

EEL100: Lecture 1 (Aug 27, 2009)

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Welcome to Environmental Economics and Policy 100. I'm your "professor". I'm David Zetland; I'm not a professor. I'm a post-doc. So for anybody who knows the pecking order in the academic world: there's professors, then there's students, and then there's graduate students, and then there's post-docs. I'm the lowest form of life. No job security.

I have enough money to go to Berkeley Bowl and buy any cheese I want. But we're usually considered to be a cheap form of labor. I'm actually teaching this class for free (if you'll believe it) because they wanted to pay me a bunch of money, but then my fellowship wouldn't let me.

People that are just coming in? Against the wall in the back. We'll shoot you later. Oh, so if you didn't know already, this is a 90-person limit class.

Is this an open seat here? How many other... open seats? Open seat raise your hand, there's two open seats. Come in and sit down. I don't like people standing.

There's a 90-person enrollment, and there is a 25-person wait list right now. I talked to Gail in Giannini, and she says don't promise anything.

I can't promise anything about enrolling you. All you can do is hope that somebody drops. So your job is going to be to convince the person next to you that they should not be taking this class. My job is to convince you that you should take it. Because I love being popular...and we'll get to the grading later.

So I'm teaching this class kind of for free. They're paying me a whole bunch of money, and then they're taking it out of my salary as a post-doc. So I want you to understand that I have a lot of desire to be here.

And why I'm here is because I like to teach. And teaching is a two-way thing. You guys have heard of lecturing? This is called teaching. So I will be talking, and you will be asking me questions and learning and saying, "I don't get it." Okay it's not just..."write down stuff."

So that means that there will be no PowerPoint. There will be no slides. There will be no computers. Any computers open? Please close them right now. No text messaging, although I can't monitor that. You can use it on the test if you feel like it. It won't help you in life.

So this is kind of like a real-life participation class. And the good news is that it's going to be very flexible. The bad news is that there's not going to be as much structure as you are used to.

If anybody saw the syllabus there's no textbook for this class. You might be happy because I just saved you about 140 bucks. I find that students don't even read

textbooks, so it's kind of a waste of money anyway.

So I put four books on the class. I'll get to that when I get to the syllabus. So that's just kind of the general introduction about how I want to do this class, in terms of teaching style or learning style if you want to call it that.

Now let me just tell you just briefly about me...because I always like to know who the hell it is that's talking to me. I was born and raised in California (San Francisco and thereabouts). I went to UCLA for my undergrad. And I got into Berkeley, but I turned it down. *[Boos]* Too close to home, too close to home. And then I went around, and I tried to get rich, and that failed. And then I went traveling for five years.

The last real estate bust? That was me. I was in the middle of that.

So then I went traveling for five years, and I saw a lot of the world and that was really cool. So I highly recommend traveling. And I came back and then I didn't know what I was going to do and then I said, "Oh, development economics, that sounds interesting."

So I actually went to UC Davis and I got a PhD in agricultural and resource economics in that department. And I went there to study drug cultivation. Why farmers in Peru decide to move their cocoa into the legal market (which is how they make tea) or the illegal market (which is how they make cocaine).

And my advisors thought that was a little bit too dangerous. And not only that. They thought there was no funding. And, as you'll find out, money does actually matter in the academic world as well.

So I switched my dissertation topic, and I went into water. So I am a water or resource economist; I talk about water all the time. I've got a blog called *Aguanomics* that I will ruthlessly refer to in this class, and you guys are going to be very involved in that blog, as you'll find out when I hand out the syllabus.

So I come from a department that does natural resource and environmental economics. My specialty is what is called "political economy". Political economy was back in the days of Adam Smith. They were combined as subjects. And then they got separated into political science and economic science.

And I am one of the people that likes to bring it back together because politics and economics are very, very interrelated. And because I came from a background of black markets and illicit drug trade I look at things from a different perspective from a lot of other economists who are like, "Oo I have a lot of math, let me do math".

I'm looking at it from corruption and bribery and you know that kind of...I think more interesting stuff. So that's the point of view that you are going to get in this class and that's the bad news because it's all my opinion, but the good news is that your grades, are based on my opinion.

So, all you need to do is say okay and do what he's asking me and as crazy as it might be, I'll get a good grade if I do it. I'm not going to ask you to do stuff you don't want to do. I'm asking you to do well at what you want to do. And we'll get into that as I go over the "Big Picture" now.

And I'm also writing a book, or I will be writing a book concurrent with this class, aimed essentially at your audience—people that are smart enough to understand what I'm talking about, vaguely interested because they have 10 million other things going on in their life, and they want to learn about water. The book is called the *End of Abundance*. And if anybody noticed, there's a drought thing going on outside, so that's what I'm in the middle of—the big policy debate on the drought. That's what I do as my day job, and you guys are my recreation.

So I looked at the syllabus...Who here is enrolled in the EEP Major? Who's a major? Okay, that's a lot of people. Ok who's not in the major? And are you undecided? Or Physics? Or econ? Environmental policy, sociology, anthropology, I have to take this 'cause someone told me to? Development studies? Okay good. CRS? What's CRS stand for? [*Conservation and Resource Studies*] Okay good.

If anybody's like, "Oh my god I don't want to take economics", this is the class for you. Because you'll learn economics in this class, and you'll walk out and say, "Wow, I like that economics stuff."

Seniors? Fifth year seniors? Sixth year seniors? No. Juniors? Sophomores?

Freshmen? Come on? No die-hards. I guess the freshmen are still out there wandering around.

Okay, so that's you guys.

So everyday, I'm going to do a little bit of math because this course is in between... sorry more survey questions.

Who has never taken an economics class at Berkeley? Okay, so this is going to be a significant audience here. Who has taken one class like Econ 1, Intro or something like that? Who has taken two classes? Three?

Okay, so that's what kind of what I figured when I was preparing for this class...is that you guys have heard of a thing called utility or supply or demand, but you're like I don't quite get it. So this is going to be about getting it. There's a whole bunch of stuff in this class that's about getting what we mean by supply and demand, and then you'll walk and say oh that's...

So you'll be able to link reality with the classroom. This is a very important concept for me.

So everyday I'm going to do a little bit of math, and the reason is because for those of you in the major, this class is a prerequisite for a lot of upper division classes and all of the professors are very worried that you're not going to know enough math.

And...for them that's important, so I have to deliver the goods on that. And I'm going to try to deliver a little bit of math everyday, so you can say, "Okay math, economics I could do that."

This is not going to be calculus class. There's this big debate...should there be calculus or not.

Okay so this is my first math equation

Now you are familiar this right? This is what's called math.

Now this class, economics, is a thing called social sciences right? So I'm just going to do it this way.

Now this, I think, believe or not, this is the biggest problem in economics...is a lot of economists do this, but the world is like this. If you have experienced this equation before, you know its not always happening right?

