

# Everything Actuarial Workshop



# Meet the team!

Nikhil Kori



Exam Chair

Bryce Poss



Career Chair

Jordan Hoffner



Social Chair

# Agenda

- What is an actuary?
- Actuarial Math major
  - Course Requirements
- Industry Overview
  - Insurance vs Consulting
  - Society of Actuaries (SOA)
  - Casualty Actuarial Society (CAS)
- Exam Process
  - Study Materials
- VEE Credit Process
- Additional Resources

- ▶ **Actuary:** A business professional who analyzes the consequence of **risk**

What's an Actuary?



# What's an Actuary?



Compile and analyze statistical data and other information to measure and manage risk



Develop and communicate solutions for complex financial issues.



Have a deep understanding of mathematics, statistics and business management.

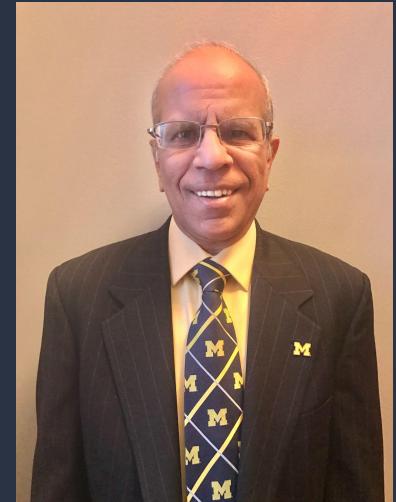


Help leaders make strategic decisions and consumers prepare for their future.

# Actuarial Math Major



- The Actuarial Math Program is a *sub-major* for the Mathematics Major
  - Center of Actuarial Excellence (CAE) of 22 in the US
- Offers specific courses that help student pass Actuarial Exams
  - i.e. MATH 425 → ~85% Exam P
  - i.e. MATH 424 → ~85% Exam FM
- Declared majors get reimbursed for exam costs (if you pass)
- Actuarial Advisor and Program Director: Professor Roger Natarajan ([rogernat@umich.edu](mailto:rogernat@umich.edu))
  - See for help with finding scholarships!
  - Award of \$1000 for students who declare Actuarial Math as their major & complete Math 215, 217, 425, & 424



# Actuarial Course Requirements

(\*) min grade of “C minus” required

★ You pick two of these four courses to complete

Cognates  
Suggested  
(2 Required)

**FIN 302**  
Making Financial Decisions  
(SOA VEE  
Accounting & Finance)

**ACC 302**  
Financial Accounting  
(SOA VEE  
Accounting & Finance)

**STATS 415**  
Data Mining and  
Statistical  
Learning  
(Exam SRM)

**TO 414**  
Advanced Analytics for  
Management Consulting  
(Exam PA)

CORE  
Courses

**MA 423 ★**  
Mathematics  
of  
Finance

**MA 528 ★**  
Topics in  
Casualty  
Insurance

**MA 521 ★**  
Life  
Contingencies  
Part II  
(Exam ALTAM)

**MA 524 ★**  
Loss  
Models II  
(Exam ASTAM)

**MA 523 (\*)**  
Loss  
Models I  
(Exam FAM)

**MA 520 (\*)**  
Life  
Contingencies  
Part I  
(Exam FAM)

**MA 424 (\*)**  
Mathematical  
Interest Theory  
(Exam FM)

BASIC  
Courses

**MA 316 (\*)**  
Differential  
Equations  
OR MA 286

**MA 351 (\*)**  
Principles of  
Analysis  
OR MA 451

**MA 425 (\*)**  
Introduction To  
Probability  
(Exam P)

**STATS 426 (\*)**  
Introductory Theoretical  
Statistics  
(SOA VEE Mathematical  
Statistics)

Pre-requisites

**MA 215**  
Calculus III  
OR  
255/285/295

**MA 217**  
Linear  
Algebra  
OR 296/395

**ECON 101**  
Microeconomics  
(SOA VEE  
MicroEconomics)

**ECON 102**  
Macroeconomics  
(SOA VEE  
MacroEconomics)

**EECS 183**  
Elementary  
Programming  
Concepts

plan your  
courses  
based on  
exam  
sittings!

