Course Description

Course Title	Actuarial Practice -1
Course Code	PPSASMAJE306
Total Number of Lectures	60
Credits	4
Introduction	• The aim of the course is to give students a flavour of Actuarial control cycle. • Couse also aim to cover the basics of structuring any financial products, insurance or otherwise. • Course also covers the investment strategies for financial products and setting return expectations • Course then touch base upon the basics Actuarial modelling
Course Outcomes	• Create an Actuarial Report • Develop understanding of financial product structuring • Develop investment strategy • Understand and update Actuarial Models
Units	Given Below

UNITS

Unit Number	CONTENT	NUMBER OF LECTURES
I	**Actuarial Control Cycle** Explain the components and purpose of the actuarial control cycle and demonstrate its practical application in various commercial situations, including its utilization as a cycle for managing risks. Explain the various clients that actuaries offer advice to in both public and private sectors, and also discuss the stakeholders who may be affected by their advice. Furthermore, describe the functions of clients and the types of advice that actuaries offer. Additionally, distinguish between the responsibility of providing advice and making decisions. Lastly, discuss the professional and technical standards that apply to actuarial advice. **Regulations** Describe the implications for the main providers of benefits on contingent events like legislation – regulations, risk management requirements, capital adequacy and solvency, competitive advantage, commercial requirements, changing cultural and social trends etc. Explain the aims and principles of prudential and market conduct regulatory regimes. Furthermore, discuss how major financial institutions can support the regulatory and business	15L

	environment. Explain the concept of information asymmetry and how certain features of financial contracts may be deemed unfair. Lastly, discuss the implications of treating customers fairly as a requirement. **Structuring a product** Explain how social security benefits and financial products offer benefits on contingent events that meet the needs of clients and stakeholders. Identify the main types of social security benefits and financial products available. Furthermore, explain the key principles of insurance and pensions that impact these products and benefits. Describe the methods used to analyze the needs of clients and stakeholders to determine the appropriate benefits to be provided by financial products. Discuss the primary providers of benefits on contingent events. Lastly, gain an understanding of the principal terms used in investments, asset management, risk management, and financial services. **Insurance Products** Explain how social security benefits and financial products offer benefits on contingent events that meet the needs of clients and stakeholders in the life and general insurance sector. Additionally, gain an understanding of the primary terms used in financial services and risk management under both sectors.	
II	**Bond** Develop an understanding of the characteristics of the principal investment assets and of the markets in bond and money market. **Equity and Property** Demonstrate a knowledge and understanding of the characteristics of the principal investment assets and of the markets in equity and property. **Alternate Investment classes** Discuss: Collective Investment Schemes (CISs), which are pooled investment vehicles used as an indirect way of accessing investments. The use of derivatives to gain exposure to movements in investments, commodities, etc. The advantages and disadvantages of investing overseas,	15L

	including issues related to investing in emerging markets. **Behaviour of Investment Market** This chapter covers the following topics: A partial coverage of the characteristics of the principal investment assets and their respective markets. An explanation of how the risk profile of the principal investment assets affects the market for such assets. An explanation of the principal economic influences on investment markets. A description of other factors that affect the supply and demand in investment markets. **Portfolio Valuation** Discuss various methods used for individual investment valuation and develop an understanding of their suitability for different scenarios. Discuss various methods used for portfolio investment valuation and an understanding of their suitability for different scenarios.	
III	**Return on Asset** Discuss the theoretical relationships between the total returns and the components of total returns on equities, bonds and cash, and price and earnings inflation. **Investment Strategy** Explanation of the principles and objectives of investment management. Analysis of an investor's investment needs, taking into account factors such as liabilities, liquidity requirements, and risk appetite. **Managing an investment portfolio** Provide an overview of investment management, including its principles and objectives. Additionally, analyze an investor's investment needs, considering their risk appetite, liquidity requirements, and liabilities. Discuss methods for measuring risk in different types of investments and sub-classes, as well as the use of a risk budget for managing risks in a portfolio. Finally, describe the techniques used to construct and monitor a specific asset portfolio and the importance of monitoring investment performance and reviewing investment strategies. Lastly, explain how providers can analyze the performance of an investment portfolio against a benchmark.	15L

