Job Description

Job Title:	Information Systems Specialist - Data Developer
Department:	Mechanical and Mechatronics Engineering
Reports To:	I.T. Manager
Jobs Reporting:	None
Salary Grade:	USG 9
Effective Date:	March 2019

Primary Purpose

Reporting to the Information Technology Manager, the Information System Specialist (IT Specialist) will develop and deliver software targeted to support academic administration processes. This includes collecting and analyzing data into reports, configuring, testing and delivering requirements to internal administrative faculty and staff (administrative, technical and teaching) teams. In more detail, s/he will be responsible for the full stack development of online forms using java scripting and databases to maximize the efficiency of administrative systems and integrate software solutions to satisfy diverse computing needs for day-to-day operations. S/he provides comprehensive and sustainable IT solutions to the department using the department developed database. As part of the Information Technology team, the System Specialist is also responsible for the daily operational administration, support and server maintenance of all information system technology, s and related computing systems in the Mechanical and Mechatronics Engineering Department. These responsibilities include management of the online forms using SharePoint and Skybow add-on for SharePoint, database system, web server and supporting infrastructure, enabling and improving outcomes for administrative, teaching, and research computing within the department.

Key Accountabilities

Software and application management
- Provides customized data management system for department;
- Provide expertise for requirements definition, functional design, configuration, implementation, testing, training and documentation to deliver database solutions;
- Assesses client needs, recommends database solutions and creates customized databases for tracking and utilizing department, business data;
- Ensures compatibility and interoperability of database with other University databases and computing systems;
- Consults with users on current or proposed procedures, problems, and requirements in order to define systems needs and streamline administrative work flow;
- Facilitates effective database solutions that meet regulatory requirements and departmental obligations;
- Ensures a high level of availability, security, data integrity for custom-built applications;
- Creates queries and provides custom reports and extracts for data analysis;
- Understands key technical environments to effectively identify integration, security, scalability, and performance requirements;
- Maintains software to create reliable technology solutions that increase staff productivity;
- Troubleshoots problems and errors in software and improve data processing efficiency, effectiveness and user satisfaction.

Custom report development and data analysis

- Participate and/or lead system or department projects that may include performing assigned project tasks, project planning, documenting, communicating, scheduling, organizing or attending meetings
- Participate in acquisition and implementation of new computer systems or software, including product research, product demonstrations and RFP development
- Complete departmental requests and ongoing operational tasks that include; data extracts, data cleanup, database coding, data exchange, reporting and technical support

Maintain department / support research websites

- Acts as Site Manager for the department website and controls user access for content editing;
- Provide advice and direction relating to the design, creation, maintenance and presentation of web pages;
- Monitor the department website to assure it stays online, functions without flaw and assures users a rich online experience;
- Provide support for research department websites
- Liaise between IST, the Faculty and department users to ensure consistent Waterloo branding and image are preserved;
- Stay up to date on the web's latest technologies and make sure the site and its products are always mobile-friendly and multi-platform ready

Projects, requests and operational tasks

- Participate and/or lead system or department projects that may include performing assigned project tasks, project planning, documenting, communicating, scheduling, organizing or attending meetings
- Participate in acquisition and implementation of new computer systems or software, including product research, product demonstrations and RFP development
- Complete departmental requests and ongoing operational tasks that include; data extracts, data cleanup, database coding, data exchange, reporting and technical support

Services development

- Design and development of new technical services and procedures in support of the Department's needs.
- Identify, propose, and acquire or develop applications and technological solutions to support the department's academic and research missions;
- Manage technical projects using best practices to achieve successful outcomes;
- Recommend enhancements and improvements to systems and processes;
- Provide guidance on technological evolution

All employees of the University are expected to follow University and departmental health and safety policy, procedures and work practices at all times. Employees are also responsible for the completion of all health and safety training, as assigned. Employees with staff supervision and/or management responsibilities will ensure that assigned staff abide by the above, and actively identify, assess and correct health and safety hazards, as required.

Required Qualifications

Education

- A University degree or College diploma preferably in computer science, software engineering, software development or a related information technology area of study or equivalent education and experience

Experience

- 2 - 3+ years' experience developing software applications and/or full stack development using

software development methodologies (SDM) and practices such as prototyping, rapid application design, agile or waterfall for system architecture, with experience conducting requirements gathering, testing and code design
- 1 - 2+ years' experience developing .Net based windows or client/server applications using Microsoft Visual Studio and using VB .net or C# .net programming language and/or experience developing web based applications using ASP .Net / MVC architecture, HTML, CSS and JavaScript
- Experience designing and maintaining SQL databases, such as Microsoft SQL Server and Access databases and using database tools
- Experience developing custom reports programmatically or using report-writing tools
- Experience developing web applications or supporting Windows or Linux Server operating system platforms would be an asset using current web programming languages

Knowledge/Skills/Abilities
- Basic web development using HTML, CSS, JavaScript, JQuery and knowledge of SOAP or REST APIs
- Microsoft SQL Server (2012 or newer) database development, Microsoft Access, SQL management studio, T-SQL query language (or similar) and XML
- Strong interpersonal, organizational, communication, analytical and problem solving skills
- Red Hat Linux OS, Microsoft Windows Server 2012, PHP, Python, PERL. MySQL and PostgreSQL databases would be an asset
- Previous MS SharePoint on premise experience an asset
- Ability to handle multiple tasks, and work in teams or independently

Nature and Scope
- **Contacts:** Contacts include: other members of MME, IT staff across the University in individual and group contexts; staff, faculty, students and visitors associated with the department; technology specialists other institutions and organizations; and technology vendors.
- **Level of Responsibility:** This position performs specialized work with minimal supervision. I.T Manager available for consultation and advice on complex issues that arise.
- **Decision-Making Authority:** Make recommendations to management on the entire lifecycle (development, purchase, repair, and replacement and decommissioning) of hardware and software. May decide when and how to affect the working environments of clients
- **Physical and Sensory Demands**: Long periods of sensory attention required. May need to lift or manipulate computing equipment occasionally.
- **Working Environment:** Most work takes place in private offices in front of a computer workstation. Travel to staff and faculty offices and computing labs on campus regularly required. Hours of work are similar to standard office hours, with some flexibility in scheduling and the occasional requirement for work to be done outside of office hours due to special events, emergency situations, or to minimize disruption to clients. The position requires balancing competing demands of short and long term projects, periodic interruptions when engaged in focused work, and the awareness that any errors may damage large numbers of computing systems and/or affect the ability of clients and peers throughout the School and in some cases the entire University to accomplish their jobs.