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SYLLABUS OF BASIC EDUCATION
Fall 2021
Regulation and Financial Reporting
Exam 6-International

The syllabus for this four-hour exam is defined in the form of learning objectives, knowledge statements, and readings.

LEARNING OBJECTIVES set forth, usually in broad terms, what the candidate should be able to do in actual practice. Included in these learning objectives are certain methodologies that may not be possible to perform on an examination, such as complex simulations, but that the candidate would still be expected to explain conceptually in the context of an examination.

KNOWLEDGE STATEMENTS identify some of the key terms, concepts, and methods that are associated with each learning objective. These knowledge statements are not intended to represent an exhaustive list of topics that may be tested, but they are illustrative of the scope of each learning objective.

READINGS support the learning objectives. It is intended that the readings, in conjunction with the material on earlier examinations, provide sufficient resources to allow the candidate to perform the learning objectives. Some readings are cited for more than one learning objective. The CAS Syllabus & Examination Committee emphasizes that candidates are expected to use the readings cited in this *Syllabus* as their primary study materials.

Thus, the learning objectives, knowledge statements, and readings complement each other. The learning objectives define the behaviors, the knowledge statements illustrate more fully the intended scope of the learning objectives, and the readings provide the source material to achieve the learning objectives. Learning objectives should not be seen as independent units, but as building blocks for the understanding and integration of important competencies that the candidate will be able to demonstrate.

Note that the range of weights shown should be viewed as a guideline only. There is no intent that they be strictly adhered to on any given examination—the actual weight may fall outside the published range on any particular examination.

The overall section weights should be viewed as having more significance than the weights for the individual learning objectives. Over a number of years of examinations, absent changes, it is likely that the average of the weights for each individual overall section will be in the vicinity of the guideline weight. For the weights of individual learning objectives, such convergence is less likely. On a given examination, in which it is very possible that not every individual learning objective will be tested, there will be more divergence of guideline weights and actual weights. Questions on a given learning objective may be drawn from any of the listed readings, or a combination of the readings. There may be no questions from one or more readings on a particular exam.

After each set of learning objectives, the readings are listed in abbreviated form. Complete text references are provided at the end of this exam syllabus. Candidates may be interested in further exploration of these topics on their own. A list of readings that provide broader perspective on topics covered by this examination is provided following the required text references. Note that these materials will **not** be tested on the exam.

Items marked with a bold **SK** constitute the Fall 2021 Exam 6-International Study Kit that may be purchased from the CAS Online Store. Items marked with a bold **OP** (Online Publication) are available at no charge and may be downloaded from the CAS website.

Please check the “*Syllabus Updates*” section of the CAS website for any changes to the *Syllabus*.

Section A of this examination covers insurance regulation with regards to property-casualty coverages in the international arena. Section B covers solvency and solvency assessment in general. Section C covers International Financial Reporting



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Standards (IFRS) insurance accounting and taxation as well as risk adjustments. Section D covers the professional responsibilities of the actuary in financial reporting. Section E presents the general concepts of reinsurance to the candidate.

The inherent nature of the material addressed in this multi-nation exam makes it subject to continual development and change. It is expected that the candidates will respond to exam questions based on the current syllabus presented below. Recognizing the changing nature of law, regulation, and financial reporting requirements, however, the CAS Syllabus & Examination Committee will strive to acknowledge candidates who also respond with the current state in their solutions to examination questions.

In addition, this exam assumes that the candidate has completed Online Course 2. Online Course 2 contains fundamental background material for Section A (Regulation of Insurance), Section C (Financial Reporting), and Section E (Reinsurance Accounting Principles).



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A. Regulation of Insurance

Range of weight for Section A: XX-XX percent

Candidates should understand that insurers are regulated by various governmental agencies because insurance is a valuable public service. Various approaches to regulation are presented along with understanding the role of the marketplace in regulating the insurance market.

Assumed Prior Knowledge

- CAS Online Course 2 and in particular, Assignment 16: Insurance Regulation
- International Association of Insurance Supervisors (IAIS), Core Curriculum for Insurance Supervisors, Module 1.1.1, [Conditions for effective insurance supervision](#)

