

IOE 452 – CORPORATE FINANCE

University of Michigan – Fall 2008

IOE 1610, Tuesday/Thursday 3:00 – 4:30 p.m.

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Office hours: Tuesdays 2:00 – 3:00 p.m., 4:30 – 5:30 p.m. and by appointment.

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Wednesdays 1:00 – 2:30 p.m., IOE 1824

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Fridays 9:30 – 11:00 a.m., IOE 1824

Course objective:

Provide you with an understanding of financial valuation, investments, risk-return tradeoffs, and capital structure decisions.

Course outcomes (ABET Course Outcomes):

By the end of the semester you will learn about NPV and its applications, risk and return, market efficiency and financial securities, corporate dividend policies and capital structure, options and their applications.

Why should you take this course?

This course will help you considerably whether you are pursuing a career in finance or one in another business area such as consulting or strategic planning where you will need to understand what is driving financial choices in your company. Although the course emphasizes corporate policies, you will find that the fundamental financial principles discussed in the course are useful for your personal investment decisions as well. Given the current economic environment, everyone ought to consider taking a finance course or two (I teach IOE 453 in the Winter semester).

Prerequisites:

IOE 301/201 -- *Economic Decision Making*.
IOE 365/265 -- *Probability and Statistics for Engineers*.
IOE 310 -- *Introduction to Optimization Methods*.
Or Instructor's consent.

Graduate students, if you are missing one or more of the prerequisites, it is your responsibility to rectify this deficiency. Please, keep in mind that your GPA might be at risk. Please, talk to me if you have any questions about this!

Required textbook:

Brealey, R. A., Myers, S.C., and Allen F.: “*Principles of Corporate Finance*”, 9th edition, McGraw-Hill, ISBN-10: 0073368695 (abbreviated as BMA)

I strongly encourage you to avail yourself to the resources that come with the textbook as well as the resources offered on the publisher’s web site. These resources not only will help you master the course material, but also will allow you to continuously gauge your progress in the course.

Recommended textbooks (optional):

Welch I. A.: “*A First Course in Finance*”. You can download a free copy of this book from the IOE 452 CTools site (<http://ctools.umich.edu>). This will be an excellent textbook when published: it offers great examples, it is fun to read, and its price is hard to beat (it is free for now). If you are new to finance or would like an additional perspective on what we are discussing, please read Welch’s book in parallel with BMA. You will like it.

Luenberger D. G: “*Investment Science*”. This book is not required, but students (especially graduate students) who would like to have a deeper understanding of the subject will find it very useful. This book is exceptionally well written (we use only the best in IOE 452). The author won the 1999 INFORMS Expository Writing Award for this and his other textbooks. Some of the lecture slides (hopefully self-sufficient) will be based on this book. Copies of this book are on reserve at the Arts, Architecture, and Engineering Library. You can also access a few, pertinent to us, chapters of this book from the IOE 452 CTools site (<http://ctools.umich.edu>) and from the Library electronic reserves.

Other course materials:

Other course-related materials (e.g. lecture notes, articles, and assignments) will be made available at the instructor’s discretion. Although the textbooks and the lectures will give you a good foundation in the principles of corporate finance, to get the most out of this knowledge it is imperative that you keep up with the current financial developments. I strongly urge you to read the financial section of a major newspaper (for example, the *Financial Times*, the *New York Times* or the *Wall Street Journal*) frequently. The *New York Times* and the *Wall Street Journal* are available from the UM libraries. In addition, you can access the *New York Times* for free at www.nytimes.com (after registration). If you decide to subscribe to the *Wall Street Journal* (and I encourage you to do so), please, use “V. Babich” as the referring professor. It is also useful to become familiar with good business magazines. I recommend *The Economist* (available from the UM libraries). Other possible choices are *Business Week* and *Barron’s*. An excellent magazine for financial managers is CFO.com.

Reading financial sections of newspapers requires some preparation and knowledge of financial terms and jargon. If you are unfamiliar with this jargon, a good source to learn it is “The Financial Times Guide to Using The Financial Pages”. Also, check out documents posted on the IOE 452 CTools site (<http://ctools.umich.edu/>). Many investment sites have excellent tutorials and help sections (e.g. <http://finance.yahoo.com> is free and award-winning). You can turn to them for a quick, but comprehensive explanation of financial concepts. Finally, do not hesitate to look up Wikipedia entries or to google for the financial terms unfamiliar to you. It’s a good thing.

