Count On
Coaching Actuaries.

Coaching Actuaries Tutorial

Bruin Actuarial Society

Preferred Club

Agenda

1. Who is Coaching Actuaries (CA)?
2. What is Offered?
3. Learn & Adapt Demo
4. What are the Club Benefits?
5. Group Photo!

1.

Who is Coaching Actuaries?

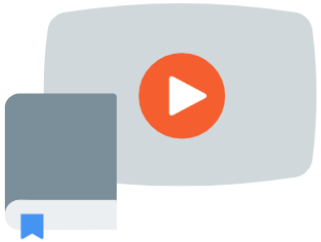
Mission of Coaching Actuaries

To provide our students with the best possible materials to help them build their knowledge, feel prepared, and pass their exams.

2.

What is Offered?

What Is Offered?



Learn the essentials

Understand everything you need to know to pass the exam. Learn by reading online manuals and watching video lessons.

Take practice exams

Experience the exam format with our Adapt practice tool, then analyze your performance and adapt your study focus.

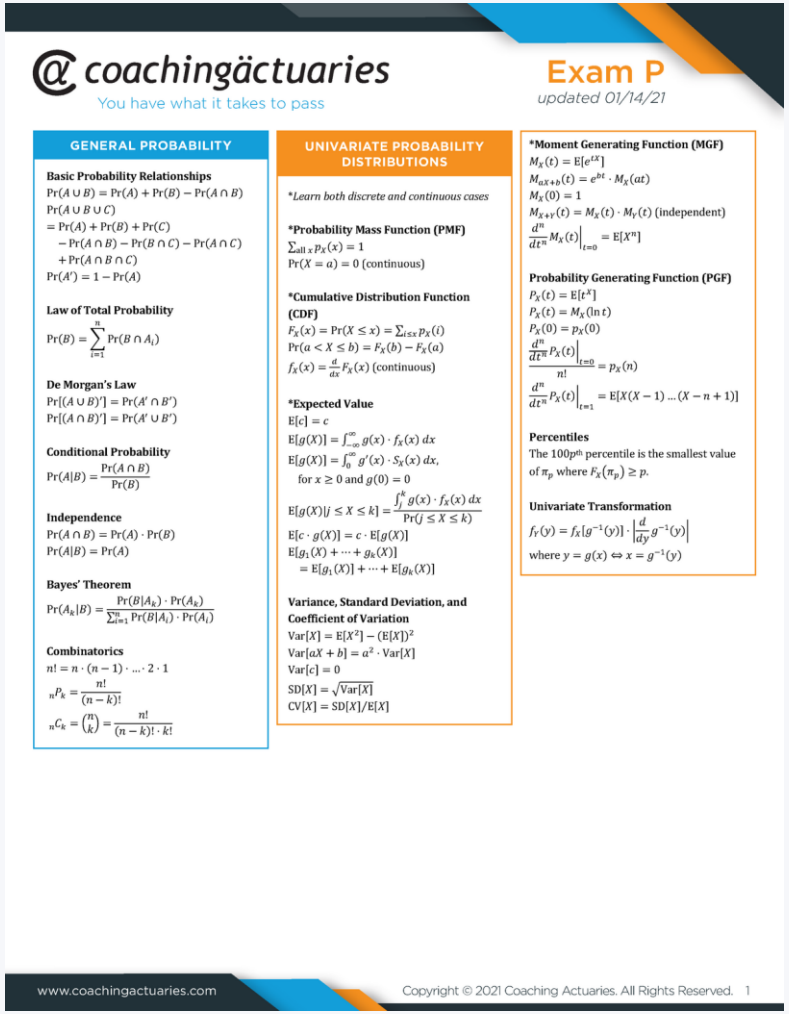
Gain confidence to pass

Improve with Adapt exams and increase the challenge so you'll be ready for the real thing.

What Is Offered?

