INTRODUCTION

These notes grew out of lectures given by the author at the Institut für Angewandte Mathematik, Heidelberg University, and at the Centre for Mathematical Analysis, Australian National University.

A central aim was to give the basic ideas of Geometric Measure Theory in a style readily accessible to analysts. I have tried to keep the notes as brief as possible, subject to the constraint of covering the really important and central ideas. There have of course been omissions; in an expanded version of these notes (which I hope to write in the near future), topics which would obviously have a high priority for inclusion are the theory of flat chains, further applications of G.M.T. to geometric variational problems, P.D.E. aspects of the theory, and boundary regularity theory.

I am indebted to many mathematicians for helpful conversations concerning these notes. In particular C. Gerhardt for his invitation to lecture on this material at Heidelberg, K. Ecker (who read thoroughly an earlier draft of the first few chapters), R. Hardt for many helpful conversations over a number of years. Most especially I want to thank J. Hutchinson for numerous constructive and enlightening conversations.

As far as *content* of these notes is concerned, I have drawn heavily from the standard references Federer [FH1] and Allard [AW1], although the reader will see that the presentation and point of view often differs from these references.

An outline of the notes is as follows. Chapter 1 consists of basic measure theory (from the Caratheodory viewpoint of outer measure). Most of