The ACS major does not just prepare one to be an actuary; it allows one to thrive in any career that requires strong analytical thinking with sound mathematical backing. It is a major that prepares one for a challenging and rewarding career.

Weng Jiahao
BBA, ACS Major, Summa Cum Laude, Graduation year 2012, Statistician, Singapore Department of Statistics

I chose the ACS major because I love numbers, and want a solid foundation in this field of applied mathematics. Under the guidance of very experienced and dedicated professors at SMU, I had received great help in and out of classes while preparing for the professional Society of Actuaries (SOA) Examinations. The carefully designed course curriculum struck the right balance between practical and theoretical aspects, and provided me with skills that will be extremely useful when I start my career. I am really proud to be one of the graduates from the ACS major and strongly encourage you to join our family.

Eng Pingni
BBA and BSc (Econ), ACS Major, Summa Cum Laude, Graduation Year 2012, Associate, Ernst & Young Actuarial Advisory

This programme has far exceeded my expectations of a second major. With two highly qualified Professors who are passionate to help you achieve the actuarial credential, I was able to pass the first three professional exams by the end of my second year and secure an internship with GIC. If you are looking for fast-track to a prominent career, consider this an exclusive invitation.

Luo Xingqun
BSc (Econ), ACS Major, Enrollment year 2010

At the face of recent financial crises, the importance of risk management has been projected to a level that is unprecedented. As an ACS major, I’ve gained deep appreciation for quantitative risk analysis through the use of statistical and financial methods. For those seeking a professional career filled with dynamic challenges, the SMU ACS programme promises a platform to equip you with technical knowledge that is valued in any financial institutions.

Vince Tan
BAcc and BSc (Econ), ACS Major, Enrollment year 2010
Overview

The ACS Major prepares students for a career as an actuarial analyst or risk analyst. Its design follows the professional education and examination requirements of the US Society of Actuaries (SOA). Students in this major will learn a range of subjects in Statistics, Economics, Finance, Risk Management and Insurance. Graduates with this major may seek careers in insurance, banking, finance, risk management and other areas that require quantitative training in Economics and Finance, as well as application of probability models to business and risk management.

Actuarial Science is a discipline that applies rigorous probability and statistics models to the analysis and management of risks in business, which includes life insurance business, non-life insurance protections, as well as enterprise risk management of a corporation. Naturally, quantitative skills learnt in Actuarial Science are relevant to the modern workplace that requires the understanding of data and uncertainty.

The ACS Major is of particular relevance to students who have affinity for the use of Mathematics and Statistics in business. If you are a BSc (Econ), BIBM or BAcc student who is interested in Finance, you are encouraged to consider taking the ACS second major.

Structure and Curriculum for students admitted in AY2012-13 and after

The ACS Major has two tracks: Actuarial Analyst (AA) Track and Risk Analyst (RA) Track. The AA Track prepares students for the professional credential as an actuary under the SOA, i.e., Associate (ASA) and Fellow (FSA). The RA Track prepares students for the professional credential as an enterprise risk analyst under the SOA, i.e., Chartered Enterprise Risk Analyst (CERA).

Apart from the usual requirements of the respective degree programmes, the ACS Major requires students to complete 14 compulsory courses, with 11 of these courses common to both tracks. The ACS Major curriculum meets all the objectives listed in SOA’s Validation for Actuarial Education (VEE) guidelines for Economics, Corporate Finance and Applied Statistical Methods, and has been approved by the VEE Administration Committee for VEE accreditation.

Compulsory courses for both AA and RA Tracks:

1. Introductory Statistics (STAT101) or Introduction to Statistical Theory (STAT151)
2. Probability Theory and Applications (STAT201)
3. Financial Mathematics (STAT203)
4. Risk Theory and Loss Models (STAT311)
5. Statistical Methods for Actuarial Analysis (STAT314)
6. Intermediate Microeconomics (ECON101)
7. Intermediate Macroeconomics (ECON102)
8. Financial Accounting (ACCT101/ACCT111)
9. Finance (FNCE101)
10. Financial Instruments, Institutions and Markets (FNCE102) or Corporate Finance (FNCE201)
11. Analysis of Derivative Securities (FNCE305) or Structured Finance (QF301)

Compulsory courses for the AA track only:

- Applied Econometrics (ECON107)
- Intermediate Econometrics (ECON207)
- Life Contingent Risks (STAT310)

Compulsory courses for the RA track only:

Select three out of the following courses:

- Life Contingent Risks (STAT310)
- Quantitative Risk Analysis (STAT313)
- Risk Management and Insurance (FNCE215)
- Enterprise Risk Management (FNCE309)
- Computing Technology for Finance (QF205)
- Global Financial Risk Management (QF305)

Teaching faculty

The ACS Major involves faculty members from the School of Economics, Lee Kong Chian School of Business and School of Accountancy. The following faculty members with professional qualifications in Actuarial Science are teaching in the programme:

Professor Tse Yiu Kuen, PhD, FSA
Professor Tse is the Director of the ACS Major. He has published over 90 articles in scholarly international journals, and has written two popular text books in Actuarial Science: Financial Mathematics for Actuaries (with W.S. Chan), McGrawHill, 2011, and Nonlife Actuarial Models, Cambridge University Press, 2009.

Education Professor Kwong Koon Shing, PhD, ASA, CERA
Professor Kwong is a committee member of the ACS Major. He has published many articles in top-ranked statistics journals, such as Statistics in Medicine and Biometrics. He has more than ten years of experience in teaching actuarial science courses. He obtained his professional qualifications ASA and CERA in 2005 and 2011, respectively.

Adjunct faculty Dr Serena Tiong, PhD, ASA, CERA
Dr Tiong has extensive experience in the banking and insurance industry. She has published many articles in actuarial science journals, including Transactions of the Society of Actuaries and North American Actuarial Journal.

An education in Actuarial Science will set you apart from other candidates. The analytical skills learned, as well as the holistic view of the business, positions the Actuary for upward mobility. The career is a rewarding blend of math and business while playing a vital role in the well-being not only of the economy but in individual’s lives. The barrier to entry is high and is only for those who are mathematically minded, curious and determined. If this is you, then becoming an Actuary will be a rewarding career.

Jill Hoffman
FSA, FCIA, FSAS, President 2012/2013, Singapore Actuarial Society

It is an exciting time to be an actuary. While the many methods at an actuaries’ disposal were developed in the context of more traditional actuarial areas such as valuing insurance or pension liabilities, their potential application is clearly much broader. It is now widely recognized that modern actuarial techniques make actuaries well-placed to be pivotal players in risk management throughout the financial sector and beyond.

Woon Dar Vei
FIA, FSAS, Senior Vice President & Regional Head of Life Insurance, Tokio Marine Asia

The balanced curriculum of the Actuarial Science (ACS) major in SMU provides a solid foundation for students to work towards becoming an all-rounded actuary or risk analyst in the ever-evolving business world. Courses offered by the ACS major involve comprehensive assessments in both forms of written exams and project works. While the former evaluates students on the understanding of technical theories, the latter simulates actual working environment and encourages research, application of concepts and teamwork.

Wai-Sum Chan
PhD, FSA, CERA, Professor of Finance and Programme Director of Insurance, Financial and Actuarial Analysis, School of Business, Chinese University of Hong Kong