

# Public and Private Investment Analysis

EC 314

Fall 2015

James Woods

## 1 Introduction

This course will examine the tools required to analyze expenditures that yield benefits over time – investments. The use of accounting documents and a focus on the time value of money will allow students to analyze choices in a variety of security, loan, and equipment investment decisions.

The main objectives are to prepare engineers for their PE exams and to provide engineers, economists and others with a shared language and understanding of basic finance topics.

This is a hybrid class. That means that we only have half the usual amount of classroom time but will have a lot more work on-line.

## 2 Prerequisites

There are no prerequisites for this course. However, a reasonable math background, MTH 95, is a practical requirement. The math placement assessment for MTH 111, testing concepts from MTH 70 and 95, i.e., high school algebra, will be given on the first day. If you don't do well, you should reconsider enrolling in this course.

## 3 Contact Information

If each of you sent me an email, text, or message, once a week, I would be unable to respond to all your questions. Rather than emailing questions, I encourage you to post your questions on Piazza. You can find our class page at <http://piazza.com/pdx/fall2015/ec314/home>. There is also a link in D2L. If you have any problems or feedback for the developers, email [team@piazza.com](mailto:team@piazza.com).

Please get signed up as soon as possible. I have set up a folder for each of the class modules. If you want to discuss the class material, need a clarification or have a concern about a quiz question, look to see if someone has asked the same question and if it has been answered. If you have a question about course mechanics, interpretation of the syllabus, or where something is located, there is a folder for that called "Logistics". I will check piazza on a regular basis during regular business hours, and answer questions. I also expect you and your peers to help to each other and will indicate the good answers and make clarifications.

If you send me an email with a question that should be asked in a piazza, I will ask you to post it there rather than answer in email.

The TAs assigned to the class is TBA.

Rebecca Hanes's contact information is:

- Office Hours: TBA, CH 230
- Email/gtalk: TBA

My office is in CH 241-O. The best ways of contacting me, in decreasing order of effectiveness:

- IM/hangout: woodsj@pdx.edu
- Phone/text: (503) 465-4883
- Email:woods@pdx.edu (Answered only on M W and F)
- D2L email: Do not use. I will not respond.

You are encouraged to use the IM function of your PSU email account rather than email. This will allow me to get back to you more quickly and more conversationally. Please be aware that I will likely not reply till the next day if you IM me after 6pm or on the weekend.

My office hours will be held on Monday from 10:30-12:00 through the last week of class, not including finals week. There is no need to make an appointment for these hours – just come. D2L has a link that allows you to attend office hours remotely via hangout.

If you can't attend regular office hours, please check my calendar link on D2L. I will make a limited number of 15 minute slots available each week. All appointments are assumed to be in my office unless specified. *If you make an appointment and fail to show up without first canceling, I will penalize you one quiz grade.*

## 4 Textbooks and Other Sources

I have assigned Chan S. Park “Contemporary Engineering Economics 4ed”. If the 4th edition is unavailable, the 3rd or 5th editions are also acceptable but *all readings and suggested questions will be from the 4th edition*. I am pretty comfortable with any engineering economics textbook you choose, but it is your responsibility to figure out the relevant readings from the descriptions of the subject matter. The table of contents for the 4th edition (<http://web.pdx.edu/~woods/Teaching/table%20of%20contents.pdf>) is posted to help you make the correspondences. Many students have found the textbook unnecessary given the online resources.

“Schaum’s Outline of Engineering Economics” by Sepulveda, Souder and Gottfried is a useful second reference if you are having trouble with time value of money.

### 4.1 Online Resources

We will make significant use of online resources and technology. The three essential tools are:

- D2L
- Course Wiki
- Piazza

D2L is our main platform for homework, i.e., online quizzes. Should you have technical problems with D2L or your computer please resolve them yourself with the general campus help desk or D2L help (<http://www.psuonline.pdx.edu/>). You will also find a tutorial on how to use D2L on your D2L landing page. *You are responsible for learning how to use D2L.*

The course D2L landing page will have several important links:

- EC314 Wiki, where most of the supplementary material, videos and podcasts reside.
- Schedule an Appointment, where you can arrange times to meet other than office hours for help or an oral exam.
- Calendar of Topics and Deadlines, for deadlines and due dates.
- Table of Contents for 4th Edition Book

Pay particular attention to the course content tab in the upper left. This is where most of the online work starts. Each module will be structured with one or more of the following:

- Preparation: Pages out of the book and wiki you should read. *Wiki links are required.* Former students have suggested that these should read and watched before attempting the quizzes. Don't start the quizzes and then use the book and wiki as a reference.
- Practice Assignment: This is an online assignment that you may take as many times as you wish and does not count toward your grade. Each of these questions will have a wiki page associated with them. Many of these pages are incomplete and completing them will result in extra-credit. Details about the extra credit process is in section XXXX.
- A 'Pre' assignments: These count towards your grade. Your score is equal to the maximum of up to two attempts. Note that the second time you take the quiz that the questions will be similar but not identical.
- A 'Post' assignment: This assignment counts towards your grade and is equal to two 'Pre' assignments. You will only be allowed to take these quizzes once. Please note that Post quizzes may contain questions from previous modules and will have questions that are more open response than the pre quizzes.

