

Basic Education Update

Southeastern Actuaries Conference

June 22, 2007

Stuart Klugman, FSA

Professor of Actuarial Science, Drake University

Actuarial Education Consultant, Society of Actuaries



Today's Presentation

- Update on Education Redesign
- Fundamentals of Actuarial Practice modules
- FSA-level education
- CERA Designation



2005-07 Redesign - Objectives

- Provide a more practice-relevant syllabus
- Better prepare actuaries for the future
- Reduce "travel time" to ASA/FSA



Key Changes

- Preliminary education is more efficient and relevant, with emphasis on core actuarial topics and new reference materials
- Introduction of computer-based testing and e-learning platforms
- Courses 5-7 replaced by Fundamentals of Actuarial Practice (FAP) Course and FSA modules
- Professional Development (PD) component and Course 8 replaced by FSA exams and modules
- New ASA-level ERM credential introduced



Implementation Schedule

- Preliminary examinations – 2005
- FAP Course – 2006
- FSA-level education – 2007
- Financial Economics additions – 2007
- ERM Credential – 2007



ASA Education

- Preliminary Education (PE)
 - Prerequisites: 5 topics
 - Validation by Educational Experience (VEE): 3 subjects
 - Examinations: 4
- Fundamentals of Actuarial Practice (FAP)
 - Eight interactive modules
 - End-of-module exercises submitted for review
 - Examination after Module 5
 - Graded exercise after Module 8
- Associateship Professionalism Course



Preliminary Exams

- Exam P – Probability
- Exam FM – Financial Mathematics
- Exam M – Actuarial Models (in two parts)
 - Exam MLC – life contingencies segment
 - Exam MFE – financial economics segment
- Exam C – Construction and Evaluation of Actuarial Models



Financial Economics in PE

- In February 2005, the SOA Board approved adding 1.5 hours of financial economics to the preliminary exams
- In November 2005, the Board approved recommendations for implementation in 2007



Exam P - Probability

- Content unchanged from 2005 implementation - Probability and supporting calculus
- 3 hour multiple-choice exam
- Computer-based delivery through Thomson Prometric centers
 - 4 administrations in 2007
 - Unofficial grades available to candidates immediately upon completion of the CBT exam



Exam FM-Financial Mathematics

- 2.5 hour multiple-choice exam, offered twice per year
- 2007 content expanded to include additional financial economics
 - Theory of interest
 - Introduction to financial economics, derivatives, no-arbitrage
- The SOA, CIA, and CAS are exploring the conversion of Exam FM to CBT, with 2008 as an implementation target date.



Exam M – Actuarial Models

- Two segments totaling 5 hours of multiple-choice exams. Candidates may take both segments in one session if they choose. Both segments offered twice per year and graded separately.
- 2007 content expanded to include additional material on financial economics.



Exam M – Segment MFE

- Segment MFE
 - Financial economics including Black-Sholes; option pricing; exotic options; delta-hedging; Brownian motion.
 - This segment will be 2 hours.



Exam M – Segment MLC

- Segment MLC
 - Life contingencies, similar to the current Exam M.
 - This segment will be 3 hours.
 - Material on loss models and risk theory is moved to Exam C.



Exam C – Construction and Evaluation of Actuarial Models

- 4-hour multiple-choice examination offered twice per year
- Additional material added on
 - Lognormal models; Monte-Carlo valuation of derivative securities
 - Loss Models and Risk Theory (from Exam M)
 - Calculation of risk measures
- Material on interpolation and smoothing (splines) removed.



Fundamentals of Actuarial Practice (FAP) course

- Focus on education over accreditation via web-based modules
- Present facts, concepts, processes, procedures and principles via practical applications, examples and case studies (in addition to traditional readings)
- Provide opportunities to practice and receive feedback (activities and exercises)

