Abstract: The financial crisis in 2007-2008 has sparked renewed interest on financial mathematics. Since most of the tradings on Wall Street are performed based on sophisticated mathematical models, one would naturally question to what extent they are to blame for the crisis. However, I believe that it is not the models, but the model-users who are at fault in this situation. Robert Merton, Nobel laureate in economics wrote in a recent article in Harvard Business Review: A model is unreliable if the person using it does not understand it or its limitations."

But to understand a specific model and its limitation, one first needs to understand the field and the subject area. In this talk, I will introduce the fundamental concepts of financial mathematics, as well as the fundamental questions it tries to answer. New areas of research will also be mentioned, as well as other branches of mathematics that are related to math finance. We will see a very basic model for pricing a financial instrument, and how misunderstandings of this model can potentially lead to a crisis, as mentioned in the quote above. This talk is intended for the general audience, no background in finance is required.