



Routledge

Nuclear Engineering Textbook Catalogue

Welcome

Welcome to the Taylor and Francis Nuclear Engineering Textbook Catalogue.

eBooks

We have over 50,000 eBooks available across the Humanities, Social Sciences, Behavioural Sciences, Built Environment, STM and Law, from leading Imprints, including Routledge, Focal Press and Psychology Press. These eBooks are available for both individual and institutional purchase.

INDIVIDUALS

Our eBooks are available from Amazon, Apple iBookstore, Google eBooks, Ebooks.com, Kobo, Barnes & Noble, Waterstones, Mobipocket, VitalSource, and CourseSmart.

LIBRARIES AND INSTITUTIONS

Subscribe to or purchase a wide range of eBook packages or pick and mix your own from our complete collection (a minimum number of titles applies). FREE TRIALS are available. For more information, please visit www.tandfebooks.com or contact your local sales team.

eUpdates

Register your email at www.tandf.co.uk/eupdates to receive information on books, journals and other news within your area of interest.

an **informa** business

Prices, publication dates and content are correct at time of going to press, but may be subject to change without notice.

Partnership Opportunities at Routledge

At Routledge we always look for innovative ways to support and collaborate with our readers and the organizations they represent.

If you or your organization would like to discuss partnership opportunities, from reciprocal marketing activities to commercial enterprises, please do get in touch on partnerships@routledge.com.

Considering Books for Course Use?



This symbol shows books that are available as complimentary exam copies for lecturers or faculty considering them for course adoption. To obtain your copy visit the URL listed beneath the title in the catalog and select your choice of print or electronic copy.

Visit www.routledge.com or in the US you can call 1-800-634-7064.



This symbol shows books that are available as electronic inspection copies only.

For a complete list, visit: www.routledge.com/representatives.

Trade Customers' Representatives, Agents and Distribution

For a complete list, visit:

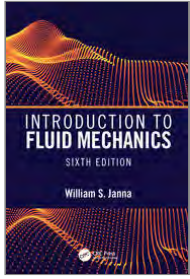
www.routledge.com/representatives.

Contents

Fluid Mechanics	2
Heat Transfer	3
Introduction to Nuclear Engineering	4
Nuclear Reactor Physics	5
Nuclear Reactor Physics (Advanced)	6
Nuclear Reactor Thermal Hydraulics	7
Plant Engineering, Operations, Maintenance	8
Radiation Detection and Measurement	9
Radiation Heat Transfer	10
Thermodynamics	11
Index	12

6TH EDITION

Introduction to Fluid Mechanics, Sixth Edition

**William S. Janna**

Introduction to Fluid Mechanics, Sixth Edition, is intended for a first course in Fluid Mechanics, as taken by a range of engineering majors. Beginning with dimensions, units, and fluid properties, the text continues with explanation of key equations and coverage of the control-volume approach.

CRC Press
April 2020:754
Hb: 978-0-367-34127-5: £155
eBook: 978-0-429-32453-6

* For full contents and more information, visit: www.routledge.com/9780367341275

3RD EDITION

Advanced Heat Transfer



Greg F. Naterer

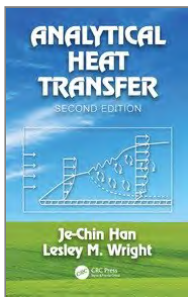
Advanced Heat Transfer provides a single source of technical content for the prediction, solution, and analysis of advanced heat transfer problems, including conduction, convection, radiation and phase change, and chemically reactive modes of heat transfer. The book offers a comprehensive source for single and multiphase systems of heat transfer for graduate students taking courses in Advanced Heat Transfer; Multiphase Heat Transfer; Advanced Thermodynamics. With more than 20 new sections, case studies, examples, and problems, the new edition broadens the scope of thermal engineering applications, including biomedical fields, micro- and nanotechnology, and machine learning.