## Sample Curriculum of a Student (With Credit for Calculus I & II)



	FALL	WINTER	EXAM / INTERNSHIP
FRESHMAN	MA 215	MA 425	Exam P – July
	EECS 183	MA 217	
	ECON 101 (VEE)	ECON 102 (VEE)	
SOPHOMORE	MA 424	Math 351	Exam FM – Feb
	STATS 426 (VEE)	MA 415 (*)	Exam SRM – Sep
	ACC 302 (VEE)	FIN 302 (VEE)	Internship
JUNIOR	MA 423	TO 414 (*)	Exam PA – Apr
	MA 520	MA 521	Internship
SENIOR	MA 523	MA 524	Exam FAM – Oct
	MA 316		Exam ALTAM/ASTAM – Apr
			Full Time Job

(\*) suggested  
additional courses

# Come to our Course

## Planning Workshop!

- October 28th
- 7-8 PM at East Hall 2866
- Work with SAM mentors for personalized help!

	Exam P	Exam FM	Exam SRM	Exam FAM	Exam ASTAM	Exam ALTAM	Exam PA
MA 422				3 %			
MA 423				5 %			
MA 425	84 %						
MA 424		87 %					
MA 520				42 %			
MA 521						82 %	
MA 523	13 %			21 %	37 %		
MA 524			6 %	17 %	49 %		
STATS 415				78 %			
TO 414							80+ %
<b>Total</b>	<b>97 %</b>	<b>87 %</b>	<b>84 %</b>	<b>88 %</b>	<b>86 %</b>	<b>82 %</b>	<b>80+ %</b>

	FALL	WINTER	EXAM / INTERNSHIP
FRESHMAN	MA 215	MA 425	
	EECS 183	MA 217	Exam P – July
	ECON 101 (VEE)	ECON 102 (VEE)	
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(\*) suggested additional courses

	Dur.	Type	# of Qs	Fees	Courses Supporting the Exams
Exam P	3.0 Hrs.	MC	30	\$ 260	MA 425 (84%), 523 (13%)
Exam FM	2.5	MC	30	\$ 260	MA 424 (87%)
Exam MAS-I	4.0	MC	~42	\$ 440	MA 520 (7.5%), MA 523 (20%), Stats 413 (40%), Stats 426 (15%)
Exam MAS-II	4.0	MC	~42	\$ 440	MA 524 (20%), Stats 415 (40%)
Exam 5	4.0	MC&FR	~25	\$ 680	Prereq: Exams P and FM
Exam 6	4.0	MC&FR	~25	\$ 680	Prereq: Exams P and FM
DISC DA	--	E-Module		\$ 390	No Prerequisites
DISC RM	--	E-Module		\$ 390	No Prerequisites
DISC IA	--	E-Module		\$ 390	No Prerequisites

# Industry Overview



Insurance

Consulting

Insurance

Consulting

# Insurance

- fewer hours, better work-life balance
  - better study programs
  - more routine, stable work



# Consulting

- higher average salary
- opportunities to travel
- fast-paced, client facing
- more variety of work

# Society of Actuaries (SOA)



Corporate Finance & FRM

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Quantitative Finance &

---

Investment

---

Life & Annuities

---

Retirement Benefits

---

Group & Health





BlueCross BlueShield



Companies

that hire SOA

Actuaries



# Casualty Actuarial Society (CAS)

MEMBERS:  
11k

AREAS OF  
INTEREST

Auto Insurance

Property Insurance

Liabilities

Worker's Compensation

Lawyers, Doctors, Businesses

...and more!

CERTIFICATIONS:

2

1. ACAS

2. FCAS





**Auto-Owners**  
INSURANCE  
LIFE • HOME • CAR • BUSINESS

# Companies that hire CAS Actuaries

\*many companies have positions  
for both SOA and CAS actuaries,  
and this is a non-exhaustive list!

