NUS National University of Singapore | Faculty of Science

STATISTICS AND APPLIED PROBABILITY FAQs
NUS e-OPEN HOUSE 2020

B.Sc. (Hons.) and B.Sc. Degree Programmes with a Major in Statistics

1. What is statistics?

Statistics is the science of uncertainty. It involves applying quantitative principles to the collection, analysis, and presentation of information in a variety of subject areas, such as biology, economics, insurance, investment, engineering, medicine, public health, psychology, physics, marketing, education, and sports. Good statisticians are skilled programmers and problem solvers, with a good understanding of uncertainty and mathematics, skills that are in much demand in the job market.

2. What's the difference between statistics and mathematics?

Mathematics deals with numbers, curves, surfaces, figures, images, etc., in all their generalities, ranging from the most abstract theories to the most concrete methods and algorithms, whereas statistics deals with the collection and analysis of data and information in surveys, experiments, databases, etc., in order to reach conclusions or decide on a suitable course of action.

Dick de Veaux has likened mathematics to music and statistics to literature. Mathematics has a cold and austere beauty, which deals with a clean, axiom-driven world of logic. Statistics, on the other hand, is about trying to make sense of a noisy and chaotic world, in which there are only shades of grey. Like other quantitative subjects — physics, engineering, economics — statistics has a mathematical foundation, which is why students studying statistics take modules in mathematics in their first year.

3. Why study statistics in NUS?

The NUS Department of Statistics and Applied Probability (DSAP) is the only university department in Singapore which offers degree programmes in statistics. We are one of the world's leading statistics departments with close to 30 faculty members, many internationally acclaimed, and several with joint appointments to Duke-NUS medical school, the mathematics department, and the Saw Swee Hock School of Public Health. A wide array of modules covering the theory and application of statistics are taught by faculty members who are dedicated to a student-oriented approach to teaching and learning. Teaching is supported by state-of-the-art computing resources and students gain proficiency in a variety of statistical and computational software.

4. What is a specialisation, what specialisations are offered for statistics and what are the learning outcomes?

Students who read a major in statistics have the option to specialise in data science or in finance and business statistics. They fulfill the specialisation requirements by reading six elective modules within the statistics major from a prescribed list of elective modules.

Data science is an interdisciplinary field that makes use of techniques and theories drawn from computer science, mathematics and statistics to extract knowledge or insights from data in various forms. Students majoring in statistics, who specialise in data science, will learn computing concepts and skills that will enable them to take on emerging challenges in the collection, storage and analysis of large amounts of data in virtually every field.

Statistics major students who specialise in finance and business statistics will learn about the application of statistics to the areas of investment and financial analysis, insurance, marketing research, and management, amongst others.

5. What second majors could statistics primary major students consider reading to add value to their learning experience?

Students have an opportunity to broaden their knowledge and capacities by pursuing a second major alongside their primary major. Because statistics is founded on mathematical principles, utilises programming and algorithms, and is widely applied to problems in business and economics, students who read a primary major in statistics could consider reading a second major in mathematics, economics, management, business analytics or computer science.

Students may apply to read a double major in statistics with computer science, economics, management, information security or business analytics upfront, or self-design these double major combinations or other permissible double major combinations by the end of their second year of study.

6. What are the career opportunities for statistics graduates?

The world is becoming more quantitative- and data-focused. Many professions, organisations and businesses depend on numerical measurements to make decisions in the face of uncertainty. Therefore, statistics graduates may look forward to being employed as statisticians in government agencies, the medical and pharmaceutical industries, manufacturing and engineering companies, banking and financial institutions, research and development, and educational institutions. Further, there are many jobs that do not bear the word "statistician" but will significantly rely on the knowledge and skills acquired from studying NUS Statistics. These include business, risk and financial analysts, quality assurance or pharmaceutical engineers, marketing professionals, banking and telecommunication executives, actuaries, and data scientists, amongst others. The more entrepreneurial graduates have also set up their own business ventures.

CareerCast.com's Jobs Rated Report provides a general snapshot of 200 careers every year, using the key criteria: income, work environment, stress, and projected growth. The Jobs Rated Report has ranked the statistician consistently as one of the best jobs in recent years (third in 2014, fourth in 2015, second in 2016, best in 2017, fifth in 2018). The 2019 report placed the statistician as the second best job.

7. I am interested to pursue a career in teaching. As a statistics graduate, what school subjects can I teach and at what level?

Statistics graduates may apply to teach in primary schools or in secondary schools/junior colleges (JCs). NUS Statistics graduates are able to teach mathematics in secondary schools/JCs. It should be noted that the Ministry of Education (MOE) generally requires applicants to have two teaching subjects for secondary schools/JCs.

Please refer to www.moe.gov.sg/careers/teach/how-to-apply/teaching-schemes/degree-holders for information about teaching as a career.

8. Where can I find more information about studying statistics at NUS?

Please refer to the DSAP website at www.stat.nus.edu.sg.

9. Where can I find more information about statistics and career prospects for statistics graduates in general?

You can refer to the following websites for more information:
U.S. Bureau of Labor Statistics, Occupational Outlook Handbook: www.bls.gov/ooh
Careers website of the Royal Statistical Society: www.statslife.org.uk/careers
Your Career website of the American Statistical Association: www.amsYourtat.org//ASA/Your-Career/home.aspx