CRC Press
December 2021:577
Hb: 978-1-032-07247-0: £120
eBook: 978-1-003-20612-5

* For full contents and more information, visit: www.routledge.com/9781032072470

2ND EDITION

Analytical Heat Transfer



Je-Chin Han, Lesley Wright

The book explains how to analyze and solve conduction, convection, and radiation heat transfer problems. It fills the gap between basic heat transfer undergraduate courses and advanced heat transfer graduate courses for one semester of intermediate heat transfer; advanced conduction/convection heat transfer; or radiation heat transfer. The text enables students to tackle complex engineering heat transfer problems prevalent in practice. New chapters and content include Duhamel's superposition method, Green's function method for transient heat conduction, finite-difference method for steady state and transient heat conduction in cylindrical coordinates, and laminar mixed convection.

CRC Press
June 2022:595
Hb: 978-0-367-75897-4: £115
eBook: 978-1-003-16448-7

* For full contents and more information, visit: www.routledge.com/9780367758974

Heat Transfer

A Systematic Learning Approach



Naseem Uddin

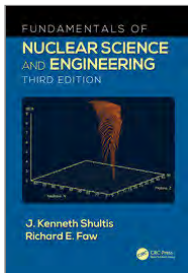
Heat Transfer: A Systematic Learning Approach presents valuable tools in understanding heat transfer mechanisms and provides a clear understanding of complex turbulent flows. It provides a comprehensive introduction to topics of heat transfer, including conduction, convection, thermal radiation, and nanofluids. The book includes numerous end-of-chapter problems to enhance student understanding and different solving approaches. The book is intended for senior undergraduate mechanical, aerospace, and chemical engineering students taking courses in Heat Transfer.

CRC Press
January 2024:534
Hb: 978-1-032-54982-8: £99.99

* For full contents and more information, visit: www.routledge.com/9781032549828

3RD EDITION

Fundamentals of Nuclear Science and Engineering



J. Kenneth Shultis, Richard E. Faw

Fundamentals of Nuclear Science and Engineering, Third Edition, presents coverage of the nuclear science and engineering concepts needed to understand and quantify the whole range of nuclear phenomena. Noted for its accessible level and approach, this long-time bestselling textbook provides overviews of nuclear physics, nuclear power generation, medicine, propulsion, and radiation detection. The Third Edition features updated coverage of the newest nuclear reactor designs, fusion reactors, radiation health risks, and expanded discussion of basic reactor physics with added examples.

CRC Press

September 2016:660

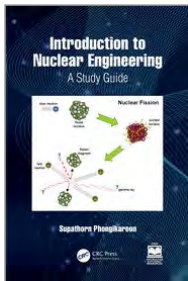
Hb: 978-1-498-76929-7: £135

eBook: 978-1-315-18318-3

* For full contents and more information, visit: www.routledge.com/9781498769297

Introduction to Nuclear Engineering

A Study Guide



Supathorn Phongikaroon

Introduction to Nuclear Engineering serves as an accompanying study guide for introductory, single-semester course in nuclear engineering. It is structured for general class use, alongside fundamental nuclear physics and engineering textbooks, and also suited for individual self-study. The book is intended for senior undergraduate and graduate engineering students taking Introduction to Nuclear Engineering and Nuclear Energy courses. It covers basic physics with atomic and nuclear models, nuclear energetics, radioactivity and decays, and binary nuclear reactions and basic fusion. Each chapter highlights basic concepts, examples, problems with answers, and a final assessment.

CRC Press

September 2023:306

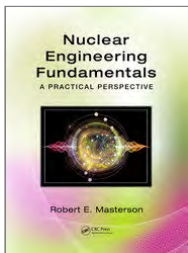
Hb: 978-1-032-22440-4: £84.99

eBook: 978-1-003-27258-8

* For full contents and more information, visit: www.routledge.com/9781032224404

Nuclear Engineering Fundamentals

A Practical Perspective



Robert E. Masterson

This full-color textbook provides an up to date introduction to nuclear physics, reactor design, thermal-hydraulic systems, fuel cycles, safety, and computational methods for students taking a first course in Nuclear Engineering. Following a structured learning approach, the text offers consistent topic development, supported by color images, key equations, worked examples, historical and biographical features, web links for research, short answer questions, and numerous chapter problems. Nuclear reactor designs, including the most recent examples, are analyzed and compared, and the role of internet tools in analysis and design is explored. Extensive tables are included for reference.