	ALM and Actuarial technique Explain the importance of investing appropriately to provide for financial benefits on contingent events and discuss the cash flows of simple financial arrangements. Furthermore, describe the principles of investment and the asset-liability matching requirements of providers of benefits on contingent events. Demonstrate how actuarial techniques, such as asset-liability modeling, can be utilized to create an appropriate investment strategy. **Solving Actuarial Problem** Explain the different approaches available to solve actuarial or financial problems. Understand how actuarial models are constructed to produce solutions in terms of the objectives of the model and the operational issues to be considered while designing and running them. Describe how models are used for various purposes such as pricing, risk management, assessing capital requirements, return on capital, funding levels, and provisions for existing commitments to provide benefits on contingent events, as well as pricing and valuing options and guarantees. Study how can sensitivity analysis of the results of the models be utilized to aid decision-making.	
IV	**Handling Data** Discuss the ethical and regulatory considerations that arise when working with large datasets containing personal information. Additionally, explain the importance of a data governance policy and the main issues that need to be addressed by such a policy within an organization. Furthermore, describe the risks associated with using data, including algorithmic decision-making, and the data requirements for determining values for assets, future benefits, and funding requirements. Explain the various checks that can and should be conducted on data to ensure its accuracy and reliability. Additionally, discuss the circumstances under which the ideal data required might not be available and explore potential solutions to this issue. Describe how to determine the appropriate grouping of data to achieve the optimal level of homogeneity. **Assumptions for a model - I** Provide an explanation of the principles used to determine	15L

	the assumptions necessary for a model to produce a specific solution. In your explanation, include the following points: - The types of information that may be available to assist in determining the assumptions needed for the model. - The usefulness of each type of information, as well as other factors that may be considered when selecting assumptions. - How the level of prudence required to achieve the client's objectives affects the selection of assumptions. **Assumptions for a model - II** Explain the various forms of heterogeneity that can exist within a population, how selection occurs, and how risk classification can help mitigate its effects. Provide a rationale for why different mortality tables are necessary for different classes of lives. Identify the primary factors that contribute to regional and socioeconomic differences in mortality and morbidity, including occupation, nutrition, housing, climate/geography, education, and genetics. Explain how different types of selection, such as temporary initial selection and class selection, can impact individuals or groups in relation to financial products. Define the concept of mortality convergence. Describe how decrements can selectively impact the remaining business. Explain the different types of expenses that benefit providers for contingent events are responsible for. Describe the ways in which expenses can be allocated when pricing financial products. Explain how actual experience can be monitored and evaluated, including the reasons for monitoring experience, the necessary data, the process for analyzing factors impacting experience, and the use of results to revise models and assumptions. **Designing a Product - I** Discuss the factors that must be taken into account when designing financial products that offer benefits on contingent events. These factors include the characteristics of the parties involved, their risk appetite or aversion, the regulatory environment, the product market, competitive pressures, the level and form of benefits to be provided, any	

	options or guarantees to be included, benefits payable upon discontinuance or transfer of rights, the method of financing benefits, the choice of assets when benefits are funded, administrative concerns, the levying of charges, and capital requirements. Discuss the issues related to managing options and guarantees in financial product design. **Designing a Product - II** Discuss the methods for determining the cost of providing benefits on contingent events. Discuss the factors that should be considered when determining the appropriate level and incidence of contributions for providing benefits on contingent events. Discuss the factors that should be considered when determining the price or contributions to charge for benefits on contingent events. Discuss the impact of provisioning or regulatory capital requirements on pricing or setting financing strategies for benefits on contingent events.	