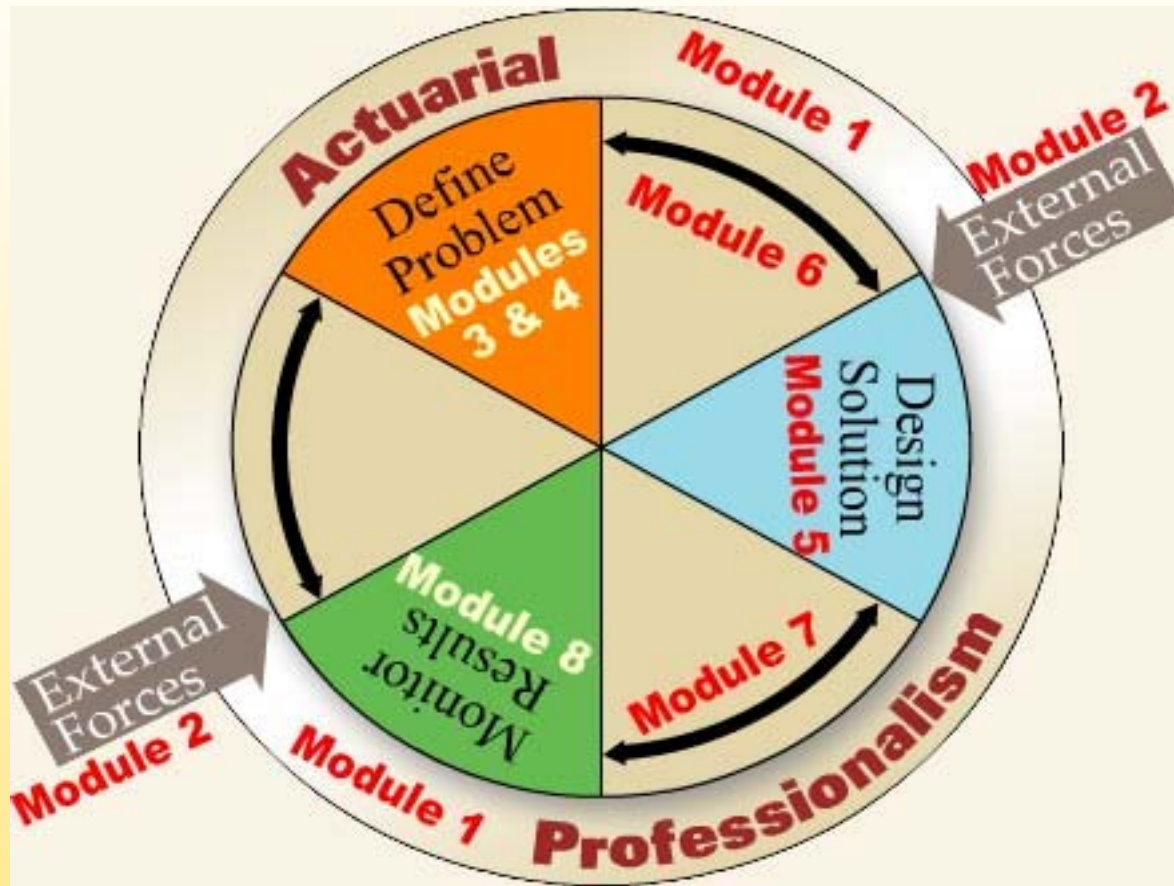


FAP Course

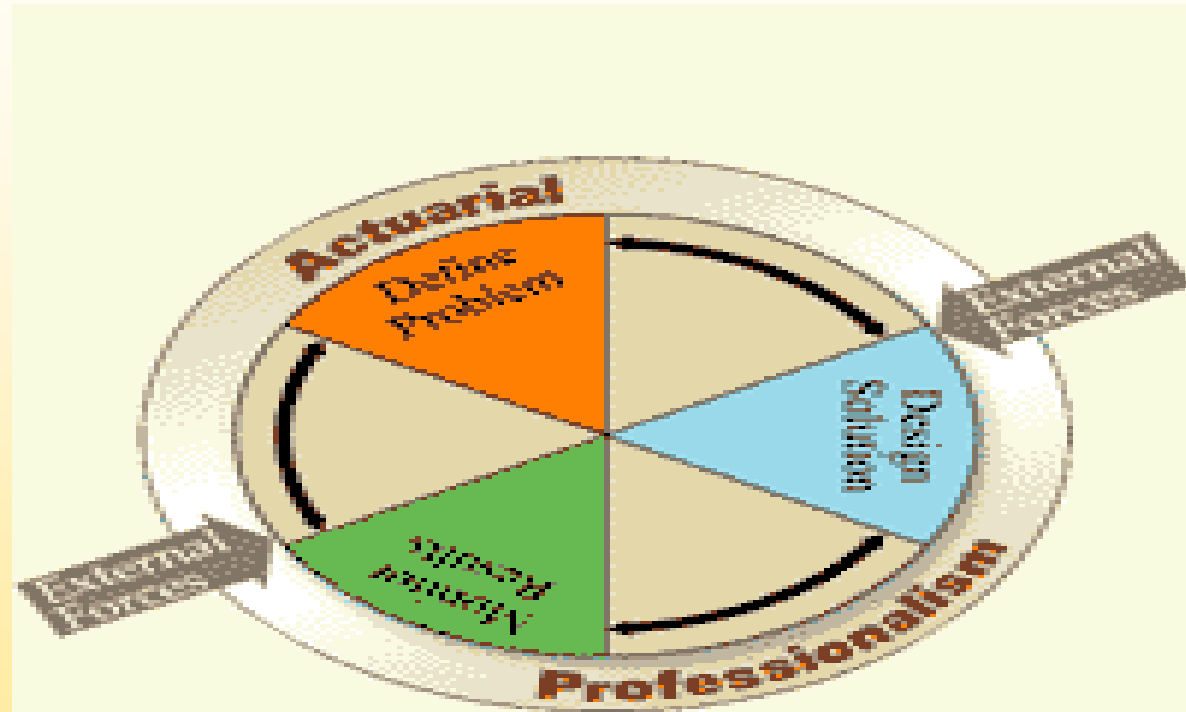
- One 2-hour multiple-choice examination following Module 5
- One graded exercise following Module 8
- Candidates can choose to complete Modules 1-5, 1-6, 1-7 or 1-8 before taking Exam FAP-1
- Graded exercise cannot be taken before Modules 1-8 are completed.