CTools site for IOE 452:

Various course documents, announcements, and other resources will be posted on the CTools site for IOE 452: <http://ctools.umich.edu/>. Please, make sure to check the site often. I encourage you to post questions about exams, assignments, lectures or anything else pertinent to the course on the appropriate “Discussion” threads on the IOE 452 CTools site. Either the GSIs or myself will post an answer to your question fairly quickly (usually within 24 hours). I encourage you to use CTools to ask all non-confidential questions instead of e-mailing them because this benefits everyone in the class. I expect that most of the communication among us will happen through the CTools course site. In addition, I have set up space under “Resources\Interesting Articles” at the CTools course site so that everyone can modify it. Please, feel free to post any interesting, course related, articles there (you may get extra credit points for doing this; please, see the extra credit policy below).

Course Policies

Policies adherence:

For all of us to function effectively in a large course like IOE 452 it is essential that **everyone (including you, me and the GSIs), without exceptions, strictly follows** the course policies outlined in this syllabus. Therefore, please, read them very carefully and contact me if you have any questions. **By taking the course you are agreeing to follow these policies.** I will treat these policies as a contract and to be fair to everyone (!) will not grant any exceptions.

Homework:

Homework assignments provide practice, help fix ideas introduced in class or in the text, and constitute a partial guide as to what to expect on exams. Unless otherwise indicated, every homework problem is worth 10 points. Your answers will be graded for readability, comprehensiveness, and brevity.

Case studies:

Case studies are excellent learning tools because they allow you to tackle messy, unstructured problems you are likely to encounter in your future careers. You will have an opportunity to work on three business cases in this course: Ocean Carriers Case, The

Harvard Management Company Case, and Seagate Technology Buyout Case. Further case instructions will be posted on CTools site for IOE 452 (<http://ctools.umich.edu>).

Submission of assignments:

Unless otherwise indicated, all assignments must be submitted **electronically** on the CTools course site by 11:45 pm of the day the assignment is due. Be sure to make a copy of your homework before turning it in. Please, make sure that you not only uploaded, but also **submitted** your file and, please, verify that **CTools shows your assignment as submitted**. Your file should be readable by the standard software (either Adobe Acrobat, MS Word, or MS Excel, in the order of preference). CTools dates all submission and marks all assignments, which are even a second past the deadline, as **late**. Late submissions will lose points at the rate of 6% per hour. For example, if an assignment is due at 11:45 pm on Thursday and a team's submission is marked by CTools as 12:00 am on Friday (15 minutes late), the team losses 1.5% and the team's score is multiplied by 0.985. **No points will be given after the solutions are posted** (we will make an effort to post solutions a day after an assignment is due). You should make every effort to turn in your assignment before the deadline if you wish to receive full credit for your work. Too many times students lose points (for themselves and their teammates) by not following these submission instructions. **To be fair to everyone in the course, there will be no exceptions to the submission rules.** I think that a good strategy to avoid losing points unnecessarily is for every team member to assume the responsibility of double-checking that the team report is submitted on time. I would like to emphasize that **the entire team will lose points for late submissions** regardless who was at fault.

Quizzes:

You may be given short in-class quizzes. Unless otherwise indicated, every quiz question is worth 10 points.

Exams:

There will be three exams in this course. Exam 1 is scheduled for October 2, 2008. Exam 2 is scheduled for November 4, 2008. Exam 3 is scheduled for December 9, 2008. All exams will be given from 3:00 pm to 4:30 pm. Locations of the exams will be announced in class. Students must take exams at the scheduled date and time. If there are highly unusual and absolutely unavoidable extenuating circumstances, the instructor may agree to offer a make-up exam. However, all make-up exams must be scheduled with the instructor at least **2 week** prior to the examination date. **No one will be excused from taking an exam.** Many of you will be interviewing this semester. Good luck! To be fair to other students in the class, please, make sure not to schedule your interviews to conflict with the exam times. All exams are in-class, closed-book and closed-notes exams (you are allowed to bring a one side of a page of formulas to each exam). The homework and the quiz questions provide a rough guide to the level and difficulty of the exam questions. If sample exams are made available, please, make sure to study them thoroughly. The exams are not comprehensive. However, they may contain questions which require you to know the material you learned earlier in the semester.

Teamwork:

You are required to work in teams (four or five students per team) on homework assignments and cases. This requirement is there to simulate your future real job experiences (except that at a real job you will have little control over who your team members are). There will be a couple of homework assignments that you must complete individually. A team is expected to submit a single, jointly-written report per assignment. Make sure to list all of the team members who have substantially contributed to the work on the assignment on the title page of your report.

I would like to caution you against granting an undeserved credit. By raising somebody's grade unfairly, you might be lowering your own and everyone else's grade at the same time. To make sure that all members of your team receive a fair grade, you may be asked to assess their contribution to the team several times during the semester. I urge you to make every effort to contribute to the team, because if your team members indicate that your contribution was greater than the team's average, you will receive more points. However, if your team members indicate that you have not pulled your weight, you will receive fewer points. After every exam, you will have an opportunity to dissolve your existing teams and form the new ones, if you wish.

