

STUDENT CENTRAL

FOCUSED ON YOUR FUTURE

CASstudentcentral.org

The CAS: The Gold Standard for
Property Casualty Actuaries

Casualty Actuarial Society



100 Years of Expertise,
Insight & Solutions

- World's **only** actuarial organization focused exclusively on property and casualty risks
- Celebrating 100th anniversary this year!
- Vibrant community and unmatched resources help CAS members advance their careers
- 6500+ members worldwide, and growing

Why CAS?

What makes us different?

- Tangibles
 - Depth of training
 - Salaries
 - Employment opportunities
- Intangibles
 - A Leader
 - Culture and Community
 - Spirit of volunteerism
 - Core Values

Core Values of the CAS

- Collaboration
- Collegiality
- Community
- Creativity/Intellectual Curiosity
- Excellence
- Integrity
- Professionalism
- Practical Applications

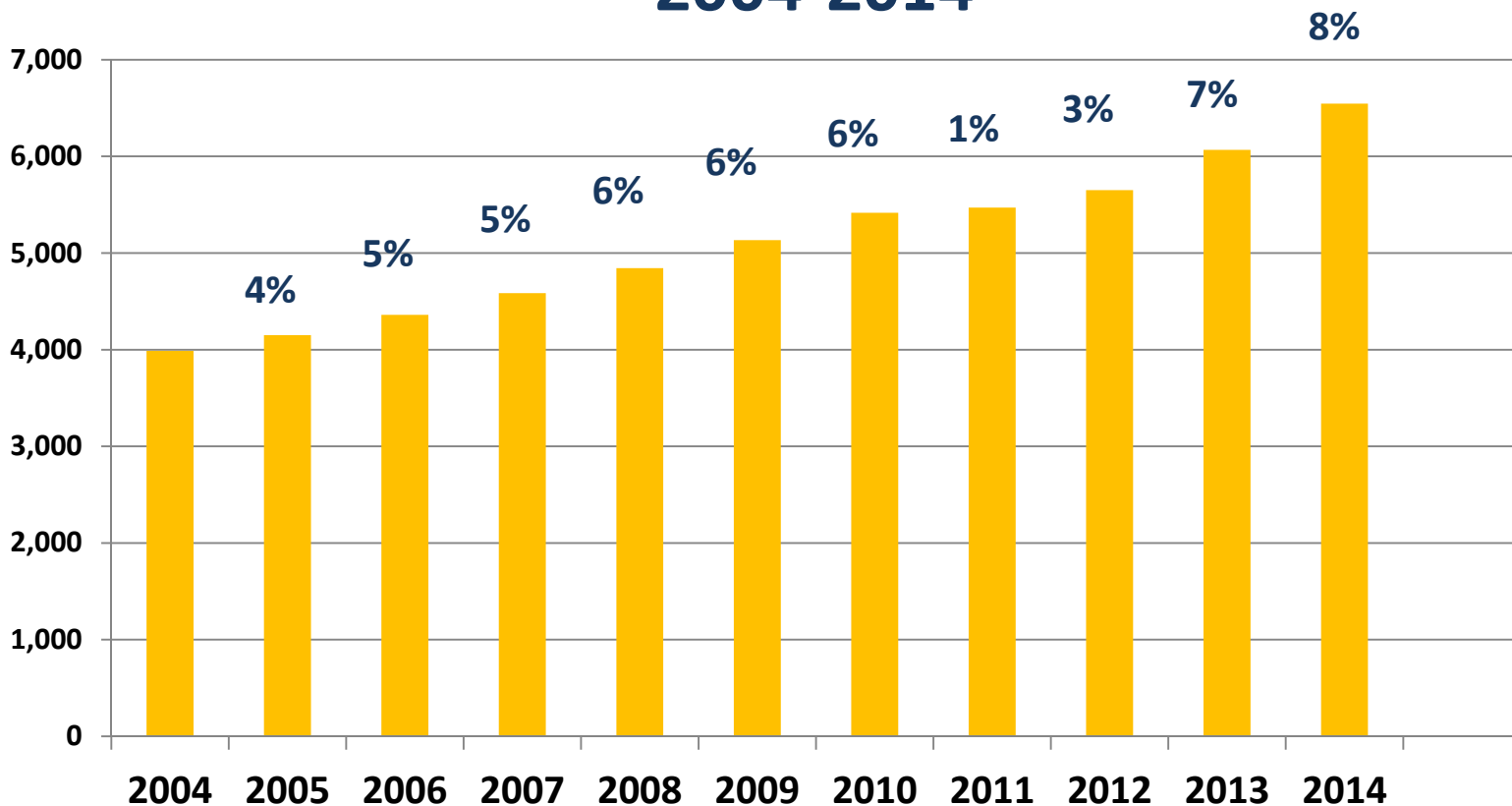
Actuarial Skill Set: A Question of Balance

