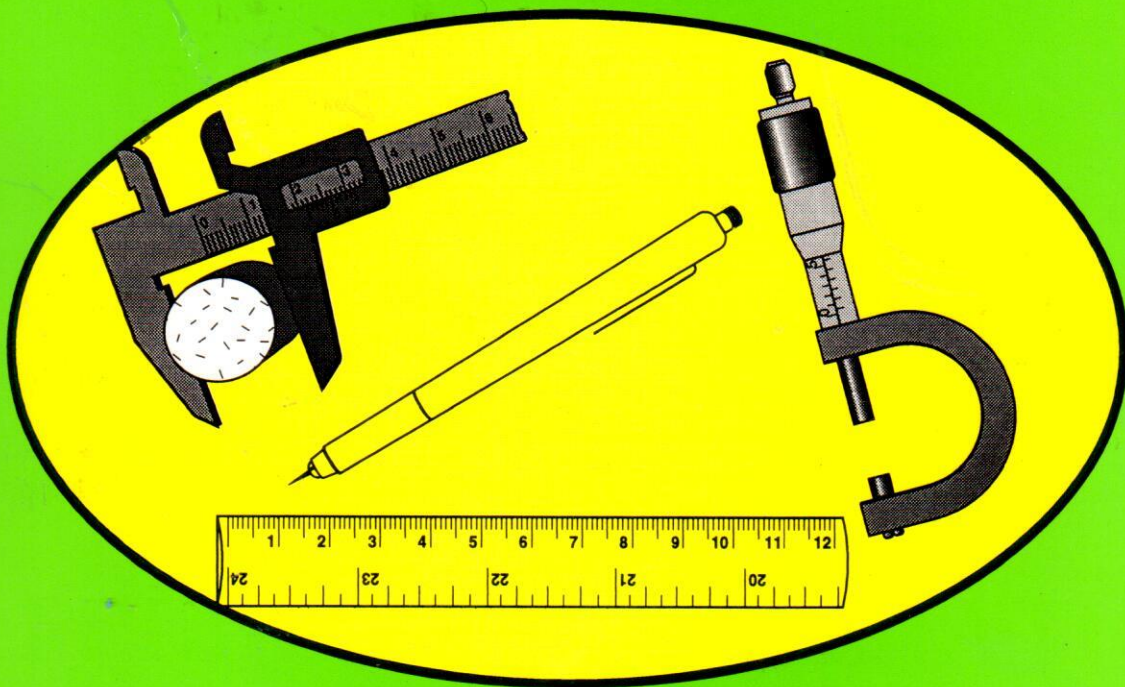

APPLIED MATHEMATICS

FOR

CRAFT ENGINEERING



• Prof. S. M. Uppal •

• James Kamau A. N. •

• Simon N. Gicharu •

• H. M. Humphreys •

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BY

**PROF. S.M. UPPAL
SIMON N. GICHARU
JAMES KAMAU A.N
H. M. HUMPHREYS**



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FOREWORD

Applied Mathematics for Craft Engineering is designed for the Craft Engineering Syllabus as set out by the Kenya Institute of Education (KIE). The book emphasizes a practical and student-centred approach to learning Applied Mathematics. Prior to publication of the book, the manuscript was tested at Thika Technical Training Institute, where it was found to be useful and relevant to craft, technician and diploma courses.

The book covers topics intended to provide students with skills and techniques necessary for solving Engineering course problems.

This fine piece of work is the result of commendable research by experienced authors with a solid background in Applied Mathematics.

I recommend the text as a set book for use in Technical Institutes, and National Polytechnics. Other educational institutions including secondary schools will find it useful as a reference book.

H. MAGARE

Principal - Thika Technical Training Institute - Thika, Kenya

PREFACE

Applied Mathematics for Craft Engineering book follows closely the syllabus drawn by the Kenya Institute of Education (KIE) for the new craft training programme.

This book will assist students in following the mathematics programme as laid down in their various fields of study. The textual material is interspersed with an abundance of illustrative examples and comprehensive exercises for further practice. The topics in this book are set out to provide learners/trainees with mathematical skills and techniques that they may require wholly or partially in application to their different craft trades.

After successful completion of this course, the trainees/learners should be able to:

- (a) Use mathematical concepts and techniques in solving problems related to their respective trade.
- (b) Draw simple deductions and conclusion from given data.
- (c) Interpret graphical representation of functions relevant to their respective trade.

The book assumes that the students have satisfactorily completed K.C.S.E. Mathematics Syllabus . Included is Chapter 12 on Differential and Integral Calculus for further reading.

At the end of the book there are several examination standard questions. We hope the reader will find the book suitable for the course. The book can also be used as a reference book by students pursuing technician courses.

PROF. S.M. UPPAL
GICHARU S.N.
KAMAU JAMES A.N.
H.M. HUMPHREYS

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APPLIED MATHEMATICS FOR CRAFT ENGINEERING

Mathematics is a service subject for engineers, technicians and all those undertaking courses in craft related subjects. They therefore require well tailored Mathematics to assist them in solving technological problems in their respective trades. Applied Mathematics for Craft Engineering aims at filling the gap that exists in the market in this area. Based on the syllabus for technician courses in the Technical Institutes, Institutes of Technology and Polytechnics, the book presents problems, worked examples and test paper questions that would enable trainees comfortably pass their Technician exams without much difficulty.

Prof. S. M. Uppal, a Phd. holder in Mathematics, has much experience in teaching University Mathematics at university level and is the current Chairman of the Mathematics and Computer Science Department at Jomo Kenyatta University of Agriculture and Technology.

S. N. Gicharu, a graduate teacher of Mathematics, has extensive experience of teaching Mathematics in various secondary schools in Kenya. Currently Gicharu is a Mathematics lecturer at Thika Technical Institute and a part time lecturer in Mathematics at Jomo Kenyatta University of Agriculture and Technology.

J. A. N. Kamau has broad experience of teaching Applied Mathematics to technicians. Currently Kamau is the Head of the Mathematics Department at Thika Technical Institute.

H. M. Humphreys is an MSc. holder in Mathematics. Humphreys is currently a lecturer in Mathematics at Jomo Kenyatta University of Agriculture and Technology.



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