LEARNING OBJECTIVES	KNOWLEDGE STATEMENTS
1. Understand marketplace regulation.	<ul style="list-style-type: none"> a. The role of the Insurance Core Principles (Principles for insurance regulation) b. The IAIS regulatory framework c. The economic and legal considerations of regulation d. The regulation in micro-insurance markets e. Insurance regulation in major markets (such as EU, United States, Asia)
2. Understand marketplace function.	<ul style="list-style-type: none"> a. Rating agencies b. Market discipline in insurance c. Discrimination in insurance d. Conditions of effective insurance supervision e. Partnership between private and government in disaster, catastrophe and health insurance
3. Understand marketplace conduct and issues.	<ul style="list-style-type: none"> a. Consumer protection b. Intermediaries c. Business conduct d. Information transparency and disclosure e. Distribution risk
4. Mainstream government and industry programs	<ul style="list-style-type: none"> a. Islamic insurance instrument (Takaful operation) b. China's insurance regulatory system c. North American government / private insurance programs
Range of weight for Learning Objectives A.1 through A.4 collectively: XX-XX percent	



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READINGS

- Avraham
- Biener
- Brown & Klein
- Chen
- Eling 1
- Eling 2
- Feldblum
- Frees
- Government Insurers Study Note
- IAA Risk Book, Chapter 9
- IAIS CC: Modules 6.1.1 and 7.1.1
- Klein
- Kousky
- McAneney
- OCED
- Swartz
- Thanasegaran



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B. Solvency

Range of weight for Section B: XX-XX percent

This section focuses on concept of solvency and solvency assessment in general.

LEARNING OBJECTIVES	KNOWLEDGE STATEMENTS
1. Understand the concept of solvency.	a. What is solvency b. Why is solvency needed c. What are the main features and concerns regarding the solvency
2. Understand solvency and solvency assessment in general	a. Main steps and basic elements for the solvency assessment b. Solvency calculation with given case / scenarios
3. Understand ORSA in general	a. What is ORSA b. Value of ORSA for solvency assessment c. Main elements addressed in the ORSA system
4. Understand mainstream global solvency assessment	a. Solvency II framework b. Risk-based capital (RBC) approach c. High level country specific knowledge
Range of weight for Learning Objectives B.1 through B.4 collectively: XX-XX percent	
READINGS	
<ul style="list-style-type: none">• Geneva• IAA ORSA• IAA Risk Book, Chapter 10• IAA Solvency• IAIS CC: Modules 5.6.1 and 5.6.2	



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C. Financial Reporting

Range of weight for Section C: XX-XX percent

This section addresses financial reporting under International Financial Reporting Standards (IFRS).

Assumed Prior Knowledge

- CAS Online Course 2 and in particular, Assignment 1: Introductory Insurance Accounting
- International Association of Insurance Supervisors (IAIS), Core Curriculum for Insurance Supervisors, Module 1.6.1, [Introduction to insurance accounting](#)

LEARNING OBJECTIVES	KNOWLEDGE STATEMENTS
1. Understand Key Principles, Concepts and Techniques under IFRS 17.	<ul style="list-style-type: none"> a. Difference between IFRS 4 and IFRS 17 b. Key IFRS 17 definitions c. GMM (or BBA) vs PAA d. Different Risk Adjustments Techniques
2. IFRS 17 related calculations.	<ul style="list-style-type: none"> a. Estimates of Future Cash Flows b. Discount Rate c. Risk Adjustment d. Liability for Remaining Coverage and Incurred Claims e. Determine Amounts on Transition to IFRS 17 f. Contractual Services Margin and Ceded Reinsurance
3. Financial Statement Presentation under IFRS 17.	<ul style="list-style-type: none"> a. Financial Liabilities b. Financial Assets c. Principles of Materiality under IFRS 17 d. Disclosure under IFRS 17
Range of weight for Learning Objectives C.1 through C.3 collectively: XX-XX percent	
READINGS	
<ul style="list-style-type: none"> • IAA ISAP 4 • IAA Note 100 • IAA Risk Book, Chapter 14 • IBC 	



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D. Professional Responsibilities of the Actuary in Financial Reporting

Range of weight for Section D: XX-XX percent

This section focuses on the professional responsibilities of an actuary as defined by standards of practice, regulators, and insurance laws for financial reporting.

LEARNING OBJECTIVES	KNOWLEDGE STATEMENTS
<p>1. Explain the responsibilities of an actuary as defined by standards of practice, regulators, and insurance laws for financial reporting.</p> <p>Range of weight: XX-XX percent</p>	<p>a. Describe the oversight role of the actuarial function as part of the lines of defense of effective risk management of an insurance company.</p> <p>b. Describe the role of actuarial professional standards and their relationships with regulations.</p> <p>c. Describe the principles upon which a profession is founded and how these principles influence an actuary's behavior.</p> <p>d. Describe common standards of practice applicable to general actuarial work and to financial reporting.</p>
READINGS	
<ul style="list-style-type: none">• IAA ISAP 1, 4, 5, and 6• IAA Professionalism• IAA Risk Book, Chapters 2 and 3	



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E. Reinsurance Accounting Principles

Range of weight for Section E: XX-XX percent

This section presents the general concepts of reinsurance to the candidate. The candidate should become familiar with reinsurance accounting terminology and practice.

