

Actuarial Science

An Introduction

1

What is an Actuary?

- “An actuary is a person who analyzes risks and plans for the financial security of people and businesses. Actuaries look at the past and the present to predict what will be needed in the future.”

Society of Actuaries & Casualty Actuarial Society

2

Where do Actuaries Work?

- Insurance Companies
- Commercial Banks
- Investment Banks
- Retirement Funds
- Government
- Consulting Firms

3

How to become an Actuary?

- Majors
 - Statistics/Math
 - Finance
 - Economics
- Complete Validation by Educational Experience (VEE)
- Pass Actuarial Exams

4

VEE – Applied Statistical Methods

- Statistics 401 – Statistical Methods for Research Workers
- Statistics 451 – Applied Time Series
- Grade of B- or higher in both courses

5

VEE – Corporate Finance

- Finance 310 – Corporate Finance

6

VEE - Economics

- Economics 301 – Intermediate Microeconomics
- Economics 302 – Intermediate Macroeconomics

7

Course Work in Statistics and Mathematics

- Math 165, 166, 265: Calculus I, II, and III
- Statistics 101
- Statistics 341
- Statistics 342
- Statistics 401
- Statistics 451

8

Course Work in Economics

- Economics 101: Principles of Microeconomics
- Economics 102: Principles of Macroeconomics
- Economics 301: Intermediate Microeconomics
- Economics 302: Intermediate Macroeconomics

9

Course Work in Finance and Accounting

- Accounting 284: Financial Accounting
- Finance 301: Principles of Finance
- Finance 310: Corporate Finance
- Finance 361: Personal Risk Management and Insurance
- Finance 462: Corporate Risk Management and Insurance

10

Actuarial Exams

- Every Fall and Spring
- First 4 exams
 - 1: Probability (P)
 - 2: Financial Mathematics (FM)
 - 3: Actuarial Models (M)
 - 4: Construction and Evaluation of Actuarial Models (C)

11

Exam 1/P

- Probability (P)
- www.soa.org/files/pdf/edu-2008-fall-exam-p.pdf
- Take semester AFTER Stat 341.

12

Exam 2/FM

- Financial Mathematics (FM)
- www.soa.org/files/pdf/edu-2008-fall-exam-fm.pdf
- There is no course at ISU that prepares you for this exam.
- Take after passing Exam 1/P

13

Exam 3/M

- Actuarial Models (M)
 - Financial Economics (MFE)
 - Life Contingencies (MLC)
- www.soa.org/files/pdf/edu-2008-fall-exam-m.pdf
- There is no course at ISU that prepares you for this exam.
- Take after passing Exam 2/FM.

14

Exam 4/C

- Construction and Evaluation of Actuarial Models
- www.soa.org/files/pdf/edu-2008-fall-exam-c.pdf
- There is no course at ISU that prepares you for this exam.
- Take after passing Exam 3/M.

15

Things to consider

- Start course work early
- Minor in Economics
- Double-Major in Finance??
- Summer Internship after junior year
- Pass rate on Exams
 - Between 35% - 40%
- Studying for exams is time consuming!

16

How much??

www.dwsimpson.com/salary.html

- Starting Salary (pass 1 exam)
 - Middle 80% \$46,000 to \$61,000
- After 5 years (pass 3 exams)
 - Middle 80% 64,000 to 85,000
- After 10 years (Associate)
 - Middle 80% 114,000 to 183,000
- After 15 years (Fellow)
 - Middle 80% 150,000 to 405,000+

17

Information on Web

- Society of Actuaries – www.soa.org
- Casualty Actuarial Society – www.casact.org
- Be An Actuary – www.beanactuary.org
 - Exams
 - Video
 - FAQ

18