- Technical Competence
 - Ability to apply casualty actuarial techniques
 - Synthesis skills
 - Critical thinking/informed judgment
- Ability to communicate effectively
 - Relevance: A business perspective
 - Articulate judgments, assumptions, limitations
 - Audience may vary – Sr. Management vs. Peers
- Business sense

CAS Demographics

Membership Statistics

CAS Member Growth 2004-2014

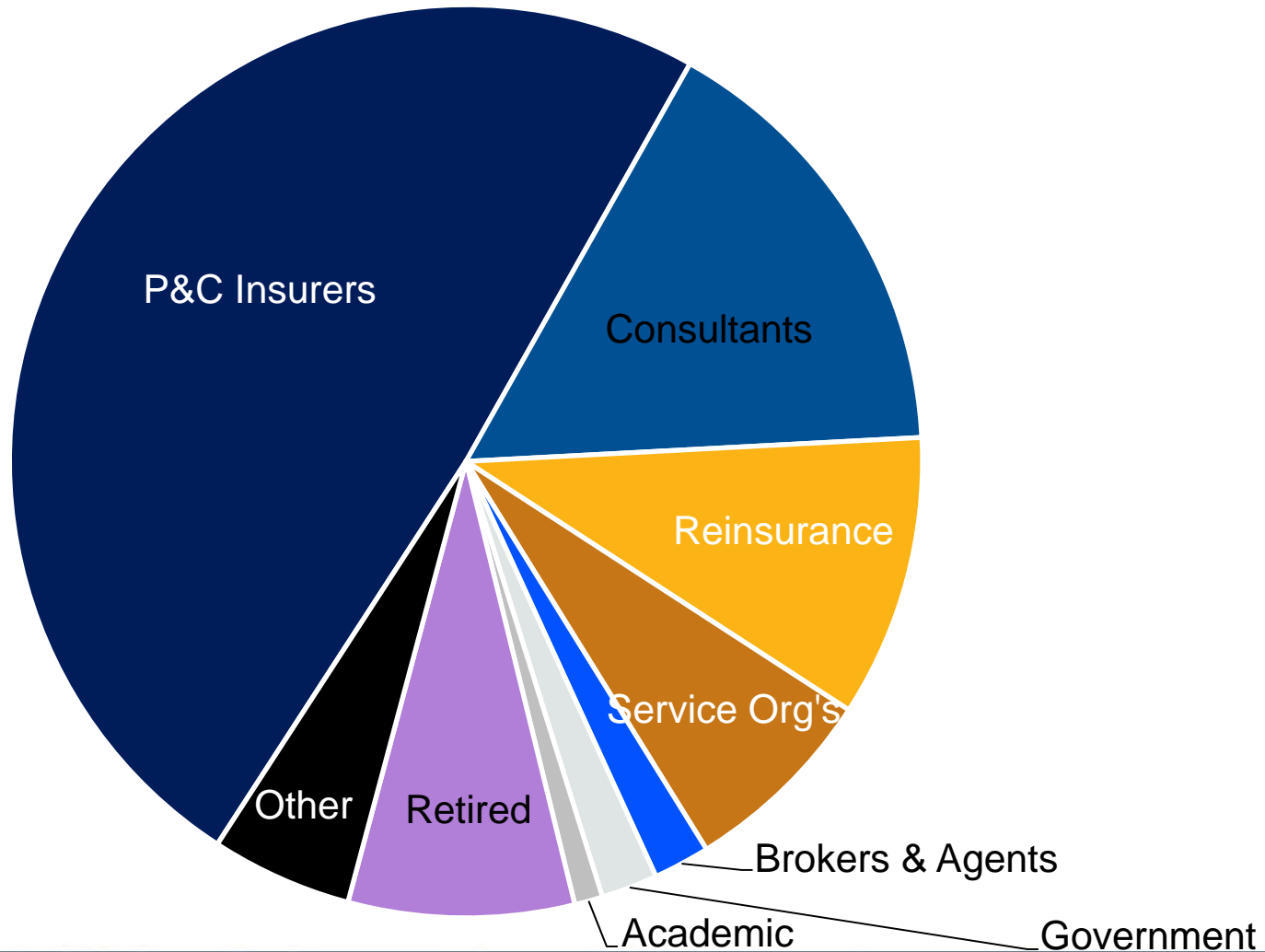


A Global Society

2014 Geographic Distribution

United States	5,505	Switzerland	30
Canada	598	Hong Kong	28
Bermuda	119	Singapore	23
United Kingdom	55	Germany	14
China	65	Other	86

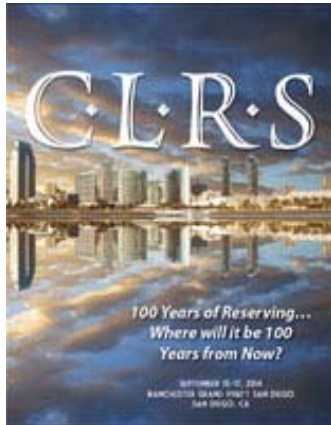
CAS Members by Type of Employment



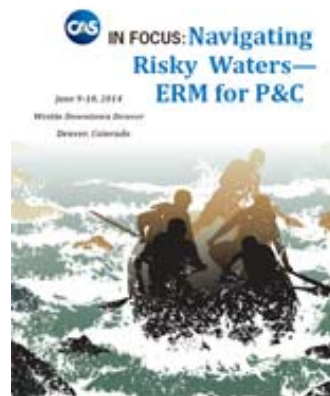
Top Employers of CAS Members

Company or Organization	Number Employed	% of CAS membership
Liberty Mutual Group	271	4.2
The Travelers Companies	230	3.5
Zurich (including Farmers)	205	3.1
Towers Watson	119	1.8
Marsh (including Guy Carpenter & Oliver Wyman)	118	1.8
Milliman, Inc.	114	1.7
The Hartford	110	1.7
Intact Insurance Company	101	1.5
ACE	90	1.4
CNA Insurance Companies	89	1.4
AON	89	1.4

Sample P&C Actuarial Work Areas



- Ratemaking
- Reserving
- Predictive modeling
- Reinsurance
- ERM



Ratemaking / Pricing

- Are current rates meeting our objectives?
- Are some classes performing better or worse than others?
- How do driving patterns influence risk of loss?
- How does an insured's loss experience influence its premium?
- How does price sensitivity enter into loss cost projections?

Loss Reserving

- What is the company's unpaid claim liability as of 12/31/14?
 - Best estimate, central estimate, key assumptions
- What is the probability distribution of unpaid claims as of 12/31/14?
- Role with Audit Committee for governance (management influence on amounts booked, independence of actuarial function)

Capital Adequacy

- How adequate is company surplus to respond to adverse results (e.g., loss reserves higher than estimate)?
- How much capital is required to support different types of business?
- How does portfolio diversification enter into economic capital requirements?

