Abstract: In a moment when few students enrol in courses within the Faculty of Science, the problem of first year undergraduates’ difficulties in mathematics has become a social issue. The main consequences for students are a delay in graduating and, sometimes, the feeling that they made the wrong choice. Lately, a number of initiatives have been undertaken by both the Ministry and the Universities in order to stem this phenomenon.

In this paper, we look at students’ difficulties in mathematics from a perspective that is opposed to that viewing the only origin of these difficulties in students’ lack of preparation. Our “alternative” interpretation guided us in the design and planning of preliminary courses that have been organised over the past five years by the University of Pisa’s Faculty of Science and set up by a working group including both the authors. We will try to account for the specific nature of these courses through a description of objectives, part of the original materials produced and used during the sessions and methodology underlying the actual development of the sessions.