

Tell me more about MATHEMATICS

- I have a natural curiosity for science.
- I have a good capacity for analysis and abstraction.
- I know how to conduct logical reasoning.
- I like to manipulate and experiment with things.
- I'm interested in technological innovations.
- I would like to be able to use IT and modelling tools.
- I am willing to work hard at my studies.
- I have a solid grounding in scientific subjects.
- Candidates should ideally have a secondary-level background in science.

Most of the professions listed require master's level qualifications, but some of them can be accessed after 2 or 3 years' higher education.

Examples taken from the list of professions compiled by ODIF (Observatoire de la Direction des Formations), part of the University of Lille.

<https://odif.univ-lille.fr/>

WHICH PROFESSIONS?

Mathematics graduates can be found across all business sectors: computer engineering, industry, sales and retailing, telecommunications and networks, banking, insurance, transport, etc.

AUDITING- MANAGEMENT

- Management controller
- Auditing consultant
- Econometrician...

BANKING - FINANCE - INSURANCE

- Financial/credit analyst
- Head of financial research
- Head of actuarial research
- Portfolio manager
- Trader...

TEACHING - RESEARCH

- University lecturer
- Research engineer
- Primary school teacher
- Secondary school teacher...

MARKETING RESEARCH- STATISTICS

- Head of economic/statistical research
- Quantitative/qualitative research consultant
- Biostatistician...

INDUSTRY-TRANSPORT

- Aviation management analyst
- Structural engineer (aeronautics, aerospace,automotive, energy, etc.)...

IT

- Cryptologist
- Decision-support IT consultant
- Datascientist
- Webanalyst...

METEOROLOGY-ASTRONOMY

- Head of meteorological research
- Astronomer...

ROBOTICS - ARTIFICIAL INTELLIGENCE

- Knowledge engineer
- Head of analysis and development...

Tell me more about MATHEMATICS

POST-SECONDARY COURSES AVAILABLE AT THE UNIVERSITY OF LILLE

PROFESSIONAL TRAINING IN 2 YEARS

Theory combined with apprenticeships in the field. Selective admission.


DUT STATISTICS AND DECISION SUPPORT

2ND YEAR ALSO AVAILABLE AS PARALLEL STUDENT/EMPLOYEE PROGRAMME

Trains students how to process data: conduct surveys, design databases, statistical analysis, production and automation of dashboards, development of decision-support tools.

3-YEAR BACHELOR'S DEGREES

Theoretical grounding to prepare for further study up to master's level and/or civil service examinations.

The "exact science and engineering" (SESI)  programme offers gradual specialisation, with all first years taking the following 8 subjects: chemistry, EEEA¹, civil engineering, computer science, mathematics, mechanics, physics, and combined physics & chemistry. In semester 2, students can choose a path that will lead into **Mathematics** in their 2nd year.

DEGREE MATHEMATICS PARCOURS MATHEMATICS

Option available in 2nd year after one year on the SESI programme. This degree provides a solid grounding in the field enabling students to pursue further study in all specialty areas of mathematics (pure and applied) as well as engineering.

DEGREE COMPUTER SCIENCE PARCOURS MATHS-IT

Option available in 3rd year that enables students to take the CAPES examination in mathematics with computer science as an option with a view to teaching mathematics at secondary level in France.

DEGREE MIASHS ²

Scientific training to teach students how mathematics and IT can be used to represent, understand and study the phenomena that fall under the human and social sciences: how languages evolve, pricing-related problems, drivers of economic growth, behavioural responses to risk, man-machine interface design, data from archaeological digs, cliometrics, social impact of pollution, etc. Suitable for students with a background in science or economics and social studies.

DEGREE MIASHS ²

OPTION MATHEMATICS APPLIED TO SOCIAL SCIENCE

Option available from 1st year onwards with a focus on three main disciplines: mathematics (analysis, algebra from S1 to S3 (120 hrs per semester), probability, differential calculus beginning in S4), economics and management science, and computer science.

It is possible to continue this course until 3rd year or to choose a degree in mathematics, computer science or economics & management.

DEGREE MIASHS ²

Course run on the Pont-de-Bois campus. The 1st year of the programme introduces students to the different areas of the human and social sciences and includes between 192 and 216 hours of mathematics (depending on options chosen) and around 100 focusing on computer science. 5 options are available beginning in the 2nd year.

• MATHEMATICS APPLIED TO ECONOMICS

Students are taught the knowledge they need in applied mathematics and computer science to address challenges facing businesses in economic analysis, econometrics, and statistics generally.

