

# Public and Private Investment Analysis

EC 314-001

Winter 2012

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 an online course and it is expected that you have access to a computer with sufficient software and hardware to use the hangout feature in Google+ and have a *GMail account* so you can access this feature. This means a computer with a webcam, microphone and a reasonably fast Internet connection. *If you can't satisfy these requirements please drop the course.*

## 2 Prerequisites

There are no prerequisites for this course. However, a reasonable math background, MTH 95, is a practical requirement.

## 3 Contacting the Professor and TA

This is an online course with a lot of students. If each of you sent me an email once a week, I would be able to respond to all your questions.

Before you email the TA or me, check the discussion boards on D2L. I have set up a topic for each of the class modules. If you 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 forum topic for that called “Course Mechanics, Syllabus and Other Things”.

I will check these forums on a regular basis and answer questions, but I also expect you and your peers to help to each other. If you send me an email with a question that should be asked in a D2L discussion, I will ask you to post it there rather than answer in email.

The TA assigned to the class is Adam Shick. You may find him in CH 230. His contact information is:

- Office Hours: Monday 2pm-3pm Online at ashick@gmail.com hangout
- Email/GTalk/Hangout: ashick1@gmail.com
- D2L Chat

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

- My Email/gtalk: woodsj@pdx.edu
- Hangout: pdxwoods
- Phone/text: (503) 465-4883
- D2L email: I will not respond

My office hours will be held through the last week of class on Monday from 12:00-1:00. There is no need to make an appointment for these hours – just come.

If you can't attend regular office hours, please check my calendar at <http://tungle.me/woodsjam> and follow the directions for setting up an appointment. Let me know if you want a phone, in-person or gtalk/hangout appointment. *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 edition is 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 is posted in D2L to help you make the correspondences.

Please note that the publisher has issued the 5th edition. As the 4th and earlier editions become harder to locate, the bookstore will require me to change texts. This is just a warning for those forecasting text resale prices.

Many students have found “Schaum’s Outline of Engineering Economics” by Sepulveda, Souder and Gottfried a useful second reference.

### 4.1 Online Resources

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

- D2L
- Course Wiki
- Google+ Hangouts

#### 4.1.1 D2L

D2L is our main platform. 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.
- Calendar of Topics and Deadlines, for deadlines and due dates.
- Link to “Hangout of Office Hours and Tutorials”.

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, pages in the wiki you should read, podcasts and videos you should listen to and watch before an tutorial session. Wiki links are required but labeled as ‘Supplemental’ in the module.
- A Forum on the Quizzes: This is intended to be a space to discuss the material in the module. Please do not post the answers to quizzes in this forum.
- A Required Forum: This is a graded item that may not be in every module. It will typically ask for you to construct an example, is equivalent to a ‘Pre’ quiz grade, and is graded on a pass/no pass basis.
- Practice Assignment: This is an online assignment that you may take as many times as you wish and does not count toward your grade.
- A ‘Pre’ assignment: This is an online assignment that should prepare you for an online tutorial. This counts towards your grade. You are required to make two attempts of the ‘Pre’ assignment before you can attempt the ‘Post’ assignment. Your score is equal to the average of the two attempts.
- A ‘Post’ assignment: This is an online assignment that counts towards your grade and is equal to two ‘Pre’ assignments. You will only be allowed to take these quizzes once.

The pre and post quizzes are timed so please do not start them and then close them. 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 in the upper left will show several kinds of deadlines:

- Quiz Deadlines: You have a lot of latitude on when you finish topics but I don’t want you to delay too many things till late in the term. As a consequence, you will be required to complete a third of the module quizzes by week five and 3/4th of the modules by week eight. All modules should be completed by the last week of class – not the last day of finals week.
- Polling Deadlines: I will offer three tutorial sections weekly. Times for the next week will be determined by vote. A nominating poll will be released on Monday at 8am and will close on Tuesday at 5pm. A voting poll will be opened on Wednesday at 8am and close Friday at 5pm. I will choose the three one-hour periods with the highest number of votes for the tutorial times the following week.

The first module, which contains a forum topic for you to introduce yourself and a quiz on class rules has a deadline on Friday of the first week of class.

