



Team CMD

UBC Learning Analytics Hackathon 2019
November 3, 2019

Raise your hand if you are a second-year,
upper year, or grad student of UBC



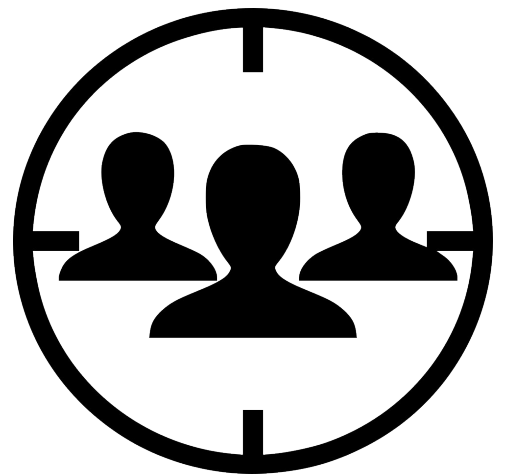


Do you remember all course numbers
for all courses that you ever taken?



Targeted Audience

All students, especially upper-year, graduate students, and students who were on exchange



Problem

- The course calendar has pre-requisites, but only course codes. What if you don't know these codes?
- Course codes are internal to university. Any other university developed its own course codes
- Unreasonable usage of student memory

Developed Idea/Solution

- Develop a student friendly interface for searching courses based on: their course history and pre-requisites (course title, course description if the course is taken)

[Getting started](#) [Search courses](#) [Update course calendar](#) [Credentials](#)

UBC personalized academic calendar

Hello!

CPSC 221

Design and analysis of basic algorithms and data structures; algorithm analysis methods, searching and sorting algorithms, basic data structures, graphs and concurrency.

Credits: 4.0

Pre-requisitives: one of

yes : CPSC 210: Design, development, and analysis of robust software components. Topics such as software design, computational models, data structures, debugging, and testing.

no : EECE 210:

no : CPEN 121:

no : MATH 220: Sets and functions; induction; cardinality; properties of the real numbers; sequences, series, and limits. Logic, structure, style, and clarity of proofs emphasized throughout.

Section	Activity	Term	Days	StartTime	EndTime	Instructor	Building	Room number
101	LEC	1	MWF	2:00 PM	3:00 PM	TIEN, GEOFFREY	SWNG	221
102	LEC	1	TR	9:30 AM	11:00 AM	HEEREN, CINDA	DMP	310
1W1	W-L	1	MWF	2:00 PM	3:00 PM	nan	nan	nan
1W2	W-L	1	TR	9:30 AM	11:00 AM	nan	nan	nan

Solution

- ❑ Add pre-req description to the course calendar
- ❑ Personalize it!

First challenges:

- CanvasAPI doesn't know all courses you took, only those that have Canvas webpage
- If the student took the course not in UBC, the system does not have it (the case for exchange students and grad students)

Additional challenges

The data in the course calendar is not clean:

- some courses number is 1 instead of 001 (and yes, I've checked it, it is not Python glitch)
- extra spaces
- inconsistent separators inside a single cell

Dynamical approach:

- different students took different courses, but the user wants to see accurate prereqs for him/her
- each term, courses offered are updated
- privacy and security issues

Ensured privacy and security

- users are anonymous, delicate information like CWL account details, token is not required
- the URL to google spreadsheet is protected via wtforms
- all private data in cookies is AES crypted

Further Directions

- Add better search tool (if incorporated with Canvas, just use their own)
- Add threading
- Allow to save courses for students
- Show progress towards degree
- Add calendar (finding time)
- Add Docker container
- Set up db and replace pandas with SQL

Contacts

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GitHub page:

<https://github.com/kate-melnykova/CanvasAPI-Learning-AnalytiCS>