 **Liberty Mutual.**  
INSURANCE

**Deloitte.**

**HAGERTY**<sup>®</sup>

  
**Nationwide**

 **FARMERS**<sup>SM</sup>  
INSURANCE

**PROGRESSIVE**<sup>®</sup>



**Swiss Re**

 **AIG**

**ally**



**State Farm**<sup>TM</sup>

 **AF Group**

 **RGA**<sup>®</sup>

 **Z**

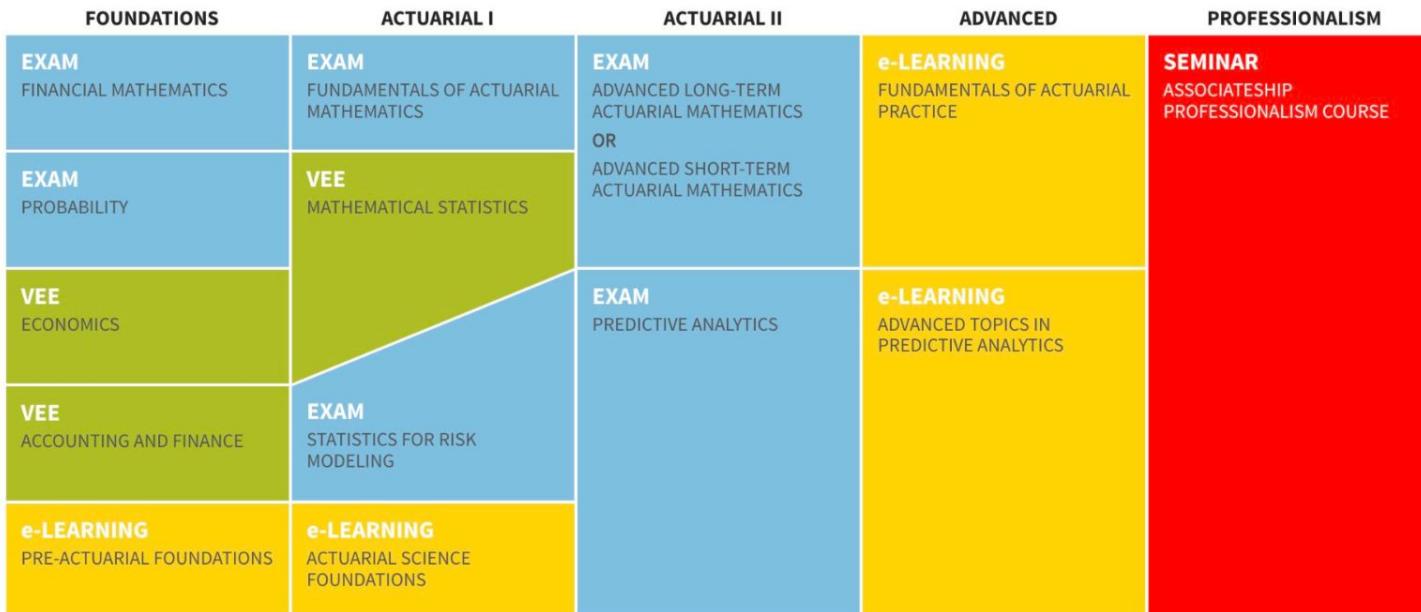