Control Cycle



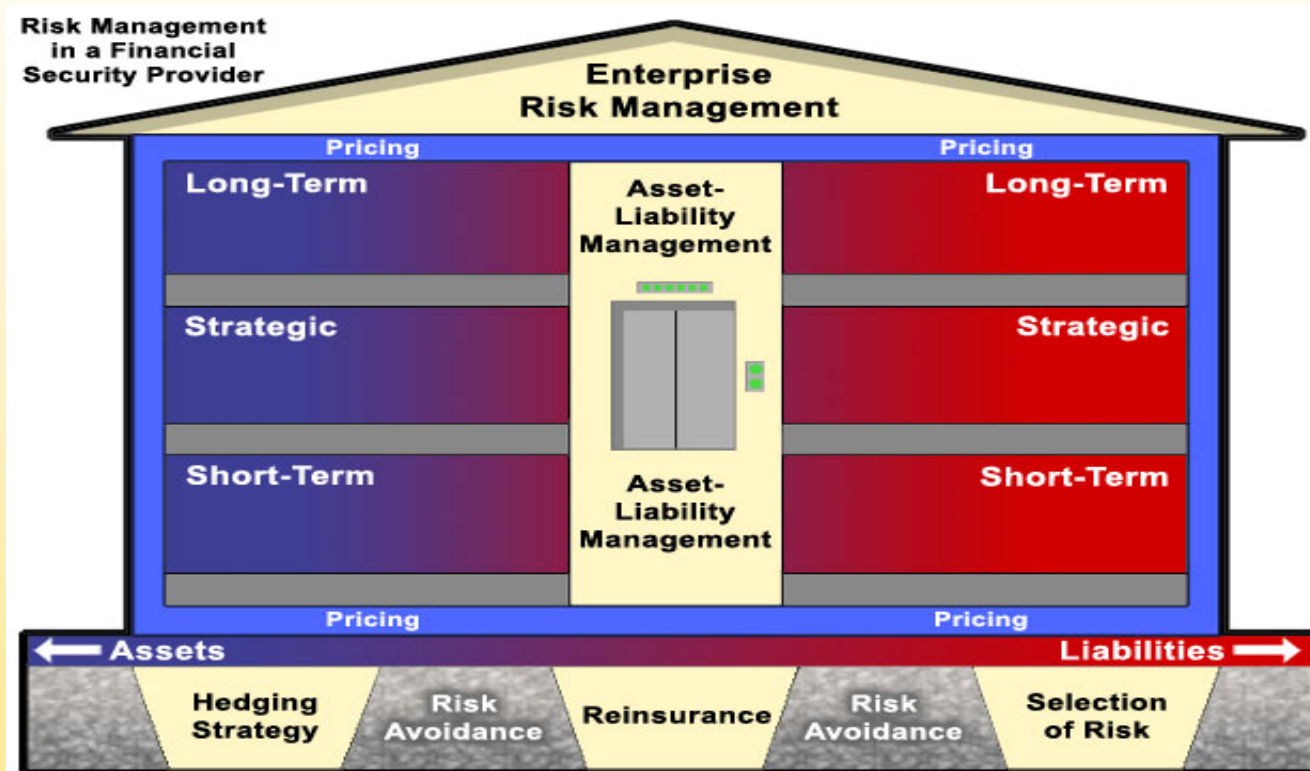
Module 1 Role of Professional Actuary



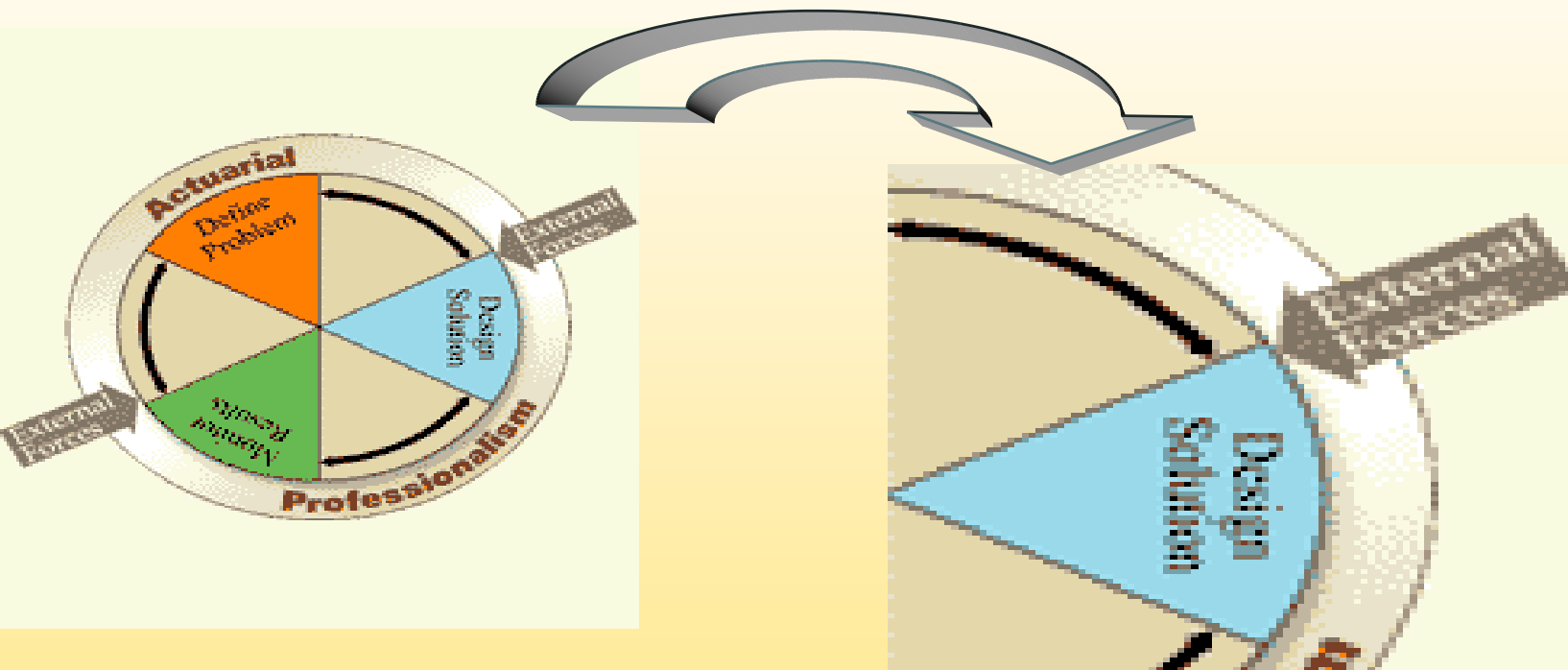
Module 2 External Forces



Module 3 Risk in Actuarial Problems



Module 4 Actuarial Solutions



Module 5 Actuarial Models

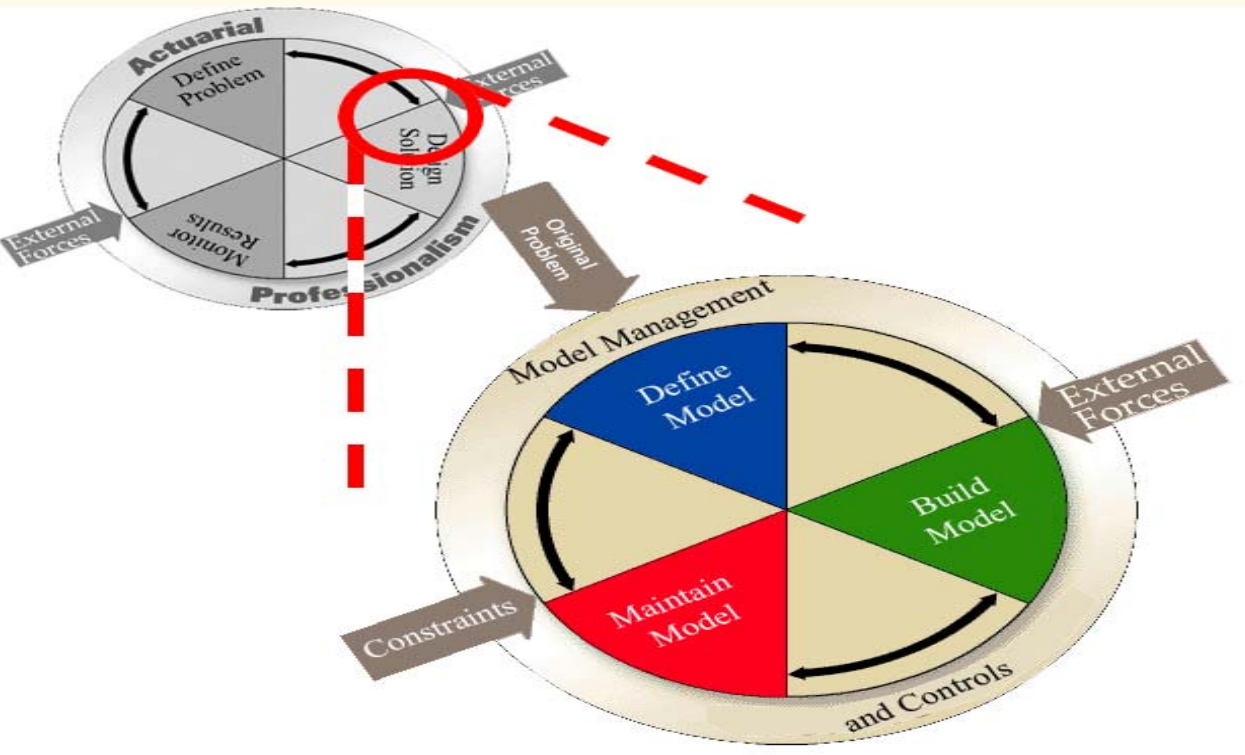
$$V = \sum B_t d_t v^t - \pi_t d_t v^t$$

Group (Collective)	Casualty	Casualty	Casualty Health* Retirement Benefits
Mixed (Group and Individual)	Group & Health* Retirement Benefits	Group & Health* Retirement Benefits Life/Investment (ALM)	Life/Finance (ERM)
Individual	Life & Annuities		
	Pricing Models	Reserving Models	Funding Models

