **(Bring/Learn)**
 - Knowledge of the critical factors that affect the significance and validity of test results. **(Bring/Learn)**
 - Knowledge of procedures and equipment used for collection, preservation and testing of surface water, groundwater, effluent, soil, aggregate, sediments and biological samples. **(Bring/Learn)**
 - Knowledge of the Torrens Land Survey System. **(Bring/Learn)**
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Skills

Skills are those demonstrated abilities, or proficiencies which one has learned from their past. These are acquired/ developed from past work and life experience, including volunteer work, independent study, life events, community and leisure activities, and formal training.

Skills are demonstrable, measurable and are transferable from one situation to another.

Communication

- Ability to actively listen to, acknowledge concerns and respond appropriately to stakeholders/contractors/co-workers/members of the public. **(Bring)**

Personal attributes which may link with this skill statement include: approachable, supportive, focused...

- Ability to accurately comprehend and appropriately apply concepts, principles, standards, practices; used in the design, construction and maintenance (of the provincial transportation systems) and related works. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: thorough, attention to detail, focused...

- Ability to listen, accurately comprehend and appropriately apply instructions to work assignments. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: willing to learn, thorough, focused...

- Ability to organize, record, and present (technical) information in a clear, accurate and understandable manner. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, resourceful...

- Ability to independently prepare and write letters, memos and technical reports using standard formats and proper grammar and spelling. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, creative, legible...



- Ability to write technical reports using standard formats, proper grammar and spelling (i.e. such as design authorization reports, surfacing, gradeline, at-grade intersection and/or lighting design, improvement warrants, signing plans and drainage studies). **(Bring/Learn)**

Personal attributes which may link with this skill statement include: positive, attention to detail, creative, legible...

- Ability to provide clear, concise and accurate information and/or explanations to contractors/ co-workers/ public/ stakeholders. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, organized, diligent...

- Ability to develop and deliver presentations to internal and external clients on a range of related topics at a level appropriate to the audience. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: creative, positive, innovative...

- Ability to reference, interpret and apply appropriate acts and regulations to accurately respond to inquiries and questions on ministry related issues or refer them to the appropriate person. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, accurate, clear...

- Ability to calmly listen, assess and clarify problems and respond with options to contractors/land owners/local levels of government/industry/consultants/staff who may be angry, upset and uncooperative to achieve understanding and reach agreement. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, supportive, approachable...



Leadership

- Ability to successfully resolve and mediate conflicts with staff/landowners/contractors/stakeholders/clients.
(Bring/Learn)

Personal attributes which may link with this skill statement include: positive, professional, resourceful...

- Ability to provide clear, concise instruction on detailed tasks to individuals and/or groups of co-workers to enhance skills and improve job performance. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, decisive, approachable...

- Ability to instruct, guide, coach and encourage others to enhance their job performance and further develop their skills.
(Bring/Learn)

Personal attributes which may link with this skill statement include: approachable, decisive, flexible, open-minded...

- Ability to independently provide guidance and direction to employees/colleagues/public/public members so that they are able to reach their full potential. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: open-minded, flexible, approachable, decisive...

- Ability to assign work to others taking into consideration priorities, employee's workloads, skills and the work that needs to be accomplished. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: decisive, flexible...

- Ability to promptly and objectively evaluate work performance and encourage employees to meet set work standards.
(Bring/Learn)

Personal attributes which may link with this skill statement include: results-oriented, supportive, confident...



- Ability to anticipate, listen, analyze and offer recommendations to enable team members/engineers to solve problems.
(Bring/Learn)

Personal attributes which may link with this skill statement include: supportive, resourceful, positive...

- Ability to influence and persuade team members to reach a mutually acceptable or workable solution. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: supportive, resourceful, positive...

- Ability to recruit, select, train and monitor employee performance according to human resource policies, procedures and guidelines. **(Learn)**

Personal attributes which may link with this skill statement include: decisive, independent, diligent...

- Ability to guide and coach a diverse group of employees, that results in a team that can meet its goals and objectives, while maintaining a healthy, productive, respectful and safe work environment that is free of discrimination.
(Bring - Supervisor only/Learn)

Personal attributes which may link with this skill statement include: respectful, supportive, empathetic...

Problem Solving

- Ability to collect and analyze relevant data to make accurate and timely decisions on a variety of quality/quantity control/operational issues. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: organized, results-oriented...

- Ability to accurately identify, develop, evaluate and implement sound solutions to resolve quality control issues and problems.
(Bring/Learn)

Personal attributes which may link with this skill statement include: decisive, resourceful, focused...



- Ability to accurately detect, locate and resolve equipment problems within standards and procedures. **(Bring)**

Personal attributes which may link with this skill statement include: responsible, thorough, results-oriented...

- Ability to plan, develop, implement, monitor, evaluate and recommend project plans taking into consideration the direction of the organization and changing priorities. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: thorough, results-oriented, organized...

- Ability to persuade, influence and convince landowners, the public, interest groups and contractors to come to an understanding and achieve a workable agreement. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: thorough, decisive, considerate...