Please, do not hesitate to contact me if you need any help or if you perceive a potential problem. However, be aware that I might not be able to help you if your team has fired you for not doing your fair share of work.

Only individual work is allowed on the exams and quizzes.

Ethics and etiquette:

Any work that you turn in under your name must be your own (see also **Teamwork**). If you use sources other than the textbook you must cite them. All students are expected to be familiar with the **Engineering Honor Code** (see <http://www.engin.umich.edu/students/honorcode/>) and are bound by its requirements. **Cheating and plagiarism will not be tolerated.** Even putting ethical considerations aside, you are doing yourself a great disservice by cheating instead of doing the work and learning in an elective course on a practical and interesting subject, like finance.

Please, bring a mature, professional attitude to class. Many of you will be graduating soon (finally!) and starting jobs. I expect from you the same level of professionalism (both in your approach to work and in the "products" you deliver) as your future boss will. Just like in "real life," there will be consequences for unprofessional behavior. Your effort to arrive on-time and not to chat or engage in extraneous activities during class will be greatly appreciated. Eating during class is discouraged (unless you bring food for everyone).

Computer use:

You are not permitted to use a computer or any other device that is or can be net-connected during class unless otherwise indicated by me. If you need to use your computer during class, please, get my explicit permission.

Regrades:

If you believe an exam or an assignment question was graded in error and wish to have it regraded, please **submit the entire exam/assignment set to IOE452GSIs@umich.edu (if the assignment is in electronic form) or to Pierre-Yves Brunet (if the assignment is in a hard-copy form), together with a written explanation.** This must be done within **one week** from the date the exam/assignment set was returned. The GSIs and I will be glad to address your concerns. However, beware that the entire assignment may be regraded and **you may lose points** by resubmitting.

Make-ups, excuses, etc.:

No make-ups will be offered (due to the large class size). However, I will drop your lowest quiz grade. If you anticipate a problem, please, let me know at once. **Please, bring a note from your doctor, or the dean's office, or someone in authority who can confirm that you missed an assignment due to an illness or unavoidable circumstances.** Again, to be fair to everyone in the class, no exceptions to this rule can be granted.

Attendance and class participation:

Active class participation is important. You are expected to come to class prepared for the day's discussion (please, see section on preparation). Your class performance may be factored into your final grade (please, see section on extra credits). Empirical evidence supports the assertion that poor performance is strongly correlated with poor attendance.

Class presentations:

To earn extra credit points I encourage you to do a short, 5-minute presentation about a financial instrument that a corporation may use either for financing or for risk management. Both individual and team presentations are allowed. You can present during any lecture, except for exam or case discussion days. In your presentation, you should talk about the financial instrument of your choice, timing of the relevant cash flows, where the instrument is traded, how firms can use it, etc. Please, give examples of companies that do or might use this instrument. If you need inspiration for which financial instrument to discuss, please, check the Wall Street Journal. To reserve your presentation date and your financial instrument, please, post a note on the CTools site in Discussion/Class Presentations with the date and the instrument name in the subject.

Preparation:

Before the class you should read the relevant chapters from the textbooks and attempt to answer either the "after-chapter" quiz questions or the electronic quiz questions (available on the textbook's website and the CD-ROM). My goal for the lectures is to emphasize the important and/or difficult concepts rather than to provide a comprehensive review of the material. During lecture you may be asked to answer questions that are based on the material we are discussing. After the class, you should re-read the pertinent chapters more carefully, solve the quiz questions you could not solve before, and solve the assigned homework problems.

Assistance:

I would like to warn you upfront that the workload in this course could be very intense at times: attending lectures, reading chapters in the textbook and other books, solving quiz questions, completing homework assignments, preparing for case discussions, studying for the exams, following financial news, attending review sessions with the GSIs. Please, beware that although the material is not difficult, there is a lot of it, and we cover it at a very fast pace. **It is your responsibility to keep up with that pace.** However, if you find that you are falling behind and you feel that the course material is extremely difficult, do not hesitate to seek help. Attend review sessions with the GSIs (at least one of us will be available to meet with students every day of the workweek). Stop by my office during office hours (or make an appointment if you cannot meet during regular hours). Ask other students. Post your questions on CTools. Consider hiring a tutor. Remember that the longer you wait before dealing with the problem, the harder it is to fix it. Trust me: nobody will be able to help you (despite our best intentions) if you wait until the last week before an exam.

