

Abstract

The book, Microbiology and Engineering of Sterilization Processes, contains 683 pages, 19 chapters, an index, and supporting material. It was developed as the teaching book for a three-day intensive course, held 3 to 4 times per year at various times of the year, from 1976 to 2015. It is a lecture problem course with both example and student problems.

Microbiology is treated in chapters 2, 4, 5, 6, 7, and 8. The titles of these chapters are: Death of Microorganisms; Laboratory Practices and Spore Growing Procedures; Treatment of Numerical Data, Statistics; Gathering Experimental Microbial-Kill Data; Analysis of Microbial-Survivor Data (calculating D -values); and Temperature Coefficient of Microbial Destruction, respectively.

Engineering technology is treated in chapters 3, 8, 9, 10, 11, 12, and 16. The subjects are: The Engineering-Technology Microbial-Control Unit Operation; Temperature Coefficient of Microbial Destruction; The General Method of Heat-Process Evaluation; z -Value Applications; Temperature Measurement Using Thermocouples; Analysis of Heating and Cooling Data; and The Mathematical Method of Heat-Sterilization Process Evaluation, respectively.

Design and validation of microbial control processes are treated in chapters 13, 14, and 17: Designing Microbial-Control Processes; Validation: Biologically Qualifying Microbial-Control Processes; Microbial-Control in Pharmaceuticals and Medical Devices Using Moist Heat (Steam Autoclave), respectively.

In chapter 15, a systematic treatment is carried out for preserving food in hermetic containers, including both low acid and acid food.