**ZURICH**

 **pwc**

 **Allstate**<sup>®</sup>

 **Allstate**<sup>®</sup>  
You're in good hands.

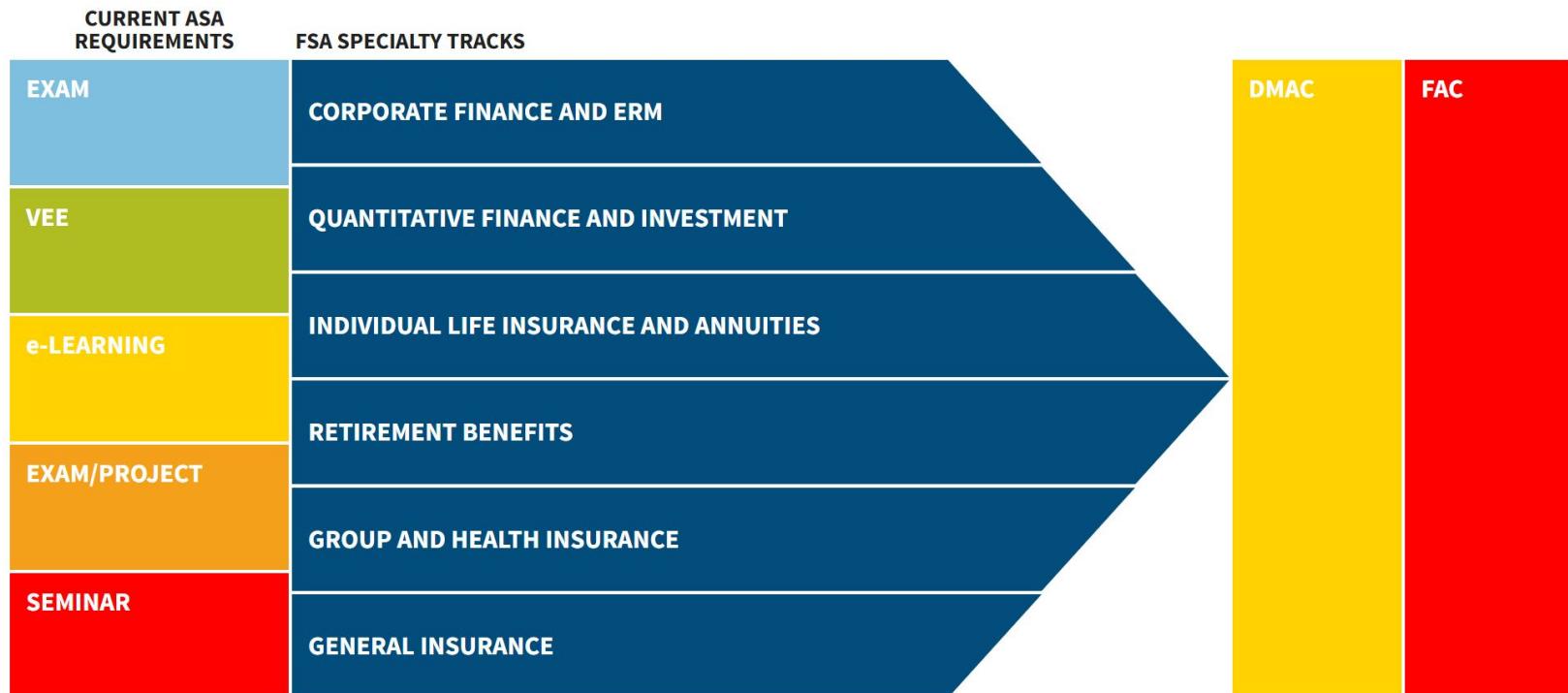
# SOA Path



# SOA Path

\*This structure has changed significantly, but it's not something that the majority of students have to be concerned with. Big Picture: There are tracks that specify which exams you take and you can enroll in electives.

