

## **IC 01 - PRINCIPLES OF INSURANCE**

(Revised Edition: 2011)

### **Objectives**

This course intends to provide a basic understanding of the insurance mechanism. It explains the concept of insurance and how it is used to cover risk. How insurance is transacted as a business and how the insurance market operates is also explained. The relationship between insurers and their customers and the importance of insurance contracts are discussed. Some commonly used insurance terms are also listed out. An overview of major life insurance and general insurance products is included as well.

### **Contents**

**Chapter 1: Risk Management:** Provides an understanding of risk management – different types of risks – actual and consequential losses – management of risks – loss minimization techniques.

**Chapter 2: The Concept of Insurance and its Evolution:** The basics and nature of insurance – evolution and nature of insurance – how insurance operates today – different classes of insurance – importance of insurance – how insurance takes care of unexpected eventualities.

**Chapter 3: The Business of Insurance:** Management of risk by individuals – management of risk by insurers – fixing of premiums – reinsurance and its importance for insurers – role of insurance in economic development and social security – contribution of insurance to the society.

**Chapter 4: The Insurance Market:** The various constituents of the insurance market – operations of insurance companies – operations of intermediaries – specialist insurance companies – insurance specialists – the role of regulators – other bodies connected with insurance.

**Chapter 5: Insurance Customers:** Understanding insurance customers – different customer needs – importance of customers – customer mindsets – customer satisfaction – customer behavior at purchase point – customer behavior when claim occurs – importance of ethical behavior.

**Chapter 6: The Insurance Contract:** Terms of an insurance contract – principles which form the foundation of insurance – significance of the principle of insurable interest – the principle of indemnity – the principle of subrogation – the principle of contribution – disclosure of all relevant information – principle of utmost good faith – the relevance of proximate cause – the insurance contract.

**Chapter 7: Insurance Terminology:** Common terms used in insurance – terms common to both life and non – life insurance – terms are specific to life and non – life insurance – how insurance terms are used.

**Chapter 8: Life Insurance products:** The risk of dying early – the risk of living too long – different products offered by life insurers – term plans – pure endowment plans – combinations of plans – traditional products – linked policies – features of annuities and group policies.

**Chapter 9: General Insurance Products:** Risks faced by the owner of assets – exposure to perils – features of products covering fire and allied perils – products covering marine and transit risks – products covering financial losses due to accidents – products covering financial losses due hospitalization – products covering miscellaneous risks.

**Annexure: A write up on the history of insurance is provided.**



## IC 11 - PRACTICE OF GENERAL INSURANCE

(Revised Edition: 2011)

### Objectives:

This course primarily deals with practical aspects of General insurance within the framework of prevailing legislation and aims at familiarizing the reader with the market structure, procedures and practices, coverages under various insurance policies, underwriting practices, claims management, accounting, investments and customer service.

### Contents:

**Chapter 1: Insurance Legislation:** The Insurance Act 1938 – Insurance Regulatory & Development Authority (IRDA) Act 1999 – General Insurance Councils – Amendments to Life Insurance Corporation Act 1956 – Amendments to General Insurance Business (Nationalisation) Act regulations issued by IRDA – Motor Vehicles Act 1988 – Other Acts – Exchange Control Regulations – Consumer Protection Act 1986 – Insurance Ombudsman, Market – Statutes & Regulations that affect conduct of business in India,

**Chapter 2: Insurance Market:** Historical – Present scenario – Agents – Corporate Agents – Brokers – Third Party Administrators (TPA) – Surveyors / loss Assessors – Overseas Markets – U K – U S A,

**Chapter 3: Insurance Forms:** Proposal Forms – Cover Notes – Certificate of Insurance – Policy Forms – Endorsements – Interpretation of policies – Co-insurance – Standard policies.

**Chapter 4: Fire & Marine Insurance Coverages:** Fire insurance Coverages – Marine insurance Coverages – Types of Marine insurance policies – Duty & increased value insurance.

**Chapter 5: Miscellaneous Coverages:** Motor insurance – Liability only policy – Package policy – Personal Accident insurance – health insurance – Burglary insurance – Baggage insurance – Legal Liability insurance – Public & Product Liability insurances – Professional Indemnity insurance – Workmen's Compensation insurance – Fidelity Guarantee insurance – Banker's Indemnity insurance – Carrier's Legal Liability insurance – Jeweller's Block insurance – Composite policies – Aviation insurance – Engineering insurance – Rural insurances – Micro insurance.

