

Microeconomics: 2010 (Edward Morey)

August 28, 2018

So, what is microeconomics?

The intent of the course is to introduce microeconomics.

Let's make a first attempt at defining microeconomics.

It has two parts: Microeconomics is a set of theories (models) that try to explain the behaviors/decisions of individual economic agents;

that is, a goal of microeconomics is modeling, explaining, and predicting the behavior of individual decision makers (economic agents)

Economic agents: you, other people, firms, the government, families, your dog, and my dog, the Catholic Church,...

And, how the inter-related behaviors of all those economic agents collectively determine what happens (what is produced, how those products are produced, and who consumes what).

Building models to explain and predict how all the different economic agents interact.

A goal of microeconomics is to explain the behavior of individuals, firms, and their interactions.

Macroeconomics, in contrast, attempts to model behavior on a very aggregate level: the total amount produced (in \$), how many people are working (not working), the consumer price index, etc.)

Many of the goals of microeconomics are similar to the goals of psychology and sociology: explaining why people do what they do, how they interact, and the outcomes of those interactions.

My name is Edward. I am an environmental economist, a statistician, someone who models behavior. I also have a strong interest in psychology, ethics, and neuroscience.

(In explanation: Much of my research is on the environment; In addition, I'm interested in statistics, psychology, neuroscience, and philosophy. For five years or so I have been interested in how one determines good from bad (moral philosophy) as it relates to economics. I also study "happiness" and teach a course on happiness (Econ 4060)

I suffer from [enochlophobia](#) and [laliophobia](#), so try not to scare me.

There are two web pages for the course:

My web page for the course

<http://edwardmorey.org/2010/2010home.html>

Note that my web pages have recently moved to <http://edwardmorey.org/>

The Sapling web page for the course at

www.saplinglearning.com/

You need to sign up for Sapling, where you will take your quizzes (all online) and where the book lives.

You can also find my personal web page for this course by Googling my name

I DO NOT USE the CU learning platform.

There are 2 T.A.'s for the course, both graduate students.

They will introduce themselves on Thursday.

There are no recitations the first week of class; recitations will start next week.

If you need their help this week with Sapling or anything else, email one of the T.A.s (their emails are on course web page), but first ask a neighbor.

Their names, recitations, email addresses, etc. are on the course web page.

Before we proceed, and you start studying, keep in mind the warning of Dr. Frankenstein (the guy who created the “monster” in Mary Shelley’s famous book)

“Study had before secluded me from the intercourse of my fellow-creatures, and rendered me unsocial.”

So, don’t study too much; study exactly the right amount. You want to study the *efficient* amount from your perspective.

1_An introduction to explaining behavior: preferences, constraints, choices, and how economists think

Microeconomics is a lot about explaining, modeling, and predicting behavior.

Who of you are freshman?

How many of you were in a committed relationship on June 1st?

How many of you are not now in that relationship?

Why or why not?"

See the Onion article: ["Thousands of High-School Sweethearts Prepare for Post-Graduation Breakup"](#)

Thousands Of High-School Sweethearts Prepare For Post-Graduation Breakup

The Onion, Fall 2012

WASHINGTON, DC—In a time-honored annual ritual, thousands of high-school seniors across the nation are cramming for final exams, trying on their graduation gowns, and preparing to break up with their longtime sweethearts.



Jeff Reidel and Amy Pocoroba, one of the nation's soon-to-break-up couples.

"Amy is an amazing girl," said Lancaster (OH) High School senior Jeff Reidel, who next week is planning to break up with Amy Pocoroba, his girlfriend of three and a half years. "I know we swore we'd be together forever, but, like me, she's got a lot of exciting opportunities ahead of her, and it just wouldn't be fair to her to keep her tied down."

Brianna Milbank, 17, a senior at Eisenhower High School in Prescott, AZ, said she plans to break up with boyfriend Chris Keegan in mid-July.

