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<b>Department/Area of Study:</b>	Economics
<b>Discipline:</b>	Introduction to the Mathematical Method for Economists (EA0XX)
<b>Number of credits:</b>	2
<b>Academic hours:</b>	30 h/a
<b>Prerequisites:</b>	-

## 1 Overview

This course introduce to the student to the most fundamental methods of mathematics, such methods are the common ways to write proofs.

## 2 Objectives

By the end of the course students will be able to:

1. Proof correctly mathematical statements.
2. Discuss Mathematical proofs.
3. Understand the mathematical Method.

## 3 Contents

1. Fundamentals: Sets; Logic; Counting.
2. How to Prove Conditional Statements: Direct Proof; Contrapositive Proof ;Proof by Contradiction.
3. More on Proof: Proving Non-Conditional Statements; Proofs Involving Sets; Disproof; Mathematical Induction.
4. Relations, Functions and Cardinality: Relations; Functions ; Cardinality.

## 4 Texts

### Principal

Fields, J. (2014). *A Gentle Introduction to the Art of Mathematics, Version 3. 1.*  
Hammack, Richard H (2013). *Book of Proof.* Virginia Commonwealth University.  
Polya, Georg (2014). *How to Solve it.* Princeton Univers. Press.



## Complementary

Knut Sydsaeter Peter J. Hammond, Arne Strom (2012). *Essential Mathematics for Economic Analysis*. Prentice Hall.

Sundstrom, T. (2014). *Mathematical Reasoning: Writing and Proof Version 2.0*. Createspace Independent Pub.

Velleman, Daniel J (2006). *How to prove it: a structured approach*. Cambridge University Press.

## 5 Contact Information

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