

EC 314 Public and Private Investment Analysis

Plan for the Day

- ▶ Walk through the syllabus
- ▶ Walk through tools and resources
- ▶ Take a pre-test
- ▶ Talk about accounting as time permits

Syllabus

You can find the syllabus here. (<https://github.com/woodsjam/PSU-EC314/blob/Summer2018/Syllabus/EC314Syllabus.pdf>)

Almost all the slides will also be on github.

(<https://github.com/woodsjam/PSU-EC314/tree/Summer2018>)

- ▶ Download them before each class if you like, but they are not a substitute for coming to class.

Spring Term

Here are final exam and course grade results

<https://github.com/woodsjam/PSU-EC314/blob/Summer2018/DayOne/GradeAnalysis.pdf>

- ▶ I usually give about 30% As and 30% Bs.
- ▶ The remaining grades are typically self-inflicted by
 - ▶ Not showing up to class
 - ▶ Trying to cram the night before on a topic outside your major.

Course Description

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 and FE exams and to provide engineers, economists and others with a shared language and understanding of basic finance topics.

- ▶ Future proof your career with this class.
- ▶ Remember, graduating with an engineering degree does not mean you will stay in the field.
- ▶ Management often requires these skills.
- ▶ Economists are often expected to know this.

Who Am I?

- ▶ Ph.D. Economist
- ▶ Background in energy and program evaluation consulting going back to the early 90s.
 - ▶ Projects were multidisciplinary. Rarely did a project not involve, economists, engineers and others.
- ▶ Former:
 - ▶ Oregon HECC commissioner
 - ▶ Parkrose School Board Chair
 - ▶ Multiple non-profit boards
 - ▶ County Budget Committees

Prerequisites

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

- ▶ Take the pretest
- ▶ There is some math and accounting concepts.
- ▶ Not for a grade. Don't put your name on them.
- ▶ Should take **10 minutes**.

On the pretest

- ▶ If you could do the math or remember that you could at one point – math will not be an issue.
 - ▶ If the math is all new to you, drop the course and take more math.
- ▶ Don't worry if you had no clue on the remaining material.
 - ▶ I use the pretest to get an idea on how fast to go.
 - ▶ It will feel like drinking from a fire hose when we do it, but it is the same pace as an introductory accounting class.

Key Dates

- ▶ Final Exam: August 16th from 4:30 – 6:50
- ▶ Midterm 1: July 17th
- ▶ Midterm 2: August 7th

Exams will be given on those days and at those times only. I do not give make up, early or late exams.

- ▶ My experience has been that “can’t” make the exam are using any excuse to get more time to prepare.
- ▶ I never give the same exam.
- ▶ It takes me about 8 hours to create and grade a makeup exam.

DRC Folks

If you have a DRC compensation and would normally schedule an exam in the testing center, you must schedule your exam on the day of the exam such that you finish your exam at 5pm.

- ▶ Schedule now. Do not wait.
- ▶ Adjust the start time based on your compensation.

Contact Information

- ▶ My office is in CH 241-O.
- ▶ Drop in office hours are Tues 3:00-4:00 through the last week of class. 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 <https://woods.j.youcanbook.me/>. I will make a limited number of 15 minute slots available each week. If you make an appointment and fail to show up without first canceling, I will penalize your final exam score two points.

My in-person office hours may need to be moved to a different location because of construction in Cramer Hall.

Meetings can be via phone or even the hangout/meet function in your pdx.edu email.

I will also keep Slack up during office hours to answer questions.

Slack

I avoid email since it is a trash heap and a constant distraction.

- ▶ The class will use slack <https://ec314summer18.slack.com>
- ▶ Handles direct messages, forum style responses.
- ▶ You should be able to sign up with your pdx.edu account
- ▶ Can access via webpage, apps in Android and iOS.
- ▶ Linked in d2l.
- ▶ Officially supported PSU software
- ▶ Common in industry
- ▶ Many of you already use it.

Hints on Slack

- ▶ Prefer #general to direct messaging me.
 - ▶ Questions about course material is for #general
 - ▶ Questions about your grade or anything private is for @jamie woods
- ▶ “I can’t find it anywhere” is usually answered with:
 - ▶ A link to a google search.
 - ▶ A search result from the wiki.
- ▶ Don’t start and end with, “I got 7 but D2L shows 245. What did I do wrong?”
 - ▶ Show your work. The fix is often a single parameter.
- ▶ Provide links to the wiki if your question is about material there.
- ▶ Provide full text of the question you are working on.

In short, make it easy for someone to help you.

More Slack Hints

- ▶ Rants and bellyaching put you at the bottom of the queue or off the queue.
- ▶ Night before the exam? You are on your own.
- ▶ Set personal Do Not Disturb times. It defaults to 10pm -8am

Textbook

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 6th edition (<https://s3-us-west-2.amazonaws.com/woodsjteaching/TableOfContents6thEd.pdf>) is posted to help you make the correspondences. Many students have found the textbook unnecessary given the online resources. The goal is to have your textbook cost less than \$30.