Additional resources available:

- Online Discussion Forum
- Study Schedule to plan out your Learn/Adapt study days
- Formula Sheets
- Sample SOA/CAS questions with step-by-step solutions



@ coachingactuaries
You have what it takes to pass

Exam P
updated 01/14/21

GENERAL PROBABILITY

Basic Probability Relationships

$\Pr(A \cup B) = \Pr(A) + \Pr(B) - \Pr(A \cap B)$

$\Pr(A \cup B \cup C)$
$= \Pr(A) + \Pr(B) + \Pr(C)$
$- \Pr(A \cap B) - \Pr(B \cap C) - \Pr(A \cap C)$
$+ \Pr(A \cap B \cap C)$

$\Pr(A') = 1 - \Pr(A)$

Law of Total Probability

$\Pr(B) = \sum_{i=1}^{n} \Pr(B \cap A_i)$

De Morgan's Law

$\Pr[(A \cup B)'] = \Pr(A' \cap B')$
$\Pr[(A \cap B)'] = \Pr(A' \cup B')$

Conditional Probability

$\Pr(A|B) = \frac{\Pr(A \cap B)}{\Pr(B)}$

Independence

$\Pr(A \cap B) = \Pr(A) \cdot \Pr(B)$
$\Pr(A|B) = \Pr(A)$

Bayes' Theorem

$\Pr(A_k|B) = \frac{\Pr(B|A_k) \cdot \Pr(A_k)}{\sum_{i=1}^{n} \Pr(B|A_i) \cdot \Pr(A_i)}$

Combinatorics

$n! = n \cdot (n-1) \cdot \ldots \cdot 2 \cdot 1$

${}_nP_k = \frac{n!}{(n-k)!}$

${}_nC_k = \binom{n}{k} = \frac{n!}{(n-k)! \cdot k!}$

UNIVARIATE PROBABILITY DISTRIBUTIONS

**Learn both discrete and continuous cases*

***Probability Mass Function (PMF)**

$\sum_{\text{all } x} p_X(x) = 1$
$\Pr(X = a) = 0$ (continuous)

***Cumulative Distribution Function (CDF)**

$F_X(x) = \Pr(X \le x) = \sum_{t \le x} p_X(t)$
$\Pr(a < X \le b) = F_X(b) - F_X(a)$
$f_X(x) = \frac{d}{dx} F_X(x)$ (continuous)

***Expected Value**

$\mathrm{E}[c] = c$
$\mathrm{E}[g(X)] = \int_{-\infty}^{\infty} g(x) \cdot f_X(x)\, dx$
$\mathrm{E}[g(X)] = \int_0^{\infty} g'(x) \cdot S_X(x)\, dx,$
for $x \ge 0$ and $g(0) = 0$

$\mathrm{E}[g(X)|j \le X \le k] = \frac{\int_j^k g(x) \cdot f_X(x)\, dx}{\Pr(j \le X \le k)}$

$\mathrm{E}[c \cdot g(X)] = c \cdot \mathrm{E}[g(X)]$
$\mathrm{E}[g_1(X) + \cdots + g_k(X)]$
$= \mathrm{E}[g_1(X)] + \cdots + \mathrm{E}[g_k(X)]$

Variance, Standard Deviation, and Coefficient of Variation

$\mathrm{Var}[X] = \mathrm{E}[X^2] - (\mathrm{E}[X])^2$
$\mathrm{Var}[aX + b] = a^2 \cdot \mathrm{Var}[X]$
$\mathrm{Var}[c] = 0$
$\mathrm{SD}[X] = \sqrt{\mathrm{Var}[X]}$
$\mathrm{CV}[X] = \mathrm{SD}[X]/\mathrm{E}[X]$