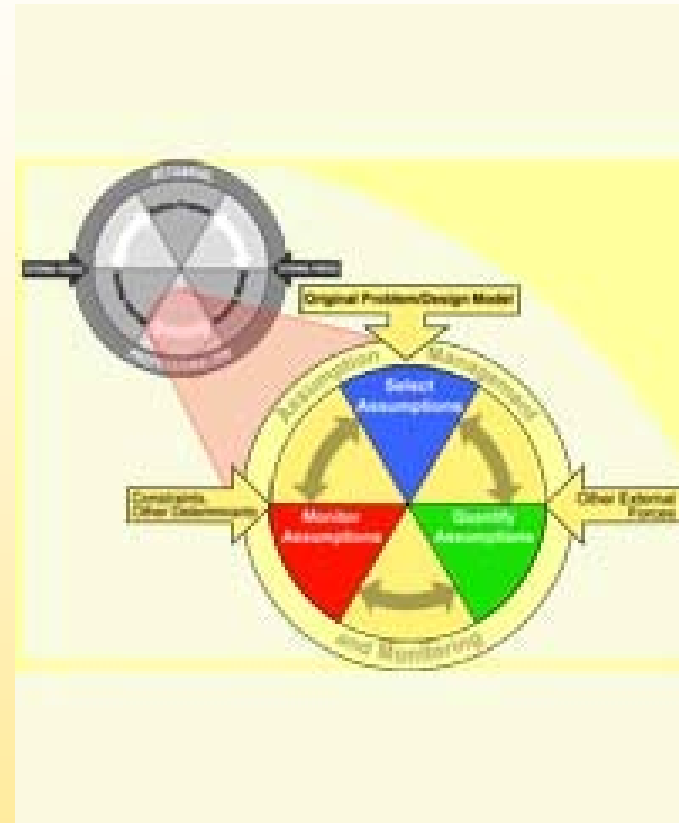
*Health includes managed care



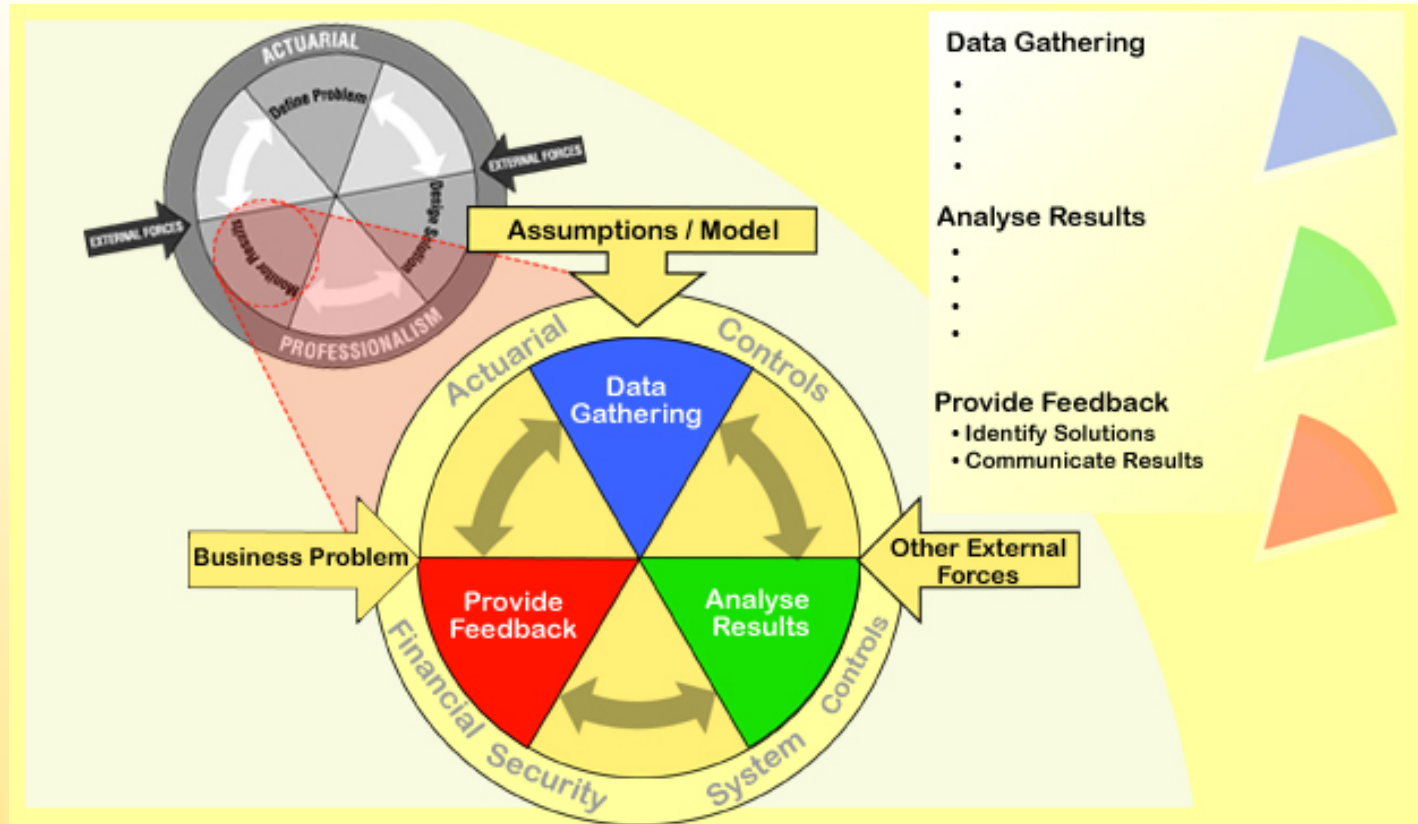
Module 6 Model Selection and Solution Design



Module 7 Selection of Initial Assumptions



Module 8 Monitoring Results and Completing the Control Cycle



Rollout, Registrations and Candidate Status

- About 4800 candidates are registered for FAP.
- FAP exam 1 pass rate about 88%.
- About 900 have completed the final assessment.



Improvements Planned

- Reduce redundancy in readings
- Reduce the amount of readings, particularly Module 2
- Increase the use of case studies for all modules
- Work on these changes has begun with release early in 2008.



Achieving the Vision

- When the Education Redesign work began in earnest in 2002, the idea for FAP was a vision of providing a quality educational tool which could be easily accessible on a global scale; efficient to update and one which above all, would engage our candidates in an active learning environment.
- The work of well over 100 volunteers and thousands of hours of their time made the idea a reality.