"We've already got plans for a July 4 camping trip that I'm really excited about, so I definitely want to wait until after that," Milbank said. "Chris is such an incredible guy, and these last two years have been amazing. But I just don't think I can give him what he needs right now."

As the seniors take one last look around the halls where they spent the past four years, they are also pausing to take one last look at the significant others they are about to dump.

"Amanda has the most beautiful eyes," said Trevor Hillegas of girlfriend Amanda Lum. "I can't tell you how many times I've gazed into them, thinking they were the only ones I'd ever want to look into. But that was before I visited UC-Santa Cruz. The chicks there are so hot, it's not even funny."

The moral of this tale is the set of people who would go out with you. You imagine, maybe incorrectly, you think you will have more and better choices when you get to college.

A number of my friends have recently changed spouses – some very quickly. Another friend, only “dates” married women (he has commitment issues). Are these **choices, or not?**

Remaining in the same relationship, is a **choice** you are making, a choice that continues until the other party dumps you, or you dump them.

That said, being in a relationship might not be a choice: maybe your significant other will shoot you if you try and leave—making your relationship a **constraint** rather than a **choice**, at least for you. The distinction between choices and constraints is important, and critical to explaining behavior)

So, how does one decide whether to stick with the old wife and 6 kids, or switch to a new wife who only has 3 kids (for a total of 9 kids)? At my age, there are always kids, a constraint.

Or, whether to keep the old boy-friend back in Grand Junction, or take your chances at CU, or try to do both?

(It is amazing what you can do with texting (sexting) and Skype: Skype and texting greatly decreases the cost of maintaining the distant relationship, but they also increase the probability that your significant others will find out about each other)

Note that most people “choose” to be in only one sexual relationship at a time, but of course there are exceptions and the length of time one is involved with the same person can vary from decades to minutes

Note that being “exclusive” can be a constraint, rather than a choice. For example, one might be exclusive because of cultural or religious constraints (maybe, for you, it is a sin to have multiple partners). One might also be exclusive because no one else will have you (your opportunity set has only one person in it, your significant other).

Some statistics:

Of males between 20 and 24, 14.2% had no sexual contact, with other people, in the last 12 months, 55.2% had one sexual partner (mostly with a member of the opposite sex), and 33.3% had two or more partners. The rest were un-ascertained.

The number for females between 20 and 24 are 12.5%, 59.3% and 21.6%. So, more females have had sex, but with fewer partners. Are these percentages consistent with the male percentages?

Some of the costs and benefits of dumping the old one

According to economists, choices are made on the basis of the costs and benefits of each alternative in the choice set.

Dumping your significant other can be emotionally risky, unless you “monkey bar” (don’t let go of the old one until you have one hand on the new one). Depending on your personality, risk can be a cost or a benefit.

The old one is reliable, but a bit boring?

He, she, loves you, or at least likes you.

He is kind of cute, but could lose a few pounds

He is starting to look and act old.

And, there might be someone better out there just waiting for you to appear, such as Ms. Swift.

(I need suggestions wrt whose pictures should appear next)



John Mayer



Amanda Seyfried



Andrew Garfield



Mr. S. Combs

And, dumping George might turn him into a crazed stalker, someone who texts pleas hundreds of times a day, or worse. (Why is George more likely than Georgina to get violent?)



A cost of breaking up could be an increased probability of being attacked.

How would an economist describe how the dump decision is made?

Your first reaction might be to say that economists do not enter into social relationships, so economists are clueless as to how these decisions are made, so anything they say should be ignored. Fair enough; except you are in a class taught by an economist.

Hint: Economists assume—believe? —that people are rational—even when it comes to love and sex. That is, the individual knows her preferences (knows what will make her better off), knows her constraints, and does what is in her own best interests.

Is this always true for love and sex? (Consider the mental processes of a drunk, aroused, eighteen-year-old male)

Is “economic rationality” true for the purchase of a washing machine? For the choice of a partner?

Many psychologists think the economic assumption that humans are rational in this way is unfounded (not based on the available scientific knowledge of how people think and function).

