



Development and Effectiveness of a Textbook on Advanced Mathematics for Engineering Programs

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KEYWORDS ADDIE Model. Book. Engineering Education. Instruction. Instructional Material

ABSTRACT Advanced Engineering Mathematics is a course that introduces higher concepts of mathematics and its applications to engineering. A textbook was developed to supplement the teaching-learning processes. The study had utilized the ADDIE (Analysis, Design, Develop, Implement, and Evaluate) model in developing the instructional material. The acceptability of the contents, structure and format and assessment in the IM was determined using a validated evaluation instrument. The instrument together with the IM was distributed to 22 engineering professors from various academic institutions and 80 engineering students using expert-based method of obtaining evaluation. Thirty civil engineering students were the participants to test the effectiveness of the material. Results showed that the IM is highly acceptable, and is effective and found that there is a significant improvement in the students' performance in the pretest-posttest. The study is important in providing an effective IM for engineering students to improve their proficiency in advanced engineering mathematics.