CRC Press

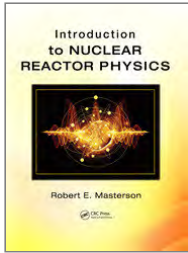
March 2017:987

Hb: 978-1-482-22149-7: £150

eBook: 978-1-315-15678-1

* For full contents and more information, visit: www.routledge.com/9781482221497

Introduction to Nuclear Reactor Physics



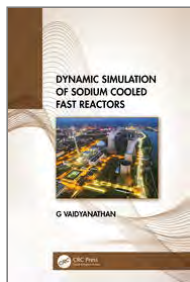
Robert E. Masterson

INTRODUCTION TO NUCLEAR REACTOR PHYSICS is the most comprehensive, modern and readable textbook for this course/module. It explains reactors, fuel cycles, radioisotopes, radioactive materials, design, and operation. Chain reaction and fission reactor concepts are presented, plus advanced coverage including neutron diffusion theory. The diffusion equation, Fisk's Law, and steady state/time-dependent reactor behavior. Numerical and analytical solutions are also covered. The text has full color illustrations throughout, and a wide range of student learning features.

CRC Press
December 2017:1107
Hb: 978-1-498-75148-3: £145
eBook: 978-1-315-11805-5

* For full contents and more information, visit: www.routledge.com/9781498751483

Dynamic Simulation of Sodium Cooled Fast Reactors



G Vaidyanathan

This book provides the basis of simulating a nuclear plant, in understanding the knowledge of how such simulations help in assuring the safety of the plants, thereby protecting the public from accidents. It provides the reader with an in-depth knowledge about modeling the thermal and flow processes in a fast reactor and gives an idea about the different numerical solution methods. The text highlights the application of the simulation to typical sodium cooled fast reactor. It will serve as an ideal reference text for senior undergraduate, graduate students and academic researchers in the fields of nuclear engineering, mechanical engineering, and power cycle engineering.

CRC Press

November 2022:272

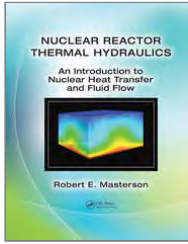
Hb: 978-1-032-25435-7: **£115**

eBook: 978-1-003-28318-8

* For full contents and more information, visit: www.routledge.com/9781032254357

Nuclear Reactor Thermal Hydraulics

An Introduction to Nuclear Heat Transfer and Fluid Flow



Robert E. Masterson

Nuclear Thermal-Hydraulic Systems provides a comprehensive approach to nuclear reactor thermal-hydraulics, reflecting the latest technologies, reactor designs, and safety considerations. The text makes extensive use of color images, internet links, computer graphics, and other innovative techniques to explore nuclear power plant design and operation. Key fluid mechanics, heat transfer, and nuclear engineering concepts are carefully explained, and supported with worked examples, tables, and graphics. Intended for use in one or two semester courses, the text is suitable for both undergraduate and graduate students. A complete Solutions Manual is available for professors.

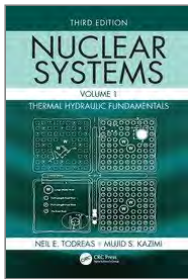
CRC Press
September 2019:1392
Hb: 978-1-138-03537-9: £190
eBook: 978-1-315-22623-1

* For full contents and more information, visit: www.routledge.com/9781138035379

3RD EDITION

Nuclear Systems Volume I

Thermal Hydraulic Fundamentals, Third Edition



Neil E. Todreas, Mujid S. Kazimi

This book provides an in-depth introduction to nuclear power, focussing on thermal hydraulic design and analysis of the nuclear core and other key nuclear plant components. The authors stress the integration of fluid flow and heat transfer as applied to all power reactor types and energy source distribution. The text features new chapter examples and problems using concept parameters, full color text and art, computer programs, figure slides, and a solutions manual. Readers will develop the knowledge and design skills needed to improve the next generation of nuclear reactors.

