Introduction to Actuarial Science

Derek England
Outline

• What is Actuarial Science?
• What does an Actuary do?
• CAS and SOA
• Actuarial Exams
• How you can prepare at IWU
• Resources
What is Actuarial Science?

• “Actuarial science is the discipline that applies mathematical and statistical methods to assess risk in insurance, finance and other industries and professions” (Wikipedia)
• Blend of math, finance, and economics
• The study of analyzing and dealing with potential risks
• People who study actuarial science are referred to as actuaries
What does an Actuary do?

- Traditionally work in Insurance and Consulting companies
- Several disciplines
  - Life, health, property & casualty, pensions, etc.
- Several roles
  - Reserving, pricing, trend analysis, reporting, etc.
- Earn professional designations through exams
- Sometimes serve in other capacities
- Consistently among highest rated jobs
- Fast growing field
Accrediting Agencies

- Two US accrediting agencies
  - Casualty Actuarial Society
  - Society of Actuaries
- Actuaries typically required to be accredited with one agency
- Each have own exams and disciplines
Casualty Actuarial Society

- Smaller of two agencies
- Property and Casualty Insurance
  - Fire, auto, homeowners, liability, etc.
- ACAS/FCAS designations
  - CERA
- One track
- Considered more involved/challenging
Society of Actuaries

• Larger of two agencies
• Life and Health Insurance
• ASA/FSA designations
  • CERA
• 6 unique tracks
  • CFE, QFI, Individual Life and Annuities, Retirement Benefits, Group and Health, General Insurance
• Considered more straightforward
Actuarial Exams

• Considered some of the most difficult exams in the world
• 100 study hours per exam hour
• Pass rates ~40%
• Each cover different topic
• Taken while in college and while working
• Company sponsored study programs
• Average of two passed exams by graduation
Actuarial Exams

- Preliminary exams
  - P/1, FM/2, MFE/3F, C/4
- Upper level exams
- Most exams 3-5 hours
- Can be taken in any order
- Offered every 2-6 months
- Prelims multiple choice, upper level written
- Scored 1-10, 6 is a pass
- $200-$1000+ each attempt
How Do I Get Started?

• IWU does not have any formal actuarial program
• Good background of Math, Finance, Economics
• VEE Credits
  • Economics (ECON 100 or 4/5 on AP Macro&Micro)
  • Corporate Finance (FIS 303)
  • Applied Statistical Methods (MATH 303)
• Recommend:
  • Above classes
  • MATH 324, 325
  • FIS 200, 304, 307,309, 408
How Do I Get Started?

• Pass at least P/1 and FM/2 at IWU
  • Math 324&325 prepare for P/1
  • FIS 303&309 provide some background for FM/2
• Be involved on campus
  • Leadership positions in RSO
  • Finance Society, PME, etc.
• Participate in at least 1 internship
  • Actuarial preferred; any insurance/finance good
Studying For Actuarial Exams

• Allow ~4 months to learn material
• ~1 month of practice exams
  • Review answers
• Comprehensive packages
  • Coaching Actuaries, The Infinite Actuary, etc.
• Manuals
  • ASM, Actex, etc.
• Practice Exams
  • ADAPT, back of manual exams, etc.
• Don’t get discouraged!
Resources

• Be an Actuary
  • beanactuary.org
• Actuarial Outpost
  • actuarialoutpost.com