

Carleton University BUSI 3502 A & B

Investments Fall 2017

Email:	David Jackson <u>david.jackson@carleton.ca</u> Thursday 10:30 – 12:30	Office: 1716 DT Phone: 520-2600 Ext 2383 or by appointment
Section A:	Wednesday 14:35 – 17:25	Classroom: TB 447
Section B:	Wednesday 08:35 – 11:25	Classroom: TB 342

Prerequisites

BUSI 2505 with a grade of C+ or higher. ECON 2009 and STAT 2606, with grades of C- or higher.

The School of Business enforces all prerequisites.

This Course is Prerequisite to

BUSI 4500, BUSI 4502, BUSI 4503, BUSI 4510 and BUSI 4511.

Calendar Description

Procedures and methods of investment analysis. Stock and bond markets. Government regulation of securities markets. Valuation of common stocks and fixed income securities. Options, warrants, convertibles and commodities.

Course Objectives

Vocabulary, concepts and techniques useful in the investment industry (e.g. as a portfolio/money manager). For securities traded in financial markets, we will ask: What is it? Why does it exist? How is it valued? How and where is it traded? What are similarities and differences among classes of securities? We will study the role of risk and return in security valuation and in portfolio diversification. Upon completion, students will understand the process and analysis involved in financial investment, including insight into appropriate allocation of funds across different investment vehicles.

Required Text

Bodie, Kane, Marcus, Perrakis, Ryan and Switzer, **Investments**, 8th Canadian Edition, McGraw-Hill Ryerson, 2015.

Interesting Supplementary Reading:

Malkiel, B., A Random Walk Down Wall Street, W.W. Norton & Co.

Graham, B., The Intelligent Investor.

Graham, B., Security Analysis.

Globe & Mail - ROB, Financial Post, Wall Street Journal, Barrons, Economist

Interesting Online Resources:

You can register with Morningstar for free. Lots of info on mutual funds and ETF's. Morningstar Insight emails, blogs and podcasts. Canadian Investment Review (Electronic journal in Library) Financial Analysts Journal (Electronic journal in Library)

NOTE: There is a required enrollment in Stock Trak for about \$30 per team of two people (2, not 1 nor 3 per team). Registration info below.

Grading

Two Group Problem Sets – Group Work	6% + 4%
Economic Forecast Assignment – Individual Work	10%
Stock Trak Trading Project + Task Summary – Group Work	8% + 2%
Midterm Test	30% or 10%
Final Examination	40% or 60%

Group Problem Sets – Group Hands-in One (1) Copy

Two (2) problems sets are to be done <u>in groups of two or three</u>. One copy of each problem set is due (in hard copy) at the <u>start</u> or during the first <u>break period</u> of the classes shown in the course schedule. For each group, the set with the lower grade will be weighted 4%; the higher set will be weighted 6%. Problem set questions will be posted on cuLearn.

Arrange a group <u>well before</u> each problem set is due. Different groups are allowed for each of the problem sets.

Should group members be unable to agree on the answers to a problem set, perhaps a discussion with another group will help your group come to a consensus. Only one set of solutions will be accepted per group.

Economic Forecast

I Prepare an economic forecast for Canada covering January – December, 2018.

- What do you expect to happen to interest rates and inflation?
- What exchange rate movements are expected?
- What are the prospects for growth in Canada's major economic sectors?
 - Manufacturing, agriculture, financial services, energy, mining, retail, and telecom.
- Cover the energy sector, plus <u>three</u> other major economic sectors.

Include a discussion of the <u>relationship</u> of inflation with: interest rates; exchange rates; and growth in each of your four major sectors.

U What do you expect in the equity and debt markets over the year?

Think about: consumers, producers, government, trade, political factors, ...

Analyse the behaviour of leading indicators (see textbook 15.5).

U What important trends seem to be developing?

□ Maximum 2,200 words (8 – 10 pages, double-spaced), plus any tables. Include a list of data sources and references. (e.g. Monthly risk-free interest rates from January, 1994 – December, 2014 is the one month, constant maturity treasury bill rate provided by Fred II.).

