

2016 PEO CHEMICAL ENGINEERING EXAMINATIONS TEXTBOOKS REFERENCE LIST

NOTE: Please feel free to use the most recent edition of textbooks referenced in this list

16-Chem-A1 Process Balances and Chemical Thermodynamics

J.M. Smith, H.C. Van Ness, M.M. Abbott, Introduction to Chemical Engineering Thermodynamics, latest edition. McGraw-Hill.

R.W. Felder, R.W. Rousseau, Elementary Principles of Chemical Processes, latest edition. John Wiley.

16-Chem-A2 Unit Operations and Separation Processes (formerly Mechanical and Thermal Operations)

C.J. Geankoplis, Transport Processes and Unit Operations, latest edition. Prentice Hall.

W.L. McCabe, J.C. Smith, P. Harriott, Unit Operations of Chemical Engineering, latest edition. McGraw-Hill.

F.P. Incropera, D.P. DeWitt, Fundamentals of Heat and Mass Transfer, latest edition. John Wiley.

16-Chem-A3 Heat and Mass Transfer

R.E. Treybal, Mass Transfer Operations, latest edition. McGraw-Hill.

P.H. Wankat, Equilibrium Staged Separations. Elsevier.

J.D. Seader, E.J. Henley, Separation Process Principles. John Wiley.

W.L. McCabe, J.C. Smith, P. Harriott, Unit Operations of Chemical Engineering, latest edition. McGraw-Hill.

16-Chem-A4 Chemical Reactor Engineering

H.S. Fogler, Elements of Chemical Reaction Engineering, latest edition. Prentice Hall.

16-Chem-A5 Chemical Plant Design and Economics

M.S. Peters, K.D. Timmerhaus, R.E. West, Plant Design and Economics for Chemical Engineers, latest edition. McGraw-Hill.

W.D. Seider, J.D. Seader, D.R. Lewin, Process Design Principles: Synthesis, Analysis and Evaluation. John Wiley.

R. Turton, R.C. Bailie, W.B. Whiting, J.A. Shaeiweitz, Analysis, Synthesis, and Design of Chemical Processes, latest edition, Prentice Hall.

16-Chem-A6 Process Dynamics and Control

D.E. Seborg, T.F. Edgar, D.A. Mellichamp, Process Dynamics and Control. John Wiley, latest edition.

T. Marlin, Process Control, Designing Processes and Control Systems for Dynamic Performance, latest edition. McGraw-Hill.

B.W. Bequette, Process Control: Modeling, Design and Simulation. Prentice Hall.

C.A. Smith, A.B. Corripio, Principles and Practice of Automatic Process Control, latest edition John Wiley.

16-Chem-B1 Transport Phenomena

R.S. Brodkey, H.C. Hershey, Transport Phenomena: A Unified Approach. McGraw-Hill.

R.B. Bird, W.E. Stewart, E.N. Lightfoot, Transport Phenomena. latest edition, John Wiley.

16-Chem-B2 Environmental Engineering

G. Kiely, Environmental Engineering. McGraw-Hill Ryerson.

16-Chem-B3 Simulation, Modelling, and Optimization

S.M. Walas, Modelling with Differential Equations in Chemical Engineering. Butterworth-Heinemann.

D. Basmadjian, The Art of Modeling in Science and Engineering. Chapman & Hall.

B.W. Bequette, Process Dynamics: Modeling, Analysis and Simulation. Prentice Hall (first 12 chapters and all modules).

P. Venkataraman, Applied Optimization with Matlab Programming. John Wiley.

T.F. Edgar, D.M. Himmelblau, L.S. Lasdon, Optimization of Chemical Processes. Latest edition. McGraw-Hill.

16-Chem-B4 Biochemical Engineering

J.E. Bailey, D.F. Ollis, Biochemical Engineering Fundamentals, latest edition. McGraw-Hill.

16-Chem-B5 Pulp and Paper Technology

J.P. Casey, Pulp and Paper: Chemistry and Chemical Technology, latest edition, Volumes 1 and 2. Wiley Interscience.

G.A. Smook, Handbook for Pulp and Paper Technologists, latest edition, Angus Wilde Publ, Inc.

16-Chem-B6 Petroleum Refining and Petrochemicals

J.H. Gary, G.E. Handwerk, Petroleum Refining, Technology and Economics, latest edition. Marcel Dekker.

J.G. Speight, The Chemistry and Technology of Petroleum, latest edition. Marcel Dekker.

16-Chem-B7 Extractive Metallurgy

T. Rosenqvist, Principles of Extractive Metallurgy, latest edition. McGraw-Hill.

C. Bodsworth, The Extraction and Refining of Metals. CRC Press.

16-Chem-B8 Polymer Engineering

A. Rudin, The Elements of Polymer Science and Engineering, latest edition. Academic Press.

J. Fried, Introduction to Polymer Science and Technology. Prentice Hall.

16-Chem-B9 Advanced Materials

16-Chem-B10 Life Cycle Assessment (LCA)

Green Engineering, Environmentally Conscious Design of Chemical Processes; EPA (ISBN 0-13-061908-6) Latest Edition.

Supplementary Resources for this text available on the EPA website.

16-Chem-B11 Nuclear and Nuclear Chemical Processing

16-Chem-B12 Ceramics Materials

Barsoum, M.W., Fundamentals of Ceramics. IOP Publishing, Bristol, 2003. ISBN #0 07503 0902 4. Chapters 1-4, 6-8, and 10-14.

Kingery, W.D., H.K. Bowen, and D.R. Uhlmann, Introduction to Ceramics. (2nd edition) Wiley, New York, 1976. ISBN 0471478601.

16-Chem-B13 Corrosion and Oxidation

Bradford SA, Corrosion Control (2nd edition), Casti Publishing, Edmonton. ISBN 1-894038-58-4. Chapters 1-6, 9-12, 14.

Metals Handbook Volume 13A - Corrosion: Fundamentals, Testing and Protection. 2003.

Metals Handbook Volume 13B - Corrosion: Materials. 2005.

Metals Handbook Volume 13C - Corrosion: Environments and Industries. 2006.

16-Chem-B14 Nanomaterials

Cao, G, and Wang, Y., Nanostructure and Nanomaterials: Synthesis, Properties and Applications, 2nd Edition, Ed. World Scientific, 2011, Chap. 2-9.