KWANTLEN POLYTECHNIC UNIVERSITY

JOB DESCRIPTION

Dept.: Faculty of Science

Working Title: Laboratory Instructor - Physics (174, 175, 176, 177)

Date: September 1999

Job Class: 13

PRIMARY FUNCTION:

The Laboratory Instructor – Physics assists faulty with the overall course delivery by assuming responsibility for instruction, student guidance and assessment (including report marking in the lab component of any course). The Laboratory Instructor – Physics may be assigned to work alongside other Laboratory Instructors (or a faculty member) or alone in fulfilling the above functions. She or he is expected to perform with a minimum of managerial supervision by the Dean. Lab responsibilities may involve any preparatory, first and second year university level or applied program service courses offered in the Physics Department's educational plan.

Special Considerations:

- The Physics faculty is ultimately responsible for course delivery and development, including the laboratory portion of any course. The Laboratory Instructor – Physics assists the faculty through her or his role in the labs in achieving this aim. As such, the Laboratory Instructor – Physics may be required to work in direct support of others within the Physics Department. Outside of her or his scheduled student contact hours in the lab, the Laboratory Instructor – Physics may, as the need arises, be asked by the faculty to provide additional job related assistance.
- The Laboratory Instructor - Physics must be comfortable with the use of data acquisition, spreadsheet, graphing and word processing software, and be willing and capable to learn the use of other software incorporated into the lab exercises.

JOB DUTIES AND TASKS:

a. Deliver the pre-lab instruction which includes experimental objectives, methods, techniques and content including theory, equations and calculations.
b. Demonstrate the use of instrumentation, equipment and supplies with respect to practical, technical and safety considerations.
c. Instruct, supervise, tutor and/or guide, and provide feedback and technical assistance to students throughout the scheduled student contact time to enable them to not only learn from the assigned laboratory work, but also to complete the work in the set time.
d. Evaluate and correct laboratory reports, quizzes or lab exams and student performance in the lab; compile resulting marks and submit to the relevant faculty for input towards the students' final grades.
e. Develop, revise and invigilate lab exams.
f. Develop student experiments, apparatus and evaluation methods and make proposed changes to the lab manuals.
g. Provide instruction on the use of computer hardware and software for data acquisition and analysis (graphing and calculations) and for reports.
h. Explain specific methods for data analysis and measurement procedures.
i. Offer instructional assistance to students outside of the scheduled lab contact time.
j. Instruct students on safety procedures and regulations in the lab including WHMIS regulations, safe usage of chemicals, equipment, glassware and MSDS processes.
k. Verify that equipment and instrumentation are operational and set up for laboratory experiments.
l. Ensure compliance with safety standards by monitoring laboratory procedures, practices and student activity including establishing safety practices in lab environment.
m. Develop and use spreadsheets to facilitate student data analysis and reporting.
n. Help maintain lab equipment in good working order and do minor repairs as necessary.
o. Monitor work of student assistants as required.
p. Provide coverage for the Physics Laboratory Technician as required.
q. Assist the faculty with the supervision of final exams as required.

SUPERVISION RECEIVED:

Reports to Dean, Faculty of Science.

SUPERVISION/DIRECTION EXERCISED:

Assign, monitor and review work of 20+ students.

PHYSICAL ASSETS/INFORMATION MANAGEMENT:

Operate and maintain sensitive lab equipment, and perform minor repairs as necessary.

FINANCIAL RESOURCES:

Provide input into budget and purchasing decisions.

The above statement reflects the general details considered necessary to describe and evaluate the principal functions of the job identified, and shall not be construed as a detailed description of all the work requirements that may be inherent in the job.

EMPLOYER REQUIRED KNOWLEDGE, SKILLS AND ABILITIES:

1. Have a B.Sc. in physics, or its equivalent, supplemented by previous related laboratory experience.
2. Have a good working knowledge of the course content, laboratory equipment and techniques pertaining to the instruction of physics courses at the preparatory, first and second year level.
3. Have a working knowledge of the operation and routine maintenance of laboratory equipment and apparatus.
4. Be able to communicate effectively in speech and writing the facts, figures and explanations and procedures in a laboratory setting.
5. Be able to effectively demonstrate proper laboratory techniques.
6. Be able to use standard word processing and spreadsheet programs on Windows-based and/or Macintosh personal computers.
7. Be able to perform general maintenance and troubleshooting of computers.
8. Be able to establish and maintain effective relationships with people of varied backgrounds and experience.