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# Nuclear Energy Cheat Sheet Physics

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Selected Reference Material, United States Atomic Energy Program: Reactor handbook: physics  
 Introductory Nuclear Physics  
 Technical Report/research Paper  
 The Theory of Neutron Slowing Down in Nuclear Reactors  
 Nuclear Science Abstracts  
 Nuclear Energy  
 Nuclear Level Schemes: A  
 Basic Ideas and Concepts in Nuclear Physics, An Introductory Approach  
 Variational Methods in Nuclear Reactor Physics  
 Introductory Nuclear Physics  
 Elements of Nuclear Physics  
 Energy from Nuclear Fission  
 Elements of nuclear physics  
 Progress in Nuclear Energy  
 Fundamentals of Nuclear Physics  
 An Introduction to Nuclear Physics  
 Nuclear Energy  
 Introduction to Nuclear Reactor Physics  
 Lecture Series in Nuclear Physics  
 Concise Encyclopedia of Atomic Energy  
 Atomic Physics  
 Minutes of the Fourth Annual Meeting of the Panel on Reference Nuclear Data  
 Nuclear Physics, Nuclear Power  
 Neutron Physics  
 The Facts on File Dictionary of Atomic and Nuclear Physics  
 Common Problems in Low and Medium Energy Nuclear Physics  
 Nuclear Radiation Interactions  
 Nuclear Physics  
 Introduction to Nuclear Physics  
 Fundamentals of Nuclear Science and Engineering Third Edition  
 Nuclear Energy: Its Physics and Its Social Challenge  
 Problems in Atomic and Nuclear Physics  
 Physics in Nuclear Medicine E-Book  
 Nuclear Radiation Physics  
 Elements of Nuclear Physics  
 Introduction to Nuclear Physics and Chemistry  
 Fundamentals of Nuclear Science and Engineering  
 Nuclear Energy  
 Nuclear Physics  
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## TESSA JOHNSON

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*Selected Reference Material, United States Atomic Energy Program: Reactor handbook: physics* CRC Press  
 Fundamentals of Nuclear Science and Engineering, Third Edition, presents the nuclear science concepts needed to understand and quantify the whole range of nuclear phenomena. Noted for its accessible level and approach, the Third Edition of this long-time bestselling textbook provides overviews of nuclear physics, nuclear power, medicine, propulsion, and radiation detection. Its flexible organization allows for use with Nuclear Engineering majors and those in other disciplines. 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. A complete Solutions Manual and figure slides for classroom projection are available for instructors adopting the text.  
*Introductory Nuclear Physics* Prentice Hall  
 Market: Scientists in nuclear engineering, engineering students,

and government policy makers with technical backgrounds. This book presents an objective view of nuclear energy as an important source for future energy needs. It discusses various types of reactors, the nuclear fuel cycle, the problem of nuclear waste disposal, reactor accidents, safety and new types of reactors that are being considered, and the cost of electricity from nuclear power. Additional themes include the problem of nuclear weapons, their storage, and, very important, their disposal as nuclear arsenals are pared down.  
*Technical Report/research Paper* Franklin Book Company  
 For undergraduate physics students or for nuclear engineers.  
*The Theory of Neutron Slowing Down in Nuclear Reactors* Addison Wesley Publishing Company  
 Fundamentals of Nuclear Science and Engineering, Third Edition, presents the nuclear science concepts needed to understand and quantify the whole range of nuclear phenomena. Noted for its accessible level and approach, the Third Edition of this long-time bestselling textbook provides overviews of nuclear physics, nuclear power, medicine, propulsion, and radiation detection. Its flexible organization allows for use with Nuclear Engineering majors and those in other disciplines. 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. A complete Solutions Manual and figure slides for classroom projection are available for instructors adopting the text.

*Nuclear Science Abstracts* Butterworth-Heinemann

*Nuclear Energy* is one of the most popular texts ever published on basic nuclear physics, systems, and applications of nuclear energy. This newest edition continues the tradition of offering a holistic treatment of everything the undergraduate engineering student needs to know in a clear and accessible way. Presented is a comprehensive overview of radioactivity, radiation protection, nuclear reactors, waste disposal, and nuclear medicine. • New coverage on nuclear safety concerns following 9/11, including radiation and terrorism, nuclear plant security, and use of nuclear techniques to detect weapons materials • New facts on nuclear waste management, including the Yucca Mountain repository • New developments in the use of nuclear-powered systems for generating cheap and abundant hydrogen from water using nuclear technology • New information on prospects for new nuclear power reactors and their applications for electricity and desalination • New end-of-chapter Exercises and Answers, lists of Internet resources, and updated references. • New instructor web site including Solutions to Exercises and PowerPoint slides • New student web site containing computer programs for use with Computer Exercises

*Nuclear Energy* CRC Press

This expanded, revised, and updated fourth edition of *Nuclear Energy* maintains the tradition of providing clear and comprehensive coverage of all aspects of the subject, with emphasis on the explanation of trends and developments. As in earlier editions, the book is divided into three parts that achieve a natural flow of ideas: Basic Concepts, including the fundamentals of energy, particle interactions, fission, and fusion; Nuclear Systems, including accelerators, isotope separators, detectors, and nuclear reactors; and Nuclear Energy and Man, covering the many applications of radionuclides, radiation, and reactors, along with a discussion of wastes and weapons. A minimum of mathematical background is required, but there is ample opportunity to learn characteristic numbers through the illustrative calculations and the exercises. An updated Solution Manual is available to the instructor. A new feature to aid the student is a set of some 50 Computer Exercises, using a diskette of personal computer programs in BASIC and spreadsheet, supplied by the author at a nominal cost. The book is of principal value as an introduction to nuclear science and technology for early college students, but can be of benefit to science teachers and lecturers, nuclear utility trainees and engineers in other fields.

