

Department of Statistical and Actuarial Sciences
FM 9528A Banking Analytics

Course outline for Fall 2020

Although this academic year might be different, Western University is committed to a **thriving campus**. We encourage you to check out the [Digital Student Experience](#) website to manage your academics and well-being. Additionally, the following link provides available resources to support students on and off campus: <https://www.uwo.ca/health/>.

Technical Requirements and Important Dates:

Stable internet connection

Laptop or computer

Working microphone

Working webcam

Classes Start

Reading Week

Classes End

Study day(s)

Exam Period

List of Prerequisites

No courses are required.

Basic financial and statistical knowledge is required to understand the concepts and underlying mathematical processes. Previous programming experience is desirable, but not required. The course will cover Excel and Python, with tutorials and online resources to support the analyses.

2. Instructor Information

Course Coordinator	Contact Information
Cristián Bravo	cbravoro@uwo.ca

Instructor(s) or Teaching Assistant(s)	Contact Information
Amirreza Seddighi	aseddig@uwo.ca
Sahab Zandi	szandi@uwo.ca

	Method	Names
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Table of Contents and Schedule



Week	Dates	Topic
1	Sept 9 – 13	Intro to Banking Regulation
2	Sept 14 – 20	Bonds and credit instruments
3	Sept 21 – 27	Provisions and capital requirements
4	Sept 28 – Oct 4	CRISP-DM and analytics in banking
5	Oct 5 – 11	Credit scoring and GLM applied in banking I
6	Oct 12 – 18	Credit scoring and GLM applied in banking II
7	Oct 19 – 25	LGD and EAD models – Introduction to ensembles
8	Oct 26 – Nov 1	Model interpretability and transparency
9	Nov 2 – 8	Reading Week
10	Nov 9 – 15	Introduction to deep learning
11	Nov 16 – 22	Convolutions and architecture design I
12	Nov 23 – 29	Convolutions and architecture design II
13	Nov 30 – Dec 6	Embeddings
14	Dec 7 – 9	Model deployment

Online Participation and Engagement



- Students are expected to participate and engage with content as much as possible
- Students can participate during sessions or post on OWL after watching the recording
- Students can also participate by interacting in the forums with their peers and instructors

4. Course Materials

There is no assigned textbook for the course. The course incorporates multiple sources, publications, and books which can be used as reference:

Books:



Chollet, F. (2017) Deep Learning with Python. (9781617294433) Manning Publications (last five weeks)

Davison, M. (2017) Quantitative Finance: A Simulation Based Introduction using Excel. CRC Press 2014 (weeks 1-3)

Siddiqi, N. (2017) Intelligent Credit Scoring: Building and Implementing Better Credit Risk Scorecards, Second Edition. Wiley. (Week 5-6)

Hastie, T., Tibshirani, R. and Friedman, J. (2013) The Elements of Statistical Learning, 10th ed. NJ, USA: Springer. Available freely online at <https://statweb.stanford.edu/~tibs/ElemStatLearn/>. Only some chapters are relevant to the course. They will be posted on OWL in each week's description. (Weeks 4 – 9)

An assessment cannot be submitted after it has been returned to the class. A final, summative assessment will be assigned if the assignment is missed.

If a make-up assessment is missed, the student will receive an INC and complete the task the next time the course is offered.

If permission to waive the requirement that students receive evaluation on work totaling 15% of their final grade at least three days prior to the deadline for withdrawal without academic penalty has been obtained from the Dean's Office, a statement to this effect must be made.

Rounding of Marks Statement

Across the Sciences Undergraduate Education programs, we strive to maintain high standards that reflect the effort that both students and faculty put into the teaching and learning experience during this course. All students will be treated equally and evaluated based only on their actual achievement. **Final grades** on this course, irrespective of the number of decimal places used in marking individual assignments and tests, will be calculated to one decimal place and rounded to the nearest integer, e.g., 74.4 becomes 74, and 74.5 becomes 75. Marks WILL NOT be bumped to the next grade or GPA, e.g. a 79 will NOT be bumped up to an 80, an 84 WILL NOT be bumped up to an 85, etc. The mark attained is the mark you achieved, and the mark assigned; requests for mark "bumping" will be denied.

6. Accommodation and Accessibility

Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The Academic Accommodation for Students with Disabilities policy can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf

contact their Faculty academic counselling office to obtain more information about the relevant documentation.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

For policy on Academic Consideration for Student Absences - Undergraduate Students in First Entry Programs, see:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf

and for the Student Medical Certificate (SMC), see:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

Religious Accommodation

Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the Western Multicultural Calendar:

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see http://www.registrar.uwo.ca/examinations/exam_schedule.html).

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy, <http://www.uwo.ca/its/identity/activatenonstudent.html>, the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

All of the remote learning sessions for this course will be recorded.

The data captured during these recordings may include your image, voice recordings, chat logs and personal identifiers (name displayed on the screen). The recordings will be used for educational purposes related to this course, including evaluations. The recordings may be disclosed to other individuals participating in the course for their private or group study purposes. Please contact the instructor if you have any concerns related to session recordings.

Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation, or the participant has the prior written permission of the instructor.