Support the forecast with a reasoned argument, backed-up by supporting data. For example, what happened to oil prices over the last year? Why? Was there a change in demand for energy? Was there a change in supply of oil? Were there political factors at play? Given that, what do you expect to happen to the price of oil and other energy sources over the coming year? Why? What do you see as the impact on other major sectors affected by energy prices? How do you see major users of energy affecting the costs of energy (and oil) over the coming year? This was just an example of how you might approach each sector forecast.

Present a forecast that could help an investor. There are no right or wrong answers. Your line of reasoning and a justification for your position are very important. For example, you will find differing forecasts of interest rates and exchange rates. It likely would not make economic sense for you to forecast: U.S. interest rates unchanged, with Canadian interest rates sharply higher, and the Canadian dollar falling. Doing well on the forecasting assignment involves research – in the textbook, in the library, on the internet. Each group is expected to figure things out for themselves, to learn terms, to find appropriate formulas, just as if they were given an assignment in a job or as if they were preparing to make investments of their own.

A marking guide will be posted on cuLearn.

Some resources for the Forecast Assignment:

- Textbook Chapter 15
- Major bank economics online. For example:
 - https://economics.td.com
 - o <u>www.rbc.com/economics</u>
- Government of Canada Canadian Economic Outlook
- Provincial government economic forecasts

Term Test

The class schedule shows the date of the midterm. In fairness to all, neither alternate test times nor a make-up term test will be administered. Students who miss the term test can have the weight of the test added to the weight of the final exam by presenting a doctor's note or other suitable documentation.

For students who earn a higher mark on the midterm than on the final exam, the weight of the term test will be 30% and of the exam will be 40%. For students who earn a higher mark on the final exam than on the midterm, the weight of the term test will be 10% and of the exam will be 60%. Studying hard to do well on the final exam might significantly raise your course mark.

Final Exam

The final examination will test your understanding of the concepts covered in the lectures and textbook. The final exam is for evaluation purposes, not instruction. It will not be returned to students.

The date and location of the final exam will be announced through the University's normal procedures. Be sure that you are available for the final exam. Allowance will not be made for conflicting travel plans.

NOTE: The final exam will be **comprehensive**, covering material from the **entire** course. Students who earn less than 45% on the final exam will receive an "F", regardless of their total mark in the course.

Trading Project – StockTrak: – Group of Two (2)

You have inherited \$1,000,000. Your objective is to create and manage a portfolio that:

Has an asset allocation appropriate for your age (Page 200);

e.g. People with a long time until retirement can afford to increase risk in order to increase expected return.

Invests according to the required tasks in the order below; and Performs well as of the end of the assignment.

You may: Trade on North American exchanges only; Short sell (Chapter 3); Trade in options and futures towards the middle of the semester, if you are properly hedged (Chapters 18, 19, 20).

Your grade will be based on two measures of performance (see grid below): <u>total portfolio value</u>, and <u>Sharpe ratio</u>, both as of the end of the assignment. As well, your group must fill-in and submit the one-page Stock Trak Task Summary, available on cuLearn.

To better understand valuation, read chapter 16, and *Security Analysis*. Read about the Sharpe ratio in the textbook and / or online. Total value is more likely to reflect luck than is the Sharpe ratio.

Undertake this project with <u>one</u> other classmate – **TWO** students per account. Email the two names of your group to me. Only one student's name is needed on the account. To register, please go to the StockTrak home page, click on "Register" then "Students" and type "Carleton-BUSI3502-F17" as the class name OR go to:

http://www.stocktrak.com/public/members/registrationstudents.aspx?p=Carle ton-BUSI3502-F17 and follow the instructions.

During registration StockTrak may ask for personal information. Some of it strikes me as unnecessary and best kept private (e.g. birthdate). Put down what you decide is appropriate.

There may be a discount code attached to new Bodie/Kane/Marcus textbooks, but you can leave the space blank if you have no code. The dates of the beginning and ending of the assignment are shown in the class schedule below. It is your responsibility to register and pay. Registration opens on September 6th and closes on October 4th. Without an account, your team will receive a zero on this assignment.