An economist would assume the individual makes the decision of whether to dump the old one on the basis of the **expected** benefits and costs

The short-run expected costs might be high: crying, screaming, regret, phone calls in the middle of the night—even threats.

You might be alone for the rest of your life, a long-run cost (or, for some a benefit?)

As some of my previously rich friends would tell you, switching spouses can be costly.

The **short-run net** benefits (benefits minus costs) are likely small unless you monkey bar—some passionate sex if you monkey bar, but also some agony.

But the long-run benefits of switching might be love, excitement, and great sex for a hundred years, **or not**.

In the words of Kelly Clarkson (<http://www.slack-time.com/music-video-779-Kelly-Clarkson-Walk-Away>)

Should you stay or should you go?

For one, it depends on how you feel about **uncertainty**. Do you hate uncertainty? Do you love uncertainty?

It also depends on how you trade off current benefits and costs for future benefits and costs.

Someone who puts a lot of weight on the present vs. the future might stay in an unhappy relationship because every day the short-term cost of breaking up is just too high.

For the same reason, you might logically continue to smoke, even though it will kill you in the long-run. This can be perfectly rational behavior, or at least an economist would say so.

Studies show that people suffer more in the long-run from their minor injuries than from their major injuries: we are forced to deal with major injuries so bite the bullet, have the surgery, and do the rehabilitation, but suffer for years from minor injuries because on a day-by-day basis, today it makes sense to not deal with the injury.

Whether to dump depends on your **perceptions** of the magnitudes of the benefits and costs of dumping, and maybe your perceptions are incorrect.

You might have misinterpreted the smile of Julie in the next office, or misjudge how much the divorce would muck up the kids.

Lots of research indicates that sex with the new partner in the back of the new car will not, in the long-run, be as great as you now imagine.

Would you dump your significant other for \$1 million in cash?

How about for a \$1?

Maybe we should have a reverse auction? A what?

Who will dump their significant other, right now, by text, for \$1

Did this couple make the right choice?



NYT: August 20, 2010

Brant vs. Brant: Divorce Celebrity Style

By [LAURA M. HOLSON](#)

... to hear a motion in the divorce case between the newsprint magnate Peter M. Brant and his estranged wife, [Stephanie Seymour](#). Last year Ms. Seymour, a beauty prized for her angel-winged walk as a Victoria's Secret model, sued to end their 15-year marriage. She claimed he was too controlling. He contended she cheated on him and abused drugs and alcohol.

He was a billionaire with a vast art collection and his very own polo team. She was a Sports Illustrated supermodel and the ex-girlfriend of a rock star...

By the time Brant v. Brant goes to trial on Sept. 20, the two sides will have generated more than 12,000 pages of public divorce documents (with thousands more sealed), paid millions of dollars in lawyers' fees and fractured an already delicate cadre of family and friends forced to take sides.

At the most basic level, this has turned into a case of "he said, she said," with charges ranging from infidelity to rampant drug use. To complicate matters, Mr. Brant, who's estimated net worth is near \$500 million, did not sign a prenuptial agreement.

"I was very surprised when he married her" without a prenup, said [Donald Trump](#),

... her most celebrated romance was with [Axl Rose](#), the lead singer of [Guns N' Roses](#). (In the band's 1992 music video "[November Rain](#)," she portrayed a bride who dies.) That relationship ended badly in 1993 after he accused her of infidelity...

She has been on the cover of Vogue at least five times, and was a Playboy cover girl in 1991 and 1993...

Mr. Brant's business was less glamorous; he made his fortune manufacturing newsprint and investing in Greenwich real estate. When he was barely 20, Mr. Brant befriended the art dealer [Leo Castelli](#), who introduced him to [Andy Warhol](#), a seminal figure in Mr. Brant's career as an art collector...

