

# EDUCATION COMMITTEE OF THE SOCIETY OF ACTUARIES (SOA)

## INTRODUCTORY STUDY NOTE

**EXAM SESSION:** SPRING 2023

**EXAM:** ENTERPRISE RISK MANAGEMENT

**DATE:** Thursday, May 4; Time scheduled with Prometric Test Center

1. The examination will consist of three hours of written-answer questions worth 60 points.
2. The SOA has established a [recommended order for each fellowship track](#)

This order is NOT mandated. Each candidate will determine the appropriate sequence based on factors including readiness to sit for an exam, exam administration schedules, or study time available. However, the Education committees believe that these recommendations provide the most effective guide for candidate success. An examination/module may assume familiarity with material that is covered in any requirement that is recommended to come before that examination or module.

3. The Syllabus material includes textbooks, online readings, and the study notes listed in the Appendix. Study notes listed with an asterisk (\*) will also be included in the Revision set of study notes. The Appendix also may contain additional important information regarding this exam. A complete listing of the Syllabus and Learning Objectives is located in this exam's home page on the SOA Web site.
4. Several [book distributors](#) carry some or all of the textbooks for the Society of Actuaries exams.
5. Any changes in the Syllabus for this exam will be published under "[Updates](#)" in this exam's home page on the SOA Web site.
6. [Past exams, solutions and case studies](#) are available on the SOA Web site.
7. A case study will be used as a basis for some questions on the examination. Be sure to answer the questions asked by referring to the case study. For example, if asked for advantages of a particular plan design to a company referenced in the case study, limit your response to the specifics for that company. Other advantages should not be listed as they are extraneous to the question and will result in no additional credit. Further, if they conflict with the applicable advantages, no credit will be given. Candidates are advised to familiarize themselves with the case study. An electronic copy will be included with the exam. Candidates will not be allowed to bring their study note copy of the case study into the examination room.
8. The candidate should be very familiar with the Learning Objectives. These Learning Objectives are the first ingredient in developing the syllabus and also guide the examination committee when writing questions. The Learning Objectives set out the cognitive level needed to pass this exam. You will notice that the candidates are expected to "analyze," "explain," "calculate," "describe," "apply," etc. While studying the syllabus material, candidates may want to refer back to the Learning Objectives to remain focused on the goals of the exam.

9. The examination questions for this exam will be based on the required readings for this exam. If a conflict exists (in definitions, terminology, etc.) between the readings for this exam and the readings for other exams, the questions should be answered on the basis of the readings for this exam.
10. Candidates may ONLY use these battery or solar-powered Texas Instruments models: BA-35, BA II Plus\*, BAII Plus Professional\*, TI-30Xa, TI-30X II\* (IIS solar or IIB battery), and TI-30X MultiView\* (XS solar or XB battery). Candidates may use more than one of the approved calculators during the examination.

Calculator instructions may not be brought into the exam room. During the exam, the calculator must be removed from its carrying case so the supervisor can confirm that it is an approved model. Candidates using a calculator other than the approved models will have their exams disqualified.

Candidates can purchase calculators directly from: [Texas Instruments](#), Attn: Order Entry, PO Box 650311, Mail Station 3962, Dallas, TX 75265, phone 800/842-2737.

*\*The memory of the **BA II Plus, BA II Plus Professional, TI-30X II and TI-30X MultiView** calculators will need to be cleared by the examination supervisor upon the candidate's entrance to the examination room.*

11. A list of various [seminars/workshops](#) and [study manuals](#) appears on the SOA Web site. These seminars/workshops and study manuals do not reflect any official interpretation, opinion, or endorsement of the Society of Actuaries or its Education Committee.

Please note that the Education Committee expects candidates to read the material cited in the *Syllabus* and to use other material as a complement to the primary sources rather than a substitution for them.

12. The Society of Actuaries provides study notes to persons preparing for this examination. They are intended to acquaint candidates with some of the theoretical and practical considerations involved in the various subjects. While varying opinions are presented where appropriate, limits on the length of the material and other considerations sometimes prevent the inclusion of all possible opinions. These study notes do not, however, represent any official opinion, interpretation or endorsement of the Society of Actuaries. The Society is grateful to the authors for their contributions in preparing study notes.

The American Academy of Actuaries, the Canadian Institute of Actuaries, the Conference of Consulting Actuaries, and the Society of Actuaries jointly sponsor various examinations administered by the Society of Actuaries.

