

## Preface

The goal of this book is to introduce the reader to different topics of the theory of elliptic partial differential equations avoiding technicalities and refinements. The material of the first part is written in such a way it could be taught as an introductory course. Most of the chapters – except the four first ones – are independent and some material can be dropped in a short course. The four first chapters are fundamental, the next ones are devoted to teach or present a larger spectrum of the techniques of this topics showing some qualitative properties of the solutions to these problems. Everywhere just a minimum on Sobolev spaces has been introduced, work or integration on the boundary has been carefully avoided in order not to crowd the mind of the reader with technicalities but to attract his attention to the beauty and variety of these issues. Also very often the ideas in mathematics are very simple and the discovery of them is a powerful engine to learn quickly and get further involved with a theory. We have kept this in mind all along Part I.

Part II contains more advanced material like nonlinear problems, systems, regularity... Again each chapter is relatively independent of the others and can be read or taught separately.

We would also like to point that numerous results presented here are original and have not been published elsewhere.

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