**Chapter 6: Specialised Insurances:** Industrial All Risks insurance – Advance Loss of Profits insurance – Oil & Energy Risks insurance – Satellite insurance.

**Chapter 7: Underwriting:** Objectives and approach – Underwriting policy – Class Rated Products – Individually Rated Products – Filing of products – Role of Actuary – Compliance officer – Underwriting Practice in different classes of insurance – Moral hazard – Underwriting of physical hazards – Declined risks – Risk inspections –

Reinsurance – Risk Management – Insurer's role in risk management – Documentation procedure – Renewal procedure – Customer service – IRDA Regulation Protection of Policyholder's Interest.

**Chapter 8: Rating & Premium:** Classification of risks – Discrimination – Bonus/Malus – Claims cost – Acquisition cost – Management expenses – Classification of products – Premium – Short period scales – Failure of consideration – Refund / return of premium – Advance payment of premium.

**Chapter 9: Claims:** Preliminary procedure – Loss minimization – Procedure – Claims form – Investigation & assessment – Surveyors and loss assessors – Claims documents – Arbitration – Discharge vouchers – Post settlement actions – Recoveries – Salvage & loss minimization – In-house settlement – Practices in U K & USA.

**Chapter 10: Investment & Accounting:** IRDA Investment Regulations 2000 – Accounting – Reserves for outstanding claims – Unexpired risk reserves – Other reserves – Final accounts – Profit & Loss account – Balance Sheet – Returns – Returns for Management control – Claims, underwriting and general administration returns – Database on computer.

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**References & recommended reading:**

1. General Insurance, John Magee & David Bickelhaupt
  2. Operational Transformation of General Insurance Industry during the period 1950 to 1990 & Beyond, R. D.Samarth
  3. Study on Distribution Functions in General Insurance & Role of Intermediaries, Arun Agarwal / P R Rao
  4. General Insurance for Information Technology Professionals, Martin Frappoli.
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## **A-1 FOUNDATION OF CASUALTY ACTUARIAL SCIENCE (PART-II)**

**(Year of Edition 2007)**

**Chapter 1: Introduction:** The Actuarial Science – Theory And Practice – Credibility – Characteristics Of Actuarial Science – Actuarial Education – Actuarial Research – Emerging Risk – Insurance Risk – Rate Making – Pricing – Credibility – Reserving – Dynamic Financial Analysis – Scenario Testing – Stochastic Simulation.

**Chapter 2: Risk Theory:** Definition of Risk – Types of Risk – Risk Theory – Risk Management – Risk Control – Risk Financing – Risk Financing Option for An Insurer – Risk Retention – Financial – Solvency – Applications – Terminology – Loss Components – Examples.

**Chapter 3: Rate Making:** Concept of Rate Making – Basic Terminology – Rate Making Process – Trended – Projected – Ultimate Losses – Expense Provisions – Profit and Contingencies – Expense Provisions – Risk Analysis – Overall Rate Indications – Classification Rates – Summary.

**Chapter 4: Individual Risk Rating:** Introduction – Prospective Systems – Goal of Individual Risk Rating – Prospective Systems – Schedule Rating – Experience Rating – Composite Rating – Retrospective Rating – NCCI Retrospective Rating Plan – Designing an Individual Risk Rating System.

**Chapter 5: Loss Reserving:** Introduction – Accounting Concepts – Claim Department Reserving – Loss Reserve Definitions – Loss Reserving Principles – Loss Reserving Process – Explanatory Data Analysis – Loss Reserve Estimation Methods – Evaluation of Ultimate Loss Estimates – Paid Loss Development – Incurred Loss Development – Claim Count Development – Average Paid Claim Projection – Allocated Loss Adjustment Expenses – Unallocated Loss Adjustment Expenses – Evaluation Of Ultimate Loss Estimates – Monitoring Result – Reserve Discounting – Reserve Estimate Ranges – Definition of Liability – An Actuarial Model Of Loss Development.

