Passed on the first try:

- P Jan 2010 7
- FM Aug 2010 9
- MLC May 2012 8*
- C June 2014 10
- MFE July 2015 9

* : Sitting after major syllabus change; pass rate was ≈ 30%
UCSB Classes

- Exam P
  - All of PSTAT 120A
  - Tiny bit of PSTAT 120B (Depending on Prof)
  - Classes cover $\approx 90\%$ of the exam syllabus
- Exam FM
  - All of PSTAT 171
  - Tiny bit of PSTAT 170
  - Classes cover $> 95\%$ of the exam syllabus
- Exam MLC
  - All of PSTAT 172A & 172B
  - Classes cover $\approx 80\%$ of the exam syllabus
- CAS Exam LC
  - Most of PSTAT 172A & 172B(?)
  - Classes cover $\approx 80\%$ of the exam syllabus
UCSB Classes

- Exam P
  - All of PSTAT 120A
  - Tiny bit of PSTAT 120B (Depending on Prof)
  - Classes cover \( \approx 90\% \) of the exam syllabus
- Exam FM
  - All of PSTAT 171
  - Tiny bit of PSTAT 170
  - Classes cover \( > 95\% \) of the exam syllabus
- Exam MLC
  - All of PSTAT 172A & 172B
  - Classes cover \( \approx 80\% \) of the exam syllabus
- CAS Exam LC
  - Most of PSTAT 172A & 172B(?)
  - Classes cover \( \approx 80\% \) of the exam syllabus
UCSB Classes

- Exam P
  - All of PSTAT 120A
  - Tiny bit of PSTAT 120B (Depending on Prof)
  - Classes cover ≈ 90% of the exam syllabus
- Exam FM
  - All of PSTAT 171
  - Tiny bit of PSTAT 170
  - Classes cover > 95% of the exam syllabus
- Exam MLC
  - All of PSTAT 172A & 172B
  - Classes cover ≈ 80% of the exam syllabus
- CAS Exam LC
  - Most of PSTAT 172A & 172B(?)
  - Classes cover ≈ 80% of the exam syllabus
Classes (continued)

- **CAS Exam ST**
  - Some of PSTAT 160B, Most of PSTAT 120B & 120C, Mome of PSTAT 173
  - Classes cover \( \approx 50\% – 80\% \) of the exam syllabus (depending on Prof)

- **Exam MFE**
  - All of PSTAT 170, Most of PSTAT 176
  - Classes cover \( \approx 90\% \) of the exam syllabus

- **Exam C**
  - All of PSTAT 173
  - Class covers \( \approx 60\% \) of the exam syllabus
Taking Classes While Studying

Three approaches:

1. Take class before exam studying
   - Most common
   - Gives good introduction to material
   - Some material will be forgotten or not understood well the first time through the course

2. Take class concurrently while studying for exam
   - Most beneficial for exam passing
   - Most time consuming

3. Take class after exam studying
   - Harder to pass exam without introduction to material
   - Easier to get a good grade in the class
Taking Classes While Studying

Three approaches:

1. Take class before exam studying
   - Most common
   - Gives good introduction to material
   - Some material will be forgotten or not understood well the first time through the course

2. Take class concurrently while studying for exam
   - Most beneficial for exam passing
   - Most time consuming

3. Take class after exam studying
   - Harder to pass exam without introduction to material
   - Easier to get a good grade in the class
Taking Classes While Studying

Three approaches:

1. Take class before exam studying
   - Most common
   - Gives good introduction to material
   - Some material will be forgotten or not understood well the first time through the course

2. Take class concurrently while studying for exam
   - Most beneficial for exam passing
   - Most time consuming

3. Take class after exam studying
   - Harder to pass exam without introduction to material
   - Easier to get a good grade in the class
Learning The Material

- You need some form of study guide:
  - Study Manual (ASM, ACTEX, Adapt, etc.)
  - Online Lectures (Adapt, The Infinite Actuary)
- Students prefer one or the other (or both) depending on learning style and preference.
- The objective is to learn and review the material
- These resources also include practice exams
- Companies typically pay for employees study materials
Typically ACTEX is preferred for P, ASM is preferred for FM, MLC, MFE, C (*not sure about CAS ST & LC*)

- Self sufficient for learning exam content
- Price $\approx$ $100 – $250
- Can get cheaper used (find on forums, ebay, etc)
- UCSB Actuary Club has PDF copies available for members
Online Resources

1. Adapt
   - Buy separately: practice exams, study manual, video lessons (or bundled)
   - Price varies depending on exam and length of availability
   - Measures level and gives questions accordingly
   - Large question bank

2. The Infinite Actuary
   - Bundle provides: online lectures, review problems with video solutions, sample exams with video solutions
   - Free practice exams for P & FM

Club membership provides discounts on these products
Online Resources

1. Adapt
   ▶ Buy separately: practice exams, study manual, video lessons (or bundled)
   ▶ Price varies depending on exam and length of availability
   ▶ Measures level and gives questions accordingly
   ▶ Large question bank

