

Name of the Department : **DEPARTMENT OF ACTUARIAL SCIENCE**

Academic Year : 2018-19

A. Program Outcome and Program Specific Outcomes

Name of the programme (UG/PG/M.Phil./ Diploma etc.)	Programme Outcomes Students will be able to	Program Specific Outcomes Students will be able to
UG	1. Import through knowledge in the field of Basic Mathematics, Statistics, Economics and Finance.	1. Solve the important issues for industries including insurance, government, business, and academic research.
	2. Relevant hands on experience are provided based on the Ms-Excel.	2. Predict uncertain events for insurance policy income, pension scheme payouts and stock market performance.
	3. High degree of Steps taken to make them clear the ACET and Core Technical Papers.	3. Mold themselves to suit the Actuarial Profession.
PG	1. Import through knowledge in the field of Basic Mathematics, Statistics, Economics and Finance.	1. Solve important issues for industries including insurance, government, business, and academic research.
	2. Relevant hands on experience are provided based on the Ms-Excel.	2. Predict uncertain events for insurance policy income, pension scheme payouts and stock market performance.
	3. High degree of Steps taken to make them clear the ACET and Core Technical Papers.	3. Mold themselves to suit the Actuarial Profession.

B1. Course Outcomes of all Programmes Offered by the Department

Name of the Programme : M.Sc. Actuarial Science

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
1.	Probability and Mathematical Statistics - I	P18AS101	1 Compare the theory of probability, both discrete and continuous, including some combinatory, a variety of useful distributions with its applications.
			2 Develop the ability to solve problems using probability and its distributions.
			3 Identify the situations and fit with the distribution.
2	Financial Mathematics - I	P18AS102	1 Ability to handle different situations of compound interest problems in banking and financial sectors.
			2 Construct the loan schedule.
			3 Develop various models related to interest rates.
3	Models - I	P18AS103	1 Explain the applications of stochastic process.
			2 Apply the Survival model and their applications in the insurance industry.
			3 Distinguish the concept of Graduation & Methods of Graduation
4	Actuarial Risk Management	P18AS1:1	1 Demonstrate the business activities of financial institutions and programs.
			2 Monitor the different types of risk arising in financial field.
			3 Implement the alternative risk strategies.
5	Principles of Insurance	P18AS1:2	1 Analyse the insurance mechanism.
			2 Describe the insurance contracts and their various types.
			3 Predict the concept of risk management.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
6	Probability and Mathematical Statistics - II	P18AS204	1 Use statistical methods to collect and analyze the data.
			2 Estimate unknown parameters of populations and apply the testing of hypotheses.
			3 Create the analysis of variance.
7	Financial Mathematics - II	P18AS205	1 Distinguish the different situations of financial projects.
			2 Analyze the different types of term structure of interest rates.
			3 Students can play a role as a fund manager in financial institutions.
8	Life and Health Contingencies - I	P18AS206	1 Classify the value of cash flows.
			2 Demonstrate contingent for survival, death and other uncertain events.
			3 Compute the insurance premium and reserves in insurance sectors.
9	Models - II	P18AS207	1 Examine the concept of Markov chain model and their methods.
			2 Differentiate the concept of Birth –Death process.
			3 Differentiate the concept of Time homogeneous & inhomogeneous Markov jump process.
10	Programming Using R	P18ASP08	1 Master the use of the R interactive environment
			2 Perform as an effective statistical data analyst.
			3 Statistical computing, which includes programming in R, debugging and organizing and commenting Records.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
11	Actuarial Mathematics	P18AS2E1	1 Characterise the features of the insurance contract.
			2 Deduce the interest rate calculation & its valuation.
			3 Discuss the Mortality rates and applications.
12	RI/MI	P15VL2:1/ P15VL2:2	1 Students realize the human values.
			2 Extracting their psychological problems and rectifying it.
			3 Develop the self confidence among them to reach their goals.
13	Statistical Methods - I	P18AS309	1 Apply Probability and mathematical statistical techniques in general insurance business.
			2 Compute the risk premium.
			3 Assess random numbers and random variates.
14	Business Economics - I	P18AS310	1 Identify the different business environment.
			2 Make business related decisions in critical situations.
			3 Meet individual and institutional clients' needs.
15	Finance and Financial Reporting - I	P18AS311	1 Organising the financial instruments in a proper way.
			2 Handling cash flows in an effective manner.
			3 Manage financial risk and to interpret the accounts and financial statements of companies and financial institutions.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
16	Life and Health Contingencies - II	P18AS312	1 Explain the variable benefits.
			2 Construct the profit testing table in the insurance sectors.
			3 Relate the different types of premiums and reserves.
17	Advanced MS-EXCEL	P18AS3:P	1 Knowledge and practice of MS-EXCEL
			2 Learning and practicing MS-EXCEL with real scenarios.
			3 Acquire great value add for their resume which can set a great career.
18	Statistical Methods - II	P18AS413	1 Analyse ruins theory in insurance business
			2 Demonstrate the time series
			3 Use the concept of reserve calculation in general insurance
19	Business Economics - II	P18AS414	1 Identify the different business environment.
			2 Make business related decisions in critical situations.
			3 Meet individual and institutional clients' needs.
20	Finance and Financial Reporting - II	P18AS415	1 Analyse the credit risk.
			2 Compare debit and credit in the financial statements.
			3 Construct the different dimensions of the balance sheet.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
21	Joint Life Annuities and Pension Funds	P18AS4:4	<ol style="list-style-type: none"> <li data-bbox="813 344 1375 428">1 Discuss the product pricing and valuation of life insurance and pension contracts <li data-bbox="813 428 1375 562">2 Apply survival models for the pricing and valuation of life insurance and pension contracts <li data-bbox="813 562 1375 680">3 Apply multiple state models for the pricing and valuation of life insurance and pension contracts.