So that's what we mean by social sciences. There are these humans in here. They don't do what you tell them to do; they are very unreliable. They're not "rational"... they use the word rational all the time

So we're going to be talking about what's rational, what's not rational. And I'm going to be saying, "Oo...be careful what you predict here, because you might be thinking this but you might be getting one of these."

And I encourage you to follow any debate (and when we get to syllabus we'll talk about why you need to follow a debate) related to the environment or politics...or not politics in general, but political sciences with environment or resources. Because theoretically if it's your major you're supposed to know about it right? And I want you to follow it because you're interest or passionate about it and look for these kinds of problems. It's the same thing as..."Oh let's just set up a tax code, and then people will declare their income and send in some money." And for some reason that doesn't always work. People don't declare their income, they over-declare on the number of dependents.

So the human element in all of these equations is the element what we're going to concentrate on...that unpredictability. Because all that does after a while, you get a little bit more cautious about these situations. Be very, very worried. If anybody has been following the climate cap-and-trade bill...the Wacky Marx man. The Markley...say it? Help? Waxman Markey?

Okay so...this cap-and-trade bill...a lot of economists, like me, hated the idea of cap and trade compared to a carbon tax because there's so much more politics involved in cap and trade. And I just put this up its in my blog somewhere... about how the politicians completely turned this bill into something completely different.

So you see the headline: "cap and trade bill", and you'll see the result "nothing happened". And that's what we're going to do. We're going to figure out this part.

What led to “nothing happens”? That’s the political economy of natural resources.

And then this calls to mind, what I’m going to call, a very simple theory. Utility maximization, or cost minimization (or any of these expressions), and then the empirical reality.

So one example I thought that was interesting, when I was...by the way (lucky you guys) this is my first entire instructor role. I’ve been a GSI five or six times. I’ve been a student way longer than you guys.

This is the first time I’m lecturing for 26 lectures. So anyway [*Congratulations*] Thank you. At the end of semester, we’ll see if its congratulations for you guys.

So people are saying, “What’s going to happen when gas prices go up?” And economists were like, “Oh...people will drive less because it’s more expensive.” That’s the whole demand curve: price goes up, demand goes down. And then one of my smart-ass students says...

“People aren’t going to drive less they have to drive. They have to drive!” And I was like, “Actually, you know what, that’s kind of a tough one.”

So here’s the question: when gas went to \$4 a gallon, did people drive less? What happened?

[I feel like people drove the exact same amount.]

Same amount? But...anything? Was there a change in behavior from \$4 gas?

[They complained more.]

They what? *[complained more]* Complained, right?

[They started buying cars at higher miles per gallon.]

Higher miles per gallon...that is really critical.

[They grouped their trips] Carpooling? Ok that’s...

Grouping trips? Ok, so that’s driving fewer miles, actually, but the same car, maybe?

[Spend less on other things.]

Spend less on other things. That’s cross price elasticity: they sacrificed their children’s food, yes. Any other ones?

[They travel less]

Travel less? That’s right. So they actually did drive less, or they moved where they live, or their job.

But the big shocker was the “change the car” thing, right? It’s like...”Wow gas costs

50 cents more a gallon I'm going to go buy a Prius. I'm going to go spend \$30,000 on a car to save 50 cents a gallon."

Now that's one of those things. There's no economics going on there. Any economists that looks at the cost/benefits of a Prius is like, "What are you talking about?"

And then like the deep ecologists were like, "Do you know how much it takes to manufacture a car?"

So all the scientists were going crazy, but the behavioral response is what came through. And that's what matters. We're going to figure what actually happens. What does matter.

Should we predict this, or should we be cautious and say, "Something's going to happen, but we're not quite sure."

I never bet on things, it turns out. I'm just too cynical.

Simple theory vs. empirical complexity. And you'll hear this. You'll have econometrics, or you have microtheory, but you know empirical complexity...

We don't know the magnitude of effects. We don't know how to measure things? This whole GDP thing? If you've ever heard the debate: What does GDP measure? Do we want to measure GDP? We'll get into all these things (well maybe that's macro). Missing variables? Are we missing something that's really important? I don't even know. So this empirical complexity is out there all the time.

You don't have to write this down necessarily. I mean, you'll see if you like it...

And I can't spell either...

Stochastic dynamic computable general equilibrium. That's almost as cool as heteroskadasticity.

It's like...what the hell does that mean? Or does anybody know? No?

It's not because I'm sitting there going, "Ooh I know more than you do"

But this is what we will call jargon. Jargon happens a lot in every academic field. Usually it's to impress somebody else that you're trying to get a job from.

So what does it mean?

Stochastic actually just means random.

Dynamic means that people respond to each other. Dynamics. I look at you...you look at me...

So stochastic dynamic...there's kind of random interactions that we hope we can compute, because we've done the math, and we assume people will act like robots.

And general equilibrium means that we'll see how the entire world interrelates and adjusts.

So what you do is you get your...stochastic dy..i don't even know. It's CGE. Stochastic dynamic CGE model, and then you say okay I'm going to plug in \$4 gasoline, and out the other end I'm going to get something. But the fact is that since nobody saw it... notice that there's this thing in Wall Street that nobody saw? Right?

People are paying millions and millions of dollars. Thousands of PhDs working on Wall Street, and they have no idea what just happened.

Because their stochastic dynamic CGE model (which is what most of them are using) didn't get it. And now we have like the whole political fiasco trying to adjust to that.

So this is the caution that I'm going to pound on over and over again in this class. And I don't want you to walk out of the class and say, "Oh this is all useless." I want you to walk out and have a little bit of respect for the difficult part of social science. And difficult not like...difficult cool, but difficult like...we really don't know.

Humility is what this is about.

Now the big picture on this class is that...

I'm working on lecturing.

I, if you haven't noticed already, I am kind of a random person. I kind of...I say things...it's a little bit...and you will notice repeatedly...

I have lecture notes. So these are my lecture notes, okay? Very well organized. There is no PowerPoint because I can't even get that together, right? And the problem is if I had PowerPoint, I go oh this slide should be out of order...

And I am going to try to make this disorganization (if you want it) I'm going to make this into a virtue in a sense that if I make a mistake, you guys learn from the mistake (and I don't mean spelling errors, because that's just a problem) but if it doesn't make sense you, say "Hey!"

If it doesn't make sense you can raise your hand. There's a hundred people in the class, there's nothing wrong here, because I want to make it more dynamic than the typical; "I talk you listen", okay?

So I'm giving you permission, and I know most of you won't take that permission, but try and bring that out, if you're like "Uhhh I have to ask a question", then please do.

Whispering to your neighbor is not the best way to answer that. And the reason I think this is actually appropriate for this class is because most of you have got one class (I think the majority has one class in economics). You have a clue, but it's a really big subject.

But economics is just about reality. You guys all understand economics, you just

don't have the jargon to relate it. So what economics really is: it's a way of looking at the world. It's (you know) economics, economists, sociologists, psychologists, anthropologists...all these social sciences. They have big overlaps because they're just trying to understand how people are.