2. The Infinite Actuary
   ▶ Bundle provides: online lectures, review problems with video solutions, sample exams with video solutions
   ▶ Free practice exams for P & FM

Club membership provides discounts on these products
Online Resources

1. Adapt
   - Buy separately: practice exams, study manual, video lessons (or bundled)
   - Price varies depending on exam and length of availability
   - Measures level and gives questions accordingly
   - Large question bank

2. The Infinite Acutary
   - Bundle provides: online lectures, review problems with video solutions, sample exams with video solutions
   - Free practice exams for P & FM

Club membership provides discounts on these products
Calculators

1. BA II Plus ($35 new)
   - Includes financial commands useful for exam FM
   - Arguably more efficient when fluent with keystrokes
   - I am the only one I know that prefers this calculator for all calculation purposes

2. TI-30 XS ($15 new)
   - Includes basic statistical functions (input data, get mean, variance, etc)
   - Includes multiple line display
   - Most students prefer this for calculations
Calculators

1. BA II Plus ($35 new)
   - Includes financial commands useful for exam FM
   - Arguably more efficient when fluent with keystrokes
   - I am the only one I know that prefers this calculator for all calculation purposes

2. TI-30 XS ($15 new)
   - Includes basic statistical functions (input data, get mean, variance, etc)
   - Includes multiple line display
   - Most students prefer this for calculations
“Study 100 hours per exam hour” (e.g. Exam P is 3 hours, so you should study for 300 hours)

Not true in my experience; depends on a lot of factors (should be smaller if you’ve already taken the corresponding classes)

It took me: 100 for P, 100 for FM, 120 for MLC, 150 for C, 90 for MFE

50 hours per exam hour is likely to be a safe guideline

Plan ahead: 150 hours of studying over 3 months is \( \approx 1.75 \) hours a day

Dedicate 1/3-1/2 of study time to review problems / practice exams (after learning the material alongside solving problems)
Planning

▶ “Study 100 hours per exam hour” (e.g. Exam P is 3 hours, so you should study for 300 hours)

▶ Not true in my experience; depends on a lot of factors (should be smaller if you’ve already taken the corresponding classes)

▶ It took me: 100 for P, 100 for FM, 120 for MLC, 150 for C, 90 for MFE

▶ 50 hours per exam hour is likely to be a safe guideline

▶ Plan ahead: 150 hours of studying over 3 months is $\approx 1.75$ hours a day

▶ Dedicate 1/3-1/2 of study time to review problems / practice exams (after learning the material alongside solving problems)
Be Realistic

▶ “I am going to take 15 credits of upper division courses and start studying in October and spend 4 hours a day studying to pass FM in December” – said no one who actually followed through with it

▶ Real life happens, midterms & finals happen, getting burnt out happens

▶ Planning exams to be shortly after major breaks (winter break, spring break) is usually helpful (or do the entire thing over summer)
  ▶ Learn the material slowly over the quarter, focus on practice exams during break
  ▶ Follow through is necessary – don’t leave the academic mindset after finals
Be Realistic

- “I am going to take 15 credits of upper division courses and start studying in October and spend 4 hours a day studying to pass FM in December” – said no one who actually followed through with it
- Real life happens, midterms & finals happen, getting burnt out happens
- Planning exams to be shortly after major breaks (winter break, spring break) is usually helpful (or do the entire thing over summer)
  - Learn the material slowly over the quarter, focus on practice exams during break
  - Follow through is necessary – don’t leave the academic mindset after finals
Pick an hour estimate and stick to it

- For exam C I picked a 150 hour estimate and started studying 3 months before the exam.
- 1 month in I had only studied ≈ 25 hours, so I calculated how many hours a day on average I needed to study after that, and tried to stick to it.
- This was an indication that I needed to study more per day, so I did.
- On the last month I was still under estimate, so I studied 4+ hours a day until exam time, sometimes taking 2 practice exams in a day (7+ hours).
- I met the 150 hour estimate and got a 10 on the exam.
Make a Plan for Memorizing Formulas

- Note cards, Note sheet
- Study before bed
- Pick formulas to memorize based on importance
  - Memorizing everything is generally too difficult
Keep Notes as You Go

- When studying out of a manual, I do the odd-numbered problems first
  - Make note of how many I got right at the end
  - Make notes of if there was anything particularly difficult in the second that I should keep note of
- At the end, I can go back and do even-numbered problems for sections that I struggled with
  - Adapt generally keeps track of how well you do in certain sections (so the above is unnecessary)
Keep Notes as You Go

- When studying out of a manual, I do the odd-numbered problems first
  - Make note of how many I got right at the end
  - Make notes of if there was anything particularly difficult in the second that I should keep note of
- At the end, I can go back and do even-numbered problems for sections that I struggled with
- Adapt generally keeps track of how well you do in certain sections (so the above is unnecessary)
Learn, Review, Practice

- A smart guideline to follow is:
  1. Spend the first $\approx 50\%$ of study time learning
  2. Spend the second $\approx 20\%$ (doing even problems, SOA review problems, etc)
  3. Spend the remaining time doing practice exams (mixed with review)

