THE UNIVERSITY OF BRITISH COLUMBIA

Department of Computer Science, Mathematics, Physics and Statistics
Irving K. Barber Faculty of Science
The University of British Columbia Okanagan Campus
1177 Research Road
Kelowna, BC Canada V1V 1V7

Job Posting:

Undergraduate Academic Assistant (Physics Assistant)

Note: Applicants must be residing in Canada for the duration of the work, and must have a Canadian bank account and a SIN number.

Hiring Preferences: This position is open only to **undergraduate students** currently enrolled at UBC-Okanagan or UBC-Vancouver, with a **strong preference** for UBCO students from any of these three designated groups: **women**, **first-generation students**, or **indigenous peoples**.

Position Details

This is a **part-time**, **hourly**, **undergraduate student** position in support of a grant to adopt an open homework system in several courses at UBC Okanagan.

Undergraduate student(s) hired in this position will be **paid a wage of $17.82/hr** with a projected total of **about 50 hours** (though the number of hours is subject to increase).

The position starts May 15th, but the majority of the work will be conducted from May 31 - December 31st, 2021.

Project Details

In this project we will be developing a large bank of questions towards the ultimate goal of implementing a mastery learning approach in introductory physics courses. The primary motivation is to encourage student success and learning by de-emphasizing exams and reducing test anxiety. A secondary motivation is to promote long-term learning and retention with distributed practice.

We will be using existing OER (Open Education Resource) problem banks as a starting point, and algorithmically generating both diagrams and questions (with full solutions) using the python programming language. Using python will allow us to maintain only the root questions and all variants would be dynamically generated uniquely for each student. This will be a core-feature of this open problem bank.

Job Responsibilities

The job responsibilities for this position include:

1. Work with course instructors to create physics problems in Python, LaTeX, and Markdown.

2. Course content will be modified to be inclusive language (for students with English as an Additional Language) and have diverse representation (particularly incorporating indigenous knowledge, and lived experiences of women and other visible minorities).

3. Work with the project lead (Drs. Jake Bobowski and Firas Moosvi) to test the problems and ensure solutions are correct.

4. Maintain and document problems as well as track project issues on GitHub using the Issue Tracker, Milestones, and Discussions.

5. Other duties related to the project, as assigned.

This is a grant-funded project and job responsibilities are subject to change.

Working Environments/Norms

This position is a remote position and the team stays connected using Mattermost (open-source Slack alternative), GitHub issues, and email. Team members are expected to have semi-regular working hours and a reasonable turn-around time for responses, particularly to key issues. Team members must also provide their own laptop or desktop computer, as well as a stable wireless connection.

Qualifications

To be a good fit of this project, you should:

- be a fast learner!
- be willing to learn!
- be reasonably tech-savvy.
- be familiar with computing concepts such as variables, loops, arrays, conditionals, and functions.
- have basic familiarity with GitHub.
- have familiarity with the python programming language.
- be comfortable in testing frameworks, particularly in python.
- have good knowledge of physics, particularly term 1 and term 2 calculus-based courses and the topics of: kinematics, mechanics, dynamics, energy, momentum, sound, waves, electricity, and magnetism.

Note: If you feel like you do not meet some of the qualifications, but definitely match on others, I encourage you to still apply! We can discuss your skills and experiences a bit more during an interview. Let me decide whether you are likely to succeed in this position, and do not sell yourself short!

How to apply

Please submit a cover letter, brief resume, and a list of relevant courses using the UBC Student Job Board. In your coverletter, please indicate whether you fit one or more of the designated groups outlined in the "hiring preferences" section. If you have any questions about the positions, please contact the project leads: jake.bobowski@ubc.ca and firas.moosvi@ubc.ca.

Equity, Diversity Statement

Equity and diversity are essential to academic excellence. An open and diverse community fosters the inclusion of voices that have been underrepresented or discouraged. We encourage applications from members of groups that have been marginalized on any grounds enumerated under the B.C. Human Rights Code, including sex, sexual orientation, gender identity or expression, racialization, disability, political belief, religion, marital or family status, age, and/or status as a First Nation, Metis, Inuit, or Indigenous person.

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