

**University of Texas at Arlington
College of Business**

FINANCE 5351: SEMINAR IN FINANCIAL MODELING

Fall 2012

Wednesday, 7:00–9:50 p.m., COBA 339

INSTRUCTOR: Dr. Sanjiv Sabherwal

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OFFICE HOURS: Wednesday, 4:30–6:45 p.m.; and by appointment

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COURSE DESCRIPTION

This course provides students with the opportunity to develop the skills needed to build financial models. The course primarily focuses on models used for pricing and analyzing derivative stock options. In addition, portfolio models are also covered.

PREREQUISITE

An introductory finance course (FINA 5311) is a prerequisite for Financial Modeling. An additional finance course (such as Investments or Derivatives) is helpful, but is not a prerequisite. A basic working knowledge of Excel is assumed, although advanced functions in Excel and Visual Basic for Applications will be covered.

STUDENT LEARNING OUTCOMES

At the conclusion of the course, the students will be able to:

1. demonstrate how to apply advanced functions in Excel
2. use Excel's programming language, Visual Basic for Applications (VBA), to set-up user-defined functions and macros to automate repetitive operations
3. implement portfolio optimization models to calculate efficient portfolios and the efficient frontier
4. describe the basics of stock options
5. discuss the binomial option-pricing model
6. build binomial option-pricing models using VBA
7. describe the mechanics of the Black-Scholes option pricing model
8. implement the Black-Scholes option pricing model by using VBA to program new functions

REQUIRED TEXTBOOK

Simon Benninga, *Financial Modeling*, 3rd edition, The MIT Press

RECOMMENDED READING

The Wall Street Journal

COVERAGE

The following topics and chapters will be covered. We will spend a little more than half of the semester on the first three topics (Excel functions, Portfolio Models, and Visual Basic) and the rest on option pricing models.

Excel Functions, Data Tables, and Matrices

Chapter 1: Basic Financial Calculations

Chapter 33: Excel Functions

Chapter 30: Data Tables

Chapter 31: Matrices

Chapter 2 Appendix 2: Getting financial data from the Internet

Portfolio Models

Chapter 8: Portfolio Models: Introduction

Chapter 9: Calculating Efficient Portfolios when there are No Restrictions on Short-Sales

Chapter 10: Calculating the Variance-Covariance Matrix

Visual Basic for Applications

Chapter 36: User-Defined Functions

Chapter 37: Types and Loops

Chapter 38: Macros and User Interaction

Option Pricing Models

Chapter 16: An Introduction to Options

Chapter 18: The Lognormal Distribution

Chapter 19: The Black-Scholes Model

Chapter 17: The Binomial Option-Pricing Model

Some of the above chapters will be covered in more detail than others.

COURSE REQUIREMENTS

Exams

There will be two exams, including one mid-term exam and a final exam.

The final exam will be **comprehensive**.

The exams will be open book and open notes.

There will be no makeup exams. If you have to miss the mid-term exam because of an excusable and verifiable reason, you must contact me before the exam. Failing to do so or failing to provide documentation of the reason for absence from a medical doctor or UTA official will result in a grade of zero on the exam. If I were to excuse you from the mid-term exam, the weight of the exam will be added to the weight of the comprehensive final exam.

Assignments

There will be several assignments. You are required to turn in your solutions to the assignments by the due date. The due dates will be announced in class.

You need to submit the solutions to the assignments via email. Assignments are due by **6:30 p.m.** on the due date. You should send the email from your UTA account because emails sent from other accounts such as yahoo, Gmail, etc., may end up in the UTA spam box. I am not responsible for any e-mail submission that I do not receive – a grade of zero will be awarded in such a case. There is no provision for making up a missed/late submitted assignment. A grade of zero will be awarded for such assignments.

GRADING

The mid-term exam, the final exam, and the assignments will each count for one-third of the overall grade.

No extra credit work will be given to any individual student.

The final letter grade will be based on the following schedule:

90 - 100	A
80 - 89	B
70 - 79	C
60 - 69	D
< 60	F

CLASS WEB PAGE DETAILS

The class web page is located at: <http://web.uta.edu/faculty/sabherwa/>. Some of the files used in class may be made available at the class web page. The password to open these files will be announced in class.

RELEVANT UNIVERSITY CALENDAR DATES

September 3	Monday	Labor Day Holiday
September 10	Monday	Census Date
October 31	Wednesday	Last Day to Drop Classes
December 5	Wednesday	Last Day of Classes

EXAM DATES

Mid-term Exam	October 24	(Date subject to change)
Final Exam	December 12, 8:15–10:45 p.m.	<u>(Please note that the time is different from the regular class time.)</u>

NOTES

Though we are having the class in the lab so that we can access a computer whenever we need to, there will be times when the focus needs to be on the lecture and not on the computer. At those times, I require your undivided attention to the lecture.

