Syllabus: Intermediate Finance

Institution:	Business School
Term Dates:	September 30–December 7
Lecture Times:	Wednesdays, 12:00-13:00, Lecture Hall 1
Instructors:	Rory Mullen, Assistant Professor of Finance Grad Student, Graduate Teaching Assistant
Website:	rorymullen.net/teaching
Textbooks:	Hillier et al. (2016), Bodie et al. (2014), Hull (2015)
Assessment:	Participation (10% weight), Final Examination (90% weight)
Final Exam:	Term 3
Prerequisites:	Introduction to Finance
Credits:	15 Credits

Introduction

Welcome to Intermediate Finance. Thank you for your interest in this exciting module, I look forward to working with you. This syllabus outlines the topics we'll cover this term and the policies that will keep the module running smoothly.

Over the next ten weeks, we will strengthen the foundations of finance that you developed in your first finance modules. In week one we review basic concepts and tools, and discuss investment under certainty. We introduce the concepts of uncertainty and risk aversion in week two. In week three we learn to construct optimal asset portfolios, and in week four we use our understanding of portfolios to develop the Capital Asset Pricing Model. We then examine the idea of market efficiency in week six. In week seven we turn to bond markets, interest rates, and term structure. In weeks eight and nine we study derivatives. Week ten we reserve for review and consolidation.

In most weeks, you will have textbook chapters to read, and occasionally an academic paper for background and depth. You will find each week's readings listed in the term schedule and a detailed reference list at the end of the syllabus. In addition to our main textbook, Hillier et al. (2016), we will use textbooks by Bodie et al. (2014) and Hull (2015); the relevant chapters in each textbook are also listed in the term schedule. We'll solve weekly problem sets, and you will receive detailed solutions to every problem set. We'll also use interactive questions and polls to keep lectures interesting.

To be successful in this module, you must meet a few prerequisites. In addition to passing

Introduction to Finance, you should have familiarity with some concepts in mathematics and statistics: you should have a working knowledge of algebra (fractions, powers, logarithms, and geometric series), calculus (differentiating power-law, exponential, and logarithmic functions, finding the stationary points of the graph of simple functions), and statistics (expected value, variance and covariance, standard deviation and correlation, linear regression, and properties of the normal distribution). You may wish to refresh these topics before beginning this module.

Policies and Procedures

This section describes the policies and procedures that help this module run smoothly. We hope that you find the information useful and clear, and we welcome you to reach out with questions.

Attendance. We recommend that you attend lectures to get the best learning experience. The university now requires attendance to be taken at seminars. Missing lectures is sometimes unavoidable, so if you do miss a lecture, you may wish to obtain notes from a classmate. Please email the Undergraduate Office for issues related to absences; there is no need to email the teaching staff directly.

Participation. You will be able to participate in lectures interactively using the Vevox platform (www.vevox.com). In weeks three through seven, you will earn one point for each Vevox poll or question to which you respond. Any response earns one point, and many polls and questions are opinion-based. You can respond to polls and questions as they appear in live lectures, or anytime during the week following the live lecture in which they appear. Your participation mark will equal the point total that you earn divided by the number of polls and questions that appear in lectures during weeks three through seven. A Vevox session will be running during each lecture. This instructional video shows how to join and participate in Vevox sessions.

Reading. Textbook chapters and other assigned reading are a great way for you to reinforce and deepen your understanding of the material that we cover in lectures. You'll find the relevant readings listed in the term schedule in this syllabus. I encourage you to make reading an important part of your study.

Office Hours. You are welcome to attend any of the weekly office hours that we offer for this module. An office hour schedule will be announced near the start of term. The forum on the course website also serves as an asynchronous office hour, where you can also ask questions and receive answers from teaching staff and from fellow students.

Email. We use the forum on the course website as our primary mode of communication outside of lectures and seminars. Forums help us publicly collect and answer the useful questions that you ask during the module. The questions and answers that we develop and record during the module are often helpful later as you prepare for exams. We ask that you post all of your questions to the forum, rather than emailing teaching staff directly. We aim to answer forum questions within two business days.