## FSA Pathway

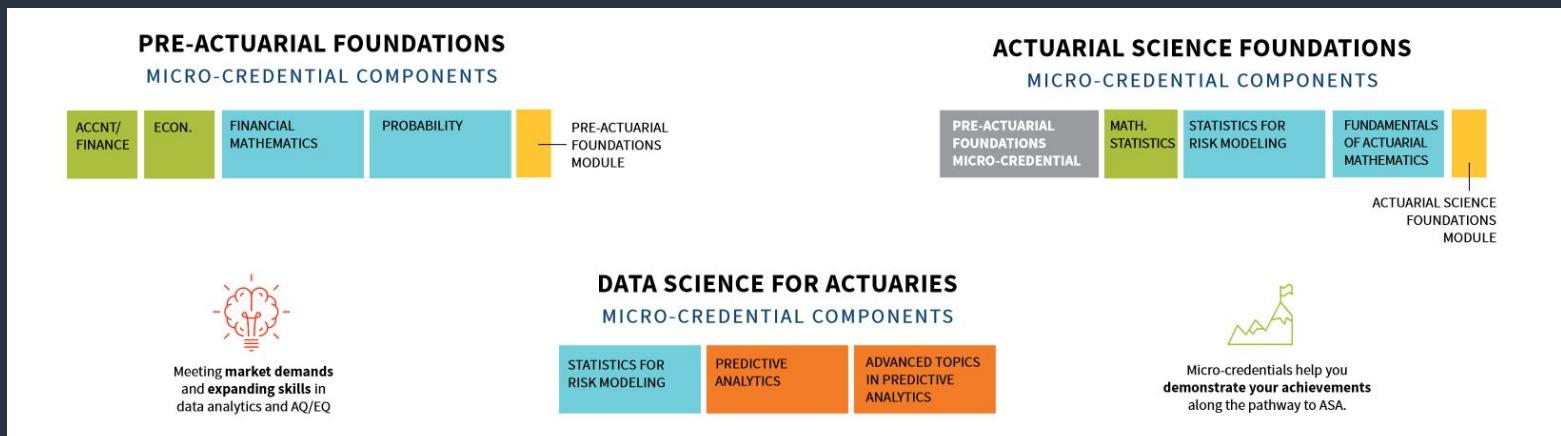


# SOA Details

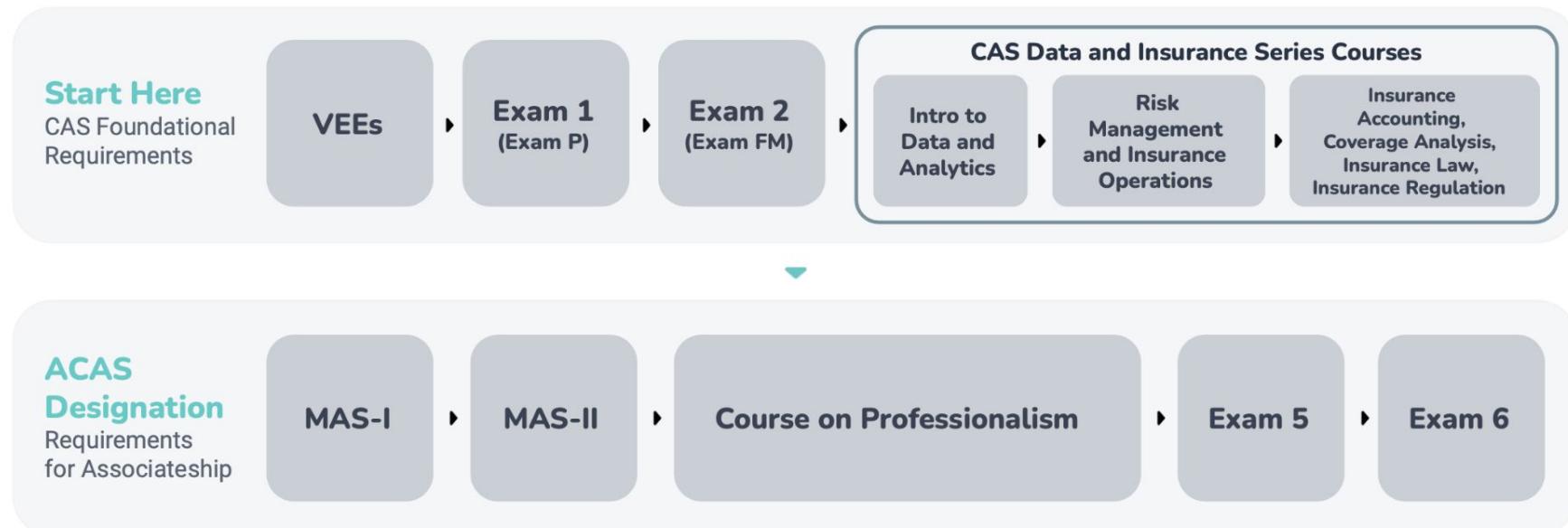


SOCIETY OF  
ACTUARIES

- Register to take P and FM through SOA
- Microcredentials (e-learning)
- VEE credentials required for ASA
  - Accounting/Finance
  - Economics
  - Mathematical Statistics



# CAS Path



Starting Fall 2025, the new PCPA exam and project will also be required for Associateship

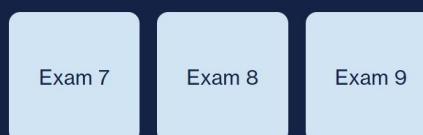
# CAS Path

## SELECT CREDENTIALS



Actuarial candidates must complete a set of requirements, including passing a series of exams, to become credentialed property and casualty actuaries and members of the CAS. The requirements outlined in the CAS Path to Success will lead you to the highly coveted Associate of the CAS, or ACAS and Fellow of the CAS, or FCAS, designations.