- ▶ Pick a book that works for you.
- ▶ Hit the library
- ▶ The books are all very similar

D2L

I will assume you know how to work D2L.
<https://d2l.pdx.edu/d2l/home/708050>

- ▶ Calendar on left
- ▶ Links in the middle
- ▶ Content, Quizzes and Grades up top

Lets walk through

D2L Key Takeaways

- ▶ Content is divided into modules.
- ▶ Don't assume one module per week.
- ▶ Quizzes are different every time and don't count toward your grade – except the class rules quiz.
- ▶ Grades are easy to get at.

The Wiki

This was originally set up for online and hybrid courses. I don't do those any more.

<http://ec314-pdx-edu.wikidot.com/outline>

Wiki Key Takeaway

- ▶ Use the search bar
- ▶ You can edit it.
- ▶ I did the videos but students did most of the text.
- ▶ Videos are key
- ▶ Key drill and kill under “Essential Skills”
- ▶ Getting dated, but this is my last time teaching this course.

Assessments and Grade Policy

- ▶ Final Exam (30%)
- ▶ Midterm 1 (30%)
- ▶ Midterm 2 (30%)
- ▶ In-class quizzes and Class Rules D2L Quiz (10%)

Mostly exams with a small slice for in-class quizzes.

- ▶ Encourage students to read material before class,
- ▶ Review the material from the last class, and
- ▶ Show up and stay

In-class quizzes

- ▶ 10 minutes long
- ▶ Intended to be *very* easy, but surprisingly hard if you have not looked at the material.
- ▶ Graded pass/no pass

Please play this straight.

- ▶ Don't have someone turn one in for you.
- ▶ Don't pull out your phone to look up answers during the quiz.
- ▶ Just come to class. It helps so much.

Change In Quizzes from Spring Term

- ▶ Quizzes *were* given at start of class.
- ▶ New behavior: An additional 20% of students would leave at the break
- ▶ Past relationship between being in class, taking quizzes, and exam grades broke down.
- ▶ For the technical people:
 - ▶ Instead of a regular regression relationship, taking quizzes acted like a cap on grades, like a frontier regression.
 - ▶ Quizzes represented unobserved half and full class attendance, not just full.
 - ▶ Quiz pass rates also fell.

Showing Up and Staying Helps

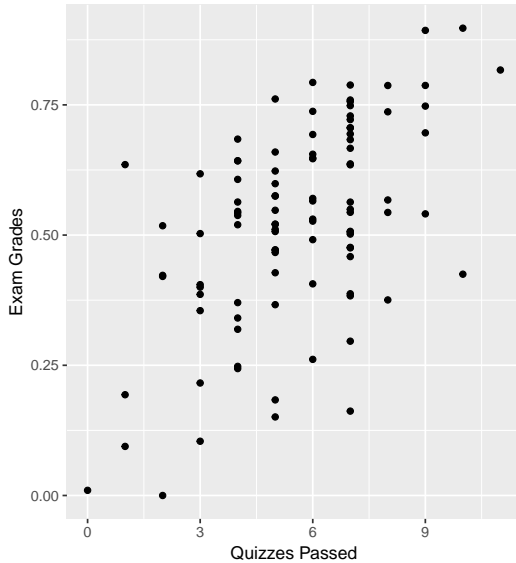


Figure 1:

Exams

- ▶ Sample exams, don't think of them as practice, are in "Syllabus and Sample Exams" module.
- ▶ Written answers. No multiple choice.
- ▶ Seating chart
- ▶ ID check
- ▶ Bags, phones, smart watches at the side or front of room.
- ▶ Many versions of the exam.
- ▶ Many key formulas given.
- ▶ Closed book, notes, internet, friend, etc.

Exams Hints

- ▶ Make the case you know what you are doing. We assume you don't.
- ▶ Don't stress if you don't get 90%+
 - ▶ Grades are based on class rank.
 - ▶ Not traditional 90/80/70 breakpoints.

It is rare for people to do poorly if they show up and actually do the work.

Other Rules (Short Version)

- ▶ Do your own work
- ▶ Don't cheat
- ▶ Go to office hours at the first sign of trouble – not as a last resort.
- ▶ Be civil to each other.
- ▶ If you are a DRC student, let me know and schedule the exam time.
- ▶ 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.

Topics

- ▶ Accounting
 - ▶ Introduction to accounting concepts
 - ▶ Accounting ratios
- ▶ Time value of money
 - ▶ Notation and Calculations
 - ▶ Loans
- ▶ Investment Criteria
 - ▶ Present Worth
 - ▶ Annual Worth
 - ▶ Internal Rate of Return
- ▶ Cost Estimation
 - ▶ Depreciation and Taxes
 - ▶ Cash flow projections

Topics (Con't)

- ▶ New Environments
 - ▶ Increasing cost of funds
 - ▶ Capital Budgeting
- ▶ Single Period Choice
 - ▶ Cost functions
 - ▶ Break-even
 - ▶ Make vs Buy
 - ▶ Optimal pace
- ▶ Uncertainty
 - ▶ Sensitivity Analysis
 - ▶ Belief Elicitation
 - ▶ Monte Carlo simulations