**Chapter 6: Risk Classification:** Introduction – Relationship to Other Mechanisms – Exposure Base – Marketing and Underwriting – Criteria for Selecting Rating Variables – Operational Criteria – Ramification of Restrictions – Examples of Classification Systems – Forces Affecting Classification Systems – Relationship to Credibility – Measures of Efficiency – Estimating Class Relativities – Loss Ratio Approach – Premium Approach.

## **A-2 FOUNDATION OF CASUALTY ACTUARIAL SCIENCE (Part – II)**

(Year of edition 2007)

Reinsurance - what is reinsurance- the foundation of reinsurance – forms of reinsurance – the cost of reinsurance to the cedant – the reinsurer's margin – reinsurance pricing method – formula – thirteen step programme to reinsurance pricing – facultative certificates – property certificates – casualty certificates – the role of actuary – reinsurance treaties – monitoring and testing predictions – reinsurance loss reserving.

Credibility – classical credibility – least squares credibility – Bayesian analysis – conjugate priors – practical issues – solutions.

Investigation issues in property liability insurance – investment income – investment and tax strategies – rate return measures – impact of investment income on pricing.

Special issues – valuing an insurance company – operating an insurance company – regulating an insurance company.



## A-3 BASIC RATEMAKING

(Year of edition 2009)

**Introduction-** Rating manuals – Basic insurance terms – Fundamental insurance equation – Basic insurance ratios – Summary, **Rating manuals** – Rules – Rate Pages – Rating Algorithms – Underwriting Guidelines – Homeowners rating manual example – Homeowners rating manual example – Medical malpractices rating manual example – U.S. workers compensation rating manual example **Ratemaking Data** – Internal Data – Data Aggregation – External Data

**Exposures** – Criteria for exposure bases – Exposures for large commercial risks – Aggregation of exposures – Exposure trend, **Premium** – Premium aggregation – Adjustments to premium, **Losses and LAF** – Loss definitions – Loss data Aggregation Methods – Common Ratio involving loss statistics – Adjustments to losses – loss Adjustment Expenses, **Other expenses and Profit** – Simple example – Underwriting Expenses categories – All Variable expenses method – Premium based projection method – Exposure – Policy –Based Projection Method – Trending expenses – Reinsurance costs – Underwriting profit provision – Permissible loss ratios, **Overall Indication** – Pure Premium method – Loss ratio method – Loss ratio versus pure premium methods, **Traditional risk classification** – Importance of equitable rates – criteria for evaluating rating variables – typical rating (or underwriting)variables – determination of indicated rates differentials – worksheet example, **Multivariate classification** – Review of shortcomings of univariate methods – minimum bias procedures – the adoption of multivariate methods – The benefits of multivariate methods – GLMs – Sample GLM output – Sample of GLM diagnostics – Practical consideration – Data mining techniques – augmenting multivariate analysis with external data, **Special classification** – Territorial ratemaking – Increased limit ratemaking – Deductible pricing – size of risk for workers compensation – Insurance to value, **Credibility** – Necessary criteria for measures of credibility – methods of determining credibility of an estimate – desirable qualities of a complement of credibility – credibility using statistical methods, **Other considerations** – Regulatory constraints – operational constraints – marketing considerations.

**Implementation-Example imbalance** non-pricing solutions – pricing solutions – calculating new rates for an existing product – calculating new rate based on bureau or competitor rates –communication and monitoring

**Commercial lines rating mechanism** – manual rate modification techniques – rating mechanism for large commercial risks, **Claims made ratemaking** – Report year aggregation – Principles – Determining rates – coordination policies.

## A-4 ESTIMATING UNPAID CLAIMS USING BASIC TECHNIQUES

(Year of edition 2009)

**Part 1- Introduction:** Overview – The claims process.

**Part 2 - Information Gathering:** Understanding the types of data used in the estimation of unpaid claims – Meeting with management – Development triangle – The development triangle as a diagnostic tool.

**Part 3 - Basic Techniques for estimating unpaid claims:** Development Techniques – Expected claims Techniques – Bornhuetter Ferguson Techniques – Cape Cod Techniques – Frequency Severity Techniques – Case Outstanding Development Techniques – Berquist Sherman Techniques – Recoveries: Salvage and subrogation and Reinsurance – Evaluation of Techniques. **Part 4- Adjustment Expenses:** Estimating unpaid allocated claim adjustment expenses. **Appendices** – statement of principles and Actuarial Standards of Practice.



Updated on 26<sup>th</sup> July, 2013