***Moment Generating Function (MGF)**

$M_X(t) = \mathrm{E}[e^{tX}]$
$M_{aX+b}(t) = e^{bt} \cdot M_X(at)$
$M_X(0) = 1$
$M_{X+Y}(t) = M_X(t) \cdot M_Y(t)$ (independent)
$\left.\frac{d^n}{dt^n} M_X(t)\right|_{t=0} = \mathrm{E}[X^n]$

Probability Generating Function (PGF)

$P_X(t) = \mathrm{E}[t^X]$
$P_X(t) = M_X(\ln t)$
$P_X(0) = p_X(0)$
$\left.\frac{\frac{d^n}{dt^n} P_X(t)}{n!}\right|_{t=0} = p_X(n)$
$\left.\frac{d^n}{dt^n} P_X(t)\right|_{t=1} = \mathrm{E}[X(X-1)\ldots(X-n+1)]$

Percentiles

The $100p^{th}$ percentile is the smallest value of π_p where $F_X(\pi_p) \ge p$.

Univariate Transformation

$f_Y(y) = f_X[g^{-1}(y)] \cdot \left|\frac{d}{dy} g^{-1}(y)\right|$
where $y = g(x) \Leftrightarrow x = g^{-1}(y)$

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 1

What Is Offered?

Introductory	Intermediate	SOA Only	CAS Only
P	IFM	FAM	MAS-I
FM		FAM-L	
VEE Microeconomics		FAM-S	
VEE Macroeconomics		SRM	
VEE Accounting		PA	
VEE Finance		ASTAM	
		ALTAM	
		VEE Math Stats	

3.

Learn & Adapt Demo

Learn

Video Lessons

Clear, Concise Explanations

Skip the long lectures. Learn at your own pace with short, digestible videos. Quickly revisit the lesson you need without parsing through long videos.

Step-by-Step Instructions

Each video focuses on making one piece of the exam material easier to understand. We do more than just explain - we illustrate each key concept step by step.

Engaging Visuals

Stay focused with visuals that animate the concepts and keep your interest throughout each lesson.

Fully Featured Video Player

Adjust the video lesson speed to fit your learning needs. Watch in full screen or in its own browser and in high definition.

Online Manuals

Exam-Focused Readings

Master the material efficiently with readings that get straight to the point.

Detailed Examples

Apply what you learn from each reading by reviewing and solving problems you'll see on the exam.

Practice Quizzes

Reinforce what you've learned with short quizzes at the end of each section.

Dynamic Content

Stay current on the latest syllabus updates without the hassle of errata or new editions.

Adapt

Tailored Practice Exams
Adapt's dynamic practice exams challenge you at your level. The better you perform, the more difficult your exams become until you're ready for the real thing.

Earned Level System
Measure your exam-readiness on a 0-10 scale. Surveys indicate that 90% of users who reach Earned Level 7 or higher pass their exams.

Section Reports
Analyze your performance on practice questions by topic to identify your weak areas.

Discussion Forum
Get help from our coaches. We've been there, passed that, and we want to help you do the same.

Video Solutions
Learn from the practice questions you miss with video and written solutions. See how to solve the problem step-by-step.

History
Review the practice questions you've taken in prior quizzes or practice exams to see what you missed.

Formula Sheet
Maximize your memorization with all the essential exam formulas in one organized place.

Quiz Builder
Create short quizzes to polish specific topics. You choose the length and difficulty.