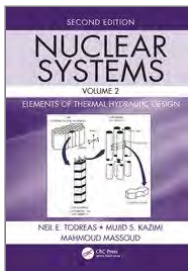
CRC Press
January 2021:926
Hb: 978-1-138-49244-8: £150
eBook: 978-1-351-03050-2

* For full contents and more information, visit: www.routledge.com/9781138492448

2ND EDITION

Nuclear Systems Volume II

Elements of Thermal Hydraulic Design



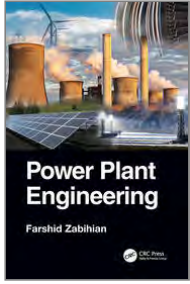
Neil E. Todreas, Mujid S. Kazimi, Mahmoud Massoud

Nuclear Systems Volume II: Elements of Thermal Hydraulic Design, Second Edition provides advanced coverage of a wide variety of thermal fluid systems and technologies in nuclear power plants, including discussions of the latest reactor designs and their thermal/fluid technologies. Beyond the thermal hydraulic design and analysis of the core of a nuclear reactor, the book covers other components of the nuclear power plant, such as the pressurizer, containment, and the entire primary coolant system. The book serves as a textbook for advanced undergraduate and graduate students taking courses in nuclear engineering, studying thermal/hydraulic systems in nuclear power plants.

CRC Press
December 2021:657
Hb: 978-1-482-23958-4: £115
eBook: 978-0-429-15760-8

* For full contents and more information, visit: www.routledge.com/9781482239584

Power Plant Engineering



Farshid Zabihiyan

This textbook begins with conventional power generation technologies, including steam power plants and gas turbine cycles. It then introduces more advanced cycles, including combined heat and power (CHP) cycles, combined cycle power plants (CCPP), integrated gasification combined cycles (IGCC), and fuel cells. The book is intended for Mechanical and Nuclear Engineering instructors and students taking a power plant design or operation course. It also covers power generation technologies based on renewable energy resources and the environmental effects of each.

CRC Press

June 2021:1250

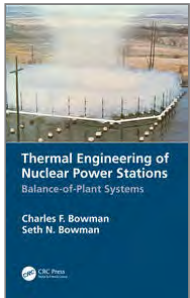
Hb: 978-1-498-70712-1: £130

eBook: 978-0-429-06945-1

* For full contents and more information, visit: www.routledge.com/9781498707121

Thermal Engineering of Nuclear Power Stations

Balance-of-Plant Systems



Charles F. Bowman, Seth N. Bowman

The book serves as a ready reference to better analyze common engineering challenges in the areas of turbine cycle analysis, thermodynamics, and heat transfer. Written for engineers in the fields of nuclear plant and thermal engineering, the book examines the daily, practical problems encountered by mechanical design, system, and maintenance engineers. It provides clear examples and solutions drawn from numerous case studies in actual, operating nuclear stations. The scope of the book is broad and comprehensive, encompassing the mechanical aspects of the entire nuclear station balance-of-plant from the source of the motive steam to the discharge and/or utilization of waste heat.

CRC Press

February 2022:366

Hb: 978-0-367-82039-8: £130

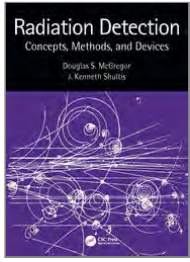
Pb: 978-0-367-50236-2: £54.99

eBook: 978-1-003-01160-6

* For full contents and more information, visit: www.routledge.com/9780367502362

Radiation Detection

Concepts, Methods, and Devices



Douglas McGregor, J. Kenneth Shultis

Radiation Detection: Concepts, Methods, and Devices provides a modern overview of radiation detection devices and radiation measurement methods. The book topics have been selected on the basis of the authors' many years of experience designing radiation detectors and teaching radiation detection and measurement in a classroom environment. This book is designed to give the reader more than a glimpse at radiation detection devices and a few packaged equations. Rather it seeks to provide an understanding that allows the reader to choose the appropriate detection technology for a particular application, to design detectors, and to competently perform radiation measurements.

CRC Press

September 2020: 1312

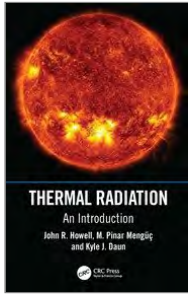
Hb: 978-1-439-81939-5: **£130**

eBook: 978-1-439-81940-1

* For full contents and more information, visit: www.routledge.com/9781439819395

Thermal Radiation

An Introduction



John R. Howell, M. Pinar Mengüç, Kyle J. Daun

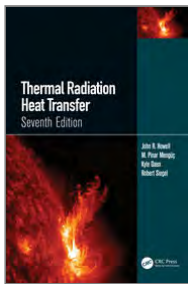
This book is a complete text for a one-semester introductory graduate course on radiative energy transfer. It bridges the gap between a basic introduction and comprehensive coverage of thermal radiation, focusing on insight into radiative transfer as practiced by engineers. The textbook is intended for instructors and graduate students in a first-year course on radiative heat transfer or advanced heat transfer. Covering radiative transfer among surfaces, with an introduction to the effects of participating media between surfaces, the book includes surface and medium property characteristics and solution of the radiative transfer equation in simple geometries.

