#### Trent University LogoOPSEU JOB DESCRIPTION

**Job Title:** Demonstrator/Technician

**Job Number:** SS-077 | VIP: 1388

**Band:** OPSEU- 8

**Department:** Trent School of the Environment

**Supervisor Title:** Director, Trent School of the Environment

**Last Reviewed:**  September 21, 2021

#### **Job Purpose:**

In co-operation with faculty, and under general supervision of the Director, assist in the delivery of academic services in the School of Environment, by demonstrating, instructing in laboratories, field laboratories, classrooms and seminars. Preparing teaching materials (e.g. manuals, assignments), supervising and coordinating Teaching Assistants, marking undergraduate student work, maintaining class records and tutoring students individually. Ensuring that health and safety requirements are being met in laboratories; assist in the management of the School of the Environment (TSE) laboratories and provide technical support for teaching facilities used by faculty, undergraduates, graduates and research assistants. Purchase laboratory supplies and equipment, and help maintain the TSE program equipment budget. In agreement with the TSE Director serve on TSE related external and internal committees and organizations.

#### Key Activities:

##### General Demonstrator/Technician Duties

* In co-operation with other instructors, teaches, demonstrates, and supervises undergraduate student classes in laboratory, field (aquatic and terrestrial), and computer settings in the TSE.
* In co-operation with other instructors, teaches safety awareness and procedures and monitors student safety in laboratory and field classes.
* Organizes and supervises Teaching Assistants with respect to laboratory instruction, explaining the objectives of the laboratory components of the course and background information.
* Works with course instructor to instruct and supervise student teaching assistants (GTA, AA). Allocates marking and keeps records of assignments. Keeps records of hours worked by student teaching assistants.
* In co-operation with other instructors, organizes, researches, designs and prepares laboratory manuals, handouts, assignments and electronic instructional materials.
* Evaluates undergraduate students as required on the basis of written work, laboratory reports, tests, essays, exams, and oral presentations.
* Invigilates tests and exams.
* Provides one-on-one instruction of undergraduate students who need assistance with course-related material, assignments, and computer-related problems.
* Manages the laboratory section of the blackboard for the School undergraduate courses as designated by the Director. Tasks include managing grades, laboratory assignments and quizzes, announcements, course content, monitoring any discussion forums.
* Assists graduate students and research assistants in equipment use, troubleshooting and choice of methodology.
* Prepares analytical and sampling equipment and supplies for field- and lab-based classes.
* Troubleshoots departmental instrument problems and liaises with instrument manufacturers to develop solutions. Liaises with instrument manufacturer technicians during the installation and repair of departmental instrumentation.
* Works with other staff members to maintain and keep inventories of departmental equipment and supplies including a chemical inventory.
* Maintains and keeps an inventory of equipment (including AV) and teaching reference material to be loaned to undergraduates, graduates and faculty.
* Available to undergraduate students for consultation regarding course related material.
* Participates in any internal or external committees as mutually agreed upon with the Director of the School.
* With the agreement of the Chair obtains/maintains training to facilitate job expectations (e.g. WHMIS, First Aid, Radiation Safety, Transport of Dangerous Goods, Driver’s License, etc.)
* Investigates and purchases laboratory supplies and departmental scientific equipment based on need and in co-operation with the other members of the Departmental Library/Equipment Committee.
* Advises students on curriculum, timetable scheduling and course choices
* Participates in any internal or external committees as mutually agreed upon with the Director of the School.
* Is available as a resource to external science related organizations. (e.g. Science Fair, Peterborough Children’s Water Festival).

##### Indigenous Environmental Studies & Sciences (IESS)

* In consultation with the TSE Director, coordinates duties with the Director of the IESS Program.
* Serves on the management committee of the IESS Program, providing input and follow-up for its development and operation.
* Provision of technical and logistical support, and direct instruction of students in selected IESS courses offered by the School of Environment.
* Works with the IES Director and TSE Director to adhere to the budget available for the IES program and maintains accurate and current records of financial transactions.
* Works with the Director of IESS on the recruitment of students to the IESS Program, including leading IESS initiatives in selected recruitment fairs/symposia and preparing display, paper and electronic recruitment materials.
* Liaises with and advises faculty and students who are involved with IESS and IESS courses as required.
* Manages and maintains departmental vehicle.
* Assists with the maintenance and installation of instrumentation at the Trent Climate Station and maintains the database.
* Maintains the Program’s equipment, supply and laboratory teaching budgets, and special project budgets.

