

# ACTSC 972, Fall 2022: Course projects

Alexander Schied

Students will carry out a course project as part of the course assessment. This year's topic is *trend following and momentum trading*.

**Assignment of papers.** A list with possible papers will be uploaded to Learn. Students will review the list and send an email to the instructor with their priorities of up to five papers they consider as preferred choices. The instructor will then assign a paper to each student. In this process, the instructor will take the preferences of students into account; random selection will be used if several students choose the same paper. If no paper from the preference list of a student is available, this student will be assigned a random choice from the remaining papers on the list. Occasionally, two students may be assigned the same paper for their projects. In this case, those students will explore different aspects of the paper and are not supposed to collaborate. In exceptional circumstances, students may suggest a paper not on the list, provided it fits into the broad topic of the year.

## Elements of the course project.

1. **Paper summary:** This is a short summary of the relevant parts of the project paper not exceeding 3 pages. It should contain a summary of the main research question, the methods, and the central results of the paper. For more comprehensive papers, students may focus on the aspects of the paper that are relevant for the research project. The level of detail and sophistication should be such that the summary can be easily understood by someone who took our course but who is not familiar with the specific paper. In this part of the course project, mainly the clarity of the scientific exposition and the verbal expression will be judged.
2. **Research project:** Based on the paper, students should conduct a small piece of original research using financial data (in certain circumstances, simulated data may also be acceptable). For instance, one can try to replicate a trading strategy discussed in the paper with a different data set (e.g., using either a different time period or a different asset or both). Students may also take some inspiration from the paper to improve strategies presented in the paper. In this part of the project, students should present a detailed account of their empirical research and its relation to the paper. Students are also encouraged to critically examine the paper and to discuss its possible strengths and weaknesses. This part of the project should not exceed 4 pages.
3. **Project code:** The code used for the empirical research. Students may use any programming language they feel comfortable with, but the code must be well-structured and furnished with detailed comments.
4. **Midterm presentation:** Each student will prepare a presentation of their project to everyone in our class. The length of this presentation should be about 15 to 20 minutes. The presentations will take place during the final sessions of our course.

**Sources for financial data:** Daily OHLCV data for financial time series dating back many years is often available for download on websites such as Yahoo Finance or investing.com. A list of data resources available to Waterloo students can be found here:

<https://uwaterloo.ca/school-of-accounting-and-finance/finance-and-data-analytics-lab>

If longer-dated intraday time series are needed, students may contact the instructor with a request that includes details on the purpose and the required data.

**Deadlines:** All presentations must be completed until the last day of classes. The written material should be submitted via email no later than December 18, 2022.

**General comments:** It is essential that students use good practices for scientific writing. In particular, all material taken from other sources must be appropriately acknowledged. Failure to do so may be considered as plagiarism. **Plagiarism** is a serious academic offence, which can lead to penalties up to expulsion. See

<https://uwaterloo.ca/secretariat/guidelines/guidelines-assessment-penalties>

For this reason, it is recommended that you always choose to include a reference when in doubt. On the other hand, it is also important that students clearly highlight their own contributions.