

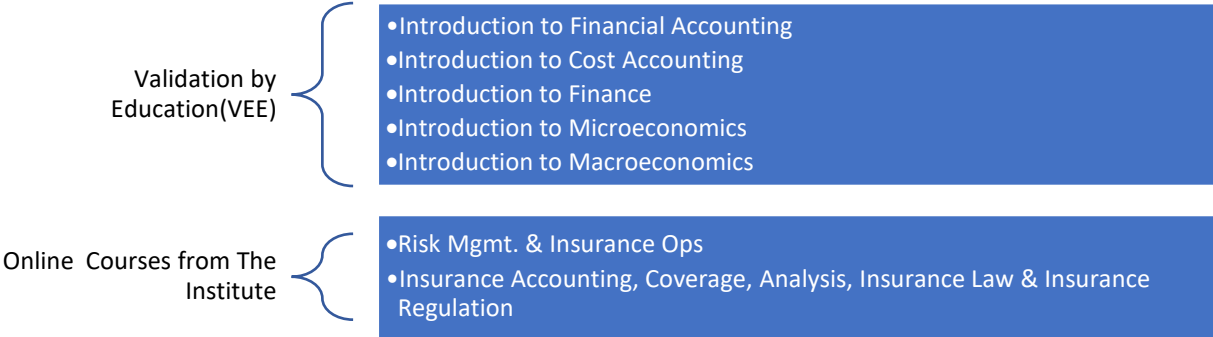
**Figure 1. Current Exam Syllabus.**

1: Probability	<ul style="list-style-type: none"> <li>•General Probability</li> <li>•Univariate Random Variables</li> <li>•Multivariate Random Variables</li> </ul>
2: Financial Mathematics	<ul style="list-style-type: none"> <li>•Interest Theory</li> <li>•Financial Economics</li> </ul>
3F: Financial Economics	<ul style="list-style-type: none"> <li>•Investment Markets</li> <li>•Corporate Finance</li> <li>•Financial Derivatives: Forwards and Futures</li> <li>•Financial Derivatives: Options</li> </ul>
MAS-I	<ul style="list-style-type: none"> <li>•Probability Models</li> <li>•Statistics</li> <li>•Extended Linear Models</li> <li>•Time Series with Constant Variance</li> </ul>
MAS-II	<ul style="list-style-type: none"> <li>•Introduction to Credibility</li> <li>•Linear Mixed Effects Models</li> <li>•Bayesian MCMC</li> <li>•Statistical Learning</li> </ul>
5: Basic Techniques for Ratemaking and Estimating Claim Liabilities	<ul style="list-style-type: none"> <li>•Basic Techniques for Ratemaking</li> <li>•Estimating Claim Liabilities</li> </ul>
6: Regulation and Financial Reporting	<ul style="list-style-type: none"> <li>•Regulation of Insurance and United States Insurance Law</li> <li>•Government and Industry Insurance Programs</li> <li>•Financial Reporting and Taxation</li> <li>•Professional Responsibilities of the Actuary in Financial Reporting</li> <li>•Reinsurance Accounting Principles</li> </ul>
7: Estimation of Policy Liabilities, Insurance Company Valuation, and ERM	<ul style="list-style-type: none"> <li>•Estimation of Policy Liabilities</li> <li>•Insurance Company Valuation</li> <li>•Enterprise Risk Management</li> </ul>
8: Advanced Ratemaking	<ul style="list-style-type: none"> <li>•Classification Ratemaking</li> <li>•Excess, Deductible, and Individual Risk Rating</li> <li>•Catastrophe and Reinsurance Pricing</li> </ul>
9: Financial Risk and Rate of Return	<ul style="list-style-type: none"> <li>•Portfolio Theory and Equilibrium in Capital Markets</li> <li>•Asset-Liability Management</li> <li>•Financial Risk Management</li> <li>•Rate of Return, Risk Loads, and Contingency Provision</li> </ul>

**Figure 2. Proposed Syllabus Exams.**

1: Probability	<ul style="list-style-type: none"> <li>•General Probability</li> <li>•Univariate Random Variables</li> <li>•Multivariate Random Variables</li> </ul>
2: Financial Mathematics	<ul style="list-style-type: none"> <li>•Interest Theory</li> <li>•Financial Economics</li> </ul>
3: Introduction to Modeling	<ul style="list-style-type: none"> <li>•Statistics</li> <li>•Extended Linear Models</li> <li>•Times Series with Constant Variance</li> </ul>
MAS-I	<ul style="list-style-type: none"> <li>•Probability Models</li> <li>•Linear Mixed Effects</li> <li>•Bayesian MCMC</li> </ul>
MAS-II	<ul style="list-style-type: none"> <li>•Application of Parametric Distributions</li> <li>•Clustering</li> <li>•Trees</li> <li>•Advanced Trees (Random Forest &amp; Gradient Boosting)</li> <li>•Neural Networks</li> </ul>
5: Basic Techniques for Ratemaking and Estimating Claim Liabilities	<ul style="list-style-type: none"> <li>•Introduction to Credibility</li> <li>•Basic Techniques for Ratemaking</li> <li>•Estimating Claim Liabilities</li> </ul>
6: Regulation and Financial Reporting	<ul style="list-style-type: none"> <li>•Regulation of Insurance and United States Insurance Law</li> <li>•Government and Industry Insurance Programs</li> <li>•Financial Reporting and Taxation</li> <li>•Professional Responsibilities of the Actuary in Financial Reporting</li> <li>•Reinsurance Accounting Principles</li> </ul>
7: Advanced Estimation of Policy Liabilities	<ul style="list-style-type: none"> <li>•Limits of link ratio methodology</li> <li>•Primary unpaid loss estimates for direct, ceded reinsurance, salvage &amp; subrogation</li> <li>•Reinsurance assumed and Excess unpaid losses</li> <li>•Effect of correlation on loss estimates between lines and measurement of correlation</li> <li>•Effect of varying loss cost inflation on unpaid loss estimates</li> <li>•Total Company Unpaid Loss Distribution</li> <li>•Premium Liabilities</li> </ul>
8: Advanced Direct Ratemaking	<ul style="list-style-type: none"> <li>•Classification Plans</li> <li>•Territorial Ratemaking</li> <li>•State Level Base Rates</li> <li>•Issue Rate &amp; Retention Models</li> <li>•Excess &amp; Deductible Pricing</li> <li>•Individual Risk Rating</li> </ul>
9: Insurance Risk and Rate of Return	<ul style="list-style-type: none"> <li>•Enterprise Risk Management</li> <li>•Reinsurance</li> <li>•Catastrophe Pricing</li> <li>•Insurance Company Valuation</li> <li>•Economic Capital</li> <li>•Rate of Return, Risk Loads and Contingency Provisions</li> </ul>

**Figure 3. Current Syllabus – Validation by Education (VEE) and Online Courses.**



**Figure 4. Proposed Syllabus – Validation by Education and Online Courses.**