The pre and post quizzes are timed. You have 240 minutes to complete each quiz. Please do not start them and then close them without submitting answers; you will receive a zero on those quizzes. Only start the quizzes when you have the time to finish them. Please note that I dislike it when students take quizzes at the same time from the same IP address.

The calendar tool will show quiz deadlines. These are hard deadlines. Having a disruption in D2L or internet connectivity in the hour or two before the deadline does not change the deadline, it means you should plan on finishing the quizzes in advance of the deadline.

Piazza will be used for news and other announcements and has the advantage of being available independently of D2L and the PSU login mechanism.

If you have questions related to course administration, post them in the "logistics" folder by composing a message with a brief version of your question in the subject line. This way we can form a knowledge base that everyone can use. If you email me a question like this, I will just ask you to post the question in this folder. Save yourself a step and start with a post.

#### 4.1.1 EC314 Wiki

The second most important resource is the wiki. Most of the supplementary reading material, videos, screencasts, and podcasts are collected here. You should visit the "Course Outline" link on the left <http://ec314-pdx-edu.wikidot.com/outline> to see what we will be doing.

A link to the wiki may be found on the D2L landing page. You must create both a wikidot account and ask for access to the course wiki. Create the account first, log in, and ask for access by filling out the request form. I log in once a day and allow everyone access. An account is required so that it is easy for you to make corrections and additions to the wiki.

This resource is outside of PSU and the help desk will not provide assistance. If you have questions please post with a "logistics" tag or look directly to wikidot for help. You and I are both customers. I have no special status. If you intend on editing pages or making contributions please look at the "how to" pages and try some things out in the sandbox.

## 4.2 Netiquette

Since we will be having some online interaction, we should be clear about what we should and should not do.

In class I can see what is going on at all times. In the online environment, I can't see everything and I can't react as quickly to what I do see. Students are expected to be particularly trustworthy both in terms of their own conduct, and in reporting inappropriate conduct to me.

I will not tolerate profanity, obscenity, or remarks intended to discount or dismiss either a person or his or her point of view. If your inappropriate message is in the public forum, I will warn you once in that public space. If you continue with inappropriate conduct in the public spaces, your access to them will be denied for the rest of the term. If your inappropriate conduct is in private, a student code of conduct violation complaint may be filed.

### 4.3 Attendance and Online Participation

If you choose to attend class, please prepare by completing the required readings and reviewing your notes from the previous lecture. If you choose not to attend a class, you are still responsible for acquiring notes, handouts, and any announced schedule changes from other students. You will be ineligible for demonstrations of basic skills, i.e., the essential questions.

Don't let your children be a barrier to attending class. Bringing your children to class occasionally is tolerated and encouraged.

Online participation is not optional. That is how we do homework.

## 5 Assessments and Grade Policy

Your grade in the class will be based on your performance on the online assignments (80%) and the final exam (20%).

Grades will be based on your class rank. The dividing lines between letter grades will be drawn such that no student is near a dividing line. In this way no student will ever be, "just one point from an A." You are in a very real competition for grades in this class. If someone cheats it harms your chances of getting an A.

I typically end up with *about* 30% A's and 30% B's in my in-person and hybrid courses.

### 5.1 On-line Quizzes

There will be two types of graded quizzes, 'Pre' and 'Post', on D2L. A 'Pre' quiz with 20 points is worth the same as a 'Pre' quiz of 3 points as far as your grade goes. You will be given the maximum score of the two nearly identical Pre quizzes in each module. Points are only comparable within a quiz, not between quizzes. 'Post' quizzes are worth twice as much as 'Pre' quizzes.

The optimal study pattern is to:

- Read the required material.
- Try some of the practice quiz questions.
- Wait a day.
- Review the material again and do more of the practice questions.
- If confident, take the 'Pre' quiz, reviewing concepts between each of the two attempts. Ideally you should put a day for review of the questions between the two attempts.
- Wait a day.
- Review and take the 'Post' quiz.