But closer to home, their life was relatively quiet. They have two sons — Peter Jr., 16, and Harry, 14 — and a daughter, Lily, 5. For years Greenwich locals spent Sundays watching Mr. Brant and his polo team play on a grassy field across the street from his estate, White Birch Farm. (Last year he began disbanding the polo team.)...

Whatever the couple's differences, it was clearly having an impact on the children... The children were assigned court-appointed legal counsel and a guardian. ...

More often, though, the couple fought over objects. Ms. Seymour claimed in a motion filed on May 7, 2009, that Mr. Brant took 44 paintings by Warhol, ...

Mr. Brant said Ms. Seymour took some Warhol paintings of her own, including a few of the "Last Supper" series, according to a motion filed four days later. At the hearing on Aug. 6, Ms. Seymour's lawyer wanted to know what Mr. Brant did with some jewels lent to a Parisian art show. Mr. Brant's lawyer countered: What did Ms. Seymour do with his client's watches?...

And then there was the claim that she was unfaithful. Mr. Brant acknowledged in a deposition on June 23, 2009, that a cause in the breakdown of their marriage was Ms. Seymour's infidelity. The topic proved particularly contentious as Ms. Seymour's lawyers saw Mr. Brant's romantic life as fair game.

Stephanie and Peter called off the fight

According to the Huffington Post

After about six months of seriously ugly divorce proceedings ([involving even drug and booze tests](#)) and [ultimately reconciling in September 2010](#), supermodel Stephanie Seymour has finally explained, kind of, how she decided to work it out with polo-playing husband Peter Brant.

[Page Six writes](#) that [Seymour told *Town & Country's* May issue](#) that their happy ending was due, in part, to an Indian blanket Brant quite liked that she gave back to him as a sort of truce.

[According to the gossip column](#), Seymour explained, "The 'dirty fight' is all about winning, not healing. It's fueled by people you're paying. It is the lawyers talking and not you." She told Brant that she wanted to get rid of all of the outsiders, remarking, "I have more confidence in you, and I would hope that deep down you would have more confidence in me, that we can work this out."

She added that she and Brant are still occupying separate houses and that the whole family is in therapy.

Evidence suggests that getting divorced was for them too expensive in terms of time and money. Maybe better to not get divorced and be more understanding about each other behaviors?

An aside: maybe Melania and the Big D would long run prefer to not be married but are not getting divorced now because the shortrun net benefits, for each of them, are negative

People make choices, and one of the most important choices we make is who to be with.

Some economists study marriage, divorce, and the family. The now deceased University of Chicago economist and Nobel Laureate, Gary Becker, was a pioneer in the economic study of marriage, divorce and the family (<http://apps.olin.wustl.edu/faculty/pollak/b-talk34.pdf>). In 1981 Becker wrote a famous book (amongst economists), *The Treatise on the Family*

It is projected that between 40% and 50% of marriages will end in divorce.

So, many of you will get married, many of you will get divorced. (None of you will get divorced without first being married.)

Many of you will remarry.

And, a few of you will never tie the knot. In the past, many people did not get married because it was illegal or culturally unacceptable to marry the person they wanted to marry.

Will you make the correct choice as to who to marry and when to marry them?

Will you divorce them at the correct time: not too early, not too late?

As I noted earlier, the fact that you get divorced does not imply getting married was a mistake.

When, who, and for how long are separate but related decisions.

Let me mention again “constraints”

The fact that you have not been married three times is probably, given your age, a constraint, not a choice. It would be very difficult for a twenty-year-old to be married three times. (I have one friend who has been married five times; he is 70)

Microeconomics is a lot about modeling and explaining behavior and choices

A lot of what you do is influenced by the constraints you face.

For example, one can't hook up with just anyone—everyone is not in your choice set.

Most people won't have you. This is a constraint you have to live with.

I am old, overweight, not rich, and go to bed a 9, so have limited options

Taylor Swift, Lindsey Lohan, George Bush, and George Clooney are not in my opportunity set (I am constrained to not be with any of them).¹

Consider the words of the tall ugly guy [in *Frankenstein*, by Mary Wollstonecraft Shelly.](#)

“All looked on me as a wretch, doomed to ignominy and perdition.”