Interpersonal

- Ability to establish and maintain open and honest professional relationships that achieve understanding and mutually acceptable or workable solutions with a variety of people. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: supportive, approachable, service-oriented...

- Ability to actively listen, acknowledge concerns, provide explanations and/or options to diffuse or resolve difficult situations with people in a calm and courteous manner. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: supportive, attention to detail...

- Ability to maintain confidentiality while liaising with clients and stakeholders in order to meet ministry goals and objectives/staying within policies and procedures. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: service-oriented, confident...



- Ability to develop and maintain positive work relationships with contractors/co-workers. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: team player, adaptable, positive...

- Ability to positively influence, persuade or convince others to achieve understanding and reach agreement. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: decisive, understanding...

- Ability to create an environment that recognizes, supports, respects and welcomes diversity of employees and clients. **(Bring - Supervisor only/Learn)**

Personal attributes which may link with this skill statement include: welcoming, objective, understanding...

Team/Independence

- Ability to work alone and in a team environment to complete required tasks while following correct operational procedures and accomplishing work goals. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: team player, flexible, open-minded, sense of humor...

Organizational

- Ability to independently, or as a part of a team, assess, plan and adjust work priorities to meet required objectives, in consideration of deadlines and resource availability. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: organized, team player, conscientious...

- Ability to consistently plan, organize and prioritize urgent or routine work taking into consideration task complexity, conflicting deadlines, and multiple reporting relationships. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: organize, decisive, focused...



Analytical

- Ability to accurately compile data and monitor quality control and test results for statistical information purposes.

(Bring/Learn)

Personal attributes which may link with this skill statement include: attentive to environment, results-oriented...

- Ability to collect and analyze relevant data to identify trends and issues and develop options and solutions. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, creative...

- Ability to identify areas for improvement by analyzing problems and recommending solutions that contribute to the development of new methods or approaches to improve work processes and systems. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: conscientious, creative, self-motivated...

- Ability to examine, understand and appropriately apply acts, regulations, policies, contracts and procedures to issues relevant to the program. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: decisive, thorough, attention to detail...

- Ability to accurately compile, calculate, prioritize and monitor expenditures and revenues within established guidelines. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: accurate, thorough, attention to detail...

- Ability to develop, implement and/or update short and long-term projects, operational and business plans ensuring established ministerial goals and objectives are met.

(Bring/Learn)

Personal attributes which may link with this skill statement include: attention to detail, flexible, service-oriented...



- Ability to accurately identify and assess employee development needs and identify learning opportunities. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: supportive, decisive, resourceful...

Technical

- Ability to identify, collect and record relevant information through observation, surveying, checking, sampling/scaling and/or inspections. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, results-oriented...

- Ability to create and generate accurate queries, reports and documents using a variety of software programs as well as specialized packages, including word-processing, spreadsheet, database, internet and project management programs. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, thorough...

- Ability to accurately record and prepare technical reports using computer graphs/graphics, word-processing, spreadsheets and statistical software. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, thorough...

- Ability to accurately perform mathematical calculations related to engineering design calculations, specifications, and/or cost estimates, budget allocations. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, organized...

- Ability to safely operate, and consistently maintain, accurately calibrate relevant scientific, analytical and sampling equipment with precision. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: attention to detail, thorough...



- Ability to inspect and monitor road/construction or service contracts and lease agreements to ensure compliance to the integrity of the operation. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: diligent, attention to detail, thorough...

Safety/Stress/Security

- Ability to apply the principles of standard precautions and proper safety practices according to established protocols, safety guidelines and existing legislation to protect self, co-workers, the public and the environment. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: decisive, confident, thorough...

- Ability to responsibly receive, handle, label, document and store samples to maintain specimen/sample integrity within established guidelines. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: thorough, attentive to environment...

- Ability to recognize, accurately assess and immediately respond to unsafe hazards and/or working conditions to ensure the safety of self, staff and others. **(Bring/Learn)**

Personal attributes which may link with this skill statement include: thorough, resourceful, dedicated...



Personal Attributes

(Bring)

Personal Attributes identify qualities of character, which a person must have to be an effective and successful performer in the job. They are underlying characteristics which are deep and enduring parts of an individual expressed most of the time. They are one's personal style or personal effectiveness, such as feelings, attitudes, habits and traits. Each of these is demonstrated by behavioural examples which allow one to objectively determine whether an individual possesses the required personal attributes.

Attributes, together with the knowledge and skill competencies, help you to predict what a person will do in a given situation.

Personal attributes for the Engineering Assistants and Technicians include:

To Be...

- decisive
- pro-active
- understanding
- results-oriented
- creative
- self-motivated
- approachable
- legible
- considerate
- attention to detail
- conscientious
- determined
- welcoming
- equitable
- supportive
- independent
- a team player
- innovative
- tolerant
- dedicated
- resourceful
- quick learner
- diligent
- professional
- organized
- attentive to environment
- accommodate individual differences
- confident
- service-oriented
- flexible/open minded
- thorough
- focused
- adaptable
- willing to learn
- honest
- positive
- sense of humor
- responsible
- respectful
- objective
- empathetic

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