CMPT395 Project Description – Winter 2023 Term

Introduction.

The School of Continuing Education (SCE) at MacEwan University offers several courses to international students and corporate training. In order to plan the proper utilization of the resources available, a schedule for the lectures of various courses should be created before the start of every term.

The main objective for this term project is to create a **software** the assist with the scheduling process for the Executive Professional Development for International Students (https://www.macewan.ca/academics/faculties-schools/school-of-continuing-education/international-programs/overview/), by **creating a detailed schedule** that allows them to **assign the resources in an optimal way**. Several requirements and constraints need to be observed when putting together the required scheduled.

Requirements and Constraints.

The schedule is subject to various constraints. Here is a list of the most important constraints:

- The number of exact students is unknown (there is only an initial forecasted estimation, but the numbers are subject to change).
- There are seven different programs, which **follow the MacEwan Academic Calendar**:

Bookkeeping & Accounting Technology & Professional Communication
Business Analysis & Professional Communication
Digital Experience Design & Professional Communication
Full-Stack Web Development & Professional Communication
Global Logistics Management & Professional Communication
Project Management & Professional Communication
Supply Chain Management & Logistics and Professional Communication

- There are various formats and patters for lectures:
    - Lecture Time:
        - 3-hours lectures once a week.
        - 1.5-hour lecture twice a week.
        - 2-hour lecture once a week.
        - Etc…
    - Number of hours per course can vary (e.g., 6, 7.5, 15, 21, 24, 28, 33,35).
    - Lectures must be scheduled from **8:00 am to 5:00 pm**, from **Monday to Thursday**.
        - *EXCEPTION: Full Stack Web Development program courses (4:30 pm to 8:30 pm)*
- There are two groups of courses:
    - Core courses and Program Specific Courses (see document "*SCE_ProgramsCourses.xlsx*").
- The software should optimize the scheduling and sequence of courses and the use of physical resources (i.e., classrooms and labs available) to maximize the number of students that can be registered each term.
- The students must not have more than 1.5 hrs. gaps.

Technologies

- The project development is platform agnostic.
- The project should use a private GitHub repository for version control.
- The teamshould follow the source code control process described in the GitHub lab.

Desired Outcomes

- A standalone software to be installed on a Windows machine.
- The app works **without connecting to the Internet**.
- The app helps me to perform the scheduling processes using the inputs mentioned in Figure 1.
- The app should be easy to use.

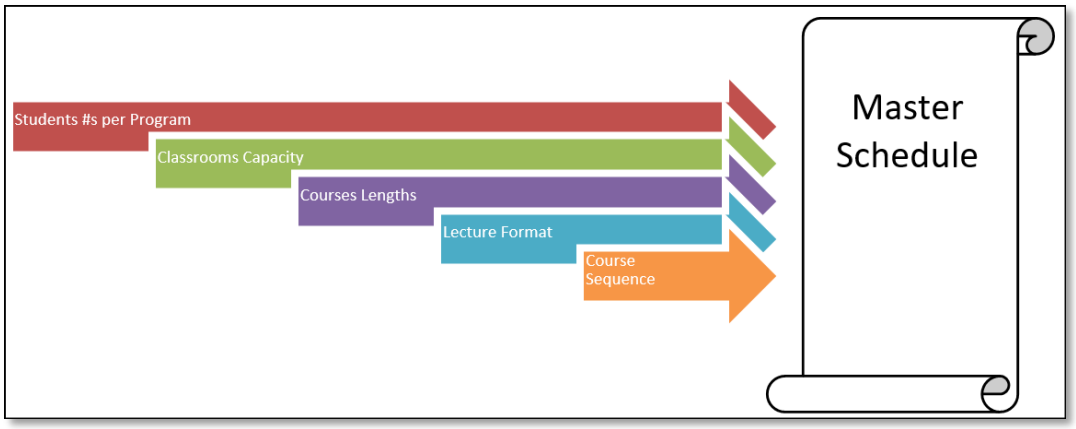

Figure 1: Inputs Provided

Tips for Scheduling

- Create cohorts per program specific to maximize the use of classrooms.
- To prevent overlaps, schedule Core Courses (i.e., PCOM and BCOM) on Mondays and Wednesdays, and Program Specific courses (e.g., PM, BA, FS, DXD) on Tuesdays and Thursdays.
- Always review the academic calendar when doing the scheduling.