The tall ugly guy (the “monster”) only wanted a girlfriend, but there were no takers. He tried to get Dr. Frankenstein, his creator, to create for him a woman as grotesque as he (so she would not be offended by his looks), but the doctor would not do it. It is a sad tale.²

Economists call such limitations constraints

You know about the dating “rule” (constraint) that you cannot date anyone who is less than half your age + 7. Yesterday in the NY Times vows section, there was a story about a 72-year-old

¹ The fact that I am constrained to not be with them does not mean I want to be with them.

² Contrary to popular belief, Frankenstein is the creator, not the “monster.” In Shelly's book, the big ugly guy has no name. Dr. Frankenstein refers to him as the “daemon”, a synonym for devil, and describes him as so bad looking that Dante could not even imagine a creature so hideous.

marrying a 27-year old.³ <https://www.nytimes.com/2017/08/25/fashion/weddings/may-december-couple-marc-wallack-cynthia-zhou-.html>

The rule must not apply to them.

E.g. if you are 20, they must be at least 17.

Our choices are constraints by

- how much money we have
- prices
- our time
- our abilities (I won a gold medal - not)
- our looks
- the norms of society (cultural norms)
- the law
- and what other people want (e.g., it is a bad idea to have sex with someone who does not want to have sex with you)
- where we live

I would like to buy an apartment in Italy (I spend part of most summers there) but given my income and the fact that I already have two houses, I cannot afford it.)

³ Given his age, she would need to be at least 43 to not break the rule. Given her age, he could not be more than 40.

Microeconomics is largely about modeling and explaining choices in a world of constraints

Constraints are caused by scarcity.

My friend “George” wants to get married, he is heterosexual, he wants to have kids, he does not want to adopt.

He recently took a job teaching in a small rural town in Kansas. Most of the students are undergraduates, and George is close to forty.

Given that female fertility starts declining fast around 35, and given the age rule about dating, George is restricted to females between 27 and 38, or so, who are willing to live in small-town Kansas with George.

They are scarce.

If you are interested, note that George is a fictional character.

Scarcity is what makes the world go around. If there was not scarcity, we all could have whatever, whenever.

George gets to choose but the choice set is small, unless he imports.

Potential partner sets:

If you understand sets (the mathematics and logic of sets), economics will be easier. The T.A should make up some exam questions on sets and set theory.

First consider the set of all people. Imagine a giant fish bowl filled with ping-pong balls, each ball has a different name on it, and every person in the world is represented. Ping-pong balls are typically white in color.

Let's say you have a way of telling who would, and who would not, go out with you at least once. (Soon there will be an app for that, or maybe that is what [Tinder](#) is—others swipe left to indicate they are not available to you, you swipe right to say you are available for them)⁴

Let's color a person's ping pong ball green if that person would go out with you at least once. The green balls are a set, a subset, of all the balls.

Call it your *potential-date set*

If you want a date, you are constrained to choose from the green set—you are constrained not to go out with anyone whose ping-pong ball is white.

Now consider the set of people who would go out with you more than once. Put a black dot on the ping-pong ball for everyone in that set.

The black-dot set is a subset of the green set and the green set is a subset of everyone.⁵

Let's call the black-dot set your *potential-relationship set*.

I have a quiz question in mind. Assume you only want to date people with brown hair. Might there be someone with blond hair in your potential-date set? Yes or No, and explain.

⁴ If George swipes right on your profile and you swipe right on his, you are a match. And you both get a message saying you have a match and become able to contact each other.

⁵ Maybe not: maybe there are people who would go out with you two or more times, but not just once.

Yes, there might be. There might be someone who is blond who is attracted to you and would go out with you.

I ask this question to make clear that who is in your potential-date set does not depend on who you want to date (your preferences). The set represents your constraints, not your preferences.