Feedback and cooperative course development:

If you have any problems with the course, the instructor, or the GSIs, or if you have any ideas how to make this course more useful, understandable, or enjoyable, please, do not hesitate to contact me at any time. I find that the time spent in the course is the most productive and enjoyable for everyone when you and I collaborate on trying to make this the best course at the University of Michigan (at least the best course in the IOE department). **Therefore, your feedback will be greatly appreciated. All comments will be carefully considered.** Please, recognize that not all suggestions can be immediately implemented. For example, I often receive comments about the very same lecture that “it was too slow” and “it was too fast”. Reacting to such contradictory comments could be difficult, but I still appreciate them.

Please, include “IOE 452” in the subject line of your e-mails. This way I will know which e-mails are important.

The GSIs and I will make every effort to respond to your questions as soon as possible. However, we do not monitor our e-mail accounts and the CTools web postings continuously. Therefore, please, allow for an up to 24-hour (sometimes longer) response time. In particular, please, try to ask questions well in advance of submission deadlines.

Name tags:

Please, bring a name tag to class. This will help not only the instructor and the GSIs, but also other students. Your name tag will allow me to keep track of your class participation.

“The IOE Day” holiday:

There will be no class on October 14, 2008 because the GSIs and I will be out of town for a conference.

Grading (approximate):

We will try to design assignments so that if you receive a score of 90% and above on them it roughly corresponds to 'A' grades (A-, A, A+), 80% and above corresponds to 'B' grades, 70% and above corresponds to 'C' grades, etc. However, the exact breakpoints between grades will depend on the performance of all the students in the course. Sorry, but I will not know the exact breakpoints until all grades for all assignments are in. The following is a distribution of contributions of each assignment type to your course score.

Quizzes and Homework	30%
Cases	10%
Exams (equal weights per exam)	60%

Bonus Points:

You will have multiple opportunities to earn bonus points in this course.

The instructor and the GSIs will give extra points to the students who help with the course (e.g. by assisting other students, providing interesting, course related examples or articles, actively participating in the class discussion, etc.)

You may receive participation points by posting relevant and interesting materials on CTools or by presenting them in class. I have set up space under "Resources\Interesting Articles" so that everyone can modify it. Please, feel free to post your articles there. You will receive extra credit points for class presentations (please, see section on class presentations). We will have in-class activities (e.g. games), which will allow teams or individual students to earn bonus points.

To encourage cooperation within teams, bonus points will be awarded based on each team's joint achievements. Specifically, for each exam, a team will be awarded extra-credit bonus points if every team member receives a score in the top 25% of the class scores.

The instructor and the GSIs may also take away points for unprofessional, unethical, or disruptive behavior.

Course Outline

Below is a tentative course outline. We may adjust it from time to time depending on our progress.

Date	Topic	Sources
9/2	Introduction	BMA Ch 1, Syllabus
9/4	Valuation of Bonds ¹	BMA Ch 4
9/9	Valuation of Stocks	BMA Ch 5
9/11	Valuation of Stocks	BMA Ch 5
9/16	Investment Decisions with NPV	BMA Ch 6, 7
9/18	Investment Decisions with NPV	BMA Ch 6, 7
9/23	Dealing with errors	BMA Ch 11
9/25	Managerial flexibility	BMA Ch 11
9/30	Case Discussion: Ocean Carriers	Case
10/2	EXAM 1	Exam 1
10/7	Introduction to Risk and Return	BMA Ch 8, notes
10/9	Portfolio Selection, CAPM	BMA Ch 9, notes
<i>10/14</i>	<i>The IOE Day (no class or office hours)</i>	
10/16	Portfolio Selection, CAPM	BMA Ch 9, notes
<i>10/21</i>	<i>Fall Break (no class or office hours)</i>	
10/23	Capital Budgeting and Risk	BMA Ch 10
10/28	Market Efficiency	BMA Ch 14
10/30	Case Discussion: The Harvard Management Company	Case
11/4	EXAM 2	Exam 2
11/6	Overview of corporate financing, IPOs	BMA Ch 15, 16
11/11	Dividend policies	BMA Ch 17
11/13	Debt Policies	BMA Ch 18
11/18	How much should firms borrow?	BMA Ch 19
11/20	How much should firms borrow?	BMA Ch 19
11/25	Financing and Valuation	BMA Ch 20
<i>11/27</i>	<i>Thanksgiving (no class or office hours)</i>	
12/2	Case Discussion: Seagate Technology Buyout	Case
12/4	Case Discussion: Seagate Technology Buyout	Case
12/9	EXAM 3	Exam 3

¹ You are expected to know the basic NPV formulas. Therefore, Chapters 2 and 3 will not be discussed in class (in detail).