Reinsurance

- (Insurer) What are risk/reward trade-offs related to different reinsurance structures?
- (Reinsurer) Pricing and reserving issues, but with much less data.

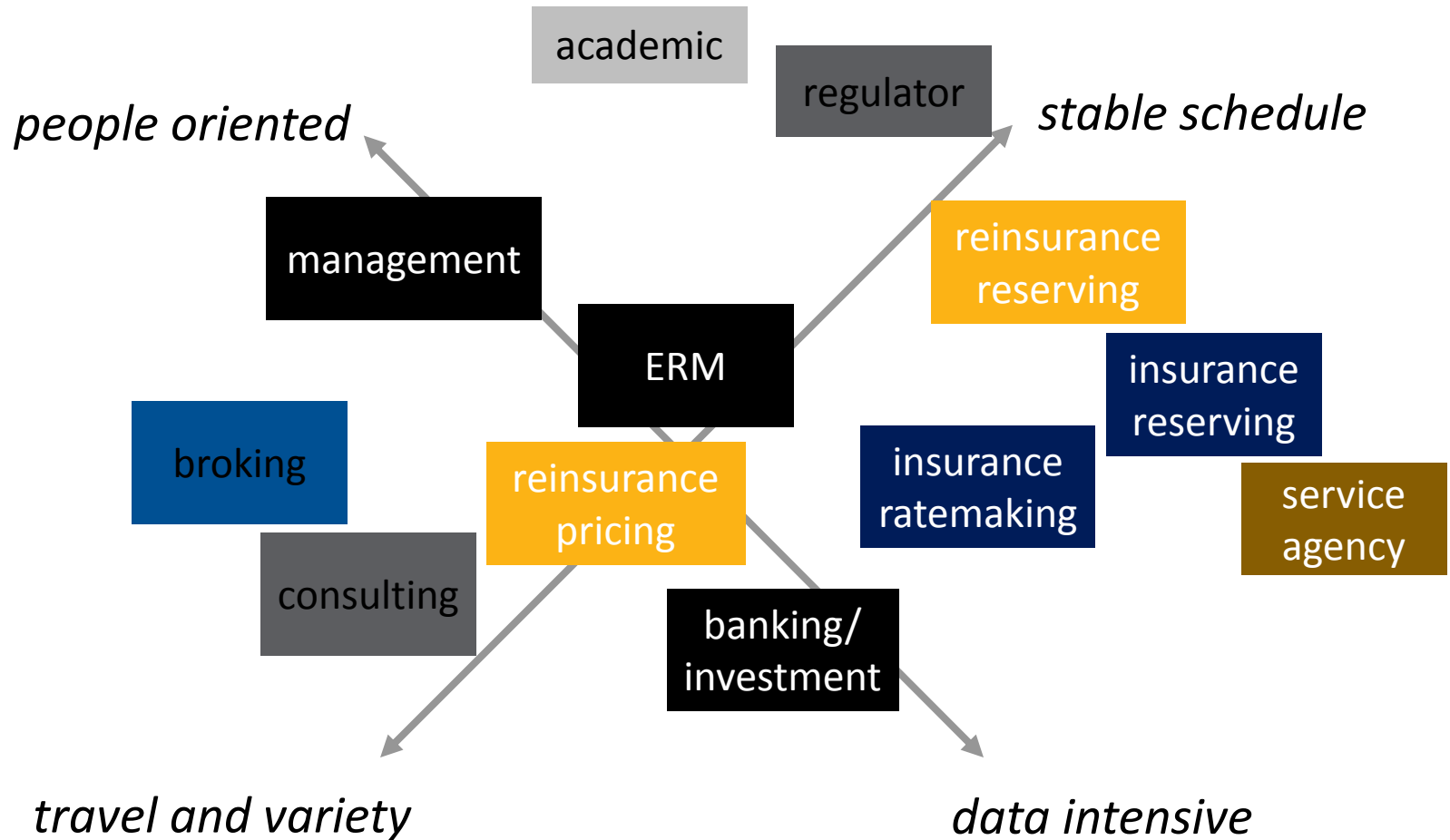
Enterprise Risk Management

- Enterprise-wide view of risk that allows insurers to identify, quantify, and manage risk on a more holistic basis
- Risk identification and related management and mitigation
- ERM integration into governance, strategy and decision-making
- Board and Audit Committee responsibilities

