

TO STUDENTS TAKING, Fall 2010, CAS Exam 9 SEMINARS

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**Feel free to send me any questions or suggestions: hmahler@mac.com
If you send me an email saying that you will be attending my Exam 9 Seminar,
then I will copy you on my answers to questions from students.**

My study aids are intended to supplement, rather than replace your reading of the syllabus material. In my study aids, information in bold is more important to pass your exam. Information presented in italics (and sections whose titles are in italics) should not be needed to directly answer exam questions. It is provided to aid the reader's overall understanding of the subject.

There will be no multiple choice questions on your exam. However, I have not gone through and rewritten all of the older multiple choice questions; they should still have educational value.

The list of my study guides:

1. Gillam & Snader, "Fundamentals of Individual Risk Rating"
2. NCCI Experience Rating Plan including "The 1998 Adjustment to the Experience Rating Plan: Your Guide to Understanding the Changes"
3. Gillam, "Workers' Compensation Experience Rating: What Every Actuary Should Know"
4. Venter, "Experience Rating - Equity and Predictive Accuracy"
5. ISO Commercial General Liability Experience and Schedule Rating Plan
6. Mahler, "An Example of Credibility and Shifting Risk Parameters"
7. Lee Diagrams
8. NCCI Retrospective Rating Plan
9. Skurnick, "The California Table L"
10. Mahler, "Workers Compensation Excess Ratios: An Alternate Method of Estimation"
11. Mahler, discussion of "Retrospective Rating: 1997 Excess Loss Factors"
12. Teng, "Pricing Workers' Compensation Large Deductible and Excess Insurance"
13. Fisher, "Pricing Aggregates on Deductible Policies"
14. Walters and Morin, "Homeowners Ratemaking Revisited (Use of Computer Models to Estimate Catastrophe Loss Costs)"

**Solutions to problems are posted on the New England Actuarial Seminars webpage:
www.neas-seminars.com**

A Suggested Order of Studying:

Here is one possible order that may work for you:

Bailey & Simon

Miccolis

Gillam and Snader Part 1 (Experience Rating)

Robbin

NCCI Experience Rating Plan (NCCI 2)

Lee Part 1 (Lee 1)

ISO Experience Rating Plan

Mahler on Shifting Risk Parameters (Mahler 1)

Feldblum, Internal Rate of Return

Gillam and Snader Part 2 (Retrospective Rating)

Walters & Morin

Teng

Brosius

McClenahan

Mahler on W.C. Excess Ratios (Mahler 3)

AAA Risk Classification

Ferrari

Feldblum and Brosius

Gillam

Bault

NCCI Retrospective Rating Plan (NCCI 3)

Venter

Cummins, et. al.

Skumick

Roth

Lee Part 2 (Lee 2)

Anderson, et. al.

NCCI 1998 Adjustment (NCCI 1)

Mango

Gillam and Snader Part 3 (Related Topics)

Kreps

Fisher

Mahler Discussion of Gillam and Couret (Mahler 2)

For the readings I am teaching, I have included past exam 9 questions since 1996.^{1 2}

In some cases it is not clear what would be the best study guide in which to place an exam question.

		1996	1997	1998
1	Gillam & Snader	5, 10, 11, 29, 31, 32, 34, 36	1, 12, 13, 21, 22, 23, 27, 31, 32, 35a	4, 6, 16, 31, 37, 38, 39, 44c, 47
2	NCCI Experience Rating	24, 25	10, 34	2, 17, 20, 36
3	Gillam	3, 26	8, 30	18
4	Venter	4, 27, 28	6, 7, 29	19, 40
5	ISO Experience Rating	1, 21, 22, 23	9, 33	41
6	Mahler, Shifting Risk Parameters	20	44, 45, 46	13, 14, 25
7	Lee Diagrams	39	4, 26, 37	29
8	NCCI Retro Rating		5	5, 42, 46
9	Skurnick	6, 30, 35	28	43
10	Mahler, W. C. Excess Ratios			
11	Mahler, ELFs			
12	Teng, Large Deductibles			7, 27
13	Fisher, Aggregates on Deductibles			
14	Walters and Morin			

		1999	2000	2001
1	Gillam & Snader	6, 12, 13, 21, 41	4, 5, 6, 20, 40, 44, 48	8, 10, 13, 31, 32, 36
2	NCCI Experience Rating	11, 14, 28	42	4, 25
3	Gillam	31, 32	17, 41	5, 28
4	Venter	15, 29	1, 3, 43	6, 26
5	ISO Experience Rating	30	2	27
6	Mahler, Shifting Risk Parameters	48	34	1
7	Lee Diagrams	34, 39	19, 37	30
8	NCCI Retro Rating	8, 9, 10, 22, 23		9, 33
9	Skurnick	25, 26	45	34
10	Mahler, W. C. Excess Ratios			
11	Mahler, ELFs			
12	Teng, Large Deductibles	17, 42	38	12
13	Fisher, Aggregates on Deductibles			
14	Walters and Morin			

¹ I have also included a few relevant questions from older exams.

