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Mathematics for engineers. Vol. 1: Linear algebra and analytic geometry, differential and integral calculus of one variable. (Mathematik für Ingenieure. Band 1: Lineare Algebra und analytische Geometrie, Differential- und Integralrechnung einer Variablen.) 4th expanded ed. Weinheim: Wiley-VCH (ISBN 978-3-527-40980-8/pbk). 408 p. (2010).

The authors now present the extended 4th edition of the textbook “Mathematik für Ingenieure 1”. The book is mainly written for engineering students, but as they remark also students in natural sciences can use the book for their undergraduate studies in mathematics. As in the previous editions, see [Weinheim: Wiley-VCH (2000; Zbl 0983.00003); Berlin: Akademie Verlag. 442 S. (1994; Zbl 0815.00001); and Berlin: Akademie Verlag. 503 S. (1994; Zbl 0840.00002)], *R. Ansorge* and *H. J. Oberle* use the mathematical language whenever it seems useful and present many proofs of the sentences and lemmas. In only a few cases verbal explanations are given. As compared with earlier editions, the 4th edition contains new and updated figures, improved explanatory sentences, and an enlarged part about linear optimization techniques which become more and more important in engineering sciences over the last decades. The material presented in the textbook can be combined and tested with the software package of **MATLAB**. The content of the book covers linear algebra, analytic geometry, differential and integral calculus of a function of one variable. Corresponding to the new edition, the book containing exercises and solutions has also been released in the fourth edition.

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Classification: U25 G75 I15 H65 N15 M55

Keywords: linear algebra; differential calculus; integral calculus; numerical methods; analytic geometry; fast Fourier transform; fixed point iterations