We bring a particular set of analytical tool (more statistics more math) but we're all trying to understand how people are. And I want you to be able to walk out and say "God, why is it that the bus is empty when it goes by?" Anybody see AC transit? Those big empty busses going back and forth and back and forth. I always think, god that is weird.

This is just a side story: I used to be thinking as a hardcore free market guy... "No subsidies. It's horrible. We should have no public transport!"

But then as a political economy guy, I'm like wait a second...they're going to run those busses no matter what because that's really popular (to have public transport, even though nobody takes it).

It's like politicians who love public schools, but put their kids in the private school. So it's like...oh we have to have public schools, but my kids go here.

And we have these busses running around empty, and I thought we shouldn't do that...but clearly we have to do that, because somebody thinks it's a good idea. It's true. It's just ridiculous.

And now they have those bigger bendy busses, which are much more dangerous; notice that they are 110% of the lane size.

I ride a bike. And I'm like, "I'm going to die one of these days" But I'm only 5 blocks away, so I won't die this semester.

So the political economy of the public transport system is: it's going to happen anyway.

Now who's heard the...

Who's got solution for the empty busses?

Microecon one. Econ one solution. You took the final, come on you're saying it. What is it?

[Make it free]

Make it free, right? Because if the price is a dollar, and it's not full, you lower the price. This is the demand curve. Until the bus is full, and then you start charging, essentially, a congestion charge. So if the busses are empty, make it free!

Anybody from Portland?

Anybody gone to Portland? Ok what's in Portland? The mass trans. Anyone? The

loop? The inner loop, the outer loop?

But in the inner zone the mass transit is free. If you got out you have to pay. Because essentially you are commuter if you go out.

But in the city center...I was there for a convention and, believe it or not, you know you go down, you get on the tram, and you go there, and you're like "Oh, I love Portland it's a free tram!" and you feel good. You buy an extra cup of coffee, and everybody's happy. Right?

But it wasn't full, and they figured it out. They have this light rail running, why not keep it full? So that's like a price discrimination type of model.

Who is your customer? If it's like a tourist who's like, "Oh it's complicated to buy a ticket and I don't understand" and I'll just walk...compared to "It's free!" right? That's why you have free shuttles...in certain places you have free shuttles to take downtown to have lunch.

Who pays for the free shuttle to go downtown and have lunch?

[Residents]

The president? *[Residents]* The residents? No.

[Restaurants]

The restaurants! Who are going to sell more lunch right? They want people to come in. And they're like, "Hell we'll do it."

And they might argue over who is selling more lunches, but the whole idea is to have the shuttle. And if they're smart, they'll get the residents to pay for it. That's political economy right?

Its like "Yea, yea we need this for our community!"

And the sandwich guys are like, "Yeah, yeah we need it for the community!"

That's important; keep in mind that there's multiple explanations.

There's a difference between what they tell you, and what they do

And this is...I have it down here somewhere... It's basically: "follow the money", right?

If anybody's curious about political motivation: go to opensecrets.com and check out campaign contributions and find out who's contributing money to your local politician. I love that.

Okay, so here's another thing that I think that's a useful analogy to keep in mind.

If you take a textbook...did anybody actually buy a textbook because they're

paranoid? They have to have a textbook? Anybody have one?

Yes? Didn't bring it though.

But if you take a textbook, and you look at chapter 1 and chapter 2. And its like...its all so organized so perfect. Chapter 1 is right before chapter 2, and all the stuff in chapter 1, you need in chapter 2 and then chapter 4, and then...

And so they have there's no mistakes and there's no equations...

And its like if I looked at a building its like... like this building...

"Wow this building that must be easy, you know? You just drop them down..."

But if you look at how its built...piece by piece, including the guy that put the beam in wrong, and they have to take it out, and it cost 3 million dollars extra...what we're doing here is we're going to build up the superstructure...the infrastructure.

And we're going to hang the skin of the building on it, so you can walk out and say...I understand how these things fit together. And the thing I don't like about people that walk in (like me) and I've had years of economics I say... "Oh its simple, you guys write this down."

And you're like I don't understand, because I haven't seen it. Right? So one of the things I'm trying to do (by not having a text and by going at things multiple different directions) is to give you an idea of how things fit together, seeing it in multiple different ways, alright?

So that might work it might not work but that's what I'm going to try and do.

And then you'll walk out with a much stronger intuition about how things fit together. And at some point you'll say, "How does that fit together."

And that's when you raise your hand and say, "I don't get how that fits to that", and then we're going to start having a useful discussion. Because when you guys are learning how things fit together, that's when stuff starts to click.

And that's when you'll walk out of here and say, "Wow, I learned something today", which, as far as I'm concerned, you don't always have in the classroom. Especially in grad school...anybody want to get a PhD in economics?

[Maybe]

Maybe? If I do a good job you will? But if I...we should talk. Danger...

So there will be words that'll come up all the time in this class...supply and demand... obviously. And it turns out if you understand like four concepts, you have more knowledge than most PhDs.

Supply and demand, and how they work: economists mess this up all the time, and

everybody else...forget it.

Cost benefit? What does cost benefit mean?

[If it's worth your wealth to do something]

That's good. What's the cost part refer to?

[Production cost]

Production cost? Not exactly.

[Cost to yourself]

Cost to yourself, ok. What's the jargon for that?

[Opportunity cost]

Almost, well kind of, there's another synonym for opportunity cost. It's the thing you have to make an equation [for].

[Marginal cost]

There we go. What over here?

[Marginal Revenue]

No, not revenue. It's not a firm, it's a person.

[Marginal Benefit]

Benefit right? Now do we want it to be like this, or like this?

[Left]

You want the marginal benefit greater or equal to the marginal cost, right?

That will make you a rational person ok? So when we talk about rational... economists will say people are rational.

That's what we mean. How people calculate marginal benefit...that's where crazy comes in. It's like...why are you doing this? Oh, it makes me feel good. It's like oh... okay. But a couple days down the road, they might not feel so good.

But at the time, most people make decisions doing what they consider to be the right thing.

That's where we become humanistic. We have respect for people, but then the problem is that when its like, "Oh, I'm doing this." It's like "Oh...no, no, no...you're not doing that..."

So the miscalculations can happen, and we have to take that into account.

Opportunity cost is super important in terms of making life decisions, kinds of thing
And in some ways, you can learn something that you can use outside the classroom,
as long as you don't lecture people in the elevator.

So this gets to this question: what goes into costs and benefits?

So we have this word utility is a function of ...for the geeks out there, this is a vector.

So what's another word for utility? Satisfaction, pleasure, happiness.

There's disutility and there's utility. I don't know why they came up with the word
utility but they did. It's a weird word. There's utility knife, utility shed, whatever.

This is happiness, ok? Literally, the analogy is "We are climbing the hill of
happiness." No porno allusions here.

So utility is about happiness. It's what we want. And it includes everything we
want. Utility is a function of everything that we're doing.

And X, and that's were X becomes crazy...because X can be... "I am happy as a
function of the number of hamburgers I've eaten." That's the consumption thing.
That's the whole idea of GDP.

