

If you enjoy solving complex problems, building models and doing in-depth analysis, then actuarial science could be the right choice for you. SMU's actuarial science major has equipped me with the necessary knowledge and skills to start a career as an actuary. The core actuarial modules are designed closely related to the professional exam syllabus and as a result, preparation time is greatly shortened and passing rate improved greatly. The ACS major has prepared me to take up a variety of roles across life and general insurance, which is part of my rotations as a management associate. My advice to all aspiring actuaries is that do not be afraid of the math. The true value of an actuary is to come out with the model and computers will take care of the rest.

DARIUS BAI ZHI PENG, ASA

*BSc (Econ), second major in Actuarial Science, Class of 2015
Actuarial Executive (Management Associate), Aviva Limited*

I am grateful for having the opportunity to learn from two awesome professors in the ACS major. They are patient, caring, and knowledgeable. They not only taught me actuarial knowledge and actuarial modelling, but also provided me with industry knowledge which helped me to land a job in the actuarial industry. The curriculum of ACS major is well calibrated to prepare students with both quantitative skills and business acumen to solve real-life problems that actuaries face in their day-to-day job. In addition to that, the curriculum is also well aligned with the qualification exams under Society of Actuaries.

GUO JIALIANG, ASA

*BSc (Econ), second major in Actuarial Science,
Class of 2017
Actuarial Executive, NTUC Income Insurance
Co-operative, Singapore*

The ACS major was key in preparing me for my actuarial career. Classes are centred around understanding advanced quantitative concepts and applying them to projects with industry applications. Profs Tse and Kwong constantly encourage critical thinking, inquisitive learning and often initiate events or programs to increase the exposure of ACS students. The ACS major's alignment with the Society of Actuaries has also been an important boost in my journey to getting credentialed. I would highly recommend this major to those who wish to pursue a career in this niche profession.

HO XIANG YING, ASA

*Actuarial Analyst, Aon Centre for Innovation and Analytics (ACIA),
BSc (Econ), second major in Actuarial Science, Class of 2017*

ENQUIRIES

If you want to know more about the ACS Major, please write to

Education Professor Kwong Koon Shing, PhD, FSA, CERA,
kswong@smu.edu.sg

Professor Tse Yiu Kuen, PhD, FSA, yktse@smu.edu.sg

FURTHER INFORMATION

Further information about the actuarial profession and qualification for professional credentials can be found in the following websites:

SOA, US: www.soa.org

Actuarial Profession, UK: www.actuaries.org.uk

Institute of Actuaries of Australia: www.actuaries.asn.au

Singapore Actuarial Society: www.actuaries.org.sg

GENERAL INFORMATION

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SCHOOL OF ECONOMICS

Second Major
in Actuarial
Science (ACS)

Overview

Actuarial Science applies rigorous probability and statistics models to the analysis and management of various risks in business including life insurance, non-life insurance, and enterprise risk management of large corporations. The second major in Actuarial Science (ACS) provides multidisciplinary training in probability, statistics, finance, economics, risk management and predictive modelling to equip students for challenges ahead. Graduates with this major may seek careers in insurance, banking, finance, healthcare, enterprise risk management and other business fields that require quantitative training and probability modeling.

The ACS curriculum meets all the objectives listed in the Validation for Education Experience (VEE) guidelines under the US Society of Actuaries (SOA) and prepares students for pursuing the Associate of the Society of Actuaries (ASA), the Fellow of the Society of Actuaries (FSA) and the Chartered Enterprise Risk Analyst (CERA) credentials offered by the SOA.

The ACS programme is of particular relevance for students who have affinity for the use of Mathematics and Statistics in business. If you are interested in addressing real-life quantitative issues with actuarial modeling and computer programming, you are encouraged to take the ACS major.

Teaching Faculty

The ACS programme 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:

Education Professor Kwong Koon Shing, PhD, FSA, CERA

Professor Kwong is the Director of the ACS programme. He has published many articles in top-ranked statistics journals. His recent research is in retirement financing. He has about twenty years of experience in teaching actuarial science and has earned several teaching excellence awards in his career. He obtained his professional qualifications CERA and FSA in 2011 and 2013, respectively.

Professor Tse Yiu Kuen, PhD, FSA

Professor Tse is a committee member of the ACS programme. He has written two popular text books in actuarial science: Financial Mathematics for Actuaries (with W.S. Chan), McGrawHill, 2013, and Nonlife Actuarial Models, Cambridge University Press, 2009. The former is on the official reading list of the SOA Exam Financial Mathematics (FM), and the latter is in the official reading lists of the Casualty Actuarial Society (CAS) exams Modern Actuarial Statistics I (MAS-I) and MAS-II.

ACS Curriculum Structure

The ACS major curriculum meets all the objectives listed in SOA's VEE guidelines for Accounting and Finance, Economics and Mathematical Statistics. The 11 required courses are as follows.

1. STAT201 Probability Theory and Applications
2. STAT203 Financial Mathematics
3. STAT310 Life Contingent Risks or STAT313 Quantitative Risk Analysis
4. STAT311 Risk Theory and Loss Models
5. DSA201 Statistical Inference for Data Science
6. DSA211 Statistical Learning with R
7. ECON111 Microeconomics 1
8. ECON112 Macroeconomics 1
9. ACCT101/111 Financial Accounting
10. FNCE101 Finance
11. FNCE102 Financial Instruments, Institutions and Markets or FNCE201 Corporate Finance



Testimonials

As with anything in life, what you can achieve as an actuarial student in SMU depends on your exposure and how much effort you are willing to put in. I was glad to have the help from dedicated professors at SMU who laid the important foundations of my actuarial education and also supported me on my path to attain fellowship. The career path as an actuary is an exciting and rewarding one, if you love a challenge – and also numbers (more importantly). The actuarial science programme in SMU is up-to-date, flexible and will equip you with the essential skills to be a well-rounded qualified actuary if you work hard towards your goals.

ENG PINGNI, FSA, FSAS, CERA

*Double degree in BBM and BSc (Econ),
second major in Actuarial Science, Class of 2012
Consulting Actuary, Milliman Singapore*

I am really glad to have taken the ACS major. The programme offers a rigorous curriculum for students to perform quantitative analysis on complex problems. In addition, the professors also encourage students to present the results in a meaningful and understandable manner. This has been extremely useful in my career in risk management, especially in engaging colleagues and even senior management. The ACS major is also very well aligned with the Society of Actuaries to obtaining a CERA or fellowship qualification. This is definitely an opportunity not to be missed.

CHIA DAO ZHE, ASA

*BSc (Econ), second major in Actuarial Science, Class of 2013
Assistant Manager, Risk Management, Tokio Marine Life
Insurance Singapore*

If you are looking for a challenging and rewarding career ahead, SMU Actuarial Science major opens the door to this highly specialized industry. It is tailored according to the Society of Actuaries (SOA)'s curriculum, giving students a good foundation before graduation. The professors are also extremely dedicated, giving their full support and help during the preparation for the professional exams. I strongly encourage you to consider actuarial science as a second major and join our big family!

YAP HUI SAN, ASA

*BSc (Econ), second major in Actuarial Science, Class of 2014
Actuarial Assistant Manager, NTUC Income Insurance
Co-operative Limited*