Trends

- Liability and property risks arise daily
- Digitalization and “big data”
- Increasingly sophisticated predictive models
- Enterprise risk management, terrorism
- Globalization, international businesses and risks, global instability
- Climate change, volatility, crop insurance
- Population shifts, hazard prone areas
- Social media, automated vehicles, healthcare
- Unmanned commercial aircraft, cyber liability, the aging population

Many Paths to Success



CAS Credentials

CAS Credentials

- Associate (ACAS)

CAS Credentials

- Associate (ACAS)
- **Fellow (FCAS)**

CAS Credentials

- Associate (ACAS)
- Fellow (FCAS)
- **Chartered Enterprise Risk Analyst (CERA)**

Current CAS Syllabus to Reach ACAS (Until Fall 2016)

- Validation by Educational Experience (VEE):
 - VEE-Applied Statistical Methods
 - VEE-Corporate Finance
 - VEE-Economics
- Two CAS Online Courses:
 - Online Course 1—Risk Management and Insurance Operations
 - Online Course 2—Insurance Accounting, Coverage Analysis, Insurance Law, and Insurance Regulation
- Course on Professionalism
- Exams

Current CAS Syllabus to Reach ACAS (Until Fall 2016)

Required CAS Learning Objectives Met Through Following Exams	CAS Exams
<ul style="list-style-type: none"> ■ P—Probability ■ FM—Financial Mathematics ■ MFE—Models for Financial Economics ■ C— Construction and Evaluation of Actuarial Models 	<ul style="list-style-type: none"> ■ Exam LC*—Models for Life Contingencies and Statistics ■ Exam ST —Statistics and Stochastic Modeling ■ Exam 5—Basic Techniques for Ratemaking and Estimating Claim Liabilities ■ Exam 6—Regulation and Financial Reporting (Nation Specific) <ul style="list-style-type: none"> ■ Actuarial Institute of Chinese Taipei, Canada, and United States <p><i>*CAS accepts waiver for MLC Exam</i></p>

Current CAS Syllabus to Reach FCAS

ACAS plus:

- Exam 7—Estimation of Policy Liabilities, Insurance Company Valuation, and Enterprise Risk Management
- Exam 8—Advanced Ratemaking
- Exam 9—Financial Risk and Rate of Return

CAS Preliminary Education

- For CAS learning objectives currently addressed through Exams 1/P, 2/FM, 3F/MFE, and 4/C, CAS will grant waiver to candidates who receive credit for exams offered by other organizations deemed to cover CAS learning objectives in acceptable depth and breadth.
 - Society of Actuaries
 - Actuaries Institute (Australia)
 - Actuarial Society of South Africa
 - Canadian Institute of Actuaries
 - Institute and Faculty of Actuaries (UK)
 - Institute of Actuaries of India

CAS Preliminary Education

- Since January 1, 2014, CAS has been offering two unique preliminary examinations
 - LC, covering life contingencies and survival models
 - ST, covering statistics and stochastic modeling
- They are administered exclusively by the CAS

Upcoming Changes – Exam S

- Consolidating material contained on current ST, LC, and the VEE on Statistics into a new comprehensive exam
- Exam will also cover Generalized Linear Models
- Topics and coverage:
 - A. Probability Models (Stochastic Processes & Survival Models) 20-40%
 - B. Statistics (2nd semester of a 2-semester undergraduate course on Probability and Statistics) 20-40%
 - C. Extended Linear Models (NEW!) 25-40%
 - D. Time Series with Constant Variance (ARIMA) 5-10%