B2. Course Outcomes of all Programmes Offered by the DepartmentName of the Programme : **B.Sc. Actuarial Sciences**

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
1	Introduction to Algebra	U17AS101	1 Apply the characteristic roots of the matrix.
			2 Identify the different types of Binomial Expansions.
			3 Compute the value of the summation of Logarithmic and Exponential series.
2	Differential Calculus and its Applications	U17AS102	1 Explain the concept of Functions and limits
			2 Distinguish the types of Ordinary and Partial Differential equations
			3 Apply the concept of Differential Equations in real life situation
3	Mathematical Statistics - I	U17AS1Y1	1 Classify the different types of data.
			2 Discuss various diagrams, graphs and its applications.
			3 Distinguish the descriptive statistics and basic probability
4	Introduction to Integral Calculus	U17AS203	1 Outline the properties of definite integrals.
			2 Justify the nature of multiple integrals.
			3 Demonstrate the real time applications of integrals.
5	Differential Equation & Its Application	U17AS204	1 Solve Ordinary differential equations of first and second order by using various methods.
			2 Solve Partial differential equations of first and second order by using various methods.
			3 Apply the concept of Differential Equations in real life situation

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
6	Mathematical Statistics - II	U17AS2Y2	1 Define basic discrete Distributions.
			2 Explain the concepts of independence, jointly distributed random variables and conditional distributions, and use generating functions to establish the distribution of linear combinations of independent random variables.
			3 Explain the concepts of conditional expectation.
7	Business Economics	U17AS305	1 Analyse the nature of economics.
			2 Explain the utility concept, cost and revenue.
			3 Demonstrate the capital structure of market.
8	Basic Accounting Concepts	U17AS3:1	1 Implement the basic accounting recording procedures.
			2 Analyse the various kinds of financial statements.
			3 Compute the different types of ratio analysis.
9	Mathematical Statistics - III	U17AS3Y3	1 Explain the concept of Continuous distributions and its properties.
			2 Demonstrate the Central limit theorem and its applications
			3 Apply linear relationships between variables using correlation and regression analysis.
10	Introduction to General Insurance	U17AS3Y4	1 Explain the concepts of general insurance and its operations.
			2 Classify the different types of products and its usage.
			3 Discuss product details of general insurance products.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
11	Principles of Insurance	U17AS3E1	1 Analyse the insurance mechanism.
			2 Describe the insurance contracts and their various types.
			3 Predict the concept of risk management.
12	Sampling Theory and its Applications	U17AS406	1 Explain the concepts of random sampling, statistical inference and sampling distribution, and state and use basic sampling distributions
			2 Describe the main methods of estimation and the main properties of estimators, and apply them
			3 Construct confidence intervals for unknown parameters
			4 Explain the concepts of Testing of hypothesis and its applications
13	Financial Management	U17AS4Y5	1 Discuss the financial functions of management.
			2 Compute the risk and return of the company.
			3 Analyse the different types of leverage.
14	Introduction to Time Series	U17AS4Y6	1 Define Index Number.
			2 Discuss the various methods of Index Number.
