Bachelor of Arts (VS)- Insurance Management

Semester VIII

Discipline Specific Elective Course -8.1 (Dse-8.1)- Fundamentals of Insurance-Linked Securities

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
FUNDAMENTALS OF INSURANCE-LINKED SECURITIES (DSE- 8.1)	4	3	-	1	12th	-

Learning Objectives:

- To provide students with knowledge of securitization and insurance-linked securities (ILS).
- To explain the benefits, costs, and issuing structures of ILS.
- To understand the role of capital markets in supporting the insurance sector through securitization.
- To introduce key aspects of capital market instruments relevant to insurers.
- To acquaint students with the range of capital market instruments available to insurers.
- To explore Alternative Risk Transfer (ART) mechanisms.
- To provide insights into Non-Life Securitization and Life Securitization.

Learning Outcomes: **After completing this course, the learners would be able to:**

- Describe the concept and application of securitization and ILS in insurance.
- Identify the sources of basis risk and strategies to minimize it.
- Recognize capital market instruments relevant to insurance investment and risk transfer.
- Explain the role and benefits of ART and insurance derivatives.
- Demonstrate understanding of catastrophe risk modelling, especially in the Indian context.
- Compare and contrast reinsurance with securitisation strategies for non-life risks.
- Assess investor motivations and the modelling frameworks used in non-life ILS.
- Describe life insurer structures and risks relevant to securitisation.
- Identify the roles of key stakeholders in life ILS transactions.

Course Content **(Theory 45 Hours + 30 hours Practical)**

Unit 1: Overview of securitization **10 Hours**

An overview of securitization. Insurance-linked securities: overview, costs and benefits, structural features, issuing vehicles. Structure and functions of capital markets insurance sector as a participant and beneficiary of capital markets. Basis risk: definition of basis risk. Quantifying basis risk. Measures for pro rata hedges. Measures for digital hedges. Measuring positive basis risk. Minimising basis risk. Over-hedging. Sources of basis risk. ILS portfolio monitoring systems.

Unit 2: Capital market instruments relevant to insurers 10 Hours

Capital market instruments relevant to insurers (bonds, equity, hybrid instruments), role of capital markets in insurance risk transfer. Emergence of alternative risk transfer (ART) mechanisms. Role of capital markets in ART. Insurance derivatives. Derivatives and Alternative Risk Transfer. General characteristics of derivatives. Exchange-traded insurance derivatives. Exchange-traded catastrophe derivatives. Exchange-traded temperature derivatives. Catastrophe Risk modelling: An Indian context.

Unit 3: Non-Life Securitisation 10 Hours

Market overview, background and evolution. Market dynamics. Cedants' perspectives on non-life securitization: insurance-linked securities as part of advanced risk intermediation. Objectives of insurance companies. Reinsurance vs securitisation. Keeping risk vs transferring it. Limits and success factors to securitisation. Securitisation as a diversification from traditional retrocession. Indemnity triggers. Scope of coverage. Payout timing. Loss verification. Transparency. Non-indemnity triggers. Parametric triggers (pure and index). Industry loss triggers. Modelled loss triggers. Choosing the optimal trigger. Basis risk from the cedant's perspective. Risk modelling. The investor perspective (non-life).

Unit 4: Life Securitisation 15 Hours

General features of life insurance-linked securitisation. Life insurer corporate and business structures, risks and products. Mutual life offices. Proprietary life offices. Other forms of life office. Principal risks associated with life insurance business. Principal product types and associated risks. Actors and their roles. Sponsor. Investors. Regulators. External professional advisers. Ratings agencies. Monoline insurers. Liquidity providers. Swap providers. Cedants' perspectives on life securitisation. Rating methodology. Life securitisation: risk modelling life insurance securitisation: legal issues. The investor perspective (life). Longevity securitisation: specific challenges and transactions. Longevity risk transfer: indices and capital market solutions.

Practical: The learners are required to:

- Critically assess the regulatory framework governing financial derivatives, ETF, mutual funds, non-life securitisation and life securitisation in India.
- Design a diversified portfolio encompassing mutual funds, exchange-traded funds (ETFs), Insurance-Linked Securities (life and non-life insurance) and related instruments, and conduct a comparative evaluation of their performance and characteristics.

- Evaluate the prevailing pension fund schemes in India.
- The learners are required to do practical exercise from unit 1, 2, 3 & 4.

References

- Barrieu, P., & Albertini, L. (2009). *The handbook of insurance-linked securities*. Wiley.
- Cummins, J. D., & Weiss, M. A. (2009). Convergence of insurance and financial markets: Hybrid and securitized risk-transfer solutions. *Journal of Risk and Insurance*, 76(3), 493–545. https://doi.org/10.1111/j.1539-6975.2009.01307.x
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- Cowley, A., & Cummins, J. D. (2005). Securitization of life insurance assets and liabilities. *Journal of Risk and Insurance*, 72(2), 193–226. https://doi.org/10.1111/j.1539-6975.2005.00052.x
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- IAA Risk Book. (2020). *Chapter 7: Insurance-Linked Securities*. International Actuarial Association. https://riskbook.actuaries.org/
- Bodoff, N. M. (2009). Measuring basis risk in catastrophe bonds. *Variance: Advancing the Science of Risk*, 3(1), 73–90.