FSA Education

- Critical content rigorously examined.
- Other relevant content covered via modular, web-based education with formally validated exercises.
- Advanced applications also covered in educational modules.
- Maintain and expand the FAC by including a communication skills component.



FSA Education Redesign at a Glance

- Examinations – 2 for each practice area
- 2 interactive practice-specific modules
- Capstone experience =
 - Decision Making and Communication Module
 - Expanded Fellowship Admissions Course



FSA Exams

- Two 6-hour exams for each practice area; each exam similar in size to current Course 8
- Offered once per year, alternating between spring and fall exam sessions.
- First exams administered May 2007.



FSA Exams

- Written answer examination
- Candidates choose from these tracks
 - Finance/Enterprise Risk Management
 - Health, Group Life & Managed Care
 - Investment
 - Individual Life & Annuity
 - Retirement Benefits



FSA Modules

- In addition to the two FSA exams, there will be 2 web-based modules
 - Topics that do not lend themselves to an examination format or that do not need to be rigorously tested
 - Optimal level of consistency across practice areas with some flexibility
 - Formal validation for accountability, similar to FAP
- Registration for the Financial Economics module has begun



	Finance/ERM	Investment	Individual Life & Annuities	Retirement Benefits	Group & Health
Spring Exams	Advanced Finance/ERM	Advanced Portfolio Management	Company Sponsor Perspective (CSP)	Company Sponsor Perspective (CSP)	Company Sponsor Perspective (CSP)
Fall Exams	Financial Economic Theory		Design & Pricing (DP)	Design & Pricing (DP)	Design & Pricing (DP)
FSA Modules	Financial Economics (June 2007)				Health Systems Overview (September 2007)
	Financial Reporting/Operational Risk (August 2007)	Advanced Investment Topics (November 2007)	Regulation (October 2007)	Social Insurance (October 2007)	Pricing, Reserving & Forecasting (October 2007)
Capstone Experience	Decision Making and Communication Module (November 2007)				
	Fellowship Admissions Course				



Capstone Experience

- Decision Making and Communication module
 - Previously called Strategic Business Management Module
 - Complex business problems without a single solution
 - Communications and business skills
 - Web-based
 - End of module project – one year time limit



Capstone Experience

- Fellowship Admissions Course
 - Professionalism and ethics
 - Communications skills
 - Ten minute oral presentation based on DMAC project, graded pass/fail
 - Those with Course 7 credit (and thus do not need the module) will make an oral presentation if attending after January 1, 2008



Conversion Rules

- Appear on the SOA website's Education Redesign page
- Questions on specific candidate situations may be sent to eq2005@soa.org



New ASA-level ERM credential

- Approved by SOA Board in November 2005
 - Help members to exploit ERM opportunities
 - Differentiated in marketplace from “traditional” ASA
 - Uses exams and modules within the new structure
- Name approved in March 2007
 - Chartered Enterprise Risk Analyst (CERA)



Key Points

- CERAs
 - Are to be considered actuaries
 - Will complete an alternative ASA pathway and will receive their ASA designation at the same time as their CERA designation



CERA Marketplace

- CERAs will be employed primarily in banking and broader financial services, whereas the ASA will have its traditional stronghold in the insurance sector.
- Marketing efforts will be directed at publicizing the unique skill set of CERAs.



CERA Requirements

- For individuals new to the field:
 - Exam P
 - Exam FM (2007 and later)
 - VEE Economics
 - Exam MFE (2007 and later)
 - Exam C (2007 and later)
 - Advanced Finance/ERM Exam
 - Financial Reporting and Operational Risk Module
 - Associate Professionalism Course (APC)



