

Process Equipment Cost Estimating by Ratio and Proportion

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Randall W. Whitesides, P.E.

Course Overview

Students of this one-hour course will be provided with two simple methods to arrive at approximate equipment costs during preliminary estimate preparation.

Learning Objective

At the conclusion of this course the student will:

- Understand the applicability of ratio and proportion estimating methods;
- Learn the technique to factor costs to correspond to varying equipment sizes and capacities;
- Learn the technique to escalate or otherwise adjust historical costs.

Intended Audience

This course is intended for anyone involved with cost estimate generation.

Benefits for Attendees

This course will provide new methods of estimating for some and refresher information for others. The course material can be used as a reference source for actual future situations.

The course includes a true-false test at the end.

Introduction

This course provides the student with an understanding of the estimating technique known as *The Rule of Six-tenths* and when appropriate, use of this rule in combination with cost indices. The various types of estimates are discussed as prerequisite background. Equations are provided to enable the student to escalate or otherwise adjust historical equipment cost data.

Content

Cost Estimate Types and Accuracy

Regardless of accuracy, capital cost estimates are typically made-up of direct and indirect costs. Indirect costs consist of project services, such as overhead and profit, and engineering and administrative fees. Direct costs are construction items for the project and include property, equipment, and materials. This course deals with the equipment component of direct cost.

Process Equipment Cost Estimating By Ratio And Proportion

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Process Equipment Cost Estimating By Ratio And Proportion:

Managing Cost Estimating & Budgeting - Project Controls Planning Planet, The Managing Cost Estimating and Budgeting Module is to introduce the tools techniques and methodologies associated with cost estimating and budgeting that have been identified as being best tested and proven practices and which have been found to work on most projects most of the time provide a logical or rational sequence showing when those tools or techniques would normally and customarily be used and in selected instances show how to use those tools techniques and or where to find additional information on how to use or apply them An Economy Based on Carbon Dioxide and Water Michele Aresta, Iftekhar Karimi, Sibudjing Kawi, 2019-07-01 This book is devoted to CO₂ capture and utilization CCU from a green biotechnological and economic perspective and presents the potential of and the bottlenecks and breakthroughs in converting a stable molecule such as CO₂ into specialty chemicals and materials or energy rich compounds The use of renewable energy solar wind geothermal hydro and non fossil hydrogen is a must for converting large volumes of CO₂ into energy products and as such the authors explore and compare the availability of hydrogen from water using these sources with that using oil or methane Divided into 13 chapters the book offers an analysis of the conditions under which CO₂ utilization is possible and discusses CO₂ capture from concentrated sources and the atmosphere It also analyzes the technological non chemical uses of CO₂ carbonation of basic minerals and industrial sludge and the microbial catalytic electrochemical photoelectrochemical plasma conversion of CO₂ into chemicals and energy products Further the book provides examples of advanced bioelectrochemical syntheses and RuBisCO engineering as well as a techno energetic and economic analysis of CCU Written by leading international experts this book offers a unique perspective on the potential of the various technologies discussed and a vision for a sustainable future Intended for graduates with a good understanding of chemistry catalysis biotechnology electrochemistry and photochemistry it particularly appeals to researchers in academia and industry and university teachers **Principles of Sustainable Energy Systems** Charles F. Kutscher, Jana B. Milford, Frank Kreith, 2025-08-14 Principles of Sustainable Energy Systems provides students with a fundamental and practical understanding of the energy transition It discusses the design production and economics of energy conversion and storage technologies as well as requirements and technologies for the end use sectors of transportation buildings and industry This book begins by introducing students to the important field of sustainability and then presents comprehensive coverage of solar wind hydropower biomass and bio fuels geothermal nuclear and ocean based energy technologies This new edition features recent advances in batteries and other storage technologies electricity transmission electric vehicles and beneficial electrification and demand response in buildings as well as approaches for reducing emissions from shipping and aviation It introduces new material on low carbon building materials heat pumps and the practical design aspects of solar photovoltaic systems This book also covers economics and energy systems analysis methods such as life cycle assessment and greenhouse gas accounting including detailed examples of design

