



# UNIVERSITY OF CALGARY

## DEPARTMENT OF MATHEMATICS AND STATISTICS COURSE OUTLINE

1. **Course:** AMAT 683, Introduction to Computational Finance

Lecture Sections:

L01: TR, 9:30-10:45, MS 452,

Instructor: Tony Ware, MS 586, 403 2207200, [aware@ucalgary.ca](mailto:aware@ucalgary.ca), Office hours: T:12-13, F:10-11

Course website: D2L.

2. **Prerequisites:** Applied Mathematics 481 and 491.

Credit for both Applied Mathematics 683 and 583 will not be allowed.

3. **Grading:** The University policy on grading and related matters is described sections [F.1](#) and [F.2](#) of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Assignments (6)	36%
Project	24% (Due on 15 <sup>th</sup> April)
Final Examination	40% (To be scheduled by the Registrar)

Each piece of work (assignment or final examination) submitted by the student will be assigned a percentage score. The student's average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade (bearing in mind that a **B- grade in the final examination is necessary for an overall grade of B- or better**). The conversion between course percentage and letter grade is given below.

Letter Grade Conversions	
Letter Grade	% range
A+	[95,100]
A	[90,95)
A-	[85,90)
B+	[80,85)
B	[75,80)
B-	[70,75)
C+	[65,70)
C	[60,65)
C-	[55,60)
D+	[50,55)
D	[45,50)
F	[0,45)

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.6](#) of the University Calendar

5. **Scheduled out-of-class activities:** there will be no scheduled out-of-class activities.

6. **Course Materials:** The following three texts (in order of increasing sophistication) are recommended background reading for the course. The course content will be defined by the annotated lecture slides and MATLAB codes given in class and posted on D2L.

- An Introduction to Financial Option Valuation, Des Higham, Cambridge, 2004
- A Workout in Computational Finance, Andreas Binder, Michael Aichinger, Wiley 2013
- Tools for Computational Finance, Rudiger Seydel, Springer,

**Online Course Components:** No online tools will be used the class beyond those provided by D2L and the Top Hat classroom response system.

7. **Examination Policy:** The final examination will be a closed-book exam. A basic scientific calculator may be used, but no device with communications capability will be allowed. Students should also read the Calendar, [Section G](#), on Examinations.

8. **Approved Mandatory and Optional Course Supplemental Fees:** none.

9. **Assignments:** there will be six assignments in the course, and an end of term project, which will be due on the last day of classes. Please note the department policies on the preparation of assignments, including presentation, neatness, stapling, lateness, and plagiarism.

10. **Computation:** there is a significant computational component to the course. Example programs in MATLAB will be provided on D2L. Some assignments will include a computational component. These may be completed using any of the following languages: MATLAB, python, C++ or R. If desired, any student may purchase an inexpensive, student version of MATLAB at the UC Microstore.

#### 11. OTHER IMPORTANT INFORMATION FOR STUDENTS:

(a) **Academic Misconduct:** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties

(b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).

(c) **Academic Accommodation Policy:** Students with documentable disabilities are referred to the following links: [Calendar entry on students with disabilities](#) and [Student Accessibility Services](#).

(d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also

(f) <http://www.ucalgary.ca/secretariat/privacy>.

(g) **Student Union Information:** VP Academic Phone: 220-3911 Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca).  
SU Faculty Rep. Phone: 220-3913 Email: [sciencerep@su.ucalgary.ca](mailto:sciencerep@su.ucalgary.ca); [Student Ombudsman](#)

(h) **Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.

(i) At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses ([www.ucalgary.ca/usri](http://www.ucalgary.ca/usri)). Your responses make a difference - please participate in USRI Surveys.