

# ENGINEERING PRACTICE & EDUCATION IN MALAYSIA



## ENGINEERING PRACTICE & EDUCATION IN MALAYSIA

Norlida Buniyamin



#### © UiTM Press, UiTM 2022

All rights reserved. No part of this publication may be reproduced, copied, stored in any retrieval system or transmitted in any form or by any means; electronic, mechanical, photocopying, recording or otherwise; without prior permission in writing from the Director of UiTM Press, Universiti Teknologi MARA, 40450 Shah Alam, Selangor Darul Ehsan, Malaysia. E-mail: penerbit@uitm.edu.my

#### UiTM Press is a member of MALAYSIAN SCHOLARLY PUBLISHING COUNCIL

Perpustakaan Negara Malaysia

Cataloguing-in-Publication Data

Norlida Buniyamin

Engineering Education & Practice in Malaysia / NORLIDA BUNIYAMIN.

(Professorial Lecture UiTM) ISBN 978-967-363-823-9

- 1. Engineering--Malaysia.
- 2. Engineers--Malaysia.
- 3. Consulting engineers--Malaysia.
- 4. Engineering firms--Malaysia.
- $5.\ Government\ publications \hbox{--} Malaysia.$
- I. Title. II. Series.

620

Cover Design: Nurhunaina Mohd Bani Typesetting: Mohd Fadhel Mohd Drus

Printed in Malaysia by: UiTM Printing Centre

College of Creative Arts Studies Universiti Teknologi MARA

40450 Shah Alam

Selangor

### **CONTENTS**

List of Figures	ix
List of Tables	xiii
Preface	xv
Acknowledgement	xix
Chapter 1: Introduction	1
1.1 Introduction	1
1.1.1 What is Engineering	1
1.2 Historical Overview of Engineers Contribution to Nation	
Building	3
1.2.1 Contribution of Electrical Engineers to Nation	
Building	6
1.2.2 Evolution of Malaysian Engineers	8
1.3 Historical Overview of Education in Malaysia	13
1.3.1 Engineering Education-the Early Days	15
1.3.2 The First Engineering University in Malaya/Malaysia	16
1.3.3 Universiti Teknologi MARA, Malaysia's	
Largest University	17
1.4 Conclusion	19

#### **PREFACE**

To choose a topic for my professorial lecture turns out to be quite difficult. I do have many interests, in various areas of research in technical engineering fields and in engineering education, that are interesting and exciting to me. I have indulged myself in these interests and am involve in many areas in both engineering education and in the technical areas of the profession of engineering.

In the end, this topic was selected as it could potentially reach many lecturers in the college of engineering that maybe interested in a particular area. With the merger of all engineering faculties in Universiti Teknologi MARA (UiTM), and we are now the College of Engineering, UiTM, I have selected a topic that I hope will be of interest to most of us as an educator and a practitioner in the many technical fields of engineering. In my experience of more than 30 years as an engineering practitioner, I have been active in the areas of Knowledge Management, Robotics & Automation, Biomedical Engineering and Engineering Education. Throughout these years, interest in research in Engineering Education and the development of policies in engineering education have remained with me.