*Nuclear Level Schemes: A* CRC Press

Originally just an offshoot of nuclear physics, neutron physics soon became a branch of physics in its own right. It deals with the movement of neutrons in nuclear reactors and all the nuclear reactions they trigger there, particularly the fission of heavy nuclei which starts a chain reaction to produce energy. Neutron Physics covers the whole range of knowledge of this complex science, discussing the basics of neutron physics and some principles of neutron physics calculations. Because neutron physics is the essential part of reactor physics, it is the main subject taught to students of Nuclear Engineering. This book takes an instructional approach for that purpose. Neutron Physics is also intended for all physicists and engineers involved in development or operational aspects of nuclear power.

*Basic Ideas and Concepts in Nuclear Physics, An Introductory Approach* Elsevier Health Sciences

This book is a treatment on the foundational knowledge of Nuclear Science and Engineering. It is an outgrowth of a first-year graduate-level course which the author has taught over the years in the Department of Nuclear Science and Engineering at MIT. The emphasis of the book is on concepts in nuclear science and engineering in contrast to the traditional nuclear physics in a nuclear engineering curriculum. The essential difference lies in the importance we give to the understanding of nuclear radiation and their interactions with matter. We see our students as nuclear engineers who work with all kinds of nuclear devices, from fission and fusion reactors to accelerators and detection systems. In all these complex systems nuclear radiation play a central role. In generating nuclear radiation and using them for beneficial purposes, scientists and engineers must understand the properties of the radiation and how they interact with their surroundings. It is through the control of radiation interactions that we can develop new devices or optimize existing ones to make them more safe, powerful, durable, or economical. This is why radiation interaction is the essence of this book.

*Variational Methods in Nuclear Reactor Physics* Addison Wesley Publishing Company

The third edition of a classic book, this text sets out in a clear and consistent manner the various elements of nuclear physics. Divided into four main parts: the constituents and characteristics of the nucleus; nuclear interactions, including the strong, weak and electromagnetic forces; an introduction to nuclear structure; and recent developments in nuclear structure research, the book delivers a balanced account of both theoretical and experimental nuclear physics. In addition to the numerous revisions and updates to the previous edition to capture the developments in the subject over the last five years, the book contains a new chapter on the structure and stability of very light nuclei.

*Introductory Nuclear Physics* Springer

*Physics in Nuclear Medicine* - by Drs. Simon R. Cherry, James A. Sorenson, and Michael E. Phelps - provides current, comprehensive guidance on the physics underlying modern nuclear medicine and imaging using radioactively labeled tracers. This revised and updated fourth edition features a new full-color layout, as well as the latest information on instrumentation and technology. Stay current on crucial developments in hybrid imaging (PET/CT and SPECT/CT), and small animal imaging, and benefit from the new section on tracer kinetic modeling in neuroreceptor imaging. What's more, you can reinforce your understanding with graphical animations online at [www.expertconsult.com](http://www.expertconsult.com), along with the fully searchable text and calculation tools. Master the physics of nuclear medicine with thorough explanations of analytic equations and illustrative graphs to make them accessible. Discover the technologies used in state-of-the-art nuclear medicine imaging systems Fully grasp the process of emission computed tomography with advanced mathematical concepts presented in the appendices. Utilize the extensive data in the day-to-day practice of nuclear medicine practice and research. Tap into the expertise of Dr. Simon Cherry, who contributes his cutting-edge knowledge in nuclear medicine instrumentation. Stay current on the latest developments in nuclear medicine technology and methods New sections to learn about hybrid imaging (PET/CT and SPECT/CT) and small animal imaging. View graphical animations online at [www.expertconsult.com](http://www.expertconsult.com), where you can also access the fully searchable text and calculation tools. Get a better view of images and line art and find information more easily thanks to a brand-new, full-color layout. The perfect reference or textbook to comprehensively review physics principles in nuclear medicine. *Elements of Nuclear Physics* World Scientific Publishing Company More than two thousand alphabetically arranged entries cover

topics including magnetism, spectroscopy, and transmutation.

*Energy from Nuclear Fission* CRC Press

This textbook on nuclear physics will be of value to all undergraduates studying nuclear physics, as well as to first-year graduates.

**Elements of nuclear physics** McGraw-Hill Companies

This book provides an overview on nuclear physics and energy production from nuclear fission. It serves as a readable and reliable source of information for anyone who wants to have a well-balanced opinion about exploitation of nuclear fission in power plants. The text is divided into two parts; the first covers the basics of nuclear forces and properties of nuclei, nuclear collisions, nuclear stability, radioactivity, and provides a detailed discussion of nuclear fission and relevant topics in its application to energy production. The second part covers the basic technical aspects of nuclear fission reactors, nuclear fuel cycle and resources, safety, safeguards, and radioactive waste management. The book also contains a discussion of the biological effects of nuclear radiation and of radiation protection, and a summary of the ten most relevant nuclear accidents. The book is suitable for undergraduates in physics, nuclear engineering and other science subjects. However, the mathematics is kept at a level that can be easily followed by wider circles of readers. The addition of solved problems,

strategically placed throughout the text, and the collections of problems at the end of the chapters allow readers to appreciate the quantitative aspects of various phenomena and processes. Many illustrations and graphs effectively supplement the text and help visualising specific points.

*Progress in Nuclear Energy* Cambridge University Press

For students and research workers in any field of science who wish to study the atomic nucleus.

**Fundamentals of Nuclear Physics** Elsevier

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.

*An Introduction to Nuclear Physics*

*Nuclear Energy*

*Introduction to Nuclear Reactor Physics*

Lecture Series in Nuclear Physics

*Concise Encyclopedia of Atomic Energy*