Pass Guarantee

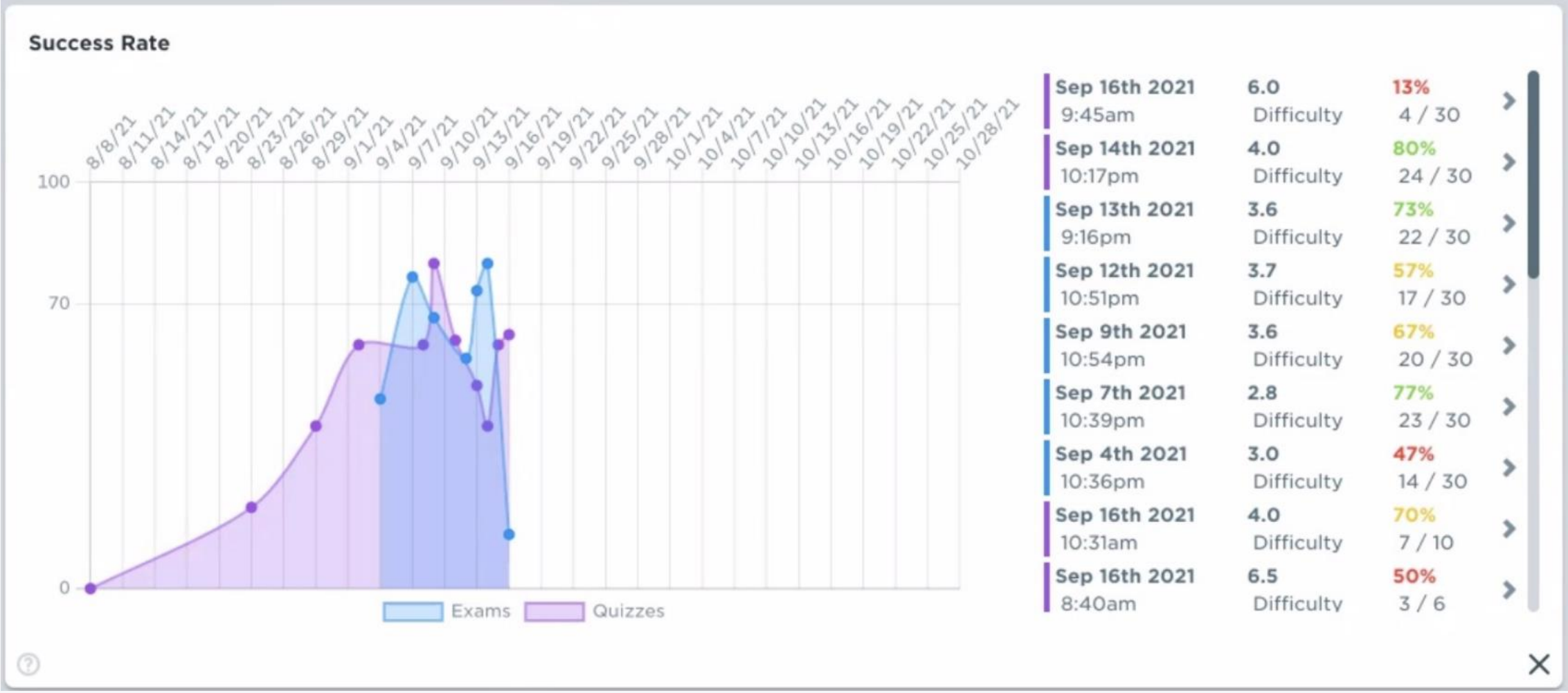
Proven Process

90% of surveyed CA students at Earned Level 7 or above pass their exam. When you reach Earned Level 7, you know you're ready.

