
VALIDATION BY EDUCATIONAL EXPERIENCE

Introduction

As part of preliminary education, there are three topics that require Validation by Educational Experience (VEE). Validation of these topics is required in addition to the four preliminary education exams listed below. The CAS, in conjunction with the Canadian Institute of Actuaries and the Society of Actuaries, has implemented VEE requirements for the following topics:

- VEE-Applied Statistical Methods
- VEE-Corporate Finance
- VEE-Economics

The four preliminary education exams are:

- Exam 1, Probability (same as SOA Exam P)
- Exam 2, Financial Mathematics (same as SOA Exam FM)
- Exam 3, Actuarial Models consisting of Exam 3F, Financial Economics segment (same as SOA Exam MFE) and Exam 3L, Life Contingencies and Statistics segment (or credit for SOA Exam MLC)
- Exam 4, Construction and Evaluation of Actuarial Models (same as SOA Exam C)

In addition to the preliminary education requirements listed above (i.e., VEE requirements and four exams), Exams 5-7 and the CAS Course on Professionalism are required for Associateship. The syllabi for the examinations are provided in the “Materials for Study” section of this *Syllabus*. Details about the process for obtaining credit for the VEE topics are provided below. VEE topics are not prerequisites for the preliminary examinations and may be fulfilled independently of the preliminary exam process.

VEE Process—How to Get VEE Credit

Validation by Educational Experience can be accomplished in any of the following ways:

1. College Course(s)

Complete one or more courses offered by a college or university and approved by the CAS, CIA, and SOA. Candidates must receive a grade of B- or better in each course. If the institution does not use letter grading, an appropriate translation will be determined. A directory of approved courses is available from the “VEE Information” section of the CAS Web Site.

2. Standardized Examinations and Other Educational Experiences

Achieve a pre-set score on a standardized examination or other educational experience as approved by the CAS, CIA, and SOA. A list of approved standardized exams and other educational experiences is available from the “VEE Information” section of the CAS Web Site.

Step 1: Approval of Courses/Experiences

The VEE Administration Committee (VEEAC) will determine which college courses, standardized exams, and other educational experiences are appropriate for VEE credit. Before a candidate may submit an application to receive individual credit for a VEE topic, the course or educational experience itself must first be approved and listed on either the “Directory of Approved Courses” or the “Standardized Exams and Other Educational Experiences” list. Each list identifies the educational institution, the approved courses/experiences by VEE topic, a unique approval code for each course/experience, and the years for which the courses/experiences are approved.

If a VEE Course/Experience does not appear on either list, approval must be requested by completing an official VEE course/experience approval application form and submitting it along with the required documentation. The application form is available in the “Exam Applications and Order Forms” section.

The VEEAC will review the course/experience.

The guidelines that the VEEAC will use to determine whether specific courses or educational experiences are appropriate to fulfill the VEE requirements are provided in the next three sections of this *Syllabus*.

Step 2: Approval of Individual VEE Credits for Candidates

Candidates who have credit for at least two actuarial examinations may submit an application for their own VEE credits. In addition to the application, candidates will be required to arrange for an official transcript to be submitted to the VEE administrator. The “Application for Validation by Educational Experience Credit” includes specific directions. Only courses/experiences that are listed in the online “Directory of Approved VEE Courses/Experiences” or the “Standardized Exams and Other Educational Experiences” list may be used for VEE credit. If a course/experience is not on the approved list, the candidate may submit the course for approval according to the procedures described in Step 1 above.

Candidates may combine two approved courses/experiences to complete a VEE topic requirement. For example, an approved microeconomics course from a university may be combined with an approved macroeconomics course from another school or provider. Likewise, an approved regression course may be combined with an approved time series course from two different providers. In these cases candidates should include approval codes from both approved courses on their individual VEE credit application form. **Corporate finance courses, however, must be completed in the combinations shown in the directory. No alternate combinations will be accepted without an additional course approval application process.**

Note: Candidates may not submit VEE credit applications for partial credit (e.g., an approved regression course may not be submitted alone, but must be accompanied on the same application by an approved time series course). Candidates may not submit for VEE credit for a topic until they have completed all requirements for that topic. Specific questions may be sent to vee@soa.org.

Once a candidate’s application and documentation of the required grade on an approved course/experience have been validated, credit for the specific VEE topic will be granted. The candidate will be sent a written response to each application.

VEE–Applied Statistical Methods

The following guidelines for the Validation by Educational Experience (VEE) requirement for Applied Statistical Methods will be used by the VEE Administration Committee to determine whether specific courses or educational experiences are appropriate to fulfill the VEE requirements. Details about submitting a course for approval as well as obtaining individual VEE credit are provided at the beginning of this section on VEE. The “Directory of Approved VEE Courses/Experiences” and the “Standardized Exams and Other Educational Experiences” are available in the “VEE Information” section of the CAS Web Site.

