

- Faculté des sciences
- www.unine.ch/sciences

Number Theory (3MT2127)

Filières concernées	Nombre d'heures	Validation	Crédits ECTS
Master en mathématiques	Cours: 4 ph	Voir ci-dessous	6

ph=période hebdomadaire, pg=période globale, j=jour, dj=demi-jour, h=heure, min=minute

Période d'enseignement:

- Semestre Printemps

Equipe enseignante

Dr Gabriel Dill

Contenu

Number theory is the study of the integers ... -1, 0, 1, 2, ...

In this course, we will encounter the following questions (among others): How many prime numbers are there up to one trillion? Which natural numbers are sums of two squares? If we choose two numbers at random, what is the probability that they do not have any common factor greater than 1?

We will study the following topics (if time permits):

- Distribution of prime numbers
- Geometry of numbers
- Sums of squares
- Pythagorean triples
- Quadratic reciprocity
- Diophantine approximation
- Irrational and transcendental numbers
- Arithmetic functions

Forme de l'évaluation

Oral exam (30 minutes)

Modalités de rattrapage

Oral exam (30 minutes)

Pré-requis

Courses of the first year of the bachelor in mathematics

Having followed "Analyse vectorielle", "Introduction à l'analyse complexe", "Algèbre", and "Mesures, intégration et probabilités" will be helpful to understand certain arguments, but is not strictly required.

Forme de l'enseignement

Ex cathedra + exercises