Work Load. This module carries 15 credits. One credit equates to around 10 hours of learning effort, spent as a combination of contact time (lectures, seminars, office hours) and self-directed

learning time (reading, problem set solving, exam preparation). You can find more information in the Undergraduate Student Handbook.

Revision. We aim to provide excellent support as you revise for the final exam in Term 3. We provide detailed step-by-step solutions to over seventy problems from the seminar problem sets. In addition, we provide a past exam along with detailed solutions. In the weeks before the final exam, we will announce additional support, including a review session in which we answer student questions about the exam. We also provide detailed references to textbooks where you can find additional practice material. We hope that you find these resources helpful!

Marking. Your final mark for the module is a weighted average of your marks in the following areas: Participation (10% weight), Final Examination (90% weight). You will be working hard this term, and your mark should reflect your hard work. For this reason, the teaching staff assign marks thoughtfully and generously, while upholding the high academic standards for which this University is known. You will find a detailed set of marking criteria at the end of this syllabus. After your work is carefully marked by the teaching staff, second markers and external examiners then check the marks for fairness and consistency. Please see the the Undergraduate Student Handbook for more information on examinations and academic standards.

References

Basu, S. (1977). Investment performance of common stocks in relation to their price-earnings ratios: A test of the efficient market hypothesis. *The Journal of Finance*, *32*(3), 663–682.

Bodie, Z., Kane, A., & Marcus, A. J. (2014). *Investments* (10th). McGraw Hill.

Carhart, M. M. (1997). On persistence in mutual fund performance. *The Journal of Finance*, *52*(1), 57–82.

Diez, D., Barr, C., & Çetinkaya-Rundel, M. (2015, July). *Openintro statistics* (3rd ed.).

Elton, E. J., Gruber, M. J., Brown, S. J., & Goetzmann, W. N. (2011). *Modern portfolio theory and investment analysis* (8th). John Wiley & Sons.

Fama, E. F., Fisher, L., Jensen, M. C., & Roll, R. (1969). The adjustment of stock prices to new information. *International Economic Review*, *10*(1), 1–21.

Fama, E. F., & French, K. R. (1992). The cross-section of expected stock returns. *the Journal of Finance*, *47*(2), 427–465.

Hartman, G., Heinhold, B., Siemens, T., & Chalishajar, D. (2015). Apex calculus 3.0.

Hillier, D., Ross, S., Westerfield, R., Jaffe, J., & Jordan, B. (2016). *Corporate finance* (3rd European Edition). McGraw Hill.

Hull, J. C. (2015). *Options futures and other derivatives* (9th). Pearson Education.

Jegadeesh, N., & Titman, S. (1993). Returns to buying winners and selling losers: Implications for stock market efficiency. *The Journal of Finance*, *48*(1), 65–91.

Jensen, M. C. (1968). The performance of mutual funds in the period 1945-1964. *The Journal of Finance*, *23*(2), 389–416.

Rendleman, R. J., Jones, C. P., & Latane, H. A. (1982). Empirical anomalies based on unexpected earnings and the importance of risk adjustments. *Journal of Financial Economics*, *10*(3), 269–287.

Solnik, B. H. (1974). Why not diversify internationally rather than domestically? *Financial Analysts Journal*, *30*(4), 48–54.

Stitz, C., & Zeager, J. (2013). *Precalculus*. Stitz Zeager Open Source Mathematics.

Weekly Timetable

				Instructor in Week									
Type	**Day**	**Time**	**Room**	1	2	3	4	5	6	7	8	9	10
Sem	Tu	12:00–13:00	Sem Rm 1	–	RM	TA	TA	RM	TA	TA	RM	TA	TA
Sem	Tu	14:00–15:00	Sem Rm 2	–	RM	TA	TA	RM	TA	TA	RM	TA	TA
Sem	Tu	15:00–16:00	Sem Rm 3	–	TA	RM	TA	TA	RM	TA	TA	RM	TA
Sem	Tu	16:00–17:00	Sem Rm 1	–	TA	RM	TA	TA	RM	TA	TA	RM	TA
Sem	Fr	12:00–13:00	Sem Rm 2	–	TA	TA	RM	TA	TA	RM	TA	TA	RM
Sem	Fr	14:00–15:00	Sem Rm 3	–	TA	TA	RM	TA	TA	RM	TA	TA	RM
Lec	We	12:00–13:00	Lecture Hall 1	RM	RM	RM	RM	RM	RM	RM	RM	RM	RM

Note: Sem=Seminar, Lec=Lecture, TA=Teaching Assistant, RM=Rory Mullen, –=not scheduled.