The news section will be used to announce the times of the week’s tutorials as well as other announcements.

If you have questions related to course administration, post them in the “Course Mechanics, Syllabus and Other Things” discussion area 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 area. Save yourself a step and start with a forum post.

#### 4.1.2 EC314 Wiki

The second most important resource is the wiki. Most of the supplementary reading material, videos, screen-casts, 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 should be able to see all the material but if you wish to edit the pages you must create an account and then request access to the wiki.

This resource is outside of PSU and the help desk will not provide assistance. If you have questions please post on the D2L “Course Mechanics, Syllabus and Other Things” discussion 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 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 via email.

I will not tolerate profanity, obscenity, or remarks intended to discount or dismiss either a person or his or her point of view. I will not count such messages for grade. They will be deleted from the message board and returned to you for revision, failure to do so will result in loss of points.

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 class with the resultant loss of points. If your inappropriate conduct is in private, a student code of conduct violation complaint may be filed.

## 5 Assessments and Grade Policy

Your grade in the class will be based on your performance on the online assignments. There are no midterms and there is not a traditional final exam, but there will be a final exam period.

There will be both practice and graded assignments on D2L. *Practice assignments will not count towards your grade but the other assignments will.* A 'Pre' quiz with 20 points is worth the same as a 'Pre' quiz of 3 points as far as your grade goes. Points are only comparable within a quiz, not between quizzes.

Grades will be based on your class rank, subject to the minimum requirements described below. At the end of the term I will create a weighted average score and rank the students. 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 usually end up with *about* 30% A's and 30% B's.

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

### 5.1 Minimum Requirements for Grades Higher than C

The course is focused on a three essential skills. You must demonstrate proficiency in at least one to receive a course grade higher than a C:

- 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.

Please note that demonstrating one of these skills does not get you a C, it just means that it will be assigned a grade higher than a C if your rank in the course warrants it.

Students may schedule a 15 minute appointment, through the link described above, to demonstrate an essential skill via an oral examination. These may be conducted in-person and via Hangout, but not via phone. Times will be available after the first three weeks of the course, but not during final exam week. 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 at a specially scheduled final exam period. The room and time are not known at the beginning of the term but will be announced as soon as they are known.

At the final exam period please bring a calculator, a writing implement, and your student ID. 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.

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

## 5.2 Additional Requirements for Grades Higher than B

This is a requirement in addition to the one above, for students that would like to be considered for a grade higher than a B. Completing this assignment does not ensure an A, it just makes it possible should your rank in the class warrant the grade.

This assignment comes in two parts. After you complete the 'Income/Cash Flow' module construct a reasonably complete proposal for a choice problem that includes:

- The context of the choice, e.g., Considering two different business vehicles but one has a higher resale value.
- Assumptions about:
  - Revenue and cost changes;
  - Cost basis and resale of any assets;
  - Any loans;
  - Changes in working capital requirements
- The main problems you will have to deal with, e.g., a gains tax or a loan with many payments per year.

This will be submitted to the “Income Cash Flow Proposal” dropbox folder in D2L by March 9th for approval. If not approved, any revisions to the proposal must be completed by March 14th. In general only one revision will be allowed before your proposal is rejected. Please note that D2L will not allow you to submit a proposal until you have completed the Post Income and Cashflow quiz.

A spreadsheet showing the Income and Cashflow statement as well as narrative, not to exceed one page, explaining the statement and your investment choice must be submitted to the “Income Cash Flow Final” dropbox by March 20th. This will be evaluated on a pass/no pass basis.

## 5.3 Other Rules

- Begging for grades will result in an immediate lowering of your course grade by a full letter grade.
- Go to office hours at the first sign of trouble – not as a last resort.
- Portland State University supports equal opportunity for all, regardless of age, color, disability, marital status, national origin, race, religion or creed, sex or gender, sexual or gender identity, sexual orientation, veteran status, or any other basis in law.
- Students with accommodations approved through the Disability Resource Center are responsible for contacting the faculty member prior to, or during, the first week of term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval should contact the DRC immediately.

- 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.

## **5.4 Expected Outline**

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