Or I'm happy as a function of the sunshine outside. Or I'm happy as a function of the
whales, right?

We're in environmental resources economics. So we're happy...we are either happy
or studying people who are happy about these things called environments and
resources. Stuff that is really hard to hold on onto...

So that's what we're going to be talking about. And the reason I say utility is
because it means everything and anything to everyone.

This is why economists are called social science imperialists. Because they go off
and they say, "Ooh ok, the psychologists have something. Let's just steal that and
put it in our utility function."

And we have behavioral economics, which is called psychology, right?

So we just re-label and make it our own and publish more books.

So that's what we're going to be talking about...different kinds of stuff...and the
tricky part is...with environmental resource...

So there's environment and resources...and I want you to understand the main
difference between environment and resources...

Who has an idea? What's an example of an environmental good? Anyone?

[Clean Air]

Air? Clean air. Ok. Good.

What's an example of a resource?

[Water]

Water, hey! Actually give me another one. Water is a little more complicated than that.

[Bauxite]

Bauxite? That's good! We got our mineral boys in here.

Bauxite turns into what? Aluminum. With the addition of natural gas. Energy right?

So here's just examples, but you can look around and think about them.

What's the difference between these two? Besides that they're different goods? What's the main economic difference...

[Rivalry is possible for resources.]

Rivalry...okay. Is it a rival good? Air is a non-rival environmental good, right?

So I'm going to put that as a footnote as "awesome". We're going to talk about that later, but that's not what we're talking about now.

So this is...air is non-rival. What does non-rival mean?

[One person using it doesn't mean some else can't use it]

Right so it's...I'm breathing it, but it means you still breathe, technically mother air right? If you get a phone booth with someone then you can start a fighting after awhile.

You're on the right track I mean, but I want to get it to like...one single dimension. But that's one of the dimensions that goes into this category.

[Is it because you can make money off of resources and you can't do that off of environmental goods?]

That's basically it. It's, essentially, that you can have a market for a resource. You can exclude it. So, rival and excludable are two different things, right? In terms of the different dimensions of goods.

We'll get into a discussion of the dimensions of goods, property and goods later on.

But essentially the difference between a resource good is that you can have a market for it...natural gas...bauxite...

[But the cant we just turn everything into a resource?]

That tends to be what someone like me would say right? It's like...well we have a problem? Let's just make it into...let's make a property right and make a market for it.

The whole idea of carbon markets, carbon taxes, cap and trade, is that you are taking...carbon goes into carbon dioxide, which goes into the atmosphere, and eats the earth, and we all die.

If we were worried about carbon going into the atmosphere because the air is a public good, it's a shared good, but we can potentially affect that environment... environmental good by affecting the flow of stuff in to it, which is carbon, right?

So we're going to turn carbon which is a...now I'm going crazy with jargon...so we're going to turn carbon, which is an externality. Carbon is pollution is the result of an industrial process. We can turn that actually into a commodity, give us a commodity.

It's a resource, even if it's a bad resource, then we can make it into a market, and then we can tax it or trade it, or do something like that and therefore affect the environment.

We haven't necessarily gotten to the idea of...I have a market for air.

Buying and selling air. We're worried about carbon and carbon dioxide, but that's essentially where it goes.

Can we fix every environmental problem by making it into a resource? We can fix a lot of them. That's the one thing...

But moving from, "this is a good idea", which is the simple theory, to the empirical result is the difficult part. Okay?

Let me allude to fisheries...anybody fond of the salmon around CA? The West coast of this country?

What happened to the salmon recently, in CA in particular?

[People stopped fishing]

Stopped fishing? Because why?

[It was running out]

They were running out...Oops WalMart ran out of salmon.

There was no more salmon going down the streams for a lot of reasons, but more importantly there was no control on who was harvesting those salmon.

So it was essentially the tragedy of the commons...that's a paper that we will read in this class...it was a tragedy of the commons in a sense that all the fishermen were

racing around and chewing up the salmon as they came back.

That was a problem because they didn't go into the stream; it was a bigger problem because they didn't get upstream to spawn because the stream was screwed up for other reasons, and so the whole salmon fishery collapse.

And the salmon fishermen who for many, many years said: "Don't bother us; don't mess with us." And now they're like, "Oh you know what? We should have property rights of salmon."

Except they're almost all gone...it's kind of one of those like, "Too late, but we'll see what happens maybe in ten years they'll have another salmon run."

So that was trying to convert a resource that had no market into a resource that did have a market. And when you have a market (this is the key) you can have supply and demand.

And if you have...let's go to supply and demand for a second...this should be basic stuff...got price, got the quantity, got our demand...and...we've got supply...

Now what's gonna be this here, what's this?

[Equilibrium]

No not equilibrium. This particular hash mark marks what?

[Price]

Which price? Market price or equilibrium price right?

P star, so that's q-star right?

So if there is no price and there is no market, what happens?

We have a supply, somewhere, we have a demand, but we don't have this.

Here's a way to look at it. Does anybody remember the theory behind supply curve? What is a supply curve?

Because with the fish (let's talk about the fish for a second), there's a supply of fish

But what's the market equilibrium for the fish based on? Or in this catching analogy?

[The quantity that they're willing to supply?]

Well they are willing to supply, not exactly...it's a production function from a firm, in a way. The fishermen are firms, and taken together they have a production function and they have a...supply curve is actually based on the marginal cost of production.

So if you think about the marginal cost of fishing, catching the first fish is very cheap.

Those are the Indians that sit at the mouth of the river with these weirs or these nets that catch the fish as they go by. That's very cheap very efficient right?

And then you get up here and you get nuclear powered submarines that are out there catching fish. Those are very, very expensive, right? So this is, in a sense, is the supply curve for catching fish and there's going to be a demand called, "I want to eat fish". Okay? So we can take that for granted and this would be a "market equilibrium", but what if this is a supply of actual fish?

At that price, at this quantity, you have this much demand, people are willing to pay that much. And it's very cheap to catch them, right? You're not in equilibrium. So the problem is that you go beyond, (this is where you get into dynamic things).

You go beyond where the fish are happy, beyond the biological supply. So the technological supply is...(I'm very ad-hoc here but I'm trying to illustrate a point using economic tools)

This is the technological supply curve given an infinite number of fish. Let's say it that way.

There's fish out there, there's plenty of them. But then if there's a biological supply, which is this vertical line, then you're in trouble. You just went way beyond the number of fish that are there, and you can't catch them. You run out of fish. Ok? So... and one reason why it might be is because there's no price for fish. You can just go out and catch them if you want them.

So the solution in terms of economics is...let's put a price on these fish. And what we'll do is: we'll actually shift the cost up. We'll put a tax on the whole (this is the fancy math part. That's the theory, right?) We'll put a tax on all the fish, so we shift that cost up, and we get an equilibrium at a "sustainable catch". I mean...that's not meant to wipe it out, that's meant to be sustainable.