Upcoming Changes – Exam S

Candidate Credit on August 31, 2015			Action Required by August 31, 2016 to Earn Credit for new Exam S
Exam ST	Exam LC	Stats VEE	
✓	✓	✓	Credit granted. No candidate action required.
✓	✓		Complete the Applied Statistical Methods VEE.
✓		✓	Pass Exam LC.
✓			Pass Exam LC and complete the Applied Statistical Methods VEE.
	✓	✓	Pass Exam ST.
	✓		Pass Exam ST and complete the Applied Statistical Methods VEE.
		✓	Candidate must take full Exam S.
			Candidate must take full Exam S.

CAS Syllabus to Reach ACAS (After Fall 2016)

- Validation by Educational Experience (VEE):
 - ~~VEE-Applied Statistical Methods~~
 - VEE-Corporate Finance
 - VEE-Economics
- Two CAS Online Courses:
 - Online Course 1—Risk Management and Insurance Operations
 - Online Course 2—Insurance Accounting, Coverage Analysis, Insurance Law, and Insurance Regulation
- Course on Professionalism
- Exams

CAS Syllabus to Reach ACAS (After Fall 2016)

Required CAS Learning Objectives Met Through Following Exams	CAS Exams
<ul style="list-style-type: none"> ■ P—Probability ■ FM—Financial Mathematics ■ MFE—Models for Financial Economics ■ C— Construction and Evaluation of Actuarial Models 	<ul style="list-style-type: none"> ■ Exam S—Statistics and Probabilistic Models ■ Exam 5—Basic Techniques for Ratemaking and Estimating Claim Liabilities ■ Exam 6—Regulation and Financial Reporting (Nation Specific) <ul style="list-style-type: none"> ■ Actuarial Institute of Chinese Taipei, Canada, and United States

CAS Preliminary Education: Changes

- CAS believes these changes:
 - Align preliminary educational objectives to the appropriate coverage for these topics
 - Recognize the increasing importance of statistics in property/casualty actuarial practice
 - Allow the CAS to focus on exams that validate knowledge that is uniquely relevant to property/casualty actuaries

Current CAS Syllabus to Reach CERA

- Meet all requirements for CAS Associateship,
- Have credit for CAS Exam 7 and Exam 9,
- Successfully complete the three-day Enterprise Risk Management and Modeling Seminar for CERA Qualification, and
- Successfully complete Exam ST9, Enterprise Risk Management Specialist Technical, of the Institute and Faculty of Actuaries (U.K.).

You're Invited...



join online today at
www.CASstudentcentral.org

CAS Student Central

- Membership program for university students:
 - No Membership fee
 - Access to resources including P&C internship listings, CAS Curriculum Guide, Case Studies, Online Community
 - Free webinars created specifically for students
 - Invitations to free networking events including student programs at CAS meetings and Seminars
- Approximately 1,400 student members from 300 schools

STUDENT CENTRAL

FOCUSED ON YOUR FUTURE

About the CAS ▾

About Our Profession ▾

Classroom to Credentials ▾

News & Updates ▾

Contact Us

▶ About CAS Student Central

▶ Study Tools

▶ Career Resources

▶ Online Community


Explore P&C Internship Opportunities




Tweets



 **CAS Student Central** 2 Oct
@CASstudent
Learn About Exciting New Content and Resources on CAS Student Central in the New Future Focus Blog Post. ow.ly/CckSd

 **CAS Student Central** 1 Oct
@CASstudent
Register for November Exams P and FME by October 2nd. ow.ly/Ca2GL

 **CAS Student** 25 Sep

Tweet to @CASstudent

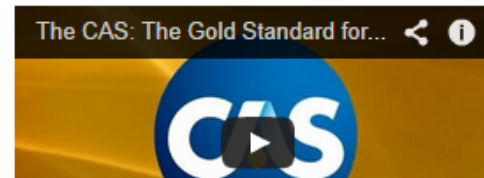
[CAS Student Central News](#)