• COGNITIVE SCIENCE

Course providing students with skills in mathematics and computer science to conduct modelling in cognitive science. These disciplines interact with cognitive psychology, neuropsychology, biology and neuroscience.

• LINGUISTICS

This course uses mathematics and computer science to study linguistic questions (linguistic morphology, statistical corpus analysis, language sounds, etc.).

• COMBINED HISTORY & GEOGRAPHY

Course drawing on mathematics and computer science to enable students to work with modelling and analytical tools to study historical facts and geographic data (studying historical series, spatial statistics, cartography, geographic information systems, etc.).

• MATHEMATICS, STATISTICS & DECISION-SUPPORT COMPUTING

Option only available in 3 year and reserved for holders of the DUT STID³.

¹Electronique énergie électrique, automatique

² Mathématiques et informatique appliquées aux sciences humaines et sociales ³Statistique et informatique décisionnelle

DEGREE PROGRAMMES AND OPTIONS THAT STUDY MATHEMATICS THROUGH OTHER DISCIPLINES

DEGREE **ECONOMICS AND MANAGEMENT** **A**

OPTION **MATHEMATICS, COMPUTER SCIENCE AND STATISTICS APPLIED TO ECONOMICS AND MANAGEMENT (MISEG)**

SELECTIVE PROGRAMME

Option available in 2nd year. In-depth complementary training in mathematics, computer science and statistics (including econometrics).

DEGREE **ECONOMICS AND MANAGEMENT** **C** OPTION **QUANTITATIVE ECONOMICS AND ECONOMETRICS**

Option available in 2nd year drawing on mathematics and statistics in the field of economics to develop skills in modelling and processing economic data using econometric techniques.

SPECIFIC MATHEMATICS DEGREE PROGRAMMES

OPTION **RESEARCH FOCUS** **A** **A**

Course intended for school leavers with a scientific background interested in working as a researcher, university lecturer or engineer, particularly in physics, chemistry or mathematics.

OPTION **SESI (BILINGUAL)** **A** **A**

Course providing specific competency in scientific English. Offered in 1st year; students can continue to 2nd year in mathematics and combined physics & chemistry.

PRIMARY SCHOOL TEACHER TRAINING

DEGREE **EDUCATIONAL SCIENCE** **A**

PARCOURS **EDUCATIONAL SCIENCE** OPTION **SCIENTIFIC TRAINING AND COMMUNICATION (FOCUS)**

Option available in semester 4. Generalist scientific modules and an initiation for instructors, moderators and communication roles in scientific fields. Particularly suited to graduates wishing to work as primary school teachers.

AFTER 2 YEARS OF HIGHER EDUCATION

Whatever your background, you have the option of completing professional training. This course lasts one year and allows you to specialise, obtain a dual qualification or enter the job market after 3 years in higher education. This professional diploma is designed to lead immediately to employment.

DEGREE **LITERATURE** **C** **A**

PARCOURS **LITERATURE-MATHEMATICS**

Programme combining literary coursework and writing skills with a solid grounding in mathematics.

DEGREE **MECHANICS**

PARCOURS **MECHANICAL SCIENCE AND ENGINEERING** **A**

2nd-year course training students in computation, digital simulation and modelling applied to fluid mechanics (e.g. aerodynamics) and the mechanics of solids (e.g. resistance of materials). See "Tell me more about engineering professions".

COURSE **MASTER'S IN ENGINEERING (CMI)**

A **A**

Course available from year 1. Taught over 5 years with graduates qualifying as engineers. Based on the coursework of the mathematics degree with additional modules.

AFTER A BACHELOR'S DEGREE

You can continue your studies to master's level (5 years in higher education) in fields such as mathematics, engineering or finance to find employment in R&D, statistics, decision-support computing, economics and management, as well as applied mathematics, or choose to sit civil service examinations.

Graduates can also apply for admission to engineering schools at the end of their 2nd or 3rd year (e.g. Polytech'Lille).

The information here is valid for the reference year 2018-2019. The academic programmes at ULille are subject to change in September 2020

More info: consult the catalogue of courses at <https://www.univ-lille.fr/formations> or contact **SUAIO**

A **PARCOURSUP**

Find out about the requirements and terms of access for each course at: www.parcoursup.fr

Main campuses:

- A** Campus Cité scientifique (V. D'Ascq)
- B** Campus Moulins-Ronchin
- C** Campus Pont-de-Bois (V. D'Ascq)
- D** Campus Roubaix-Tourcoing
- E** Campus Santé (Lille ; Loos)

UNIVERSITY OF LILLE

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MATHEMATICS



www.univ-lille.fr