Okay, so the idea of "Can we put a price on it?" is... "Can we shift this environmental good" (And fish aren't really an environmental good)...but can we shift something that is not in a market into a market.

Now, that's the theory right? Try and go do that. The salmon fisherman saw this stuff. They saw this train wreck coming for years. The economists saw this coming 50 years before them, but nothing happened because this is all about, "Just one more year, just one more year, got to pay off the Lincoln...the navigator" So that's we had the fisheries collapse: because they didn't make it one more year.

And that's the kind of stuff that we're talking about in terms of environmental goods and resources. So the biggest difference is that...let's just go to...and we're going to talk about all these, and water is...someone said water earlier...water is very tricky because water is an environmental good...you've got the water in the bay...or outside...and the ocean right now is having a little bit of an issue because...I know there's the whole deal with the carbon in the atmosphere...but carbon is actually

getting absorbed in the water. It's called ocean acidification, and carbonic acid is not good for beasties that live in the ocean. Right?

So reefs are having problems (all the plankton and stuff like that). Diatoms are having problems. And I'm like, "oh my god, apocalyptic stuff. Like...dead ocean."

I'm freaking out thinking about that. So that's water...ocean as an environmental good, but what water in a bottle is a resource, right? I can sell this, I can control it, it's excludable, its rival, okay? So water comes and goes back and forth. That's why it's really fun, or confusing. Depending on your perspective.

Alright, so...Oh so the other thing is that, in terms of timing in this class? So it's an hour and twenty minutes. Do we take a break...or we don't...right? Start at 10 after and you go all the way till 11:30...or 12:30...? That's the normal thing? Or we stop somewhere, and everybody walks around? No. go all the way through. Ah, see, you guy just screwed yourselves. Okay, so...but that's okay because if I had to really... that'll be fine. Because getting 100 people in and out of the room, it's a big...it'll take five minutes to get everyone to sit down...

Okay, so, umm...

We're gonna talk about another concept, we're still on the big picture. And by the time...because I'm going to come back and revisit this over and over and over again...not to bore you guys, but to give you...

See...so you can see it in different angles over and over again and say, oh I heard about the fishery, now I hear about the timber, now I hear about the oil, now I hear about the corruption in Nicaragua, now I hear about the corruption in the United States, and now I hear about the corruption in Iraq, and you're like...after a while you identify a pattern, called whatever. It's going to be called corruption or fisheries or resources.

So another big theme that's going to come up is...back to the political economy...is... what's the difference between, what is...break political economy into politics and economics. Anyone? And tell me what the organizing concept is in each of them...or something. Just throw out some words here...let's just do it this way.

Politics? Right? And economics. This is one of those things where I want you to give me word pairs. One goes in each one. Anybody?

[Partisan]

Partisan? Is that economic or politics?

Theory or reality. More? Oh what's the equivalent in economics?

[Empirical?]

Empirical...I'm not going with that. No, let's not do that. I'm going to write that

down after I've had...

Somebody...politics and economics. It's like two dead simple words that I want. That's like...gold prize. Gold star.

[Policy?]

Policy? And? What's the economics? Help her out? Policy?

[Theory]

Theory? No I'm not going with that either...

[Model?]

Model? No.

[Laws] Laws? That's good, and what's the economics?

[Statistics]

No, not statistics, although they use statistics on both sides.

[Results]

Results? Political results?

[No...economics]

Economic results. Political non-results?

[No...it's like policy and results]

Policy and results.

[It would be like the counterpoint of the policy]

Okay, okay so that's in the right direction. So results in policy...and someone said laws right?

Laws, policies...and in some ways what you're talking about is...

This is nothing to do with...well kind of...they all relate together...but this is kind of an idea...

We have an outcome, which is the result of things going on in a market. Let's just broadly define a market, ok?

And the market is controlled by the law, and laws could be formal or informal. Those could be rules and norms. But those are controlled, in turn, by a constitution, what you're...how you even make a law. So this is the...if you want you can call it the different layers. I'm not going to push on this analogy too much, but I will get at it

when we talk about politics, in a sense politics does have an impact on economics the way that change in the policies and laws will impact a market.

So in that sense, if that's what you guys are getting at, yes definitely. I don't know how to make that into two words, but let's do it right now and say ...we'll say outcomes with that caveat, if that's what we're talking about. I'm going to use a much more basic set of words. Let's give you the easy one: efficiency...what's the one over here?

[inefficiency]

No, but true. What's...so if economics is about how big do you make the pie...

[Distribution]

Distribution, right? This is equity. Fair. Fair means that I get what you have, okay?

And the pie analogy is used very much as an organizing principle. How big do you make the pie, and how do we divide the pie up? So that's why...the Marxists had the most interesting idea. So the Marxists said, "We'll have this capitalist economy. It'll be super efficient, it'll produce a whole bunch of wealth, and then we'll take it all over, and then we'll pass it all out to the workers, and then we'll be fine."

And he missed that...he didn't do the stochastic dynamic equilibrium, because he forgot about the next stage. What happened next year? Right? That's where the Marxists kind of fell apart as witnessed by the USSR, kind of when you guys were born almost...isn't it. 1991? Anyone? ...late 80s! Yeah, okay good.

So it's equity vs. efficiency, okay? So that's the kind of thing in political economy. That's a good way to keep those things straight. It turns out, with water...now this is a very useful analogy with water...and I actually have bumper stickers that I didn't bring. But it addresses this issue because people say, "Oh we have a water shortage what do we do?"

"Oh, we'll just price water". What's the objection to if we have a price on water?

[It's a basic commodity?]

It's a basic commodity? Kind of. It shouldn't be a commodity at all. What's the objection?

[Human Right]

[Right, not a privilege]

It's a human right? It's a what?

[Right, not a privilege]

Right not a privilege? Same rhetoric? Okay. You need it to live? That kind of thing

like...

Unfortunately, the “need to live” thing, “it’s a human right” thing.

Human right is different than “you need it to live” because you need what else to live? Food. But we don’t have like...so the human right is like “We should have water for free”. It’s a right. But food? Do we have a right to food?

We don’t. There’s no constitutional amendment that says thou shalt have a Big Mac. Right? But there’s plenty of stuff that says though shalt have water.

[Well, is it because you have to produce food, and not really have to produce water?]

How did this get here?

[Well you produce the bottle but...]

No not the bottle, what’s in the bottle. How does this get here? Where does it come from?

I’m not trying to trick you but I’m saying this comes from somewhere else, it’s not raining outside. So the production of food and the production of water are very similar. Right? It does cost money to produce both. It might be handier to produce a chicken right? Compared to water.

Because the chicken will eat whatever’s around, and the water’s like...where do you get the water? But the production is not exactly it, but there is this issue with water in particular that it is a very...I mean...the South African constitution, the right to water is in the constitution...you cannot deny a citizen 50 liters per day per person. Okay?

So I’m sitting there, and I’m an economist, and the hard-core free-market economist goes, “You should always charge for water, all the time”. We’re not talking about bottled water. And then the hard-core non-economists (whatever, the civil-libertarians)...they’re like, “Water should be free all the time”. But there’s an issue of production.