² Some of the readings were added to the syllabus after then.

		2002	2003	2004	2005
1	Gillam & Snader	2, 14, 15, 16, 36	7, 10, 28, 32, 33	19, 43, 47	30, 32, 35
2	NCCI Experience Rating	33	27		24, 27
3	Gillam	10, 31, 32	26	6, 15, 16, 42	26
4	Venter			39, 40	25, 29
5	ISO Experience Rating	12, 34	3, 4, 5	14, 41	28
6	Mahler, Shifting Risk Parameters		21	3	2
7	Lee Diagrams	17, 43	8, 9, 23	4	33
8	NCCI Retro Rating	35, 40	31	18, 20, 45	31
9	Skurnick	38, 39	30	44	
10	Mahler, W. C. Excess Ratios				
11	Mahler, ELFs				
12	Teng, Large Deductibles	1, 44	34	48	34
13	Fisher, Aggregates on Deductibles		12, 35	46	36
14	Walters and Morin			7, 29	11

		2006	2007	2008	2009
1	Gillam & Snader	32, 35	30, 32, 35		26, 28, 31
2	NCCI Experience Rating	24	25, 28	21, 25	21
3	Gillam	23, 25, 26	26, 29	22, 23	25
4	Venter	27			20, 23
5	ISO Experience Rating	28	27	24	22
6	Mahler, Shifting Risk Parameters		6		
7	Lee Diagrams	29	31	29	24
8	NCCI Retro Rating	30		36	30
9	Skurnick	7, 34		32, 33, 35	32
10	Mahler, W. C. Excess Ratios			34	33
11	Mahler, ELFs			20	19
12	Teng, Large Deductibles	31, 33	36	31	29
13	Fisher, Aggregates on Deductibles	36	33	30	27
14	Walters and Morin	10, 11	12	7	6

My solutions to questions are intended to be model solutions.³ Often they are more detailed and contain more explanation than would be needed in order to get full credit. This was done in order to give you a clearer and better understanding of the subject material.

For examples of actual candidate responses that got full credit (or in a few cases close to full credit), see the solutions to past exam questions posted by the CAS. Also see the examples of graded papers posted by the CAS.⁴

Make sure you write legibly; the more organized your work the better.

On numerical essay questions clearly label your final answer and show enough intermediate steps so someone can follow what you did. If there are a series of parallel calculations you can show just one of them. Of course, if writing down more helps you to do the problem, do so.

In the case of verbal essay questions, do not concentrate on grammar or complete sentences. Feel free to list or outline your ideas. The selected use of abbreviations can save some time.

In any case, remember that spending considerable additional time to increase 80% credit to 100% credit on a single question is usually not a good use of your limited exam time. You can come back later to a question, if you have the time.

As stated in the CAS Syllabus: "The model response to the typical essay question is brief, less than one-half of a written page. Be concise—candidates do not need to answer in complete sentences when a well-composed outline format is more appropriate. Candidates should not waste time on obscure details. They should show that they have learned the relevant material and that they understand it. They should state the obvious, if it is part of the answer."

My study aids include questions written by me, and some by Sholom Feldblum.⁵ In addition, the former exam questions are arranged in chronological order. The more recent exam questions are on average more similar to what you will be asked on your exam, than are less recent questions. It is important that you **do problems when learning a subject and then some more problems a few weeks later.**

There are two manners in which you should be doing problems. First you can do problems in order to learn the material. Take as long on each problem as you need to fully understand the concepts and the solution. Reread the relevant syllabus material. Carefully go over the solution to see if you really know what to do. Think about what would happen if one or more aspects of the question were revised. This manner of doing problems should be gradually replaced by the following manner as you get closer to the exam.

³ In some cases, I even quote a reading word for word. This does not mean you need to be able to do so!

⁴ <http://www.casact.org/admissions/index.cfm?fa=exampapers>

⁵ I thank Sholom Feldblum, who used to teach most of what I am teaching, for the kind permission to use his material. Any mistakes are my responsibility.

The second manner is to do a series of problems under exam conditions, with the items you will have when you take the exam. Take in advance a number of points to try based on the time available. For example, if you have an uninterrupted hour, then one might try $60 / 3 = 20$ points of problems. Do problems as you would on an exam in any order, skipping some and coming back to some, until you run out of time. Leave time to double check your work.

As you get closer to the exam, the portion of time spent doing problems should increase.

It is important that you develop the skill of quickly and clearly writing down what you know. Many of you will benefit by giving some of your solutions to essay questions to someone else to "grade".⁶ They should give you feedback on whether they were able to follow what you did. They should point out where you wrote more than was necessary or not enough.

