



# Actuarial Science Foundations Module

## Introduction and Objectives

---

### Module Introduction

The Actuarial Science Foundations Module provides candidates with insights into how actuaries complete their work, how they communicate the results of their work, how forces outside of actuarial practice influence their work, and how they, ultimately, solve actuarial problems. Candidates will get a chance to look more deeply into the Actuarial Control Cycle and even apply the control cycle to an actuarial problem.

When looking at actuarial communication, candidates will be able to explore samples of common actuarial communications, from emails to formal written reports.

A deep dive into external forces provides candidates with a unique perspective on the actuarial practice, which will help them understand how cultural/social values, demographics, government influences, and economic and business environments directly affect and influence their work as actuaries.

Finally, an exploration of solution design will provide candidates with a detailed look into the actuarial work that makes the most difference to every stakeholder an actuary has: the designed product.

This module also contains an End-of-Module Test, an Interactive Scenario, and an End-of-Module Assessment.

### Module Objectives

- Explain how actuaries do their work
- Describe common types of communications you will use as an actuary
- Describe and explain how each category of external forces influences the work of actuaries
- Design a solution

### How We Do Our Work

In the *Pre-Actuarial Foundations Module*, candidates were introduced to the control cycle and the importance of communications. The purpose of *How We Do Our Work* is to provide greater detail on these two areas.

Specifically, after candidates complete this section, they will be able to:

- Explain how the Actuarial Control Cycle facilitates actuarial work
- Describe common types of communications actuaries use to facilitate actuarial work

## External Forces

The purpose of *External Forces* is to provide you with an understanding of how core external forces affect actuarial work. Identifying these forces and determining their relevance and interrelationships will help candidates manage actuarial problems, projects, and assignments. An understanding of external forces will help candidates assess risks in a variety of situations in an ever-changing environment. Specifically, after candidates complete this section, they will be able to:

- Define external forces
- Describe and explain how the following categories of external forces apply within and across global areas of actuarial practice and fit into the Actuarial Control Cycle framework
  - Cultural/social values
  - Demographics
  - Governmental influences
  - Economic and business environment
  - Physical environment
- Describe the changing nature of external forces
- Explain how changes in external forces can lead to risk

## Actuarial Solutions

The purpose of *Actuarial Solutions* is to outline the steps actuaries consider while designing actuarial solutions. Through real-world scenarios throughout provide practical experience using various techniques for modeling, data collection, selecting appropriate assumptions, validation, and reconciliation. After candidates complete this section, they will be able to:

- Identify typical actuarial solutions
- Describe important aspects of designing solutions
- Identify data needed to design a solution
- Describe and use appropriate modeling techniques to design a solution
- Describe the importance of assumptions when designing a solution
- Describe the importance of validation and reconciliation techniques when designing a solution