Links to StockTrak instructions for trading should be easy to find once you have your account registered. Read the trading restrictions on the website

		Portfolio Value	
		Top Half	Bottom Half
Sharpe	Top Half	8%	7%
Ratio	Bottom Half	7%	6%

carefully. The marking matrix is below. Note that your performance is evaluated relative to the other groups in the course.

Task	
Summary	
2%	

The trading tasks below are related to investment topics that we will be covering. Think about <u>why</u> you are being asked to do each task. For example, in Task 1, why do I say to invest in at least 8 different stocks? Why not everything in <u>one</u> stock? Why do I say to invest in at least 3 different sectors? Why not all in <u>one</u> sector? If you are unsure why you are being asked to do something, pull out the textbook or do a search online and read about it.

NOTE:

At the end of the assignment, your trading history will be examined. The Task Summary will help determine that you carried out each Task. If your portfolio did not satisfy the parameters specified for a task, you will be penalized 0.5 marks per offense. For example, if you do not trade in two futures contracts <u>after</u> completing Task 4, you will be docked 0.5 mark. Or for example, if you complete Task 1 and start Task 2 four days later, you will also be docked 0.5 marks. The maximum number of marks that you can be docked via trading penalties is limited to the grade that you would have received. If you satisfy <u>all</u> tasks, in order, however, the maximum you can receive on this project is shown in the grid of marks for the assignment.

Trading Tasks:

Tasks must be carried out in order. You do not need to start Task 1 on the day that trading opens.

At least 7 days must pass between completing a task (e.g. buy 8 stocks) and starting the next task (e.g. short 2 stocks).

After the 7th day of a task, you may adjust your holdings. For example, for Task 1, buy 8 stocks. On day 8+, you may sell two of the stocks and replace them with three different stocks.

You must complete Task 5 by the close of trading November 15 (i.e. Seven days before the end of the assignment).

Task 1: Dip your toes into investing, in a sensible way.

Invest long (i.e. buy) at least 40% of your portfolio value in at least 8 different stocks (share price \$3.00 or higher) in at least 3 different sectors. Stocks do not have to be in the S&P500; but use the S&P sector / industry guides.

Minimal relevant readings: 1.3, 1.6, 2.3

<u>Task 2</u>: What is the point of shorting stocks? In what way is shorting riskier than going long?

- a) Increase your long equity stake to at least 70% of total portfolio value. Maintain exposure to at least 8 different stocks over at least 3 different sectors. <u>Managing</u> your equity exposure may involve changing some stocks and / or the weights of the stocks in your long holdings.
- b) Short (sell stocks that you do not own) at least 2 stocks for amounts of at least \$10,000 each.

Non-equity holdings may now include bonds. What is your capital allocation?

Minimal relevant readings: 3.2, 3.4, 3.5, 2.1, 2.2

<u>Task 3</u>: How is buying a put option like shorting a stock?

- a) Maintain at least 70% long (You may manipulate your holdings 8+ different securities, 3+ sectors.).
- b) You can continue to hold your short positions, or not, but you now must short using options. (Use options to achieve the same objective as shorting stocks.) Option strategies you may try are a protective put and / or a covered call (a minimum of \$5,000 worth of the underlying stock for a given strategy).

A protective put involves purchasing a put option contract on a stock (or index) that you presently own. If the stock (or index) falls, the put rises to offset it. If the stock rises, the put is worthless, but you've made money on the stock (or index). Downside risk is mitigated.

A covered call involves selling (i.e. writing) a call contract on a stock (or index) that you own. The call will generate a premium since you sold it, and the premium helps to defer losses should the stock price fall. If the stock price rises, you deliver for a profit.

Protective puts and covered calls are far cheaper than shorting stocks, and provides leverage that reduces exposure to downside risk far more efficiently.

Minimal relevant readings: 2.5, 18.2, 18.3

<u>Task 4</u>: Investing using options. What are the two <u>kinds</u> of options traders?

- a) Keep previous tasks in effect. Maintain at least 70% long.
- b) Now enter into options trades, independent of your holdings. You may choose any strategies buying, writing, spreads, combos, etc., trading no less than \$5,000 worth of the underlying asset and no more than \$20,000 in each strategy (absolute values if you choose to write). This means \$20,000 worth of the underlying, not \$20,000 worth of options. You are allowed to reduce your shorts, and / or use protective puts or covered calls, as long as you maintain at least \$2,500 (of the underlying) invested in some form of insurance (independent of the options strategies above). Are your options liquid?

