

UW-MADISON ACTUARIAL PROGRAM COURSES

Course (Credit Hours)	Description	Semester(s) Offered
<p>Act Sci 300: Actuarial Science Methods I (1 credit)</p> <p>Pre-reqs: Already taken a probability course.</p>	<p>Review calculus-based probability concepts and methods, covered in a first course in probability. Prepare students for SOA Exam P / CAS Exam 1.</p>	<p>Fall, Spring, Summer</p>
<p>Act Sci 301: Actuarial Science Methods II (1 credit)</p> <p>Pre-reqs: Taking Act Sci 303 concurrently or an equivalent course.</p>	<p>Discussion course for ACT SCI 303, to focus on preparing students for SOA Exam FM / CAS Exam 2.</p>	<p>Fall, Spring</p>
<p>Act Sci 303: Theory of Interest (3 credits)</p> <p>Pre-reqs: Already taken the second semester calculus course on series and sums.</p>	<p>Theory and applications pertaining to the time value of money.</p>	<p>Fall, Spring</p>
<p>Act Sci 365: Foundations of Actuarial Applications (3 credits)</p> <p>Pre-reqs: First semester calculus.</p>	<p>For students interested in a career as an actuary. Evaluates facets of actuarial practice through case studies and other hands-on work.</p>	<p>Spring</p>
<p>Act Sci 650: Actuarial Mathematics I (3 credits)</p> <p>Pre-reqs: Already taken probability and interest theory classes</p>	<p>First course of two-semester sequence covering the foundations of life contingencies.</p>	<p>Fall, Spring</p>
<p>Act Sci 651: Actuarial Mathematics II (3 credits)</p> <p>Pre-reqs: Act Sci 650</p>	<p>Second course of two-semester sequence covering the foundations of life contingencies.</p>	<p>Spring</p>

<p>Act Sci 652: Loss Models I (3 credits)</p> <p>Pre-reqs: Taking a statistics class concurrently or in the past.</p>	<p>First course of two-semester sequence covering the foundations of loss data analytics.</p>	<p>Fall, Spring</p>
<p>Act Sci 653: Loss Models II (3 credits)</p> <p>Pre-reqs: Act Sci 652</p>	<p>Second course of two-semester sequence covering the foundations of loss data analytics.</p>	<p>Fall, Spring</p>
<p>Act Sci 654: Regression and Time Series for Actuaries (3 credits)</p> <p>Pre-reqs: Already taken a statistics class.</p>	<p>Linear regression and correlation; generalized linear regression models; introduction to time series; time series model building and forecasting with focus on data of interest to actuaries.</p>	<p>Fall</p>
<p>Act Sci 655: Health Analytics (3 credits)</p> <p>Pre-reqs: Already taken a statistics class.</p>	<p>Provides an introduction to the broad area of health, integrating how researchers from multiple perspectives have investigated various aspects of health, along with the hands-on practice of learning and using statistical tools to analyze these topics.</p>	<p>Spring</p>
<p>Gen Bus 656: Machine Learning for Business Analytics (3 credits)</p> <p>Pre-reqs: Already taken a statistics class.</p>	<p>An introduction to machine learning techniques in business.</p>	<p>Spring</p>
<p>Act Sci 657: Risk Analytics (3 credits)</p> <p>Pre-reqs: One of Act Sci 654, Act Sci 655, Gen Bus 656</p>	<p>Building on the regression and machine learning techniques, the course introduces the notion of probabilistic forecasting and discusses predictive models for non-normal data.</p>	<p>Spring</p>