- Planning ahead to give yourself 2 weeks before the exam to review and do practice problems is NOT enough time
- Give 1 month at least. Most of the time you will not meet that estimate anyways.
A smart guideline to follow is:

1. Spend the first \( \approx 50\% \) of study time learning
2. Spend the second \( \approx 20\% \) (doing even problems, SOA review problems, etc)
3. Spend the remaining time doing practice exams (mixed with review)

Planning ahead to give yourself 2 weeks before the exam to review and do practice problems is **NOT** enough time

Give 1 month at least. Most of the time you will not meet that estimate anyways.
Review

After learning the all of the material, in order I:

1. Make sure that I have a general grasp of each section
   ▶ If not, I go back and reread, do even problems, etc.

2. Do the sample questions provided by SOA (100-300 problems depending on exam straight from the SOA)

3. Do practice exams
   ▶ Record which problems I struggled with (by section)
   ▶ If one area seems to be appearing repeatedly, go and do more review problems for that area only

Typically I use note cards for assistance with 1 and 2, but not for 3 (until I’ve “completed” the exam).
Practice Exams

- The most important tool
- Take in an exam setting
  - Take in an exam like location (library, etc.)
  - Turn off phone, laptop, etc.
  - Time yourself, leave timer running if you have to go to the bathroom
- Score the exam
- If you’re not doing well, go back and review, take more practice exams, etc. (this is why we leave so much time left at the end)
Be Mentally Prepared

- Schedule the exam at a realistic time (e.g. if you usually wake up at noon, don’t schedule it in LA at 10am)
- Get a good nights sleep the day before
- Assuming you took practice exams in an exam setting and did relatively well on them, remind yourself that the real exam won’t be much different. You should feel prepared.
Pick Questions Strategically

- In practice you should have a good feel for which questions will be time consuming or difficult
  - Skip or “mark” (see next slide) these questions and come back
  - Even if you find a question that is both easy and time consuming, if you make a mistake, it can take a long time to correct the mistake, and this process can repeat if you keep messing up
- When taking MFE I had half of the questions answered by the 45 minute mark. It still took the full 3 hours to finish the remaining questions and double check my work on the first half. Hypothetically if I didn’t finish in 3 hours, and also did the questions a fixed order, I would have missed some of the easier later questions.
Take advantage of the “Mark” system

- When answering questions you can leave it blank or answer it, but also mark it (or leave it unmarked)
- Come up with a system for marking. Mine is:
  - Unanswered/unmarked: Question is difficult. Put higher emphasis on marked questions
  - Unanswered/marked: Question is time consuming. I’m skipping these the first time around.
  - Answered/marked: I did the question, but if I have time I should come back and recheck my work (I do this if I think I could have made a mistake or felt iffy in my solution)
  - Answered/unmarked: I feel confident in my answer. Only if I have a lot of excess time will I come back and check my work.
- When doing the exam I cycle through the questions with this system, and then go again, first doing the marked ones.
Take advantage of the “Mark” system

- When answering questions you can leave it blank or answer it, but also mark it (or leave it unmarked)
- Come up with a system for marking. Mine is:
  - Unanswered/unmarked: Question is difficult. Put higher emphasis on marked questions
  - Unanswered/marked: Question is time consuming. I’m skipping these the first time around.
  - Answered/marked: I did the question, but if I have time I should come back and recheck my work (I do this if I think I could have made a mistake or felt iffy in my solution)
  - Answered/unmarked: I feel confident in my answer. Only if I have a lot of excess time will I come back and check my work.
- When doing the exam I cycle through the questions with this system, and then go again, first doing the marked ones.
Time is a Resource

- Time is a resource that needs to be utilized
- Already mentioned above, skip / mark time consuming questions
- Do not run out of time before accessing all of the exam questions!
Be Familiar with your Calculator

- Utilize all of your calculator functions (in particular storing / recalling numbers is very useful)
- Try to be fast and efficient with calculator
Be Honest with yourself while Studying

(This is probably the most important slide in the whole talk)

▶ Don’t skim a section or problem solution because “you think you get it” or because you’re bored and want to move on.
  ▶ Being dishonest this way is a huge detriment.
  ▶ Studying is boring in general. You have to force yourself to go back and make sure you fully understand everything.
  ▶ Often question solutions have many steps and it can get overwhelming and tedious. Read solutions line-by-line and make sure you understand why and how they got from line to line.

▶ I went from an undergraduate with a GPA of 2.9 to graduating with my masters with 3.9 GPA and now a PhD student with 3.9 GPA on track to finish a year early, and I mostly attribute the change to employing the above.
How to save time while studying

- If you want to save time, you can try to do examples as exercises rather than reading the question and solution together.
- If you can do the example as an exercise, maybe you understand the second well enough to go straight to exercises.
- If not, it’s probably a good idea to fully understand the section materials and its formulas.
Feel free to ask any questions if you see me around during club meetings or elsewhere. Also you can e-mail me: risk@pstat.ucsb.edu