**Department of Human Resources**

**OPSEU Job Description**

**Job Title:** GIS Programmer and Developer

**Job Number:** L-085

**NOC:** 2174

**Band:** 9

**Department:** Library, Maps, Data & Government Information Centre (MaDGIC)

**Supervisor Title:** Head, MaDGIC

**Last Reviewed:** August 15, 2012

**Job Purpose**

Reporting to the Head of the Maps, Data and Government Information Centre, the incumbent is responsible for a range of activities associated with the design and delivery of library web services and GIS technologies. Primary duties include: Arc GIS for Server (Enterprise) programming, GIS programming and web server script development, design and development of web interfaces and tools, database design and implementation, records management and documentation. The incumbent plays a key role in the development of teaching curriculum and online instruction resources for the Centre and assists with the promotion and delivery of instructional content to graduate and undergraduate programs in the environmental life sciences, social sciences and humanities. The incumbent serves as a technical consultant and resource person to faculty, staff, students and co-workers in the use and availability of maps and cartographic resources, spatial and statistical data, and government publications, and in the application of GIS desktop and web server technologies.

**Key Activities**

***GIS Support Technologies, Web Programming and Design:***

1. Develops, edits and maintains GIS programs and scripts for desktop, server and mobile applications using a variety of languages and software, adhering to industry standards for web and GIS technologies.
2. Develops customized web interfaces and tools for GIS query, analysis, editing and visualization.
3. Analyses, tests, and resolves production problems.
4. Performs impact analysis for suggested systems changes, patches and upgrades.
5. Writes manuals and documents all procedures.

***Database Development, Management and Design:***

1. Designs and develops GIS database models and templates, writes and edits programs for accessing, maintaining, linking and populating databases, verifies database integrity and documents procedures, meeting a variety of library, researcher and stakeholder requirements.
2. Creates and maintains metadata following industry standards.

***Systems and Hardware Support:***

1. Administers the library’s GIS servers and workstations by installing and troubleshooting system software and performing application maintenance, upgrades and enhancements as required.
2. Troubleshoots campus ESRI Desktop and Server installations, writing guidelines and lending support to operational issues as they arise. Provides feedback to Trent IT on campus installations and responds to student and faculty inquiries.
3. Reviews performance logs and monitors system performances.
4. Performs automated and manual back-up and restores processes.

***Client Services:***

1. Assists with client services and the development of library instruction programs for undergraduate and graduate programs in support of maps and cartographic resources, spatial and statistical data, government publications, GIS desktop and web server technologies.
2. Responds to inquiries from faculty, staff, students, university administration, co-workers, research labs and members of the public. Conducts interviews, and provides written and oral responses, meeting client deadlines.
3. Guides researchers in formulating GIS project requirements and advises on alternatives. Assists with problems related to researcher production incidents and develops solutions.
4. Designs, develops, maintains, revises, and validates instructor-led and web-based training materials and exhibits.
5. Produces high-quality cartographic maps, reports and data extracts.
6. Assists with program delivery and instruction meetings with small and large groups across all academic disciplines and levels of knowledge.

***Other Duties:***

1. Develops and maintains various statistics for the unit using a variety of software, forecasts changes, and provides output in a variety of formats as requested
2. Assists with special projects and performs other duties as assigned.

**Education**

Honours University Degree (4 year) in a related field, plus a College Degree or Post-Graduate Diploma in Geographic Information Systems.

**Experience Required**

1. Minimum 5 years of directly related experience, including 3 years of progressive programming experience with ArcGIS Server Java Script API.
2. Minimum 3 years’ experience in web site design and web server configuration (e.g. IIS) as well as development experience using Web-based languages and technologies such as ASP.NET, C#, VB.NET, JavaScript, XML, Python, PHP, JSON, HTML5, CSS, Node js
3. Experience with open JavaScript libraries such as Dojo, jQuery, Ext JS.
4. Extensive experience using ESRI suite of software.
5. Knowledge of PCI Geomatica and remote sensing technologies.
6. Knowledge of open source GIS desktop, mobile and server environments and applications.
7. Experience with RDBMS and MS SQL Server.
8. Strong verbal and written communication skills including technical writing and documentation skills.
9. Excellent records management and organizational skills.
10. Demonstrated ability to meet aggressive deadlines, working on multiple projects with varying deliverables.
11. Strong client service and research skills appropriate to an academic environment.
12. Must be able to work in a team and collegial environment, as well as independently with minimal supervision.
13. Highly adaptive and flexible to changing environments and priorities.
14. Must be able to work evenings or occasional weekends.
15. Strong record of engagement in the workplace and profession and a commitment to keeping up with new technologies.

**Responsibility for the Work of Others**

*Indicate whether the incumbent is directly or indirectly responsible for the work of others. Provide the title of the position(s) as well as an example of how the incumbent is responsible for the work of others on a daily basis. Specifically, indicate whether the position has responsibility for hiring and supervision of student workers.*

Direct Responsibility

Student Employees