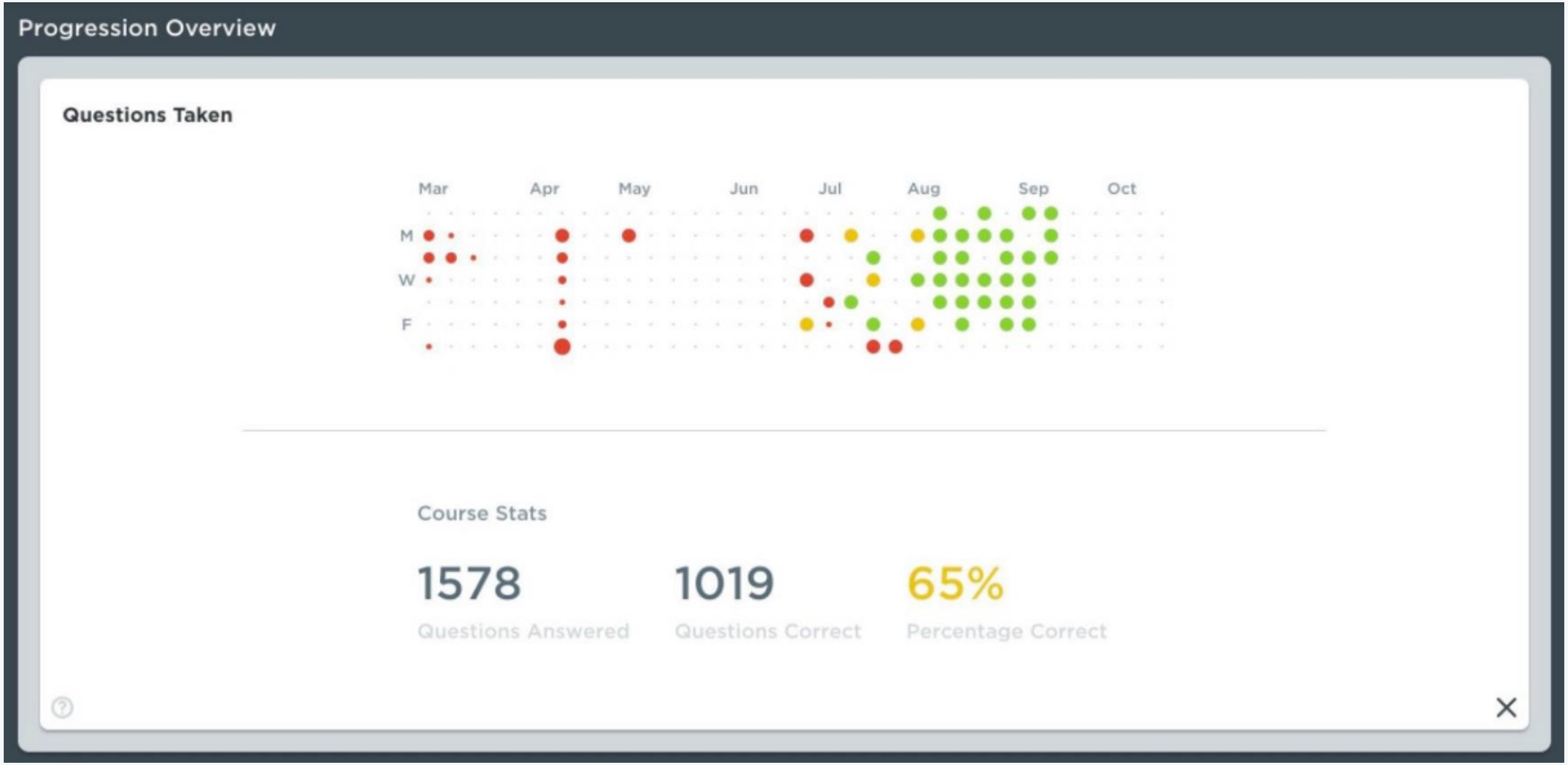
Pass Guarantee

Renew your subscription once for free when you get any 180-day subscription and you don't pass the exam.

Adapt: Success Rate



Adapt: Progression Overview

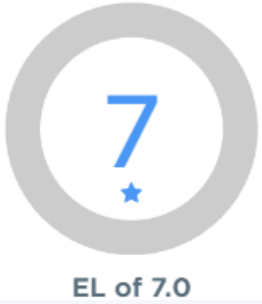


Adapt: Earned Level

Your Earned Level (EL) helps Adapt provide you with questions at the correct level of difficulty for you, so that practice exams and questions are not too difficult or too easy.

Raise your EL by passing a practice exam with greater than 70% accuracy. Score less than 50% and your EL goes down. Your EL determines the difficulty of your next practice exam.