Your quiz score is determined by the sum of the percent correct on each of the pre quizzes plus twice the sum of the percent correct on each of the post quizzes. I drop either the two lowest pre quiz scores or the lowest post quiz, whichever results in the highest score. The dropped scores are intended to be a buffer for technical failures, illness, bad days and other bad luck. I will take care of this adjustment at the end of term.

## 5.2 Final Exam

The final exam, which constitutes 20% of your grade. The function of the required final exam is to provide me with added assurance that online work was completed by the person enrolled in the class. Because of this, picture ID will be required to enter the examination room.

There are additional requirements for students wishing to be eligible for a grade higher than a C. Note that these are not required if you are taking the class P/NP and will have no effect on your grade.

## 5.3 Minimum Requirements for Grades Higher than C

The course is focused on four essential skills. You must demonstrate proficiency in all four to receive an A in the course and three of the four to receive a B in the course:

- Accounting: Knowledge of the definitions and locations of a small subset of items found on income statements, balance sheets and cash flow statements.
- Time Value: The ability to represent arbitrary cash flows consisting of common patterns, such as constant series and linear gradient series, in factor notation and compute the present worth of these series.
- Choice: The ability choose acceptable and optimal investments, given cash flows and an interest rate, using the present worth, annual worth and internal rate of return criteria.
- Income/Cash Flow: The ability to construct simple income/cash flow statement, e.g., for an asset purchase or expense, including depreciation, interest, taxes, gains tax and working capital to support an investment decision based on the present worth, annual worth or internal rate of return criteria.

Please note that demonstrating three or more of these skills does not get you a and A or B in the course, it just means that it will be assigned a grade higher than a C if your rank in the course warrants it, i.e., a necessary but not sufficient condition for a grade higher than a C.

Ten to fifteen minutes of each session is reserved to allow students to demonstrate these skills with a brief written test. Certifying questions will be made available soon after the topics are introduced in class. Students may attempt one question per class. All questions will be scored on a pass/no pass basis.

Your graded essential questions will be available at the will call window in the Economics office, CH 241, to comply with FERPA.

Examples of past questions and keys to the grading rubric may be found in outline on the course wiki under "Essential Skills Hints".

Students may schedule a 15 minute appointment with the professor, through the links in D2L. Times may be limited and is the responsibility of the student to plan appropriately. *Please expect to show your student ID.*

You will also be able to make three attempts in the final exam period. At the final exam period please bring a calculator, a writing implement, and your student ID. In addition to your final exam, you will have your choice of any three essential question, even three of the same. They will be graded on a simple pass/fail scale. This is intended to be your last chance to demonstrate proficiency – not the main chance. We will not admit you without your student ID.

## 5.4 Other Rules

- Begging for grades will result in an immediate lowering of your course grade by a full letter grade.
- When completing online quizzes you may use your book, wiki, calculator, spreadsheets, notes, or other resources as long as it is not another student or person. It is intended that you do these things by yourself.
- When completing in-class quizzes you may use any resource including your neighbor and your uncle.
- When completing essential skills tests, also known as essential questions, you may only use your calculator. Your notes, wiki, book and other resources are not allowed.
- Go to office hours at the first sign of trouble – not as a last resort.
- In this classroom, we support and value diversity. To do so requires that we:
  - Respect the dignity and essential worth of all individuals
  - Promote a culture of respect toward all individuals
  - Respect the privacy, property, and freedom of others
  - Reject bigotry, discrimination, violence, or intimidation of any kind
  - Practice personal and academic integrity and expect it from others
  - Promote the diversity of opinions, ideas, and backgrounds, which is the lifeblood of a university

For additional information, please see the Office of Affirmative Action & Equal Opportunity at <http://www.pdx.edu/diversity/affirmative-action>.

- Accommodations are collaborative efforts between students, faculty, and the Disability Resource Center. If you have a documented disability and require accommodation, you must arrange to meet with the course instructor prior to or within the first week of the term. The documentation of your disability must come in writing from the Disability Resource Center (Faculty letter). Students who believe they are eligible for accommodations but who have not yet obtained approval through the DRC should contact the DRC immediately. Reasonable and appropriate accommodations will be provided for students with documented disabilities. For more information on the Disability Resource Center, please see <http://www.drc.pdx.edu/>.
- Academic honesty is expected and required of students enrolled in this course. Suspected academic dishonesty in this course will be handled according to the procedures set out in the Student Code of Conduct.
- I am sympathetic to family emergencies but you must inform me as soon as possible. If the notice is verbal, please email me with your understanding of our agreement. All agreements have to be in writing.
- I expect online quizzes to be completed by you without consulting your classmates or other human resources. I take this seriously. Last spring, eight students were suspended for violating the student code of conduct in my class.

## 5.5 Expected Outline

A link to a full, detailed, and continuously updated schedule will be posted on D2L and the course wiki.