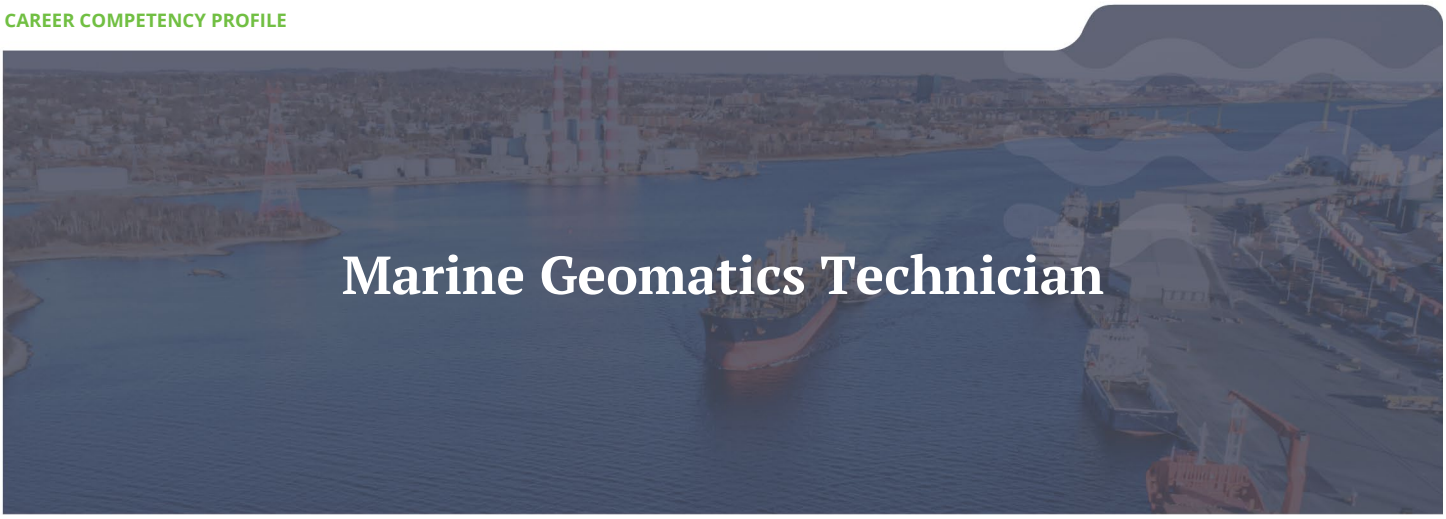

Marine Geomatics Technician

ROLE OVERVIEW

Marine geomatics technicians gather, analyze, interpret data captured in the terrestrial, marine and coastal environments and use this geospatial information for applications in natural resources, geology, and environmental research.

They convert technical information like soil density and properties into digital representations to be used by engineers, governments and interested stakeholders.

They use specialized computer systems, engineering measures and geological concepts to collect geospatial data using imagery, global positioning devices and survey equipment. They conduct marine, land and infrastructure surveys using surveying software to provide geographical data on various projects. They engage in professional collaborative efforts with other members of the team, stakeholders, and government bodies to ensure project requirements are achieved.

Marine geomatics technicians provide information on maritime boundaries, contribute to infrastructure planning, titles, parcel identifiers and other documents from land registry as well as reports to ensure conformity to standards and specifications. They often engage in frequent travel, are mostly on board a vessel and are usually expected to work in various geographical settings, weather conditions and climates. Marine geomatics technicians often require a post-secondary education in geography, survey technology or a related field with experience using a wide range of analytical and visualization software's.

STRATA LEVEL: 2 – Supervisor/Technician

Also Known as:

- Geographic Information Systems Technician
- Geomatics Technician
- Surveying Technician

Education and Experience:

- A post-secondary education or diploma in engineering, geography, survey technology, geomatics, or a related field
- Experience with relevant software's such as AutoCAD, EsriProducts, Auto desk map 3D, Tempest, Civil 3D, Microsoft Office suite, GNSS rovers, Optical total station, Micro Survey and others.
- Knowledge of or Proficient with different data structure models, model building, remote sensing concepts, GIS analytical concepts, georectification and orthorectification processing of raster imagery and spatial data

Associated NOC(s):

2255 - Technical occupations in geomatics and meteorology.

TECHNICAL

Geographic Information System

Use geospatial information systems (GIS) technology, equipment, or systems to apply geospatial analysis procedures to produce data layers, maps, tables, or reports.