[Future Fellows Newsletter - June 2014](#)

Join Us

CAS Student Central is a membership program for university students interested in pursuing an actuarial career. Join the community of students from nearly 200 universities who have already joined this free membership program and gain access to:

The CAS: The Gold Standard for P/C Actuaries

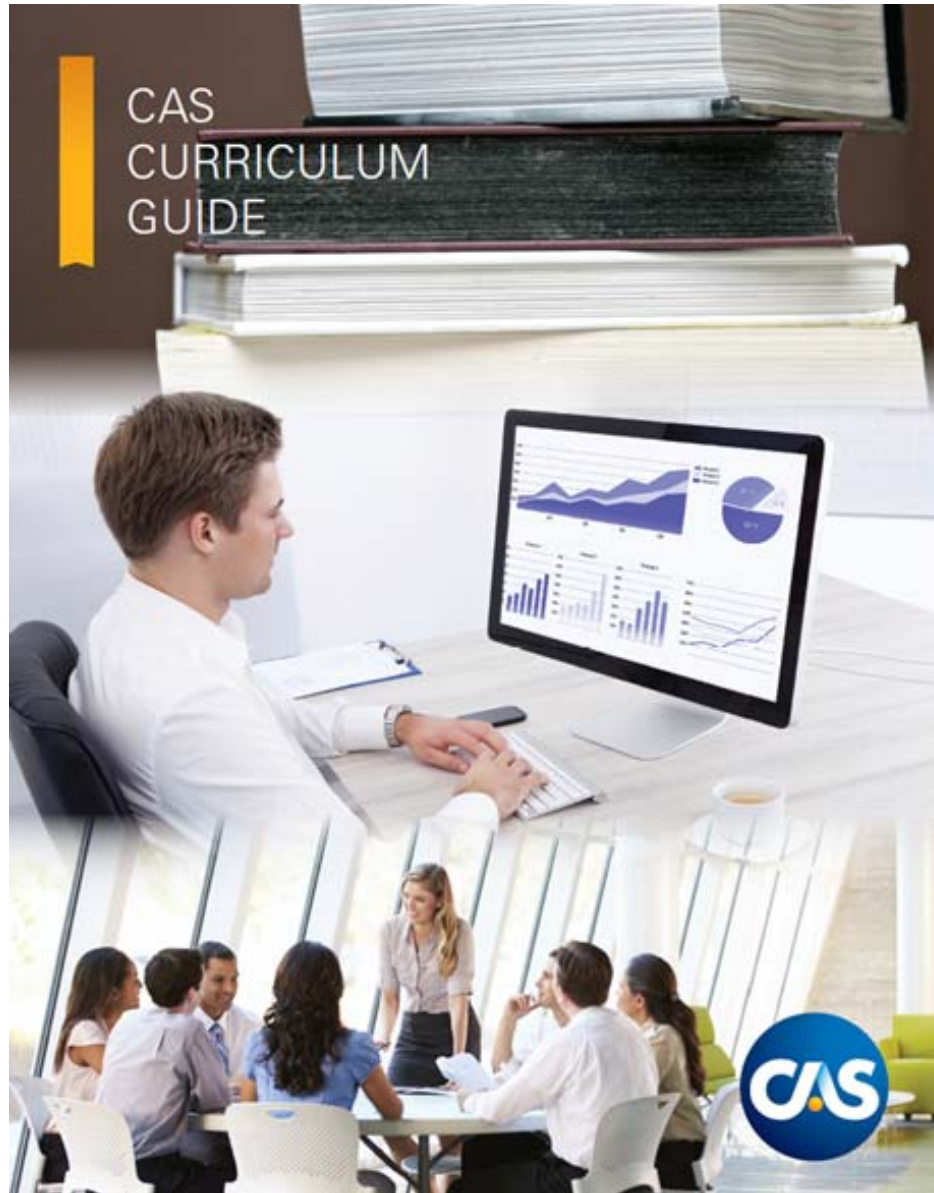


Puzzler

Find a new brain twister here every month. We'll post a variety of puzzles that challenge your mind, stretch your thinking and hone your problem-solving skills.