Do not use e-mail or surf the web during class.

All cell phones must be turned off and out of sight during class.

UT-Arlington has adopted MavMail (e-mail) as an official means of communication with students. I may provide some information to all of you via e-mail to your UTA e-mail address. It is your responsibility to check your UTA e-mail account.

I reserve the right to make any modifications to this syllabus. Modifications, if any, will be announced during class. You are responsible for all changes announced in class.

SYLLABUS ADDENDUM

Academic Integrity:

It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. According to the UT System Regents' Rule 50101, §2.2, "Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts."

Americans with Disabilities Act (ADA):

The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the Americans with Disabilities Act (ADA). All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at 817-272-3364.

Attendance Policy:

Students are expected to attend each class and students are expected to come to each class with their assignments completed. Any student who must miss a class is responsible for securing any and all assignments for coursework missed.

Student Support Services Available:

The University of Texas at Arlington has established a variety of programs to help students meet the challenges of college life. Support to students includes advising, counseling, mentoring, tutoring, supplemental instruction, and writing assistance. For a complete list of academic support services, visit the Academic Assistance resource page of the Office of Student Success Programs, www.uta.edu/uac/studentsuccess/academic-assistance. To help students address personal, academic and career concerns, individual counseling is also available. For more information, students are encouraged to contact Counseling Services www.counseling.uta.edu at 817-272-3671 or visit a counselor in 216 Davis Hall.

Drop Policy:

Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. Contact the Financial Aid Office for more information.

Distribution of Grades:

The distribution of grades for the semester will normally adhere to the guidelines of the Department of Finance and Real Estate. These guidelines are generally based on College of Business averages for similar courses.

Student Evaluation of Teaching:

The following appears in Administrative Memorandum No. 98-5, dated August 21, 1997, from the President to academic and administrative offices: "Beginning in Fall 1997, teaching evaluations will be conducted in every class every semester for every instructor of record."

College of Business Bomb Threat Policy:

Effective April 8, 1996, the College of Business adopted a policy to deal with the classroom disruption caused by bomb threats in the building. Section 22.07 of the Texas Criminal law states that a Class A misdemeanor is punishable by (1) a fine not to exceed \$4,000, (2) a jail term of not more than one year, or (3) both such a fine and confinement. If anyone is tempted to call in a bomb threat, be aware that UTA has the technology to trace such phone calls.

Every effort will be made to avoid cancellation of presentations/tests caused by bomb threats to the Business Building. Unannounced alternate sites will be available for these classes. If a student who has a class with a scheduled test or presentation arrives and the building has been closed due to a bomb threat, the student should immediately check for the alternate class site notice which will be posted on/near the main doors on the south side of the Business Building. If the bomb threat is received while class is in session, your instructor will ask you to leave the building and reconvene at another location.

To provide information about anyone making a bomb threat, call UTA's crime prevention program at 817-272-3381.

Evacuation Procedures:

In the event of an evacuation of the College of Business building, when the fire alarm sounds, everyone must leave the building by the stairs. All those in the North tower side of the building should proceed to the fire escape stairs located on the East and West sides of that wing. With the current fire alarm system, the elevators will all go to the first floor and stay there until the system is turned off.

FOR DISABLED PERSONS: Please go to the Northeast fire stairs. There is an evacu track chair located on the 6th floor stairwell. There are people trained in the use of this chair and there will be someone who will go to the 6th floor to get the chair and bring it to any lower floor stairwell to assist disabled persons.

Should this be a real emergency, the Arlington Fire Department and UTA Police will also be here to help.

Food/Drink in Classrooms:

College policy prohibits food and/or drinks in classrooms and labs. Anyone bringing food and/or drinks into a classroom or lab will be required to remove such items, as directed by the class instructor or lab instructor.

UTA Student Success Programs:

The University of Texas at Arlington supports a variety of student success programs to help you connect with the University and achieve academic success. They include learning assistance, developmental education, advising and mentoring, admission and transition, and federally funded programs. Students requiring assistance academically, personally, or socially should contact the Office of Student Success Programs at 817-272-6107 for more information and appropriate referrals.

Electronic Communication Policy:

The University of Texas at Arlington has adopted the University "MavMail" address as the sole official means of communication with students. MavMail is used to remind students of important deadlines, advertise events and activities, and permit the University to conduct official transactions exclusively by electronic means. For example, important information concerning registration, financial aid, payment of bills, and graduation are now sent to students through the MavMail system. All students are assigned a MavMail account. **Students are responsible for checking their MavMail regularly.** Information about activating and using MavMail is available at <http://www.uta.edu/oit/email/>. There is no additional charge to students for using this account, and it remains active even after they graduate from UT Arlington.