Courses that meet this requirement may be taught in the mathematics, statistics, or economics department, or in the business school. In economics departments, this course may be called Econometrics. The material could be covered in one course or two. The mathematical sophistication of these courses will vary widely and all levels are intended to be acceptable. Some analysis of real data should be included. Most of the topics listed below should be covered:

Regression analysis

1. Least square estimates of parameters
2. Single linear regression
3. Multiple linear regression
4. Hypothesis testing and confidence intervals in linear regression models
5. Testing of models, data analysis, and appropriateness of models

Time series/forecasting

1. Linear time series models
2. Moving average, autoregressive, and/or ARIMA models
3. Estimation, data analysis, and forecasting with time series models
4. Forecast errors and confidence intervals

VEE–Corporate Finance

The following guidelines for the Validation by Educational Experience (VEE) requirement for Corporate Finance will be used by the VEE Administration Committee to determine whether specific courses or educational experiences are appropriate to fulfill the VEE requirements. Details about submitting a course for approval as well as obtaining individual VEE credit are provided at the beginning of this section on VEE. The “Directory of Approved VEE Courses/Experiences” and the “Standardized Exams and Other Educational Experiences” are available in the “VEE Information” section of the CAS Web Site.

The typical corporate finance program covers the topics below in two semesters with an introductory course followed by a more advanced semester. If the second course covers most of the topics, then only the second course will be required. Where the topics are split across two semesters or courses, both will be required. The exceptional case where the corporate finance topics are covered in only one course, with no finance prerequisite, will also be considered, however, this will typically be at a more advanced level than a course designed for general business students.

Most of the topics listed below should be covered:

1. Definitions of key finance terms: stock company; capital structure
2. Key finance concepts: financing companies; characteristics and uses of financial instruments; sources of capital; cost of capital; dividend policy; personal and corporate taxation
3. Factors to be considered by a company when deciding on its capital structure and dividend policy
4. Impact of financial leverage and long/short term financing policies on capital structure
5. Characteristics of the principal forms of financial instruments issued or used by companies, and the ways in which they may be issued
6. How a company's cost of capital relates to the investment projects the company wishes to undertake
7. Definitions of key finance terms: financial instruments – bond, stock, basic options (calls, puts); dividends; price to earnings ratio
8. Structure of a stock company and the different methods by which it may be financed
9. Calculate value of stocks
10. Measures of financial performance: balance sheet; income statement; statement of cash flows; financial ratios (e.g., leverage, liquidity, profitability, market value ratios); net present value; the payback, discounted payback models; internal rate of return and profitability index models
11. Assessment of financial performance using various measures: balance sheet; income statement; statement of cash flows, financial ratios (e.g., leverage, liquidity, profitability, market value ratios); net present value; the payback, discounted payback models; internal rate of return and profitability index models

VEE–Economics

The following guidelines for the Validation by Educational Experience (VEE) requirement for Economics will be used by the VEE Administration Committee to determine whether specific courses or educational experiences are appropriate to fulfill the VEE requirements. Details about submitting a course for approval as well as obtaining individual VEE credit are provided at the beginning of this section on VEE. The “Directory of Approved VEE Courses/Experiences” and the “Standardized Exams and Other Educational Experiences” are available in the “VEE Information” section of the CAS Web Site.

Typically, the VEE requirement for Economics will be met if a candidate has completed two economics courses, one course covering microeconomics and the other covering macroeconomics. Most of the topics listed below should be covered:

Microeconomics

1. Interaction between supply and demand in the provision of a product and the way in which equilibrium market prices are determined
2. Elasticity of demand and supply and the effects on a market of different levels of elasticity
3. How rational utility maximizing agents make consumption choices
4. How profit-maximizing firms make short-run and long-run production choices
5. Different types of competition, or lack of it, and the practical effect on supply and demand

Macroeconomics

1. Structure of public sector finances of an industrialized economy
2. GDP, GNP, and Net National Product. How these concepts are used in describing the economy and in making comparisons between countries, and the limitations of these concepts
3. Propensity to save or to consume by the private sector or the corporate sector and how it affects the economy
4. Impact of fiscal and monetary policy and other forms of government intervention on different aspects of the economy, and in particular on financial markets
5. Role of exchange rates and international trade in the economy and the meaning of the term balance of payments
6. Major factors affecting the rate of inflation, the level of interest rates, the exchange rate, the level of unemployment, and the rate of economic growth in the economy of an industrialized country