			3 Explain the time series and its types.
15	Statistical Software and MS-Excel	U17ASPS1	1 Discuss the various kinds of data.
			2 Perform as an effective data analyst.
			3 Apply Statistical software in kinds of data.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
16	Financial Markets in India	U17AS4E2	1 Discuss the structure of Indian financial system
			2 Compare the role of Primary markets, Secondary Markets and Money Markets.
			3 Discuss the current scenario of the Indian financial markets.
17	Introduction to Stochastic Process and Markov Model	U18AS507	1 Differentiate Stochastic process & Poisson process.
			2 Differentiate Markov chains & Models.
			3 Differentiate Kaplan-Meier & Nelson-Aalen Model.
18	Mathematical Modeling	U17AS508	1 Demonstrate mathematical modeling in various real life situations.
			2 Discuss different mathematical models involving differential equations, graph theory etc.
			3 Discuss the Cashflow process & Short term insurance contract models.
19	Mathematics of Finance - I	U17AS509	1 Handle different situations of compound interest problems in banking and financial sectors.
			2 Construct the loan schedule.
			3 Develop various models related to interest rates.
20	Data Analysis Using MS-EXCEL	U18AS5:2	1 Discuss the various kinds of data.
			2 Perform as an effective data analyst.
			3 Apply kinds of data in MS-EXCEL

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
21	Group Insurance & Retirement benefit	U17AS5:3	1 Exemplify various Retirement benefits and group Insurance schemes available in Indian Financial Market.
			2 Discuss the methods of costing.
			3 Discuss the legal aspects and taxation.
22	Introduction to Life Insurance	U17AS5S2	1 Analyse the concepts of risk and its types.
			2 Describe the insurance contracts and their various types.
			3 Predict the concept of risk management
23	Operations Research	U17AS610	1 Discuss the various applications of operations research.
			2 Create the optimum solutions in different business problems.
			3 Choose the better method for critical business problems.
24	Numerical Methods	U17AS611	1 Analyse the different algebraic and numerical techniques.
			2 Solve problems using numerical techniques.
			3 Discuss the best method for suitable problems.
25	Mathematics of Finance - II	U17AS612	1 Define an equation of value.
			2 Describe how a loan may be repaid by regular installments of interest and capital.
			3 Handle the different kind of annuities in loan calculation.

Sl. No.	Name of the Course	Course Code	Program Specific Outcomes (After completing this course, the students will be able to)
26	Basics of Life Contingencies	U17AS613	1 Define simple assurance and annuity contracts, and develop formulae for the means and variances of the present values of the payments under these contracts, assuming constant deterministic interest.
			2 Describe practical methods of evaluating expected values and variances of the simple contracts defined in objective.
			3 Describe and calculate net premiums and Gross premium of simple insurance contracts.
27	Insurance Underwriting And Risk Management	U17AS6:4	1 Prepare the insurance underwriting techniques.
			2 Analyse the risk and the importance of risk management in the industry.
			3 Develop the methodology of risk monitoring and control.
28	Mathematics for Competitive Examinations	U17AS4S3	1 Develop skills in aptitude and arithmetic.
			2 Enhance the speed of answering with accuracy
			3 Create a platform for taking the competitive examination