Assumed Prior Knowledge

- CAS Online Course 2 and in particular, Assignment 1, Module on Reinsurance Accounting Basics

LEARNING OBJECTIVES	KNOWLEDGE STATEMENTS
1. Reinsurance and Risk Transfer	<ul style="list-style-type: none"> a. Understand the impact of reinsurance and risk transfer b. Understand the main cause of reinsurance failure and associated impact
2. Basics of Reinsurance Accounting	<ul style="list-style-type: none"> a. Understand how different types of ceded reinsurance impact financial statements b. Quantify the impact of reinsurance on financial statements (surplus, loss reserves, unearned premiums, leverage ratios, income statement)
3. Reinsurance Reporting under IFRS 17	<ul style="list-style-type: none"> a. Understand the IFRS 17 requirements for recognition and measurements of reinsurance contracts held b. Illustrate/demonstrate premium allocation approach for reinsurance through simple calculation c. Illustrate/demonstrate variable fee approach for reinsurance through simple calculation
Range of weight for Learning Objectives E.1 through E.3 collectively: XX-XX percent	
READINGS	
<ul style="list-style-type: none"> • Blanchard & Klann • IAIS CC: Module 5.5.1, Chapters 5-7 • IFRS Example • Pocket Guide 	



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Complete Text References for Exam 6-International

Text references are alphabetized by the citation column.

Citation	Abbreviation	Learning Objective	Source
Avraham, R., " Discrimination and Insurance ," The Routledge Handbook To Discrimination Lippert-Rasmussen Ed, University of Texas Law, Law and Econ Research Paper No. E574, 2017.	Avraham	A	OP
Biener, C.; Eling, M.; and Schmit, J. T., " Regulation in Microinsurance Markets: Principles, Practice, and Directions for Future Development ," School of Finance, University of St. Gallen, 2013.	Biener	A	OP
Blanchard, R.S.; and Klann, J., "Basic Reinsurance Accounting – Selected Topics," CAS Study Note, October 2012.	Blanchard & Klann	E	OP
Brown, E. F. and Klein, R. W., " Insurance solvency regulation: A new world order? ," Research Handbook on the Law and Economics of Insurance, Edward Elgar Publishing, 2015.	Brown & Klein	A	OP
Chen, B., et al., " The Development and Regulation of China's Insurance Market: History and Perspectives ," Risk Management and Insurance Review, 2013.	Chen	A	OP
Eling, M., " What Do We Know About Market Discipline in Insurance? ," Institute of Insurance Economics, University of St. Gallen, 2011.	Eling 1	A	OP
Eling, M.; Klein, R. W.; and Schmit, J.T., " Insurance Regulation in the United States and the European Union: A Comparison ," The Independent Institute, 2009.	Eling 2	A	OP
Feldblum, S., "Rating Agencies," CAS Study Note, October 3, 2011, pp. 1-7 and 14-15 (stop at Best's Capital Adequacy Ratio) and Appendix A.	Feldblum	A	OP
Frees, E. W. and Huang, F., " The Discriminating (Pricing) Actuary ," SSRN, 2020.	Frees	A	OP
Germani, W., et al., "Government Insurers Study Note," CAS Study Note, April 2017, pp. 1-5 excluding Crop Insurance.	Government Insurers Study Note	A	OP
IFRS Foundation, " Reinsurance contracts held: an example of proportional coverage ," pp. 1-xx	IFRS Example	E	OP