You have to get it to people, right? If it costs nothing, we have a demand and supply problem. So my compromise between politics and economics is that...yeah, everybody should have some for free, as a human right, but then you should pay for more. Okay? So that’s where...

It’s uniquely difficult to explain this to someone in the water business or someone who is far-right economics (far-right by meaning...radical market) or far left in terms of crazy, social engineering. They are not willing to compromise these things. This is water, it’s important, it’s a life good. It’s like no, we have to compromise. So what I’m trying to do is blend politics and economics. Some for free, and then pay for more.

And we need to have these kinds of solutions...we have to at least consider both

perspectives and try to get in the middle and talk to both of them.

Well, okay, so that was a whole bunch of overview stuff. Does anybody have any questions just now? We'll get to the syllabus in a second. That's fine.

[We still pay for water, in this country, though, right? As far as tap water goes?]

We still what?

[We still pay for water...]

We...oh that's an interesting little factor is that we...

When you pay your water bill? You're not actually paying for the water. The water is free. You're paying for the distributions. And, I think that the state water project in California, which is the big one...one of the big ones that moves water to Los Angeles for example?

It uses...now I forgot...I think it uses about 10% of the electrical power in the state? They've got the pump...anybody driven down the 5? Did you see the big pipes that go to the Tehachapis? That is one of the biggest lifts in the world. And water is very heavy. To push it over that thing takes a lot of energy, so that's what they're paying the bill for.

I have 125 copies of this syllabus, so everybody should get one. Distribute, distribute...

[You said that there were four concepts like...that we should know...]

Four concepts that we should know?

[Yeah like that...what is cost/benefit, what is supply/demand...]

Oh did I not say four? Uh...to be determined. I don't know...that sounds like a good place to start. It's good though. I told you I'd be disorganized. Any other intermediate questions before we get to the syllabus, which is a whole bunch of fun.

Yes?

[question inaudible]

Yes. Usually you're paying for water treatment. When you get it from your tap? It's usually treated.

So this water comes from the Sierra Nevada from the snow melt. So it's pretty clean. But sometimes, if you're in San Diego, and you're getting your water, and it came from the Colorado River...and it went through seven people's toilets before it got to your tap. So you hope it's clean. That's the whole idea. Anybody from San Diego?

[I lived there for a few years? And the water tasted so horrible. It's fuzzy kind of and it's flat... and just the weirdest taste ever...]

And it wouldn't kill you, but it doesn't taste good. I was in Davis. Davis? Does anybody know Davis? It's got really...ground water? Not so hot. When I came out here, I was so happy about drinking Berkeley water. Okay. Anybody else need a syllabus? Anyone?

Okay. You have a question?

[Do we still pay for the...not to get it clean, but when it goes down the drain, do we pay for that? The waste water...can it still be...in the ideal case I guess...]

Well, this is an interesting situation. Usually you almost pay a flat fee for your wastewater or you pay a fee in proportion to how much you take in, because they assume what goes in comes out again, which is usually a good assumption. But the other one is...the history of water in the United States is that...discharge it in the river, and the guys down the stream will take care of it. So that ends up being horrible because you dump one gallon of crap in the river, and you just destroy...you lower the quality of all the river water. Yeah?

[So...what are your thoughts about the whole like...LA county water policy thing? Like watering your lawn?]

That's an awesome topic for my blog, I'll see you there. Okay so let's talk about the syllabus.

But I appreciate the questions, it's...the whole water your lawn stuff. The mayor...did you see the mayor got cited for watering his lawn on the wrong days? And I'm like thinking, that's the dumbest thing I've ever heard. Right? This...regulating people on what they do with their water is ridiculous.

Okay so this PDF is on b-space. Everybody knows how to get to there right?

Okay and the syllabus will be updated as often as I feel a need to, but this is a pretty reasonable framework. Notice it has the date on it.

So does anybody know why it's on one page?

[Save trees]

Save the trees? What is the other reason? Huh?

[Budget cuts]

Budget cuts? You know what? How much does it cost me to make copies for you guys? Zero. Anybody want a book done? I could do it, you know, I'll only charge...forget five cents a page.

Okay, so it's not because of budget cuts. Why is it on one page? Another reason? Save the trees, that's a good one. I don't care about the trees though.

[Heavy stack]

Heavy stack, that's good, personal load.

[Save water]

Save water...that's way too indirect. The finished forests. No. Anything else?

[Save ink?]

Ink? Another resource, no.

[Time?]

Time. My time. Right? I'm not interested in stapling together 125 two-paged things of whatever.

So, you guys are all young, you can read small print.

And the PDF version has got some clickable links on it. So you can get that off of B-space. Especially, I know for the... on the right hand side it says the Hayek paper. *Use of Knowledge in Society*". The "October 22", you just click on that PDF and get it for free. If any link breaks, tell me, and I'll fix that and send the link to the class list. So let's go in order here.

B-space, everyone should see that. Just as a curiosity, when you look at the b-space, at the calendar does it show like all these times from all your classes? Does anybody know about the calendar on b-space? No. So that's completely a waste of my time to put stuff on there?

[No, I think if you pressed calendar, it only shows it for the class that you're on.]

Not all of them together? *[No]* That's stupid. Alright, well, the calendar should reflect what's on the syllabus, okay? And there's nothing on the calendar right now on your B-space that is like...go on the calendar and check it out...but just so you know.

Uh, no laptops and cell phones; I don't like it. There's penalties.

The videos, I'm not sure about when to post them, I'm going to put up today's later this afternoon because none of you knew that I had this tricky incentive scheme set up.

Here's my information, I'm in Giannini Hall. It's just up the hill. I've got office hours in, essentially, a bullpen? Like I told you, post-docs have no rights. I'm there with about four or five other people. But those are my office hours right now. 12:30...right after class on Tuesday, walk up the hill with me, and 3:30 to 4:30 on Thursdays. Fei and Diana are your GSIs. Diana, stand up and introduce yourself.

[Hi, I'm Diana I am a second-year PhD student in ARE.]

[Hi everyone, my name is Fei. I am a third year ARE grad student.]

So these guys are my bosses, because remember the post-docs are below the GSIs. They tell me what they can do. They can have office hours at those times and those locations.

I can't really deal with conflicts like, "Oh my god, I have a class can you change your schedule?" But if you want to negotiate appointments or something like that, just go ahead and send me an email.

Okay so here's the class time, we got our lecture, our first lecture, and we've got our discussion sections.

Thanksgiving there's no discussions. But Thanksgiving week...whenever we can't...

We lose one discussion, we lose all the discussions. So that's why there's no discussions this

week, and there's no discussions during Thanksgiving. And I think those are the only two. The last lecture is on December 8th, it's not a lecture because our, RR...reading, revising, arithmetic week, or whatever they call it. So there's going to be no new material but luckily I was going to give you prizes and stuff like that on that day. So that was...before evaluations I give you candy, right? We'll do evaluations before then.

