



Class No.:	
Original Date:	2015
Revision Date:	Major: June 2021
Pay Group:	24

CLASS SPECIFICATION

LIBRARY SYSTEMS ANALYST

NATURE AND SCOPE OF WORK

This is complex and specialized technical work in the fields of library systems and data analysis. The incumbent in this position is primarily responsible for the administration, configuration, integration, documentation, and employee training in the use of sophisticated systems in a dynamic environment, as well as library data and metadata collection, verification, conversion, processing, visualization, analysis and reporting. The incumbent is also responsible for overseeing systems and data/metadata tasks assigned to staff.

The incumbent reports to the University Librarian (UL) and works closely with the Metadata and Systems Librarian, the IT department, and systems vendors, and consults with the Digital Services Librarian and other Library faculty and senior staff.

ILLUSTRATIVE EXAMPLES OF WORK

- In collaboration with the Metadata and Systems Librarian, administers library systems including the Integrated Library System (ILS); performs installation, operation, maintenance, reconfiguration and upgrades; acts as primary technical support contact for ILS users, including librarians, staff, and IT.
- Gives technical guidance to staff assisting with systems and data/metadata tasks such as answering staff questions about how to perform the work and providing feedback to ensure work is completed in the time frame needed.
- Researches, evaluates, recommends, and implements new systems and enhancements to existing systems to increase capacities and capabilities in collaboration with Metadata and Systems Librarian.
- Creates and performs complex statistical and database queries on library operations databases and systems and external linked open data resources using custom coded software and scripts, specialized tools, methods and workflows.
- Performs data/metadata analysis by collecting, normalizing, synthesizing, visualizing, and reporting data and metadata. Identifies and resolves data issues and provides technical support.
- Diagnoses, researches, and resolves systems issues and interdependencies with the University's IT infrastructure and on site and external vendor systems.

- Ensures availability and correct / secure operations of critical library systems using IT, system vendor, and by self-written monitoring tools and procedures.
- Actively participates in and monitors multiple internal and external technical communications channels including other libraries and related professional and technical forums.
- Plans, develops, and maintains new software applications and enhancements to existing applications using current coding and data standards; writes systems and application documentation and procedures.
- In collaboration with the Metadata and Systems Librarian and Digital Services Librarian develops and maintains well-organized systems, application, and data/metadata documentation; in coordination with library staff supervisors, ensures adequate staff training and procedures in systems and data/metadata use; reviews and offers critical analysis of staff procedures and documentation with respect to systems and data/metadata use.
- Creates and maintains code repositories using version control systems (Git).
- In collaboration with the Metadata and Systems Librarian and Digital Services Librarian, serves as a resource person in support of the catalogue discovery environment, actively analyzing and configuring normalization rules, mapping and code tables, and the user interface.
- Manages cloud-based server environments (AWS, Azure) and on premise virtual servers using a VMWare platform in collaboration with the Metadata and Systems Librarian and Digital Services Librarian.
- In collaboration with the Metadata and Systems Librarian, applies complex manipulation of datasets for cataloguing and other library functions using modern library and data science data collection, query and analysis tools, standards and programming languages
- Collects, processes, cleans, and performs data analysis on data/metadata using appropriate tools including OpenRefine and current and new library and data science linked data standards.
- Performs link checking and correction in websites and datasets and automated testing of digital resource availability of hyperlinks via existing and advanced custom coded utilities in Python and appropriate Python libraries and utilities such as Selenium browser automation and headless browsers.
- Works with the UL, librarians and other senior staff on data and metadata policies, procedures, and methods to meet the requirements of the library and the university.
- Participates in the development of policies and procedures for the unit.
- Explains the operation, use and technical processes of systems and data/metadata analytics and presents results of analytics to both technical and non-technical end-users, including librarians and library staff.
- In collaboration with the Metadata and Systems Librarian, serves as an escalation point for library systems, software and hardware decisions and problem solving.
- May be required to take training and act in the capacity of a floor warden as part of the University's Emergency Preparedness Plan (Fire, W.H.M.I.S, and Earthquake).
- Performs duties related to the qualifications and requirements of the position.

