

### After Graduation

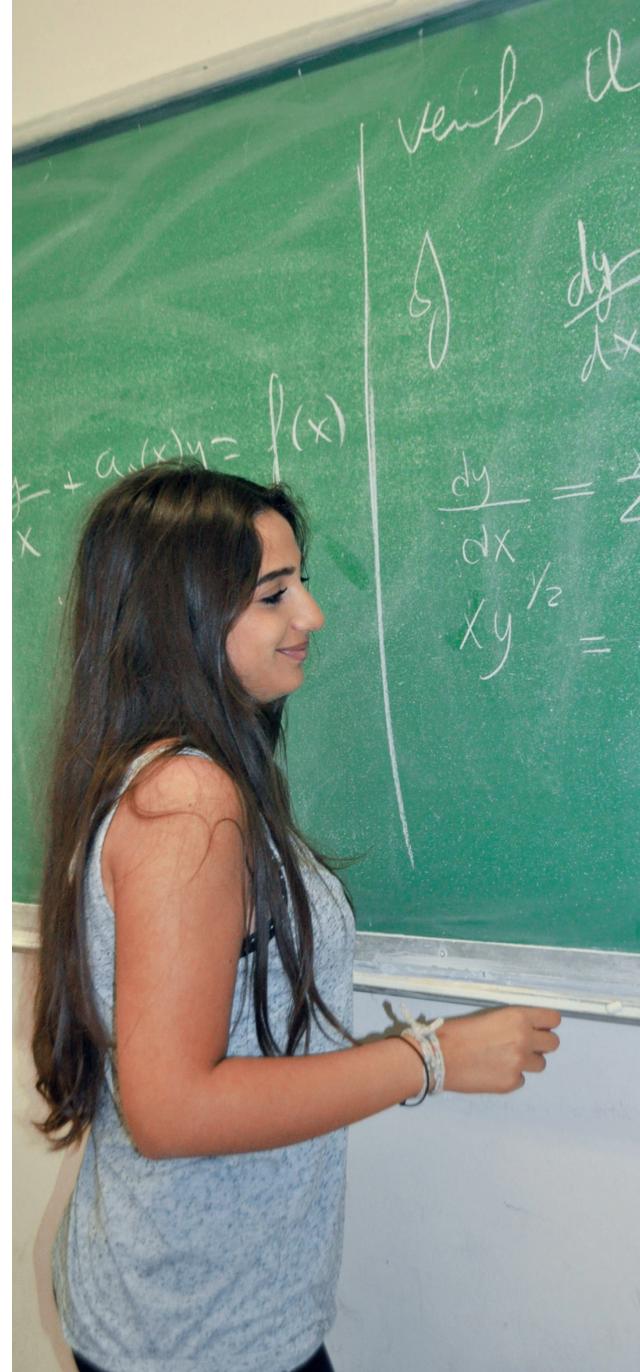
The analytical skills gained through the Mathematics and the Statistics program teach students a dynamic yet systematic way of thinking that opens the door to a wide range of career opportunities within various fields.

Students can enter different professions such as **economics and investment banking, risk management and finance** with actuarial firms or analysis and planning with statistical firms.

Many students also decide to continue their education in mathematics.

#### To learn more about the Mathematics & Statistics Department:

**Web** [www.aub.edu.lb/fas/math](http://www.aub.edu.lb/fas/math)  
**Email** [math@aub.edu.lb](mailto:math@aub.edu.lb)



## MATHEMATICS & STATISTICS

### Undergraduate Program

#### Quantitative Sciences

The Mathematics department maintains a top rated undergraduate program that cultivates analysis, research and application.

Offering options of both BS and BA degrees in pure mathematics, applied mathematics, and statistics, the department of Mathematics offers an indepth range of practical and theoretical knowledge.

## Faculty of Arts and Sciences

**Tel** +961 1 343 002  
**Fax** +961 1 744 460  
**Web** [www.aub.edu.lb/fas](http://www.aub.edu.lb/fas)  
**Email** [fas@aub.edu.lb](mailto:fas@aub.edu.lb)

## Sample Courses

### MATH 210

#### Introduction to Analysis

Examines the real numbers, completeness, sequences and series, basic topology of the real line, and compact sets.