CERA Designation Conferred

**CERA Curriculum
Map &**

**Recommended
Progression**

**Exams may
be taken in any
sequence**

Application for CERA Designation

**Associateship Professionalism
Course**

**Financial Reporting/
Operational Risk
FSA Module**

**Advanced Finance/ERM
Exam**

**Exam M – Financial
Economics Segment**

**Exam C – Construction &
Evaluation of Actuarial
Models**

Exam P – Probability

**Exam FM – Financial
Mathematics**

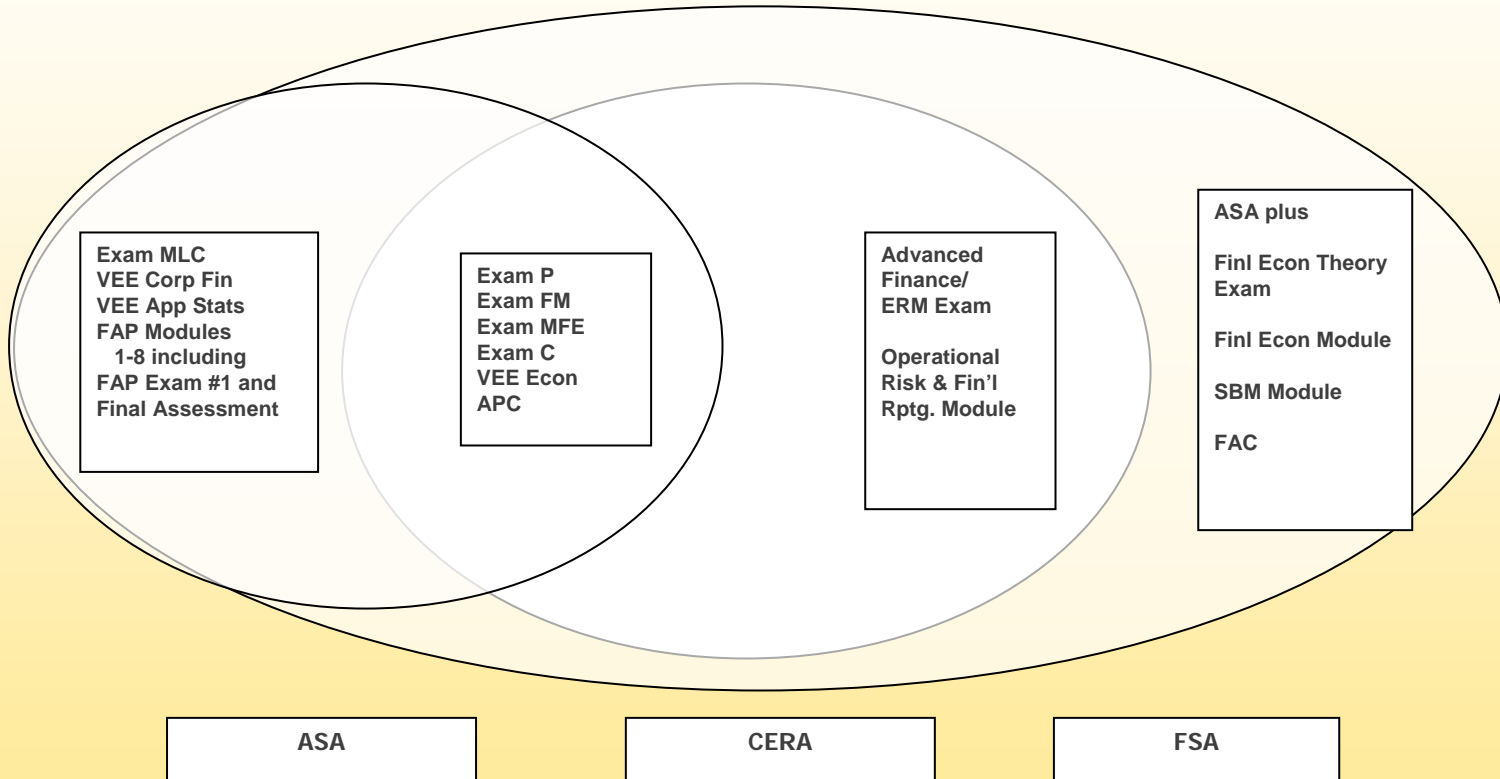
Validation by Educational Experience (VEE)*

Must pass 2 preliminary exams to apply for VEE credit

Pathway Beginning



CERA, ASA and FSA



CERA for current members

- If an FSA via the ERM track, qualified for CERA
- Other FSAs who practice in the ERM area will be provided a pathway to CERA that may involve a seminar experience. Details later on.



Special Volunteer Opportunity

- We need ERM-based professionalism/business ethics cases for the APC.
- If interested in writing one (they are typically one page), contact Martha Sikaras (msikaras@soa.org) or send an e-mail to eq2005@soa.org.



More opportunities

- For the FSAs in today's audience, do you want to be involved in the redesign? There are many opportunities to volunteer:
 - Components - PE, FAP and FSA
 - Roles - Education Committees, Exam Committees, Subject Matter Experts, Content Developers, Exercise Developers and Graders
- For information on volunteering, please contact Judy Powills at jpowills@soa.org



For More Information

- General comments and questions may be sent to eq2005@soa.org
- Questions specific to VEE may be sent to vee@soa.org
- Questions specific to FAP modules and exams may be sent to fap@soa.org
- Questions specific to FSA modules may be sent to fsamodules@soa.org



Questions & Answers