- Prepare and deploy satellite positioning or drone equipment to collect survey data.
- Acquire rater imagery to inform survey maps to interpret aspects of collected geospatial data.
- Report and archive datasets in multiple coordinate systems such as latitude/longitude, and cartesian coordinates.
- Enter datasets into GIS or CAD software to prepare layered maps at approximate scales, extension, and orientation to effectively describe the data.
- Use manual methods to generate new map layers to meet survey specifications and requirements.
- Apply advanced analytical modelling, 3D rendering, and plot creation procedures to create visual representations of geospatial data.

Field Surveys

Conduct field surveys to collect information on the area's ecosystem, landscape, or organisms to determine impacts of human activity and the intra-ecosystem relationships.

- Use survey equipment and instrumentation to collect and gather samples and data to identify characteristics.
- Apply appropriate techniques to conduct field surveys to ensure data is accurate, reproducible, and relevant to survey plan.
- Attempts to leave no trace while conducting surveys to mitigate the effects of project activities on surrounding ecosystem to prevent the loss of biodiversity.
- Adheres to protocols and procedures while using survey equipment and materials to ensure data is accurately collected.

Data Analysis

Applies recognized statistical tools and techniques to interpret and analyze data for the purposes of uncovering trends, patterns, and opportunities to enable strategic decision making.

- Confirm data is sufficient and valid prior to analysis to ensure data was collected with current legislations, survey plan, and specifications.
- Use appropriate methodologies and techniques to analyze field survey data to produce accurate, reliable, and unbiased results.
- Apply mathematical models to perform analysis and derive solutions to specific problems.
- Seeks feedback from other technical specialists to confirm interpretations and ensure all conclusions are aligned with project plan.
- Prepares technical and research reports on observations, findings, and/or impacts to communicate results to stakeholders, industry, government, or the public.

Project Coordination

Coordinates components of project activities to improve workflow and designate responsibilities for project deliverables.

- Meet with clients to discuss topics such as technical specifications, customized solutions, or operational problems to coordinate solutions and project activities.
- Confers with other technical staff to disseminate field survey results to implement project activities.
- Contribute to a multi-disciplinary team to plan, implement, and execute survey work to facilitate further project activities.

Database Administration

Organize and maintain databases to ensure that information is available and accessible to the organization to facilitate analysis, research, and decision making.

- Maintain or modify existing relevant databases to query and modify stored data.
- Provide technical support to users or clients to maintenance, develop, or operate GIS databases or applications.

PERSONAL AND PROFESSIONAL

Communication

Positively directs outcomes by delivering communication that results in a better understanding of goals and objectives and that capture interest and gain support for immediate action.

- Interprets and presents data results to stakeholders and senior management to facilitate decision making.
- Asks questions when assigned unfamiliar tasks to ensure understanding and accuracy.
- Prepares documentation for existing and upcoming products to describe functionality and composition to communicate technical specifications to a wide audience in plain language.
- Uses non-technical language to effectively communicate with team members of all experience levels.

Collaboration

Engages in professional collaborative efforts with other members of the team, including sharing information and expertise, utilizing input from others, and recognizing others' contributions to work towards a common goal.

- Ensures tasks are completed in the most efficient manner to optimize workplace output.
- Work in partnership with other practitioners, both internal and external, to execute projects.
- Shares relevant and useful knowledge, experience, or expertise to aid team members accomplish their objective more efficiently or effectively.

LEGAL, REGULATORY, AND POLICY

Health and Safety Procedure

Adheres to and advocates specific workplace safe operating procedures and occupational health and safety requirements within a defined jurisdiction to ensure the health and safety of others.

- Participates in safe workplace training as required to ensure an up to date understanding of health and safety best practices.
- Identifies potentially hazardous working conditions and safety problems to be corrected in workplace safe operating procedures and employee reviews.
- Uses appropriate Personal and Protective Equipment (PPE) in all circumstances.
- Reports incidents or problems to appropriate authorities to ensure all risks are accounted for and corrected.

ENVIRONMENTAL

Site Assessment

Analyses an area's ecosystem to understand the impacts of human activity and development to assist in determining appropriate use cases for an area's development and management.

- Contributes to complex environmental studies to assess the effects of development activities to an environment.
- Collaborate with other technical specialists to confirm roles, responsibilities, and permissions to accurately conduct site assessment.
- Use GIS technologies to visualize an areas terrestrial characteristic to provide aspects of due diligence to site assessments.

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