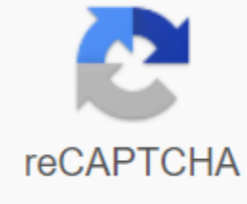




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Differential equations and boundary value problems computing and modeling pdf

C. Henry Edwards is professor emeritus of mathematics at the University of Georgia. He earned his Ph.D. at the University of Tennessee in 1960, and recently retired after 40 years teaching in classes (including calculus or differential equations almost every term) at the universities of Tennessee, Wisconsin, and Georgia, with brief interludes at the Institute for Advanced Study (Princeton) as an Alfred P. Sloan Research Fellow. He has received many teaching awards, including the University of Georgia medal of honor in 1983 (for continued excellence in honorary teaching), the Josiah Meigs award in 1991 (the institution's highest award for teaching), and the 1997 Statewide Georgia Regent award for teaching excellence of research university faculty. His scientific career ranged from research and doctoral dissertations in topology to mathematical history to computing and technology in teaching and mathematical applications. In addition to being a calculus writer or co-author, advanced calculus, linear algebra, and differential equation textbooks, he is best known for calculus instructors as the author of *The Historical Development of the Calculus* (Springer-Verlag, 1979). During the 1990s he served as principal investigator on three NSF-supported projects: (1) School math projects including Maple for early algebraic students, (2) the Calculus-to-Math program, and (3) the MATLAB-based computer laboratory project for numerical analysis and student differential equations. David E. Penney, University of Georgia, completed his Ph.D. at Tulane University in 1965 (under the direction of Prof. L. Bruce Treybig) while teaching at the University of New Orleans. He has previously worked in experimental biophysics at Tulane University and the Veterans Administration Hospital in New Orleans under the direction of Robert Dixon McAfee, where the primary focus of Dr. McAfee's research team was on the active transport of sodium ions by biological membranes. Penney's main contribution here is the development of mathematical models (using common differential equations simultaneously) for metabolic phenomena that regulate such transportation, with potential future applications in renal physiology, hypertension management, and the treatment of congestive heart failure. He also designed and built servomechanism for accurate monitoring of ion transport, a phenomenon that involves measuring the potential in microvolts at the impedance of millions of megohm. Penney began teaching calculus at Tulane in 1957 and taught the course almost every term with enthusiasm and distinction until his retirement at the end of the last millennium. During his tenure at the University of Georgia, he received numerous teaching awards throughout the University as well as directing several doctoral dissertations and seven research projects. He is a writer of papers in number theory and topology and author or co-author of textbooks on calculus, computer programming, differential equations, linear algebra, and liberal arts mathematics. About the Author: C. Henry Edwards is professor emeritus of mathematics at the University of Georgia. He earned his Ph.D. at the University of Tennessee in 1960, and recently retired after 40 years teaching in classes (including calculus or differential equations almost every term) at the universities of Tennessee, Wisconsin, and Georgia, with brief interludes at the Institute for Advanced Study (Princeton) as an Alfred P. Sloan Research Fellow. He has received many teaching awards, including the University of Georgia medal of honor in 1983 (for continued excellence in honorary teaching), the Josiah Meigs award in 1991 (the institution's highest award for teaching), and the 1997 Statewide Georgia Regent award for teaching excellence of research university faculty. His scientific career ranged from research and doctoral dissertations in topology to mathematical history to computing and technology in teaching and mathematical applications. In addition to being a calculus writer or co-author, advanced calculus, linear algebra, and differential equation textbooks, he is best known for

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