AN INTRODUCTION TO MATHEMATICAL PHYSICS

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649055722

An Introduction to Mathematical Physics by R. A. Houstoun

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

www.triestepublishing.com

R. A. HOUSTOUN

AN INTRODUCTION TO MATHEMATICAL PHYSICS

Trieste

AN INTRODUCTION TO MATHEMATICAL PHYSICS

AN INTRODUCTION

TO

MATHEMATICAL PHYSICS

BY

R. A. HOUSTOUN, M.A., PH.D., D.Sc.

LECTURER ON PHYSICAL OPTICS AND ASSISTANT TO THE PROFESSOR OF NATURAL PHILOSOPHY IN THE UNIVERSITY OF GLASGOW

LONGMANS, GREEN, AND CO.

39 PATERNOSTER ROW, LONDON

NEW YORK, BOMBAY, AND CALCUTTA

1912

PREFACE

THIS book is the substance of lectures I have given during the past six years to the Natural Philosophy Class A in the University of Glasgow.

It is intended primarily as a class-book for mathematical students and as an introduction to the advanced treatises dealing with the subjects of the different chapters, but since the analysis is kept as simple as possible, I hope it may be useful for chemists and others who wish to learn the principles of these subjects. It is complementary to the text books in dynamics commonly used by junior honours classes.

A knowledge of the calculus and a good knowledge of elementary dynamics and physics is presupposed on the part of the student.

A large proportion of the examples has been taken from examination papers set at Glasgow by Prof. A. Gray, LL.D., F.R.S., to whom I must also express my indebtedness for many valuable suggestions. The proofs have been read with great care and thoroughness by Dr. John M'Whan of the Mathematical Department.

R. A. HOUSTOUN.

CONTENTS

CHAPTER I.

ATTRACTION.

CHAPTER II.

HYDRODYNAMICS.

CHAPTER III.

FOURIER SERIES AND CONDUCTION OF HEAT.

CHAPTER IV.

WAVE MOTION.

CHAPTER V.

ELECTROMAGNETIC THEORY.

CHAPTER VI.

THERMODYNAMICS.