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Citation	Abbreviation	Learning Objective	Source
Insurance Bureau of Canada, Position Papers: <ul style="list-style-type: none"> Premium Allocation Approach Eligibility for Risk-Attaching Reinsurance Contracts, Issued September 2018 Calculation of Discount Rates under IFRS 17 for P&C Insurance Contract Liabilities, December 2018 Aggregation – Portfolio Definition and Grouping for Reinsurance Contracts, Issued November 2018 IFRS 17 Implications on P&C Actuarial Analysis by Segment and Accident Period for Liability for Incurred Claims, November 2018 IFRS-17-Assessing Premium Allocation Approach Eligibility. Nov 2018 Aggregation of Insurance Contracts, October 2017 PAA Eligibility for Risk-Attaching Contracts and Aggregation – Reinsurance Contracts Held, March 2019 	IBC	C	OP
International Actuarial Association, IAA Professionalism Committee: <ul style="list-style-type: none"> PG 1 - Principles of Professionalism PG 2 - Principles in relation to the Governance of International Actuarial Work 	IAA Professionalism	D	OP
International Actuarial Association, Insurer Solvency Assessment Working Party, " A Global Framework for Insurer Solvency Assessment ," 2004, Chapter 3-5: pp. 9-38; Chapter 6 (excluding Section 6.3 regarding life insurance): pp. 39-41, 50-59; and Chapter 7: pp. 60-66.	IAA Solvency	B	OP
International Actuarial Association, " International Actuarial Note 100: Application of IFRS 17 Insurance Contracts ," exposure draft dated: 17 January 2019.	IAA Note 100	C	OP
International Actuarial Association, International Standard of Actuarial Practice: <ul style="list-style-type: none"> ISAP 1 - General Actuarial Practice, 2017 ISAP 4 - IFRS 17 Insurance Contracts, 2019 ISAP 5 - Insurer Enterprise Risk Models, 2018 ISAP 6 – Enterprise Risk Management Programs and IAIS Insurance Core Principles, 2018 	IAA ISAP	C & D	OP
International Actuarial Association, Joint Own Risk Solvency Assessment (ORSA) Subcommittee of the Insurance Regulation Committee and the Enterprise and Financial Risk Committee, " Deriving Value from ORSA – Board Perspective ," 2015.	IAA ORSA	B	OP



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Citation	Abbreviation	Learning Objective	Source
International Actuarial Association, <i>IAA Risk Book</i> , 2016: <ul style="list-style-type: none"> • Chapter 2 - Actuarial Function • Chapter 3 - Professional Standards • Chapter 9 - Distribution Risks • Chapter 10 - Own Risk and Solvency Assessment (ORSA) • Chapter 14 – Financial Statements. Candidates will not be tested on items referring to IFRS 4. 	IAA Risk Book	A, B, C, & D	OP
International Association of Insurance Supervisors, Core Curriculum (CC) for Insurance Supervisors: <ul style="list-style-type: none"> • Module 5.5.1: Reinsurance, Chapters 5-7. • Module 5.6.1: Solvency - Principles and structures • Module 5.6.2: Solvency - Assessment • Module 6.1.1: Consumer protection • Module 7.1.1: Market analysis 	IAIS CC	A, B, & E	OP
Klein, R. W., "Principles for Insurance Regulation: An Evaluation of Current Practices and Potential Reforms," <i>The Geneva Papers</i> , 2012, 37, pp. 175–199.	Klein	A	OP
Kousky, C. and Kunreuther, H., "Risk Management Roles of the Public and Private Sector," <i>Risk Management and Insurance Review</i> , Vol. 21, Issue 1, pp. 181-204, 2018.	Kousky	A	OP
McAneney, J., et al., "Government-sponsored Natural Disaster Insurance Pools: A view from down-under," <i>International Journal of Disaster Risk Reduction</i> , 2015.	McAneney	A	OP
Organisation for Economic Co-operation and Development (OECD), <i>Private Health Insurance in OECD Countries</i> , The OECD Health Project, OECD Publishing, Paris, 2004. https://doi.org/10.1787/9789264007451-en .	OCED	A	B
Scott, D., "IFRS17 Pocket Guide on reinsurance contracts held," IFRS Foundation, 2018.	Pocket Guide	E	OP
Swartz, N. P. and Coetzer, P., "Takaful: An Islamic insurance instrument," <i>Journal of Development and Agricultural Economics</i> , Vol. 2(10), 2010, pp. 333-339.	Swartz	A	OP
Thanasegaran, H. and Shaiban, M., "Harmonisation of Takaful (Islamic Insurance) Regulation - A realistic goal or improbable ideal?," <i>Singapore Journal of Legal Studies</i> , 2014, pp. 328-354.	Thanasegaran	A	OP
The Geneva Association, " Modernising Insurance Solvency Regimes— Key Features of Selected Markets ," 2016. Candidates are not responsible for knowledge of country-specific regimes.	Geneva	B	OP



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Supplemental Readings

Candidates may be interested in further exploration of these topics on their own. The following provides a list of readings that provide broader perspective. Text references are organized by topic and then alphabetized by the citation.

Note that these materials will **not** be tested on the exam. This material is not archived on the CAS website.

