

ENSAI is the top French Graduate School specialising in Statistics. It is funded by the Ministry of Finance and belongs to the elite "Grande Ecole" system. Students do a full three-year postgraduate programme and can major in the fields of Bio-Statistics, Health Econometrics, Quantitative Marketing, Risk Management, Financial Engineering, Industrial Applications or Computer Science. The school delivers the "Diplôme d'Ingenieur" a prestigious degree equivalent to a Masters in Statistical

Engineering. Student recruitment is organised around a highly competitive national examination process which is usually preceded by two years of intensive undergraduate studies in Science. Students can also apply after having completed a BSc Honours Degree.

Furthermore, ENSAI trains the executive body of civil servants who provide statistics for government services including "INSEE" – *l'Institut National de la Statistique et des Études Économiques*.



Overview

In the first year of study

the core syllabus is composed of classes in Statistics, Probability, Mathematics, Computer Science, Economics, Social Sciences and Management. At the end of this first year the students carry out a compulsory company discovery work placement which must last for a minimum of 4 weeks. This internship may take place either in France or abroad and the main objective is that the students become familiar with the professional working world.

The second year of study

is made up of fundamental and optional courses involving advanced theories in Statistics. The students learn the techniques that are essential for their future profession of statistician and also have specific classes



in high-level computer languages such as SAS®, SPSS®, C++ and Java. Group projects enable the students to apply a wide range of techniques from real-life data. These projects are closely followed and monitored by professionals and academics alike.

Second year ends with an **applied internship in statistics** which must be carried out in a competitive company, a public or private research centre or a government organisation or administration. The objective of the internship, which lasts for two to three months, is to ensure the practical application of the theoretical knowledge acquired during the first two years of study.

The following are examples of **internship themes**: statistical analysis and SAS programming, the development of statistical tools for the evaluation of nutritional programmes on trial, clinical data management and statistical analysis, credit card analytics, statistical software development for generalised linear and non-linear mixed models.

In the third year of study

professionals make up most of the teaching body. Professional seminars are held throughout the year to complement theoretical classes. The following majors are offered: **QUANTITATIVE MARKETING, RISK MANAGEMENT and FINANCIAL**

ENGINEERING, HEALTH ECONOMETRICS, STATISTICS AND COMPUTER SCIENCE, BIO-STATISTICS and STATISTICAL TOOLS FOR INDUSTRIAL APPLICATIONS.

These majors allow students to specialise in one area of advanced applications in statistics.

In the third year, students add a new professional dimension to their scientific studies during a six month **End of Study Internship**. The students are placed in the statistics, computer science or economics departments of either public or private companies in France or abroad.

The following are some examples of **internship themes**: the elaboration of a fragile scoring chain, modelling the correlation between credit risk and market risk, web mining and measuring the audience on the internet through the use of artificial intelligence tools in auditing, the study of mixed models to coefficients of random heteroscedastic regression in quantitative genetics.

Thanks to a partnership agreement with the University of Rennes 1, ENSAI students, who wish to pursue a PhD, may follow a specially organised programme. In order to carry out their research the students are placed within laboratories such as INSERM, CNRS, CREST and INRA working for clients such as RENAULT, EUROCOPTER, SNCF, GLAXOSMITHKLINE.



General

Classes in communication and foreign languages are proposed to students throughout their studies. The TOEIC (Test of English for International Communication) is obligatory for all students. Optional classes in other languages such as Spanish, German, Japanese, Chinese and Arabic are also available. Group and individual sports may be practised at local, regional or national competition levels.



International

Internationally active, all ENSAI graduates are obliged to go abroad during their studies either on an internship or a school year/semester abroad. The school belongs to both the ERASMUS/SOCRATES and "Université Franco-Allemande" European university mobility programmes and has signed, to this day, 10 bilateral agreements with various statistics departments within institutions of higher education throughout Europe including The University of Sheffield - England, The University of Dortmund - Germany, The University of Bologna - Italy, The Polytechnic University of Barcelona - Spain.

Company contacts

Examples of some international companies which have taken on our students as trainees whether it be in 1st, 2nd or 3rd year are :

- **England** : Dunnhumby, GlaxoSmithKline, HSBC Bank, Eurostar, Clarins, British Airways.
- **Germany** : Aventis Pharma, Siemens Automotive, Checkpoint systems GMBH.
- **India** : The World Health Organisation.
- **Ireland** : Voluntary Health Insurance Company (VHI).
- **Spain** : IPSEN Pharma, Talleres de la Salve S.A. (Talsa).
- **USA** : Dartmouth Medical School, "Action Against Hunger" N.Y., American Express, TRS, NIST, The NPD Group Inc.



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Careers

The following are examples of typical areas of employment since the graduation of the first ENSAI students in 1997 :

- Quality Control Manager (Industry)
- Clinical Trial Manager (Pharmaceutical Industry)
- Research Engineer in Epidemiology (Health)
- Head of Management and Risk Control (Bank, Insurance)
- Director of Quantitative Studies (Market Study Companies, Survey and Polling Institutes)
- Marketing Analyst (Massive Retail Distribution)
- Consumer Testing Systems Engineer (Food, Cosmetic, Automobile industries)
- Systems Analyst (Service companies in Computer Science and Information Systems, Banks)