CRC Press
March 2023:476
Hb: 978-1-032-01531-6: **£86.99**

* For full contents and more information, visit: www.routledge.com/9781032015316

7TH EDITION

Thermal Radiation Heat Transfer



John R. Howell, M. Pinar Mengüç, Kyle Daun, Robert Siegel

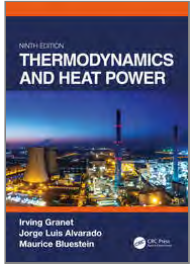
The Seventh Edition of this classic text outlines the fundamental physical principles of thermal radiation, as well as analytical and numerical techniques for quantifying radiative transfer between surfaces and within participating media. The textbook includes newly expanded sections on surface properties, electromagnetic theory, scattering and absorption of particles, near-field radiative transfer, and emphasizes the broader connections to thermodynamic principles. Sections on inverse analysis and Monte Carlo methods have been updated, along with new material on manufacturing, renewable energy, climate change, building energy efficiency, and biomedical applications.

CRC Press
December 2020:1040
Hb: 978-0-367-34707-9: **£130**
eBook: 978-0-429-32730-8

* For full contents and more information, visit: www.routledge.com/9780367347079

9TH EDITION

Thermodynamics and Heat Power, Ninth Edition



Irving Granet, Jorge Alvarado, Maurice Bluestein

The ninth edition of *Thermodynamics and Heat Power* offers a revised sequence of thermodynamics concepts, processes, and energy systems to enable learning outcomes for Engineering and Engineering Technology students taking an introductory course. Built around an easily understandable approach, this updated text focuses on thermodynamics fundamentals and explores renewable energy generation, IC engines, power plants, HVAC, and applied heat transfer. Energy, heat, and work are examined in relation to thermodynamics cycles, and the effects of fluid properties on system performance are explained. Numerous step-by-step examples and problems make this text ideal for student readers.

CRC Press

September 2023:864

Hb: 978-0-367-28091-8: **£145**

Pb: 978-0-367-56184-0: **£56.99**

eBook: 978-0-429-29962-9

* For full contents and more information, visit: www.routledge.com/9780367561840

A.	
Advanced Heat Transfer	3
Analytical Heat Transfer	3
D.	
Dynamic Simulation of Sodium Cooled Fast Reactors	6
F.	
Fundamentals of Nuclear Science and Engineering	4
H.	
Heat Transfer	3
I.	
Introduction to Fluid Mechanics, Sixth Edition	2
Introduction to Nuclear Engineering	4
Introduction to Nuclear Reactor Physics	5
N.	
Nuclear Engineering Fundamentals	4
Nuclear Reactor Thermal Hydraulics	7
Nuclear Systems Volume I	7
Nuclear Systems Volume II	7
P.	
Power Plant Engineering	8
R.	
Radiation Detection	9
T.	
Thermal Engineering of Nuclear Power Stations	8
Thermal Radiation	10
Thermal Radiation Heat Transfer	10
Thermodynamics and Heat Power, Ninth Edition	11

B.	
Bowman, Bowman	8
F.	
F. Naterer	3
G.	
Granet, Alvarado, Bluestein	11
H.	
Han, Wright	3
Howell, Mengüç, Daun	10
Howell, Mengüç, Daun, Siegel	10
J.	
Janna	2
M.	
Masterson	4
Masterson	7
Masterson	5
McGregor, Shultis	9
P.	
Phongikaroon	4
S.	
Shultis, Faw	4
T.	
Todreas, Kazimi	7
Todreas, Kazimi, Massoud	7
U.	
Uddin	3
V.	
Vaidyanathan	6
Z.	
Zabihian	8