A question that covers the same concept would be, “You hate corn. Does that mean you cannot afford to eat corn? Yes or no, and explain.

What if I replace “you only want to go out with people with brown hair” with you only want to date people who are the gender opposite to yours? Your PD set likely includes people of your own gender?

What would make my potential-date set larger or smaller than your date set?

You live somewhere more populated than where I live. I live in the burbs of Clark, Colorado.

You are good looking. I am not.

I have a PhD, you don't (or at least not one in economics)

I probably make more money than you, at least for now.

I am old and wrinkled, you are not.

I am married, you are not.

Make sure you can explain how and why these factors would influence who would date each of us.

What does the date and relationship sets look like for the poor monster in Frankenstein?

They are empty sets—no one will go out with him. The reason he started scaring and killing people is that Dr. Frankenstein would not increase his relationship set to at least one member.

Summarizing, people get to choose but cannot choose just anything. What they do has to be in their feasible set.

Earlier I mentioned [Tinder](#), the “date” site. Think about how it works in terms of the set of people you would meet and the set of people someone else would meet. Who is acceptable to you is based on your preferences, but who you would date is a constraint from everyone else's perspective (whether you are willing to meet them, or not.)

But, who is acceptable to another user (based on their preferences) is a constraint from your perspective—they are either willing or not willing to meet you.

Budget sets:

We face similar constraints in the market for goods and services.

Goods and services cost money, and one only has so much money.

Consider a world of **only** two commodities: premium chocolate bars, which cost \$5 each, and meals which cost \$25 each.

You have \$75/day to spend on your credit card. Your mother set up the card so you cannot go into debt, or save money for tomorrow (the balance reverts to \$75 every midnight, and there is no line of credit)

Think about the bundles of foods you can afford: (make sure you can write them all down)

3 meals, no chocolate (so all meals)

15 chocolate bars, so no meals

2 meals, 5 chocolate bars

1 meal, 10 chocolate bars.

1 meal, 5 chocolate bars

2 meals, no chocolate bars, etc. etc.

No meals, no chocolate bars?

2 meals

Plot this set of points on a graph with chocolate on the vertical axis and meals on the horizontal axis.

Now imagine the one can chocolate and meals are divisible, so, for example, you can purchase 1.32 meals.

Graph the budget constraint (that is graph the budget set; that is all the bundles you can afford)

With chocolate bars on the vertical axis and meals on the horizontal axis.

Your budget set (constraint set) is all of the bundles of chocolate bars and meals in the shaded area.

Write down the equation of your budget set:

$$75 \geq 25M + 5C$$

Where 75 is your money constraint, 25 is the price of a meal and 5 is the price of a chocolate bar.

Now doing it more generally (abstractly), letting B equal your budget p_c the price of a chocolate bar, and p_m the price of a meal.

Give this graphed budget set, which bundle would YOU choose?

An economist would say the bundle that you like the best from amongst those you can afford.

Will your chosen set be on the budget line (on the boundary of the budget set) or might it be in the interior of the set?⁶

Consider another feasible set: imagine all you can do is play beer bong, go skiing, or stare at the wall. Bundles consist of different amount of bonging, skiing and wall staring.⁷ All three take activities take time, and you only have so much time.

To keep things simple, assume that you can only do one of these at a time, and have to be doing one of them

Assume you have 16 hours a day for these activities (you are constrained to sleep 8 hours a day).

Assume it requires 8 hours for a ski trip, 2 hours to play a game of beer pong, 1 hour to look at the wall.

Let, for example, s be your number of ski trips.

⁶ It depends: **if** you always prefer more of each commodity to less, no matter how of each commodity you are currently eating, then bundles closer to the boundary of the budget set (the budget line) are always preferred bundles that are farther away. We call commodities with this property “goods”, as in a commodity is a good if more is always preferred to less. But what if one or both of the commodities is a bad (less is preferred to more) or a commodity starts off as a good but quickly turns into a bad.