Read the "Hints on Study and Exam Techniques" in the CAS Syllabus.⁷

Please do not copy the Study Aids, except for your own personal use. Giving them to others is unfair to yourself, your fellow students who have paid for them, New England Actuarial Seminars, and myself.

Please send me any suspected errors by Email prior to the exam.
(Please specify as carefully as possible the page, Study Guide, and Exam number.)
I will post a list of errata on the NEAS webpage: www.neas-seminars.com

Preparing for a CAS Exam--what to do with hard material

by Dr. J. Eric Brosius, FCAS

The syllabus for a typical CAS exam includes both easy and hard material. Many students learn the easy material well, but adopt less-than-optimal strategies for learning the hard material. Some spend a lot of time trying to understand syllabus readings that are nearly incomprehensible. Others ignore the more difficult readings altogether. Neither approach is a good idea, not if you hope to pass! I will suggest a better way to approach these readings.

Your goal in studying is not to understand the material in general but to be able to answer the questions. Do not study the syllabus readings in a vacuum; consider also what types of questions are likely to be asked. Each exam contains both easy problems and hard problems.

⁶ Someone else taking this exam or who has just passed this exam would be a good choice.

⁷ <http://www.casact.org/admissions/syllabus/2010/hints.htm>.

We can divide the problems into four categories based on the difficulty of the material and the difficulty of the problem, as follows:

Hard Material	4	3
Easy Material	1	2
	Easy Problems	Hard Problems

Box 1 contains easy problems on easy material. These are easy to answer; unfortunately, there are not enough of them!

Box 2 contains hard problems on easy material. You can prepare for these by practicing problems from old tests and other sources of sample problems.

Box 3 contains hard problems on hard material. Few students can afford to spend the time required to answer all of these. Fortunately, the Examination Committee does not ask many of these questions: even if they understand the reading well enough to do so, there isn't much point in a question that no one can answer. Be prepared to skip Box 3 problems if necessary.

Box 4 contains easy problems on hard material. These problems can supply the extra points you need to change a "5" into a "6". They appear often, because the Examination Committee tends to ask easy questions about hard readings. When a reading is technically difficult, and especially if it was recently added to the syllabus, even the simplest question poses a challenge. Study these readings with an eye to answering the obvious questions. It is a shame not to get points for a question that could have been answered if only you had read the first paragraph of the reading.

Plan for your exam in such a way that you **focus on Box 2 and Box 4**. Prepare for Box 2 questions by studying the easy material in detail, and by doing many sample problems. Prepare for Box 4 questions by outlining the high points of the material, and by trying to guess, alone or with other students, what questions on this material might appear on the exam.

Reading Period:

“A 15-minute reading period will be given immediately prior to the start of the exam. The reading period will begin at the published start time of the exam. After candidates have read the instructions, the proctor will give candidates 15 minutes to silently read the questions. Candidates may wish to use this time to ensure that they do not have a defective exam and to develop a strategy for which questions they will attempt first. Writing will NOT be permitted during this time and candidates will not be permitted to hold pens or pencils or use calculators. At the end of 15 minutes, the proctor will give the instruction for candidates to begin the exam. This will mark the beginning of the timed section of the exam.”

Your exam will be 4 hours in addition to the 15 minute reading period.

Planned Schedule for CAS Exam 9 Seminar (Total of 16 hours)⁸

I will teach four 4 hour sessions over 2 days.⁹

Sessions will be 4 hours each, going from 8 A.M. to 12 noon or 1 P.M. to 5 P.M.:

Session IX, 8-12:

Gillam and Snader on Experience Rating

NCCI Experience Rating Plan & NCCI "The 1998 Adjustment to the Experience Rating Plan."

Gillam "Worker's Compensation Experience Rating: What Every Actuary Should Know."

Venter "Experience Rating and Predictive Accuracy."

Session X, 1-5:

ISO Experience and Schedule Rating Plan

Mahler "An Example of Credibility and Shifting Risk Parameters."

Lee "The Mathematics of Excess of Loss Coverages and Retrospective Rating."

Gillam and Snader on Retrospective Rating

Session XI, 8-12:

NCCI Retrospective Rating Plan

Skurnick "The California Table L"

Mahler "Workers Compensation Excess Ratios."

Mahler "Discussion of Retrospective Rating: 1997 Excess Loss Factors."

Session XII, 1-5:

Gillam and Snader on Related Topics

Teng "Pricing Workers' Compensation Large Deductible and Excess Insurance."

Fisher "Pricing Aggregates On Deductible Policies."

Walters and Morin "Homeowners Ratemaking Revisited."

⁸ For the portion of the Seminar to be taught by me.

⁹ Sholom Feldblum will teach the other four days.