##### Student Placements & Supporting Recruitment Activities

* Prepares reports and proposals for funding, program projects, and joint departmental projects.
* Works with the TSE Director to promote recruitment, coordinating and leading science tours, and on-going contact with high schools.
* Works with the TSE Director to establish community liaisons and student placement opportunities by meeting with students, ensuring the completion of placement-related paperwork, and registering students in the department’s placement courses.
* Works with Trent University’s Careerspace team to remain informed about university-wide experiential learning opportunities, Risk Management procedures, and data reporting procedures.
* Assists in the preparation of promotional materials and coordinates the setup and display of departmental promotional booths.
* Actively promotes recruitment through attendance of Trent University Open houses and Ontario University fairs.
* Is available as a resource to external science related organizations. (e.g. Science Fair, Peterborough Children’s Water Festival).
* Works with the TSE Director to assign Graduate Teaching Assistants and Academic Assistants to support the department’s undergraduate courses with approval by the School of Graduate Studies and the Office of the Dean.
* With the agreement of the TSE Director obtains/maintains training to facilitate job expectations (e.g. WHMIS, First Aid, Radiation Safety, Transport of Dangerous Goods, Driver’s License, Website Maintenance, Boat License etc.).

##### Laboratory and Field Studies and Faculty Support

* Works with TSE Faculty to support laboratory and outdoor field classes in the TSE with a heavy focus on lab-based and field-based skills.
* Provides technical field and lab support to sessional faculty as needed for undergraduate courses offered in the TSE.
* Operates and trains students on the use of analytical instruments such as ICP-OES, UV/VIS Spectrometer, Dionex Ion Chromatography and others.
* Instructs undergraduate and graduate students on the proper methodology required to use equipment within a laboratory and field setting.

#### Education Required:

Masters of Science Degree.

#### Experience/Qualifications Required:

* Two years of directly related experience.
* Thorough working knowledge of the discipline of Environmental and Resource Science.
* Basic knowledge of geography, chemistry and biology.
* Ability to make solutions and run biological assay tests.
* Demonstrated ability to work independently with minimal supervision.
* Excellent interpersonal and communications skills (both oral and written).
* Knowledge of computer operating systems, word processing, spreadsheet, and Internet applications.
* Knowledge of procedures for obtaining information as needed through library, Internet, and personal contact sources.

#### Supervision:

* Graduate Teaching Assistants and undergraduate academic assistants.
* Student employees (e.g. IESS TWSP and Resource Center Employees)

**Job Evaluation Factors:**

##### Communication

Internal:

* Students: Teach and explain course material and evaluations.
* Demonstrators (within and outside department): Develop course material.
* Technicians: Troubleshoot, repair, and replace equipment. Discuss and arrange equipment sharing.
* Staff, Faculty, and other Instructors: Answer queries about course content, Trent policy, and technical issues.
* Faculty: Provide Department administration and service.
* Teaching Assistants: Explain assignments and troubleshoot problem situations.
* Liaison Office on recruitment and science facility tours
* Graduate students and research assistants: instruction on equipment usage and administration.
* Physical Resources: Identify, clarify, and arrange repairs and new projects.

External:

* Retailers and Manufacturers: Gather information about and order equipment; troubleshoot technical and equipment problems.
* Parents and prospective students: Act as a resource in recruitment efforts.
* TSE-related Community Organizations: Act as a resource.
* Technical Staff from equipment and instrumentation suppliers.
* External TSE related community organizations.
* Establish student placement opportunities with external organizations

##### Motor/ Sensory Skills

* Fine motor skills - manipulating equipment and measuring devices, data entry via keyboard and mouse
* Dexterity - precision in manipulating equipment and measuring devices
* Gross Motor Skills - moving analytical and sampling equipment, boats, and motors
* Hearing - responding to student and instructor queries
* Sight - reading reports and student assignments, precision in manipulating equipment and measuring devices
* Touch - precision in manipulating equipment and measuring devices

##### Effort

Mental:

* Sustained concentration - marking assignments, creating new hard copy and electronic educational materials, reading new material, analyzing problems, troubleshooting computer problems, working with equipment

Physical:

* Standing, Walking - teaching and demonstrating laboratory and field classes
* Lifting - moving equipment and rearranging laboratories and classrooms

##### Working Conditions

Physical:

* Injury - Operation of dangerous analytical and sampling equipment, exposure to dangerous materials, conducting field laboratories in an unpredictable outdoor environment
* Monotony - Data entry, sorting of student assignments
* Discomfort - Poor lighting and noise conditions

Psychological:

* Complaints - From instructors and students about timetable, marks
* Frequent coinciding deadlines - Many major tasks due simultaneously.
* Multiple competing demands - At any one time, many different active tasks (e.g., between different courses)
* No control over work pace - Deadlines and nature of work results in unavoidable busy periods
* Handling of student appeals - Angry students displeased with grades
* Interruptions - Emergency support and last minute changes interrupt planned activities and schedules