and financial analysis using the System Advisor Model SAM This book is intended for upper level undergraduate and graduate engineering students taking courses in Renewable Energy Energy Systems and Energy Conversion Instructors will have access to a Solutions Manual and Figure Slides for their course Process Industry Economics David J. Brennan,1998 A primer for engineers giving an overview of key facets of international process economics The text covers market evaluation shows how to estimate capital and operating costs tackles project profitability and how to plan capacity *Microfoundations of Evolutionary Economics* Yoshinori Shiozawa,Masashi Morioka,Kazuhisa Taniguchi,2019-06-27 This book provides for the first time the microfoundations of evolutionary economics enabling the reader to grasp a new framework for economic analysis that is compatible with evolutionary processes Any independent approach to economics must include a value theory or price theory and price and quantity adjustment processes Evolutionary economics has rightly and successfully concentrated its efforts on explaining evolutionary processes in technology and institutions However it does not have its own value theory and is not capable of explaining the workings of everyday economics processes in which any evolutionary process would take place Our point of departure is the addition of myopic agents with severely limited rational and forecasting capacities in stark contrast to mainstream economics We show how myopic agents in a complex world can produce a stable price system and demonstrate how they can adjust their production to changing demand flows Agents behave without any knowledge of the overall process and they generate a stable economy as large as the global network of exchanges This is the true miracle of the market mechanism In contrast to mainstream general equilibrium theory this miracle can be explained without the need for an auctioneer or infinitely rational agents Thanks to this book evolutionary economics can now claim to be an independent approach to economics that can completely replace mainstream neoclassical economics **Equipment Selection: Heat Exchangers, Pumps, Distillation Equipment** ,1960 **Petroleum Refiner** ,1958 **Data & Methods for Cost Estimation** ,1952 *Cost Engineering in the Process Industries* Cecil Hamilton Chilton,1960 CEER, Chemical Economy & Engineering Review ,1985 *Electrochemical and Metallurgical Industry* Eugene Franz Roeber,Howard Coon Parmelee,1923 Handbook of Industrial Engineering Gavriel Salvendy,2001-05-25 Unrivaled coverage of a broad spectrum of industrial engineering concepts and applications The Handbook of Industrial Engineering Third Edition contains a vast array of timely and useful methodologies for achieving increased productivity quality and competitiveness and improving the quality of working life in manufacturing and service industries This astoundingly comprehensive resource also provides a cohesive structure to the discipline of industrial engineering with four major classifications technology performance improvement management management planning and design control and decision making methods Completely updated and expanded to reflect nearly a decade of important developments in the field this Third Edition features a wealth of new information on project management supply chain management and logistics and systems related to service industries Other important features of this essential reference include More than 1 000 helpful

tables graphs figures and formulas Step by step descriptions of hundreds of problem solving methodologies Hundreds of clear easy to follow application examples Contributions from 176 accomplished international professionals with diverse training and affiliations More than 4 000 citations for further reading The Handbook of Industrial Engineering Third Edition is an immensely useful one stop resource for industrial engineers and technical support personnel in corporations of any size continuous process and discrete part manufacturing industries and all types of service industries from healthcare to hospitality from retailing to finance Of related interest HANDBOOK OF HUMAN FACTORS AND ERGONOMICS Second Edition Edited by Gavriel Salvendy 0 471 11690 4 2 165 pages 60 chapters A comprehensive guide that contains practical knowledge and technical background on virtually all aspects of physical cognitive and social ergonomics As such it can be a valuable source of information for any individual or organization committed to providing competitive high quality products and safe productive work environments John F Smith Jr Chairman of the Board Chief Executive Officer and President General Motors Corporation From the Foreword **Processing** ,1976 *Chemical Engineering* ,1984 Project Management in the Process Industries Roy Whittaker,1995 This book addresses the direct contribution of the project manager in the process industries the main components of which are taken to be the petro chemical chemical and oil refining industries It focuses on the specific role of the project manager as opposed to the complete task facing the project team and explores the many facets of project management including Project Organisation Definition and Strategy Contractual Relationships Choice of Type of Contract Contract Strategy and Organisation Effects of Taxation and Financing on Overseas Contracts Selecting and Assessing Bidders Evaluating Bids Conditions of Contract Model Forms of Contract Project Cost Management Planning Design Construction and Take Over The various stages within a project are examined without becoming overloaded with checklists providing a thorough analysis of the precise role of the project manager in different scenarios Designed for those already with some project management experience and wishing to increase their depth of knowledge Project Management in the Process Industries is essential reading in any company or for any individual involved in project management

Chemical and Process Engineering ,1955 **Chemical Engineers' Handbook** Robert H. Perry,1963 Textbook on chemical industry engineering covers theoretics definitions technical aspects etc **Design and Installation of Comminution Circuits** Andrew L. Mular,Gerald V. Jergensen,1982 **Chemical & Process Engineering** ,1955 **Power Engineering** ,1955

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