Our surveyed users who reach an EL of 7 or higher have a pass rate of 90% or above.



Adapt: Reviewing Exam Progress

Oct 20 at 10:21 PM Date Completed	6.1 Difficulty	N/A Earned Level	91% (32 / 35) Score	REVIEW
Oct 19 at 2:12 PM Date Completed	5.9 Difficulty	N/A Earned Level	66% (23 / 35) Score	REVIEW
Oct 14 at 12:06 AM Date Completed	6.1 Difficulty	7.27 (+1.10) Earned Level	80% (28 / 35) Score	REVIEW
Oct 12 at 11:14 PM Date Completed	5.0 Difficulty	N/A Earned Level	77% (27 / 35) Score	REVIEW
Oct 7 at 9:12 PM Date Completed	5.0 Difficulty	N/A Earned Level	74% (26 / 35) Score	REVIEW
Oct 4 at 10:38 PM Date Completed	5.0 Difficulty	6.17 (+1.18) Earned Level	80% (28 / 35) Score	REVIEW
Sep 30 at 11:02 PM Date Completed	3.1 Difficulty	4.99 (+1.99) Earned Level	86% (30 / 35) Score	REVIEW
Sep 25 at 10:05 PM Date Completed	3.0 Difficulty	3 (0) Earned Level	66% (23 / 35) Score	REVIEW
Sep 23 at 9:32 PM Date Completed	2.9 Difficulty	3 (0) Earned Level	69% (24 / 35) Score	REVIEW

4.

Club Benefits

Club Benefits

- Additional discount off student pricing
- Discount on CA Merch Store
- Opportunity to connect with Coach K

Club Discount Codes

- Adapt 25% off
- Adapt + Manual 50% off
- Adapt + Learn 70% off

**** Email BAS with your official UCLA email to receive the discount codes above. ****

Additional CA Resources

Links

- ✓ Discount Tutorial Video
- ✓ Coaching Actuaries
- ✓ Formula Sheets

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Group Photo Time!

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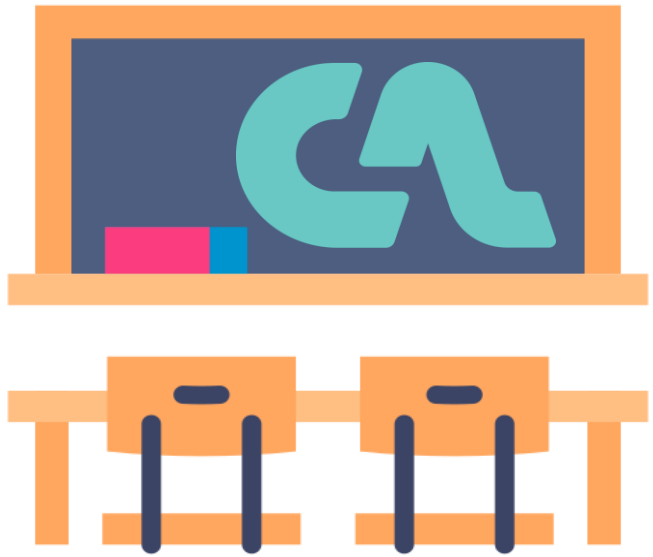

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AND THAT'S A WRAP!

KEY TAKEAWAYS

- ✓ Coaching Actuaries (CA) is an actuarial exam prep program dedicated to help you study and pass your actuarial exams
- ✓ Email us with your official UCLA email to receive the CA discount codes for Adapt, Adapt + Manual, and Adapt + Learn

ATTENDANCE

https://forms.gle/AMUNnWe5GfmQ3UG48

ANNOUNCEMENTS

- ✓ Mentorship Mixer on Thursday 10/20 in MS 3974
- ✓ First-Year & International Workshop on Tuesday 10/25 in MS 6627
- ✓ TIA Info Session on Thursday 10/27 in MS 6627

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Questions?