



As per new syllabus of Gujarat Technological University

Engineering Graphics

SUBJECT CODE: 2110013



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Engineering Graphics

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Dedicated
To My Parents

Foreword

The syllabus for the first year of engineering has been revised and here is a book that is written based on the new syllabus. One of the first things that attract everyone's attention is the excellent presentation. Anyone who goes through the book cannot miss the enormous work that has gone into its preparation. Teachers of Engineering Drawing will be able to realize that this is not a book prepared through cut-and-paste technique. The work is the extract of the knowledge gained by an experienced teacher who has been very successfully teaching this subject for more than 25 years with utmost devotion.

The language used throughout this book is simple and can be followed by students who have done their schooling through English or any other medium of instruction. This book has an extensive number of worked examples from university question papers which will be very useful to the students.

On the whole, this book exhibits thorough understanding of the subject by the author. I am sure the students will find this book useful for a clear understanding of the subject. I congratulate the author for bringing out a book of this kind and I'm sure that the author would be proud of his achievement.

G Maikandhan

Former Professor of Mechanical Engineering
Hindustan Institute of Technology and Science
Chennai – 603 103

Preface

Engineering Graphics is one of the important engineering subjects that instill the qualities required for an engineering student like imagination, skill, visualization of the problem and neat presentation of drawing documents, through continuous hard work. Engineering drawing is an excellent subject which helps to develop habits of logical thinking and effective technical communication. Engineering Graphics builds the foundations of analytical capabilities for solving a great variety of engineering problems, including diagrams. It also has numerous real-time applications in almost all branches of engineering.

To succeed in Engineering Graphics, it is essential to develop a well-disciplined method of hypothesis up to conclusion by applying applicable principles. This book reflects years of experience in teaching and discloses the importance of developing the ability to represent one's work in a logical and concise manner. The problems discussed in this book have been practiced in regular classroom teaching and the sequences of problems in examples are proved to be the best for any learner.

Many examples and problems given in this book are prepared considering the old question papers of various universities across the country. Almost all varieties of problems are discussed and similar questions are also given in the exercises.

I hope this book will provide a stimulus and help students develop a strong background in engineering. Any suggestions for the improvement of the book are welcome. For any assistance, clarifications and feedback, contact jeyapoovan@gmail.com. Also visit www.EGlive.in for Engineering Drawing and Graphics educational Blog for learning and free downloads.

T Jeyapoovan

Acknowledgements

I would like to thank the management of Hindustan Institute of Technology and Science, Hindustan University, the late founder Chairman Dr K C G Verghese who inspired me to the art of writing and motivated me to achieve success. I am highly indebted to our Chancellor Dr Elizabeth Verghese, Pro Chancellor Dr Anand Verghese, Vice - Chancellor Dr S Ramachandran, Directors Dr Aby Sam and Mr Ashok Verghese and Joint Director Mr Abraham Verghese for their inspiration and encouragement in bringing out this book.

I am grateful to Prof. G Maikandhan for his encouragement and for writing the Foreword for this book. I would like to acknowledge Dr T.S. Ravikumar, Head, Mechanical Department, my colleagues in the department and other staff members for their assistance and encouragement in writing this book.

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T Jeyapoovan

Gujarat Technological University

I Year B.E.

ENGINEERING GRAPHICS

SUBJECT CODE: 21 10013

Content:

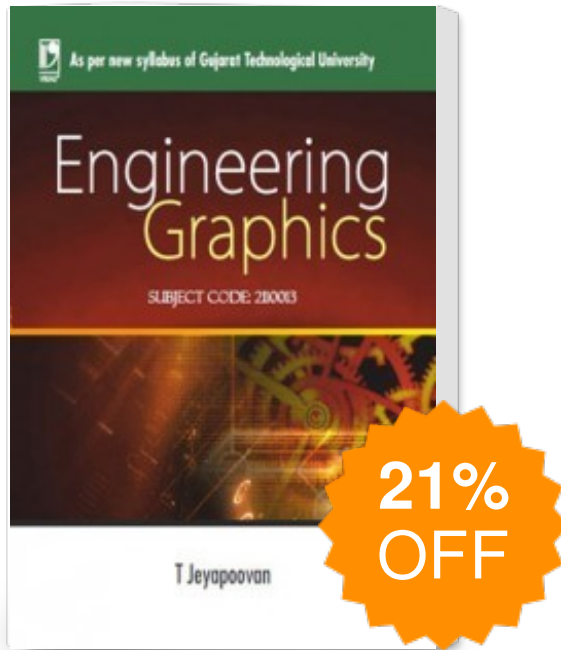
Sr. No.	Topics	Teaching Hrs.	Module Weightage
1	Introduction to Engineering Graphics: Drawing instruments and accessories, BIS – SP 46. Use of plain scales, Diagonal Scales and Representative Fraction	–	20%
2	Engineering Curves: Classification and application of Engineering Curves, Construction of Conics, Cycloidal Curves, Involutives and Spirals along with normal and tangent to each curve	6	
3	Projections of Points and Lines: Introduction to principal planes of projections, Projections of the points located in same quadrant and different quadrants, Projections of line with its inclination to one reference plane and with two reference planes. True length and inclination with the reference planes	6	30%
4	Projections of Planes: Projections of planes (polygons, circle and ellipse) with its inclination to one reference plane and with two reference planes, Concept of auxiliary plane method for projections of the plane	6	
5	Projections of Solids and Section of Solids: Classification of solids. Projections of solids (Cylinder, Cone, Pyramid and Prism) along with frustum with its inclination to one reference plane and with two reference planes. Section of such solids and the true shape of the section		15%
6	Orthographic Projections: Fundamental of projection along with classification, Projections from the pictorial view of the object on the principal planes for view from front, top and sides using first angle projection method and third angle projection method, full sectional view	–	35%
7	Isometric Projections and Isometric View or Drawing: Isometric Scale, Conversion of orthographic views into isometric projection, isometric view or drawing	–	

Note: Topic No. 1, 6 and 7 of the above syllabus to be covered in Practical Hours.

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