REQUIRED KNOWLEDGE, SKILLS, AND ABILITIES

- Thorough knowledge of all functions and configuration settings of the Integrated Library System (ILS) including database design and structure, backups, user management, and record loading.
- Thorough knowledge of data and metadata standards, schemas, vocabularies, ontologies, taxonomies, linked data, and open data resources.
- Thorough knowledge of MARC format, cataloguing and metadata tools libraries, and current and emerging cataloguing and linked data standards.
- Thorough knowledge of web programming standards, tools, techniques, and best practices.
- Thorough knowledge of business English, spelling, punctuation and arithmetic.
- Thorough knowledge of word processing, complex spreadsheet analysis, and database applications, including the development and use of macros, VBA scripting, and application interoperability.
- Thorough knowledge of graphics applications for communicating and visualizing complex information for data science and systems.
- Thorough knowledge of Structured Query Language (SQL) syntax and techniques.
- Thorough knowledge of modern programming and scripting languages such as Python as well as Regular Expressions and API creation and use.
- Considerable knowledge of Machine Learning and Natural Language Processing AI methods and tools.
- Considerable knowledge of Command Line interfaces, Linux, and PC software and hardware.
- Considerable knowledge of and experience with programming languages, development platforms, code libraries, editors and other tools commonly used in Data Science.
- Considerable knowledge of Technical writing.
- Considerable knowledge of Technical Services policies, procedures and work methods.
- Considerable knowledge of the Project Management process.
- Considerable knowledge of and experience with information architecture including databases, servers, networks, IT Security frameworks, and data backup/recovery.
- Considerable knowledge of content management systems (CMS) including content approval, versioning, and creation while applying internal content standards and Web Content Accessibility Guidelines (WCAG) standards and other web best practices.
- Considerable knowledge of data management and data curation including data gathering, transformation, visualization, and analysis, including statistical analysis, predictive modelling, and hypothesis testing.
- Working knowledge of the legal and regulatory frameworks (copyright, creative commons, privacy and security) of data/metadata.
- Extensive and practiced skill in troubleshooting, diagnosing and resolving issues with complex integrated systems, software, and data.

- Ability to sustain long periods of intense concentration and attention to detail.
- Ability to perform complex work with a high degree of accuracy.
- Ability to apply or create tools and workflows to collect, clean, process, analyze, and report complex data/metadata; design and build data analysis experiments and to create advanced queries using multiple programming languages, scientific algorithms and tools.
- Ability to understand and communicate complex technical information clearly, concisely and effectively both verbally and in writing.
- Ability to establish and maintain effective working relationships with other employees, students, service providers and representatives, technical support contacts, peers, systems vendors and the general public.
- Ability to maintain confidentiality.
- Ability to work independently with minimal supervision.
- Ability to install, test and maintain library systems.
- Ability to multitask, plan, organize, prioritize and effectively meet deadlines.
- Ability to use and manage Wiki systems, Learning Management Systems (LMS) and applicable course and module block development.
- Ability to train, delegate and monitor the work of staff assisting with systems and data/metadata project support tasks.
- Ability to lead and participate in library systems and other projects in a team environment.
- Ability to identify needs and provide documentation and training in library systems, Integrated Library System (ILS), and advanced Office application functions to employees.
- Ability to identify and implement digital transformation opportunities.
- Ability to keep current with rapidly changing trends in applicable computer science, library science, and data science technologies, tools, methods, and best practices through professional development and formal education.

REQUIRED TRAINING AND EXPERIENCE

- Completion of a two-year Library and Information Technology diploma from a recognized institution supplemented by courses or training in computer science and data science.
- Four years of directly related experience.

REQUIRED LICENCES, CERTIFICATES AND REGISTRATIONS

- Foundations certificate in ITIL V3 (Information Technology Infrastructure Library).