### MATH 218

#### Elementary Linear Algebra with Application

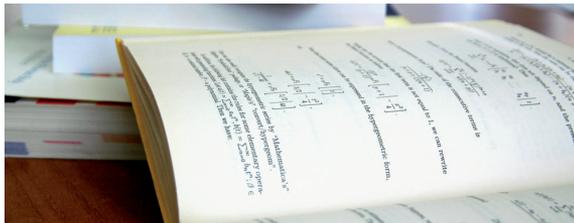
An introduction to linear algebra at a less theoretical level. The course examines systems of linear equations, Gaussian elimination, and subspaces and dimension.

### STAT 210

#### Elementary Statistics for the Sciences

Populations, samples and sampling error, types of data frequency distributions, and graphical displays of data.

*"Mathematics as an expression of the human mind reflects the active will, the contemplative reason, and the desire for aesthetic perfection." –Richard Courant*



Within the Mathematics department students have the option of choosing between six majors depending on their interests and their future goals. The program guides students in their training of *quantitative reasoning, dealing with abstraction, and enhancing their sense of formalism.*

### Curriculum

Through the different fields of **Algebra, Analysis, Geometry, Number Theory, Statistics** and **Applied Mathematics**, students will acquire a sound balance between *abstract generality* and *colorful individuality*, and between *qualitative* and *quantitative* aspects of Mathematics.

Although there is no intrinsic difference between the BA and BS degrees, they help offer options and future career direction. The **BS** degree prepares students for **graduate school in mathematics**, while the **BA** prepares you for a second track close to **mathematical sciences**.

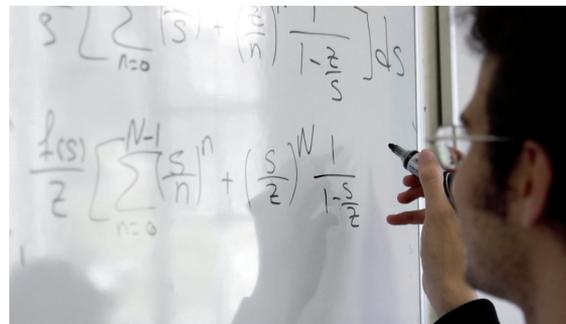
### Degrees in Pure and Applied Mathematics

All students follow a mathematical analysis sequence. This begins through introductory courses in **calculus** and then advances to **multivariable calculus**. These courses form the building blocks to real analysis that is usually offered at later stages, such as a well-designed course

on complex analysis. **Analysis courses** help students build a full theoretical understanding of the bigger mathematical picture.

Students also study the **Algebra sequence**. These courses progress from *linear algebra to abstract algebra and number theory*. The algebra sequence usually covers groups, rings, fields and Galois theory. Advanced topics are also offered in our graduate algebra courses.

Other courses offered to math majors include advanced courses in *topology, geometry, number theory, partial differential equations, Fourier analysis, and numerical computing.*



### Degrees in Statistics

Students pursuing a degree in **Statistics and Probability** can follow a sequence of courses in *statistical inference, regression, survey sampling, non-parametric statistics, probability and applied probability* in addition to a course in *simulation and Monte Carlo methods*.

### Student Activities

With the help of our graduate students, the **Math Clinic** serves as a tutoring center to our students. Students have the opportunity to prepare for their courses through guided tutoring.

### MATH 211

#### Discrete Structures

This course addresses logical reasoning, sets, relations and functions, counting and simple finite probability.

### MATH 251

#### Numerical Computing

Examines techniques of numerical analysis: number representations and round-off errors, root finding, approximation of functions, integration, solving initial value problems and Monte-Carlo methods.

### STAT 235

#### Applied Regression Analysis

Concepts of straight line regression, multiple regression, analysis of variance and analysis of covariance, hypothesis testing, and regression diagnostics.