

Information, communication, circuits

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Biologie et sciences du comportement

Nicholas F. BRITTON. — **Essential mathematical biology.** — Springer undergraduate mathematics series — Un vol. broché, 18 × 24, de xv, 335 p. — ISBN 1-85233-536-X. — Prix : € 29.95. — Springer, London, 2003.

This book is a self-contained introduction to the fast-growing field of mathematical biology. Written for students with a mathematical background, it sets the subject in its historical context and then guides the reader towards questions of current research interest, providing a comprehensive overview of the field and a solid foundation for interdisciplinary research in the biological sciences. A broad range of topics is covered including: populations dynamics; infectious diseases; population genetics and evolution; dispersal; molecular and cellular biology; pattern formation; cancer modelling.

B.A. FUSARO, P.C. KENSCHAF, (Editors). — **Environmental mathematics in the classroom.** — Classroom resources material. — Un vol. broché, 18 × 25,5, de VIII, 253 p. — Prix : £ 29.95. — ISBN 0-88385-714-6. — The Mathematical Association of America, distributed by Cambridge University Press, Cambridge, 2003.

Several chapters are accessible enough to be a text in a general education course or to enrich an elementary algebra course. Ground-level ozone, pollution and water use, preservation of whales, mathematical economics, the movement of clouds over a mountain range, at least one population model, and a smorgasbord of newspaper mathematics can be studied at this level and would form a stimulating course. It prepares future teachers not only to learn basic mathematics, but to understand how they can integrate it into other topics that will intrigue their students. Other chapters provide sufficient challenge for prospective mathematics majors. More difficult population models, the spread of infections, and the survival of buffalo after the nineteenth century slaughter provide substance for such students. This title can be a text for an independent mathematics course. With the expertise of another teacher, it could be the basis of an interdisciplinary course relating to mathematics and science.

Anton E. LAWSON. — **The neurological basis of learning, development and discovery: implications for science and mathematics instruction.** — Science and technology education library, vol. 18. — Un vol. relié, 16,5 × 24,5, de xvi, 283 p. — ISBN 1-4020-1180-6. — Prix : € 114.00. — Kluwer, Dordrecht, 2003.

This book is unique in that it: links neural physiology and neural network theory with cognition and instructional practice; grounds the current emphasis on inquiry and constructivism in epistemological, philosophical and developmental theory; links neural network theory, learning theory, conceptual change theory, and scientific discovery to classroom practice; provides examples of scientifically-based research in education as a guide for science and math educators and graduate students; has examples of lessons that can teach discipline-specific concepts as well as provoke the development of general reasoning and argumentative skills; can be used in graduate-level courses in science education and in service courses for science teachers.

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Sebastià XAMBÓ-DESCAMPS. — **Block error-correcting codes: a computational primer.** — Universitext. — Un vol. broché, 15,5 × 23,5, de iv, 265 p. — ISBN 3-540-00395-9. — Prix : € 34.95. — Springer, Berlin, 2003.

Error-correcting codes have been incorporated in numerous working communication and memory systems. This book covers the mathematical aspects of the theory of block error-correcting codes together, in mutual reinforcement, with computational discussions, implementations and examples of all relevant concepts, functions and algorithms. This combined approach facilitates the reading and understanding of the subject. The digital companion of the book is a non-printable .pdf document freely downloaded from <http://www.wiris.com/cc/>. The examples included in the book can be run with just a mouse click either directly in this URL or by clicking the hyperlinks in the .pdf document. All the examples can be modified and saved by users for their own purpose.