Minimal relevant readings: 2.5, 18.2, 18.3

<u>Task 5</u>: Investing using futures. Can you eat 40,000 lbs of pork bellies?

- a) Keep all previous entries in balance, and maintain at least 70% long.
- b) Enter into at least 2 futures contracts on any commodity. The notional value (value of the underlying commodity) not to exceed \$80,000 each.

Minimal relevant readings: 20.1, 20.2 and: (Khan Academy?)

<u>Task 6</u>: No (trading) rules until the end of the assignment.

For this last task, do whatever you see fit – a free-for-all. There are no required holdings. This as your opportunity to modify your portfolio to try and improve your standing (if you are not doing well), or perhaps to liquidate, to lock in a good ranking. There is no final written submitted portfolio.

In practice, a fund manager might modify her holdings just before the quarterly report so that it reflects what she wants investors in her fund to see, not necessarily what she has done (called window dressing).

How to do better in the course. What you should expect of yourself.

- 1. Attend lectures. Missing lectures could adversely affect your understanding of subsequent materials. Further, having regular times to be fully focused on the course will help your learning.
- 2. Read the relevant chapters of the text book <u>before</u> attending lectures. I won't be spending lots of time spoon feeding you terms and basic ideas.
- 3. Engage during lectures. Participate in class. Ask and answer questions.
- 4. Attempt the assigned practice questions. Work through the Concept Check problems sprinkled through each chapter. Check out the Online Learning Centre offered by the textbook publisher for chapter summaries, practice quizzes, etc.
- 5. Study in a group. Even if you are uncertain, explaining a concept or the solution to a problem to somebody else helps you to understand.
- 6. Enjoy the trading assignment, but keep in mind that it offers you a chance to apply course concepts in a "real" situation. Sensible and well-researched trades likely will improve your Sharpe ratio.
- 7. Read the business section of at least one major newspaper to keep up with the latest developments in the finance community.
- 8. Learn the course material as we go along, not just before the test and exam. Make a commitment to spend a minimum of 15 minutes <u>every</u> day on the course. Certainly, you'll spend much more time some days, but turning your mind to the course <u>every</u> day will pay off.

Best wishes, Dr. David Jackson

Week	Lecture	Text Chapter
Sept. 06	Introduction to Financial Markets.	1
	Professional Ethics.	
	Time Value of Money Review	
13	Financial Instruments.	2
	Trading on Securities Markets.	3
	Start: Stock Trak Assignment.	
20	Return & Risk.	4
	Capital Allocation to Risky Assets.	5
27	Optimal Risky Portfolios	6
Oct. 04	The Capital Asset Pricing Model	7.1 - 7.4
	Due: Group Problem Set 1	
11	Index Models	8
18	Midterm Test (Covers chapters $1 - 8$)	
25	Fall Break – NO LECTURE	
Nov. 01	Bond Prices and Yields	12
08	Term Structure	13
	Duration	14.1
15	Macroeconomic and Industry Analysis	15
	Security Analysis	16
	Financial Statement Analysis	17
	Due: Group Problem Set 2	
22	Options	18
	Due: Forecasting Assignment	19
	End: Stock Trak Assignment	
	Due: Stock Trak Task Summary	
29	Due: Stock Trak Task Summary Futures and Forwards Markets	20

Course Schedule for BUSI 3502 Fall 2017

Every attempt will be made to keep to the schedule above.

IMPORTANT ADDITIONAL INFORMATION

COURSE SHARING WEBSITES

Student or professor materials created for this course (including presentations, posted notes, labs, case studies, assignments and exams) remain the intellectual property of the author(s). Course materials are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).

RECOMMENDED CALCULATOR IN BUSI COURSE EXAMINATIONS

If you are purchasing a calculator, we recommend any one of the following options: Texas Instruments BA II Plus (including Pro Model), Hewlett Packard HP 12C (including Platinum model), Staples Financial Calculator, Sharp EL-738C & Hewlett Packard HP 10bII. Only non-programmable calculators without text storage capabilities will be allowed in the test and exam for this course.