So grades. I am very, very anal about "on time", okay? If it's not on time, it isn't there. So when I say the homework is due, it's on time. And the points...we'll get to that in a second.

Your grades are based on total points, no duh. I'm trying to curve...I'm trying to keep the class somewhat near cutoff. So when you have an 85 you're like oh, I'm in B-range. But I'll move it around depending on what I see, okay? So, it's going to be objectively subjective.

Re-grades: If you want a re-grade, you type it, your reason, you hand it in within a week. So you get it back on Tuesday, I want it back the start of class the next Tuesday. Alright? I'm just trying to...

Oh yeah, so the whole thing about grades, in terms of incentives and expectations...and so...incentives. Another key word here. Anybody know what intrinsic motivation means? Go ahead.

[Motivated by doing things for yourself]

Close...

[As opposed to being motivated by like...getting paid, or like...]

Right, okay. So, intrinsic motivation is the motivation that comes from within you. You do it because you like to. Okay? I like...

I have roommates, and I like cleaning windows. And they are so happy. Because I just walk around cleaning windows. And they're like...why is he cleaning windows? And I'm like, "I love cleaning windows." And they're like, oh cool.

So extrinsic motivation is...you do it because someone pays you, or you do it because someone...whatever. It's...you're getting some external source. So a lot of you are probably used to the ideas...I do it because I'm going to get a grade. Because my grade's important to me, because my GPA is important to me, because you...

Actually that's where the logic breaks down. Why do I have a GPA?

But anyways, intrinsic motivation is...you do it because you want to, right? You choose a major. You can choose a lot of different majors, but you choose the one that you like, theoretically, because you want to learn that thing.

So when I talk about intrinsic versus extrinsic motivation...what I'm trying to say is...what does this have to do with regrades...oh we're just talking about grades in general, right?

So if you're really, really worried about your grade, I want you to write it out (what's wrong) and give it back to me before class starts. And that's...we're essentially going over the extrinsic schedule, right? The grades...what your payment schedule is going to be...if you guys turn out stuff. Oh that's what I was trying to get to.

Because we're making an agreement about expectations. I'm going to say, "This is what I want from you, and if you deliver it, this is what you're going to get, in terms of your grades." So that's what's...that's the illusion. And it's an important illusion because we're talking about...when we talk about things like the environment...we're talking like...why do people do things, like recycle.

Why do you recycle? The impact on you is essentially zero, right? Economists have the same theory about...why do you vote?

There's a very strong economic tradition called, "it's irrational if you vote, but people still love voting", right? Because there's no extrinsic payoff. They don't go vote and then suddenly get a higher salary or a day off of work or congressional applaud from your district. They go vote because they like it. They like to feel like they're contributing to the dialogue. They're involved. So this is why...I'm getting stuck back and forth on this...why this has to do with grades...but anyways...so blah blah blah. So back to the grades.

There's a grade for attendance. If you miss one discussion section, that's free. If you miss two or three discussion sections, you lose five points of your class grade.

We are keeping role, we are going to double check, so don't sign in for your friend. If you miss more than three, you're going to lose ten points. Is that clear enough? Okay. And if you're...I have no idea about "I'm enrolled, I'm not enrolled". If you're not enrolled, and you still want to go to discussion section, fine. I talked to the admin, by the way, about enrollment, and she said well...I told you guys in the start, but I'm repeating it...just, you know, wait for people to drop out. I don't know what to say. Sorry.

[Diana: if you miss...you have to come next week, if you don't come you're automatically dropped.]

Oh okay, way more important motivation.

[On Telebears it says is manual, so the...you...]

A manual what?

[The waitlist. You get to pick who...]

Oh, I don't. I would have a lottery. It'd be awesome. We'd be selling seats.

[Doesn't whoever...just in order, and how many people drop it?]

Something like that. I mean, you might know about your position on the waitlist, there's nothing I can do about that. As I said, convince the person next to you to drop.

Okay, the two books are Robert Frank (this is useless...it's a book!) *The Economic Naturalist*...this book here? So I said before, there's no course book, I just saved you 140 bucks. I'm done spending your money. So you guys, I want you to read this book.

And I want you to read the other book, which is Hazlitt, *Economics in One Lesson*. Hazlitt is a free download, or you could buy it for \$3...I don't know what the price "used" is on Amazon. They're very easy books to read. I want you to read them. Okay?

Economic Naturalist is perfect. Every story in here is like one page. Put it on the back of the

toilet, right? Go to the bathroom a lot, because you have to finish it by September 18, okay? Now, I want you to read this because there's...every page of this book, or every story...is very, very good economics. It's very simple, there's no math. But you'll learn a lot about economics. And I want you to start thinking in that way because...blog post. Every person in this class, who's enrolled, who wants a grade, is going to write a post for my blog, okay? I give you my time, you give me your blog post. That's worth 10 points of your grade, okay? It is a binary operation. You hand it in you get ten. You don't hand it in you get zero.

No one is going to grade your blog post. But (intrinsic motivation) hopefully you care about writing something good. If you write crap, I'm going to make sure that everybody points out you're writing crap. Okay? Every blog post will say: "So and so, e-mail, wrote this for you." Enjoy it.

[On b-space? Or...]

No, the blog is on the internet. It's called Aguanomics. Did I say that? Aguanomics: my blog. So it's going to be on a topic of your choosing in the large topic of environmental resource economics. It's not going to be, "The other day, I drank some water, and I really liked it." Okay? Something...I want you to try and start...and the reason that you read this book first is because you're going to read like a hundred stories by other students about economics and whatever.

So you'll be reading this book and going, "Wow, that's cool, that's cool, that's cool. Hey, I can write something like that." And you will. Alright? So it'll be for the blog.

Homework one is probably going to be a lot of math. That's because, as I mentioned, this is a middle course. It's a prereq for your upper division courses. So you'll be doing some constrained optimization and that math, and the GSIs are going to have a great time writing that up for you. And we'll do a little bit of lecture on that.

Homework two will be something similar. I have no idea when we're going to...what's going to happen...we'll just see what happens. We'll write the homework and we'll hand it out to you guys, and you can hand it in. Each of those homeworks is worth 5 points. The midterm will be worth 15 points. There's one midterm. The midterm...I don't know the composition right now...it's probably going to be some math, some graphs, a little bit of an essay, something like that.

On October 22, the Hayek paper is due. I mean, have it read by then. It's a very useful paper. And homework three...October 19. These dates might slide; I'm just giving you a general idea.

Now the briefings...there's two different briefings...it's going to be on the same topic. Everybody in the class will write on the same topic. It's going to be a one-page briefing. This is going to be called...getting your point across, okay?

If you haven't noticed, the only people who read anything anymore are students in class that are assigned to read it, and people that are paid to read it. So what you need to do in this briefing is you need to make your point in essentially one page. Not one of these pages, but one 250-word page.

And then, on the topic that we're going to decide...it's going to be something like convince me that we should have a carbon tax. Or convince me that I should save the whales.