⁷ Assume you can only do one of these three things at a time.

$$16 \geq 2b + 8s + 1w$$

Graph it.

Consider two pregnant individuals:

Assume only two feasible alternatives: have the kid and keep it or have an abortion.

Let's think about constraints vs. choice in this context

Assume one individual is a devout Catholic, the other an atheist who believes that abortion is up to individual.

What is in each individual's choice set? An abortion is not in the devout Catholic's choice set, so the only available option is to have the kid.

Abortion is an alternative in the other individual's choice set. There are two options in the choice set.

Assume both individuals keep the kid.

For the atheist, it must be because she prefers having the kid to having an abortion. With the devout Catholic we don't know what she would have done if an abortion was a feasible alternative.

Summarizing:

We have investigated how economists model behavior: individuals have preferences, individuals face constraints and each individual chooses the alternative she likes the best from amongst those available to her.

Economics can be used to model/explain many types of behavior.

Make sure you understand the distinction between constraints and preferences.

Two more examples that indicate that sometimes it is difficult to tell whether your behavior was caused by a constraint or a choice:

Imagine you are a middle-age mountain climber who is out-of-shape and overweight: you have two small children, work a lot, and like cheeseburgers and beer.

Being over-weight eliminates some climbs from your choice set. Is being overweight a choice or a constraint? It was a choice that has become a constraint?

Do you **choose** to shave, or not shave, your legs? **Or**, are you constrained to shave, or constrained to not shave your legs?

Some additional course details

Each of you is assigned to a recitation section.

There will be no recitations the first week of class. We will have office hours.

If you have trouble signing up for Sapling or taking the first practice quiz, ask a classmate for help. If desperate, contact your T.A. by email. Has anyone had trouble signing up for Sapling?

You T.A. will soon be contacting you by email. (T.A.s: send all of your students a nice introductory email.)

In addition to the recitations, the T.A.s hold office hours. The times are posted on the course web page.

The T.A.s, are here to help you.

But don't come to them asking for individual help if you have not done your best to prepare to get help.

Your T.A. is your contact person for the course. My office is Econ 122 and my offices hours are posted on my web page for 2010. My email address is edward.morey@colorado.edu.

Calling my office phone number is a waste of time. I do not know the number.

If you have questions about the course, attend recitation, and, if need be, email your T.A. Note that every question you have about course mechanics is answered on the course web page.

Next week you have three Sapling quizzes due on Wednesday Sept 5th and one due on Saturday the 8th. After that most quizzes have Saturday due dates. Take a quick look at the Sapling web page for our course.

We will have a practice midterm next Thursday in Class. It will be a past midterm. (See the course web page for how it will affect your course grade.)

While your ability to take a quiz typically ends at 2:00 p.m. on a Saturday (2 in the afternoon) this does not mean you should wait until 1:45 to start, you can start now.

The second the deadline for an Sapling quiz is reached, it disappears forever.

Start soon.

I understand, that we are starting off with a bang in terms of quizzes. In explanation, if I have quizzes due this Saturday, students who add the course after Saturday will get upset. Feel free to take a quiz as soon as you are ready. You don't have to wait to do them all at the last minute.

There are two types of quizzes (Sapling book-type quizzes, and Edward-type quizzes). Your exams will be a mixture of book-type and Edward-type questions. I obviously prefer Edward-type questions.

All quizzes will be graded out of 10 points. For the Edward-type questions, you will have one chance to answer each question, so either get full credit or zero on each question. For the book-type questions you will get 100% if you answer it correctly on the first try, 80% if correct on the second try, 60% on the third try, and 40% on the 4th try.

See the grading policy: the lowest 25% of your quiz scores will be dropped. Because I am dropping 25% of your quiz scores, there will **never** be an extension of the due date, or any additional accommodations.

Expect an average of two quizzes a week (a book-type quiz and an Edward-type quiz), but there will be more in the first few weeks.

The quizzes are all on the Sapling web page for the course.