Regulation Issues
Eling, M. and Pankoke, D., "Systemic Risk in the Insurance Sector: A Review and Directions for Future Research," Risk Management and Insurance Review, 2016, Volume 19, Issue 2, pp. 249-284.
International Actuarial Association, Resource and Environment Working Group, <i>Flood Risk Discussion Paper</i> , June 2019.
International Association of Insurance Supervisors <u>Insurance Core Principles (ICPs):</u> <ul style="list-style-type: none"> • ICP 18: Intermediaries (such as agents and brokers) • ICP 19: Conduct of Business (fair treatment of customers) • ICP 20: Public Disclosure (to give policyholders and market participants a clear view of their business activities, performance and financial position) • ICP 24: Macroprudential Surveillance and Insurance Supervision Core Curriculum (CCs) for Insurance Supervisors: <ul style="list-style-type: none"> • Module 6.2.1: Intermediaries • Module 6.4.1: Information, disclosure and transparency toward the market
Klein, R., "Insurance Markets Regulation: Catastrophe Risk, Competition, and Systemic Risk," Springer, 2013.
Maysami, R. C. and Kwon, W. J., "An Analysis of Islamic Takaful Insurance," Journal of Insurance Regulation, 1999, Volume 18, Issue 1.
McCullough, K. and Sirmans, E.T., "A Comparison of the <i>Risk Management and Own Risk and Solvency Assessment Model Act</i> and Insurer Ratings," Journal of Insurance Regulation, 2017, Volume 36, No. 3.
National Association of Insurance Commissioners, Casualty Actuarial and Statistical Task Force, <i>Price Optimization White Paper</i> , November 2015, pp. 1-16.
National Association of Insurance Commissioners, Solvency Modernization Initiative (E) Task Force, <i>The U.S. National State-Based System of Insurance Financial Regulation and the Solvency Modernization Initiative</i> , August 2013. Chapter 4 is on Market Regulation.



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Solvency

International Association of Insurance Supervisors

Insurance Core Principles (ICPs):

- ICP 16: Enterprise Risk Management for Solvency Purposes
- ICP 17: Capital Adequacy

General Comparisons

- [Summary of Asia Pacific Solvency Regulation](#)
- [International ORSA Regulatory Requirements Chart - July 2018](#)

Canada

- [Dynamic Capital Adequacy Testing \(Canadian Capital Adequacy Testing\)](#)
- [MCT Guideline – 2019 version \(Canadian Capital Adequacy/Solvency Standards\)](#)

China C-ROSS

- [C-ROSS China Risk Oriented Solvency System](#)
- [Analysis of China's new C-ROSS Solvency Capital Regime](#)

Singapore

- [New Risk Based Capital Framework for Insurers in Singapore](#)

Solvency II

- [The prudential regulation of insurers under Solvency II](#)
- [Solvency II – Technical Provisions for General Insurers \(2013 Working Party Report\)](#)
- [Solvency II – General insurance](#)

United States Risk-based Capital System

- [2013 NAIC White Paper entitled The U.S. national state-based system of insurance financial regulation and the solvency modernization initiative](#)
- [NAIC Insurance Regulatory Information System Ratios Manual](#)

Financial Reporting

IFRS Foundation, educational pieces available at <https://www.ifrs.org/supporting-implementation/supporting-materials-by-ifrs-standard/ifrs-17/#education>.

IFRS Foundation, [International Financial Reporting Standard \(IFRS\) 17 – Insurance Contracts](#). Free login required, first 37 pages including Appendix A on Defined Terms.

IFRS Foundation, Transition Resource Group (TRG) discussions on IFRS 17 interpretation available at <https://www.ifrs.org/-/media/feature/groups/trg-insurance-contracts/trg-agenda-paper-tracker.pdf>.

International Actuarial Association, [Risk Adjustments for Insurance Contracts under IFRS 17](#), Chapters 3 and 4; potentially include Chapters 7 and 8, as well.



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Source Key

B	Book—may be purchased from the publisher or bookstore or borrowed from the CAS Library.
NEW	Indicates new or updated material.
OP	All text references marked as Online Publications will be available on a web page titled Complete Online Text References.
SK	Material included in the Fall 2020-Spring 2021 Study Kit.
SKU	Material included in both the Fall 2020-Spring 2021 CAS Study Kit and the 2020 Update to the Fall 2019-Spring 2020 Study Kit.

Items printed in **red** indicate an update, clarification, or change.

Publishers and Distributors

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Insurance Bureau of Canada, 240 Duncan Mill Road, Suite 700, Toronto, Ontario M3B 1Z4, Canada; telephone: (416) 445-5912; fax: (416) 445-2183.
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