Something like that. It's the kind of thing that you would hand off to a politician or a policy maker, and they would say, "Oo I'm convinced." Okay?

Those briefings are going to be graded by you. It's going to be peer grading, okay? Every person in this class is going to grade three other people's briefings, with written comments, on what they liked and didn't like. And the grading of the briefing will be graded. And you won't grade the grading of the grading, but anyway, you get the idea. So I want you to... you're going to write for your peer group, and your peer group is going to rank your briefings according to how well you did relative to the other people. It's a first, second, and third place, okay? So not everybody gets a gold medal, but we'll see what happens. That's going to be fun, I hope, and that'll be later in the semester.

Olsom and Schelling are the two other books, these ones are slightly more narrow in topic, a little more complicated, but nothing even close to a textbook. *The Logic of Collective Action* is a very big classic, it's 180 pages. It's...how do people figure out how to work together, okay? How do they cooperate? It's a very important book; I think he's actually a political scientist. But it's a very important book about things like the environmental resource. How do we get people to coordinate and work together?

Micromotives of Macrobehavior...Thomas Schelling...has anybody heard of mutual assured destruction? Anyone else? In the back, back, back, corner. What's it mean?

[It basically means that if things are removed, you destroy yourself, so there's basically an incentive not to do anything]

Right. And what did it apply to? [*The Cold War*]

The Cold War, right?

So the USSR, the United States...we have like thousands of missiles, and we can destroy the world six times over, and mutual assured destruction is like...if you launch yours, I'll launch mine and we'll both be dead. Okay? There's a video on that going up on my blog next week. It's two minutes, it's very funny. So has anybody heard of "hokay...what's that...The End of the World...I love it...so funny...okay so you'll see the "hokay" video and you'll understand the cold war.

But the guy Thomas Schelling is the one that's credited with this theory of mutual assured destruction. In a sense, we're not dead because of him. So he's important. You should read him. He's a very, very out of the box economist. He talks about how people interact with each other. That's the same theme as the logic of collective action.

And because, at the end of the course, we'll be getting into more of the more complicated dynamics, the interaction of people. And both books will be due around that date. November 24, which is the week of Thanksgiving.

By due, I mean you finish them, okay? There's no book report, there's no assignment. Anybody who wants to save even more money can do a swapping deal with their friend. I'll read this one, read book A, you read book B, and we'll swap halfway through, I don't care. Do what you want.

Briefing 2, peer grading, there is some grading for peer grading, and there is a final exam on December 15.

Now, that's the most of it. So any questions about that so far? It does add up to 100 points. I double-checked. No? Straight forward? Okay we'll see when we get there right?

Experiments. In the discussion sessions we'll be doing some experiments. I along with the hat of being a resource economist, environmental economist, an institutional economist, I'm an experimental economist. And what that means is that you're going to go to discussion, and you're going to play some games. So it's not that hard. And then you'll learn something, which is why I'm doing that. And then we've gone through the texts. I recommend all those things under the optional reading. The textbook...those other ones are other textbooks. You can get them if you want to. Underneath lectures, that's what we're supposed to be teaching... basic microeconomic tools blah, blah, blah.

Q&A, so at the start of lectures what I'm happy to do is like...if you have a question, you're like I don't get this...I read this in the newspaper...I'm arguing with my parents...start the lecture with that. Because I love answering questions. It's much more interesting than my random notes. So bring Q&A.

We'll do some math everyday to make sure that you meet the requisites, then we'll do economics, then we might take a break, we might not. And then we'll do more economics. Okay and then there's this massive provisional detailed overview schedule.

Oh, let me mention two other things.

Markets...what's the difference between a missing market, and not having a market at all? What's an example that's in a missing market, or not in a missing market. Or a good that needs a market, but it's missing? Current event, pretty simple. Anyone? They're trying to make a market in it...carbon, right? The idea is that we have this environmental problem, we can make a market in it, we can solve...that's what I mean by "missing markets". That's what the jargon is, okay?

What is no market? There's no market? The Beatles had a song about it. No demand, no supply...no there is a demand, there is a supply, but there's no market for it. Close...come on...buy you love, right? There's no market in love. And sometimes, remember, there's not... the solution to every problem is not a market, okay? So I want you to discriminate between those things, or at least keep them straight. I know you, you know the difference, but because there's an overlap between these things, okay?

And sometimes, someone says, hey we can do a market in it, but really it's over here. Don't use the wrong tool to solve the problem. That's all I wanted to say about that right now. And then there's the idea of bargaining vs. efficiency. So...who's ever tried to find a place to live. A room. You want to rent a room. I need a roommate. Or the dating scene, which is just as bad. Okay?

So what is it called? You see the place, you see the ad on Craigslist or whatever, so you go see the place...oh I really like it. Then what do they say? Fill in the application, show me your parents' social security number. Anything else? What else do they say?

[Price?]

Price? No they already do that. What else do they say? Do they say yes immediately? Or do they say, "Wait a second, I've got to see three more people today." Well, or they do they say yes, and you say, "Wait a minute, I've got to see three more people today", right? Okay, so

that's bargaining, what's going on there. And some people call that wasteful bargaining.

The way to get around wasteful bargaining is to go to the central office housing at Berkeley, and they assign you a roommate...bang! You're done. You might hate that roommate. So there's such a thing as being efficient, because you solve the problem, or having wasteful bargaining. And wasteful bargaining, is it wasteful?

[Not if it gives you marginal benefits]

What's that? *[Not if it gives you marginal benefits]*

Marginal benefits, that's right. Well this is actually very tricky because the marginal cost/benefits to you might be different society or whatever. But that's the point. We don't think it's wasteful to go around and negotiate roommates, or to negotiate dating, because you may want to have a choice of who we end up with, right?

So that...you can call that wasteful bargaining, or you can call that socially optimal or whatever. So there's this tension...it's called a tension between bargaining and efficiency. And that tension is often present. It's the same thing as going to the supermarket and you want to buy some yogurt. Anybody try to buy yogurt at the supermarket? Your roommate says, "Go get me some yogurt." And you're like, "Wait. Which one do you want?"

Oh, I want the nonfat, fruit, peach on the bottom, the organic...and you're like, "Woah, wait a second, let me right this down."

Now, when you go to the Soviet Union, they figure that one out. Yogurt. That's it. There's just one type. In fact, there's Belarus. I went to Belarus, and they had yogurt. And they didn't have any choice, and I was a little happy. Not too happy. So that's the bargaining vs. efficiency. So are there any other closing questions on this stuff? I'm not going to read through the syllabus because it's probably going to...it's roughly going to follow that order. Anything else? No? Okay great. See you guys...oh wait! Stop, stop, stop.

I won't be here next week. But, you will have guest lecturers from fabulous Claire and fabulous Damien. So obviously you should come to class, and then I'm going to quiz you on what happened when I get back the week after. Alright? See you guys later.

[Oh by the way, the first section will be next Monday.]

Transcribed and checked for accuracy by Brynna Bunnag