## APPENDIX

Study notes for this exam

| Code       | Title                                                                                                          |
|------------|----------------------------------------------------------------------------------------------------------------|
|            | Case Study <b>(Available on syllabus page of Web site)</b>                                                     |
| ERM-101-12 | Measurement and Modelling of Dependencies in Economic Capital                                                  |
| ERM-104-12 | Study Note on Parameter Risk                                                                                   |
| ERM-106-12 | Economic Capital Modeling: Practical Considerations                                                            |
| ERM-107-12 | Chapter 7 of <i>Strategic Risk Management Practice: How to Deal Effectively with Major Corporate Exposures</i> |
| ERM-110-12 | Derivatives: Practices and Principles                                                                          |
| ERM-119-14 | Aggregation of Risks and Allocation of Capital                                                                 |
| ERM-120-14 | IAA Note on Stress Testing and Scenario Analysis                                                               |
| ERM-124-15 | Chapter 2 of <i>Counterparty Credit Risk: the New Challenge for Global Financial Markets</i>                   |
| ERM-128-17 | The Breadth and Scope of the Global Reinsurance Market Plays in Supporting Insurance in the United States      |
| ERM-130-18 | Model Governance Practice Note—Some Considerations for Practicing Life Actuaries                               |
| ERM-131-18 | Leveraging COSO Across the Three Lines of Defense                                                              |
| ERM-133-19 | Emerging Risks and Enterprise Risk Management                                                                  |
| ERM-134-21 | Chapter 41 of <i>Group Insurance</i> Eighth Edition                                                            |
| ERM-135-20 | Risk Management and the Rating Process for Insurance Companies                                                 |
| ERM-136-20 | Managing Liquidity Risk: Industry Practices and Recommendations for CROs                                       |
| ERM-137-20 | ORSA and the Regulator                                                                                         |
| ERM-138-21 | Chapter 6 of <i>Quantitative Enterprise Risk Management</i>                                                    |
| ERM-139-21 | Chapter 7 of <i>Quantitative Enterprise Risk Management</i>                                                    |
| ERM-140-20 | Chapters 3 and 7 of <i>Risk Adjustments for Insurance Contracts Under IFRS 17</i>                              |
| ERM-141-20 | Chapter 9 Section 5 of <i>Managing Investment Portfolios</i> , Third Edition                                   |
| ERM-142-20 | Data Quality is the Biggest Challenge                                                                          |
| ERM-143-20 | Chapter 1, pages 11-17 and 27-35 of <i>Internal Controls Toolkit</i>                                           |
| ERM-144-20 | Chapter 13 of <i>International Actuarial Association Risk Book</i>                                             |

| Code       | Title                                                                                    |
|------------|------------------------------------------------------------------------------------------|
| ERM-145-21 | Importance of Climate-Related Risks for Actuaries                                        |
| ERM-146-21 | COVID-19: Implications for Insurer Risk Management and the Insurability of Pandemic Risk |
| ERM-147-21 | Working with Inherent and Residual Risk                                                  |
| ERM-148-22 | Agency Theory and Asymmetric Information                                                 |
| ERM-149-22 | Managing 21 <sup>st</sup> Century Political Risk                                         |
| ERM-150-22 | Exchange Rate Risk Measurement and Management                                            |
| ERM-151-22 | Developing Key Risk Indicators to Strengthen Enterprise Risk Management                  |
| ERM-702-12 | IAA Note on ERM for Capital and Solvency Purposes in the Insurance Industry, Pages 9–38  |

The following additional information applies to this exam:

## 1. EXAM OVERVIEW

The syllabus for this exam trains candidates in the financial and risk management aspects of operating and evaluating a financial institution or other entity, with particular emphasis on enterprise risk management (ERM) concepts. This includes gaining an understanding of several subjects, including risk identification, risk measurement and management, risk modelling and risk measures.

the candidates should be familiar with the Learning Objectives as described in the syllabus. These Learning Objectives were the first ingredient in developing the syllabus and provide an indication of the level of understanding required for each major area of focus. While studying the syllabus material, candidates may want to consider both the organizational approach provided by this overview note, and to refer back to the Learning Objectives to remain focused on the goals of the Enterprise Risk Management exam.

The syllabus has been organized into six major areas of focus, which align with the Learning Objectives: Enterprise Risk Management Framework and Process, Risk Categories and Identification, Risk Modelling and Aggregation of Risks, Risk Measures, Risk Management Tools and Techniques and Economic Capital. Note that many syllabus sources relate to more than one topic. In the exam, candidates will be expected to integrate material across the various topics.

The candidate should focus on both the concepts and principles addressed in the exam syllabus. Candidates may be asked to apply concepts and principles in a particular context in an examination question. For example, although the candidate is not expected to remember detailed economic capital requirements the candidate is expected to understand how the concept of economic capital may apply to different business entities as specified in the examination.

The exam comprises three types of questions: Focus (covers single Learning Objective), Integrated (synthesizes multiple Learning Objectives) and Case Study.