Printed translation dictionaries are allowed, as long as they do not contain handwritten notes. Electronic translation dictionaries are not allowed.

GROUP WORK

The Sprott School of Business encourages group assignments in the school for several reasons. They provide you with opportunities to develop and enhance interpersonal, communication, leadership, follower-ship and other group skills. Group assignments are also good for learning integrative skills for putting together a complex task. Your professor may assign one or more group tasks / assignments / projects in this course. Before embarking on a specific problem as a group, it is your responsibility to ensure that the problem is meant to be a group assignment and not an individual one.

ACADEMIC REGULATIONS

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:

http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheu niversity/

ACADEMIC ACCOMMODATION

You may need special arrangements to meet your academic obligations during the term because of disability, pregnancy or religious obligations. Please review the course outline promptly and write to me with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.

DISABILITIES

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your *Letter of Accommodation* at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (*if applicable*). **Requests made within two weeks will be reviewed on a case-by-case basis.** After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website (www.carleton.ca/pmc) for the deadline to request accommodations for the formally-scheduled exam (*if applicable*).

RELIGIOUS OBSERVANCE

Students requesting academic accommodation on the basis of religious obligation should make a formal, written request to their instructors for alternate dates and/or means of satisfying academic requirements. Such requests should be made during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist, but no later than two weeks before the compulsory event.

Accommodation is to be worked out directly and on an individual basis between the student and the instructor(s) involved. Instructors will make accommodations in a way that avoids academic disadvantage to the student. Students and instructors can confirm accommodation eligibility of a religious event or practice by referring to the Equity Services website (<u>http://carleton.ca/equity/accommodation/religious-observances/</u>) for a list of holy days and Carleton's Academic Accommodation policies. If there are any questions on the part of the student or instructor, they can be directed to an Equity Services Advisor in the Equity Services Department for assistance.

PREGNANCY

Pregnant students requiring academic accommodations are encouraged to contact an Equity Advisor in Equity Services to complete *a letter of accommodation*. The student must then make an appointment to discuss her needs with the instructor at least two weeks prior to the first academic event in which it is anticipated the accommodation will be required.

ACADEMIC INTEGRITY – YOUR RESPONSIBILITY!

Violations of academic integrity are a serious academic offence. Violations of academic integrity – presenting another's ideas, arguments, words or images

as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student – weaken the quality of the degree and will not be tolerated. Penalties may include; a grade of Failure in the submitted work and/or course; academic probation; a refusal of permission to continue or to register in a specific degree program; suspension from full-time studies; suspension from all studies at Carleton; expulsion from Carleton, amongst others. Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy which is available, along with resources for compliance at:

http://carleton.ca/studentaffairs/academic-integrity.

ASSISTANCE FOR STUDENTS

Sprott Student Services

The Sprott student services office, located in 710 Dunton Tower, offers academic advising, study skills advising, and overall academic success support. If you are having a difficult time with this course or others, or just need some guidance on how to successfully complete your Sprott degree, please drop in any weekday between 8:30am and 4:30pm. Our advisors are happy to discuss grades, course selection, tutoring, concentrations, and will ensure that you get connected with the resources you need to succeed! <u>http://sprott.carleton.ca/students/undergraduate/learning-support/</u>

Centre for Student Academic Support

The Centre for Student Academic Support (CSAS) is a centralized collection of learning support services designed to help students achieve their goals and improve their learning both inside and outside the classroom. CSAS offers academic assistance with course content, academic writing and skills development. Visit CSAS on the 4th floor of MacOdrum Library or online at: carleton.ca/csas.

Important Information:

- Students must always retain a hard copy of all work that is submitted.
- All final grades are subject to the Dean's approval.
- For us to respond to your emails, we need to see your full name, CU ID, and the email must be written from your valid CARLETON address. Therefore, in order to respond to your inquiries, please send all email from your Carleton CMail account. If you do not have or have yet to activate this account, you may wish to do so by visiting http://carleton.ca/ccs/students/