Check out this month's puzzler and submit your solutions to CASStudentCentral@casact.org.

CAS CURRICULUM GUIDE



CAS CURRICULUM GUIDE

This guide has been developed to help students and faculty build a stronger understanding of the academic strengths, technical tools and personal skills successful actuaries possess. Students can use the guide to identify experiences to seek out while in college to help them prepare for a future career as an actuary, specifically as they embark on the path to earning actuarial credentials through the Casualty Actuarial Society. To that end, the guide makes references to preparing for and taking professional actuarial examinations and other requirements for earning CAS credentials. The complete set of requirements for earning CAS credentials, which are recognized as the gold standard for property/casualty actuaries by employers and regulators, can be found as an appendix of the guide.

For faculty, this guide provides an overview of the key academic topics to cover in an actuarial curriculum and can help identify experiences that can be worked into a classroom to help their students develop the skills needed to hit the ground running in the business world. Links to examples of existing actuarial science courses and curricula offered at various types of universities are included in the appendix.

The guide is separated into three main sections:

1. Academic Foundation:

The academic subjects that are the building blocks of actuarial work

2. Technical Toolkit:

Important tools that help actuaries solve challenging business problems

3. Workplace Readiness:

The skills that help new employees make an impact on the job day one

Each main section is comprised of several subject/skill subsections that include:

1. Description and Importance:

What it is and why it's important for an actuary

2. On the Job:

An example of where the subject/skill is needed in the workplace.

3. Experiences:

Experiences a student can seek out or faculty can provide that will help prepare students for success as an actuary

This guide was developed by the University Engagement Committee. Any questions or comments pertaining to the guide can be sent to: office@casact.org

Academic Foundation

Mathematical Base
Probability Theory
Financial Mathematics
Statistics
Core Actuarial
Economics
Finance
Risk & Insurance

Technical Toolkit

Statistical Analysis
Data Manipulation
Programming Skills
Microsoft Office

Workplace Readiness

Presentation Skills
Teamwork Skills
Project Management
Business Writing
Ethics & Professionalism
Business Etiquette
Exam Study Skills

CAS Case Studies

- Case Study Topics:
 - Probability
 - Catastrophe Modeling
 - Warranties
 - Liabilities
 - Auto Insurance
- Case Studies include Facilitator's Guide, Presentation Slides, Recording, and Excel Workbook

CAS Student Central Online Community

- Future Focus blog shares insights and tips (example posts):
 - [CAS to Roll Out New Statistics Preliminary Exam](#)
 - [Strategies to Assist with Your Job Search – Advice from Actuarial Recruiters](#)
 - [How to Get the Most Out of Networking Events at the 2015 ASNA Convention – and Beyond](#)
- Connect with other student members
- CAS member directory will give you a sense of how far and wide, broad and deep our network is.
- Receive latest news and updates from the CAS

Educational Opportunities for Student Central Members

- Webinars:
 - Fall 2014 Semester: Career Paths in the Property and Casualty Actuarial Profession
 - Spring 2015 Semester: Excel and R for Actuaries
- Student programs at CAS meetings/seminars:
 - CAS Spring and Annual Meetings
 - Ratemaking and Product Management Seminar
 - Seminar on Reinsurance
 - Casualty Loss Reserve Seminar

CAS Trust Scholarship Program

casact.org/trustscholarship

- Scholarship for students pursuing a career in casualty actuarial science
- Up to three scholarships will be awarded per academic year (**\$10,000, \$5,000, \$5,000**)
- Application due by early March (Application, essay, recommendation letters, and official transcript)
- Visit the CAS website for eligibility requirements
 - Must be a member of CAS Student Central and have sat for 1 actuarial exam

STUDENT CENTRAL

FOCUSED ON YOUR FUTURE

CASstudentcentral.org