## SELECT AN EXAM



# CAS Details



- Register to take P and FM through SOA
- Data and Insurance Series Courses (DISCS) (e-learning)
- New Property and Casualty Predictive Analytics (PCPA) Exam and Project required beginning Fall 2025
- Sign up for CAS Student Central
  - Summer program has many benefits
  - Mentor-led or Independent
  - Case competition and Networking opportunities
- Accepts VEE Credentials through the SOA
  - Accounting/Finance
  - Economics

# Exam Process

1

Register for Exam  
(months in advance)



- [www.soa.org](http://www.soa.org)
- Create an account: Log In -> Create an Account
- Register: Education and Exams -> Exam Registration -> Select Exam from Menu

2

Sign Up for Exam  
Location



- After confirming payment, you will receive an email from the SOA with receipt and confirmation number
- Search SOA on Prometric -> Schedule
- Use Candidate ID to schedule appointment

**\*\*Note: save your receipt  
for reimbursement**

3

Recommended  
Study Plan



- Take the associated class first
  - Exam P -> Math 425
  - Exam FM -> Math 424
- Then use an outside resource
  - Coaching Actuaries (CA)
  - The Infinite Actuary (TIA)
  - Actex Manual
- **100 hours per hour of exam**

4

Exam Day



- For CBT, you only need to bring your ID and a calculator (bring a spare)
- A packet of paper and a pen will be provided
- Everything but your ID will be locked until the end of your exam (keys, wallet, etc...)
- Be confident!

5

Reimbursement



- Revisit your email to find the receipt of payment
- Scan/Snip your receipt and unofficial confirmation of pass
- Submit documents to the Google Survey on SAM website-> Resources -> Exam Resources

# Study Materials



- **Coaching Actuaries (CA)**
  - SAM is a Campus Club – dues-paying members receive exclusive discounts
    - 25% for Practice
    - 50% for Practice + Learn Lite
    - 70% for Practice + Learn Complete
  - Contact President Mitchell Fuchs or CA/UC Ambassador Nick Sheppard for codes
- **The Infinite Actuary (TIA)**
  - Free courses for P and FM right now!
  - SAM is also sponsored by TIA – attend our TIA workshop (Nov 3rd, 7-8PM, Virtual)
- **ACTEX Manuals (from our SAM library)**
  - Contact Exam Chair Nikhil Kori to check out
- **Actuarial Study Materials (ASM) Manuals**
- **Howard Mahler Exam Manual**
- **Introduction to Statistical Learning with Python or R (SRM, PA, MAS-I, MAS-II)**
- **Syllabi and course materials**

# Products and Resources

## Product Comparison

	Practice	Learn Lite + Practice	Learn Complete + Practice
Adapt Exams and Custom Quizzes	✓	✓	✓
Online Manuals and Study Scheduler		✓	✓
Lesson Videos and Review Videos			✓

## Additional Resources



### Discussion Forums

Connect with coaches and other students to ask questions and dive deeper.



### Study Scheduler

Pace your learning progress and have confidence you'll cover all your materials.



### Formula Sheets

Download free formula sheets for quick reference and refreshers for any course.

# SOA VEE Process

Course	VEE
ECON 101 + ECON 102	Economics
STATS 426	Mathematical Statistics
ACC 302 + FIN 302	Accounting and Finance

Timeline

## Step 1

- Be a dues-paying member of SAM
- Declare actuarial math major
- Take VEE courses at Michigan
- Be an enrolled student when all materials submitted

## Step 2

- Fill out exam reimbursement form
- Proof of payment to SOA
- Confirmation that SOA has approved the courses\*

## Step 3

- Get your money back when the exam reimbursement is processed

Note: Students can only apply for reimbursement after receiving all 3 VEEs

\*In the final semester of senior year, you may submit VEE reimbursements without having all 3 credits and without waiting for SOA approval

# Additional Resources

VEE Credits:

[CAS](#)

[SOA](#)

SOA/CAS Accounts:

[CAS Student Central](#)

[SOA](#)

Exam Registration:

[SOA Exam Registration](#)

[CAS Exam Registration \(after P&FM\)](#)

[PCPA CAS Exam Info](#)

UM:

[Actuarial Mathematics Major at UM](#)

SAM Website:

[Exam Resources](#)

[New Member Resources](#)

[Workshops](#)

[Contacts](#)

Study Materials:

[Coaching Actuaries \(CA\)](#)

[Launchpad \(with CA\)](#)

[The Infinite Actuary \(TIA\)](#)

[ACTEX Manuals \(manual checkout\)](#)

[ASM Manuals](#)

[Howard Mahler Exam Manuals](#)

[Introduction to Statistical Learning](#)

# Questions?