Term Schedule

Week	Material
01	Lecture 01: Math Refresher (Optional Self-Study), Lecture 02: Investment Under Certainty, Lecture 03: Risk and Expected Return Seminar: No Seminars, please read math refresher Reading: Stitz and Zeager (2013, optional, Ch 1, 6, & 9), Hillier et al. (2016, optional, Ch 4 & 5), Hartman et al. (2015, optional, Ch 1 & 2), Diez et al. (2015, optional, Ch 2 & 7); Hillier et al. (2016, App 4A); Hillier et al. (2016, Ch 9), Bodie et al. (2014, Ch 5 & 18)
02	Lecture 04: Risk Aversion and Expected Utility I, Lecture 05: Risk Aversion and Expected Utility II Seminar: Problem Set 01 (Financial Arithmetic, Investment under Certainty) Reading: Bodie et al. (2014, Ch 6); Bodie et al. (2014, Ch 6)
03	Lecture 06: Optimal Portfolio Selection I, Lecture 07: Optimal Portfolio Selection II Seminar: Problem Set 02 (Uncertainty and Risk Aversion) Reading: Hillier et al. (2016, Ch 10), Bodie et al. (2014, Ch 6, 7, & 8); Hillier et al. (2016, Ch 10), Bodie et al. (2014, Ch 6, 7, & 8), Solnik (1974, optional), Elton et al. (2011, optional)
04	Lecture 08: Capital Asset Pricing Model I, Lecture 09: Capital Asset Pricing Model II Seminar: Problem Set 03 (Optimal Portfolio Selection) Reading: Hillier et al. (2016, Ch 10 & 12), Bodie et al. (2014, Ch 9), Fama and French (1992); Hillier et al. (2016, Ch 10, & 12), Bodie et al. (2014, Ch 9)
05	Lecture R1: Review of Part I Seminar: Problem Set 04 (Capital Asset Pricing Model)
06	Lecture 10: Market Efficiency I, Lecture 11: Market Efficiency II Seminar: Review Problem Sets 01–04 Reading: Hillier et al. (2016, Ch 13, & 13), Bodie et al. (2014, Ch 11); Hillier et al. (2016, Ch 13), Bodie et al. (2014, Ch 11), Basu (1977), Carhart (1997), Fama et al. (1969), Jensen (1968), Rendleman et al. (1982), Jegadeesh and Titman (1993)
07	Lecture 12: Bond Pricing I, Lecture 13: Bond Pricing II Seminar: Problem Set 05 (Market Efficiency) Reading: Hillier et al. (2016, Ch 5, & App 5A), Bodie et al. (2014, Ch 5, 15, & 16); Hillier et al. (2016, Ch 5, & App 5A), Bodie et al. (2014, Ch 5, 15, & 16)
08	Lecture 14: Forwards and Futures I, Lecture 15: Forwards and Futures II Seminar: Problem Set 06 (Bond Pricing) Reading: Hillier et al. (2016, Ch 25), Bodie et al. (2014, Ch 22), Hull (2015, Ch 1, 2, 3, 5); Hillier et al. (2016, Ch 25), Bodie et al. (2014, Ch 20), Hull (2015, Ch 1, 2, 3, & 5)
09	Lecture 16: Options I, Lecture 17: Options II Seminar: Problem Set 07 (Forwards and Futures) Reading: Hillier et al. (2016, Ch 22), Bodie et al. (2014, Ch 21), Hull (2015, Ch 10, 11, 13); Hillier et al. (2016, Ch 22), Bodie et al. (2014, Ch 20 & 21), Hull (2015, Ch 10, 11, & 13)
10	Lecture R2: Review of Part II Seminar: Problem Set 08 (Options)