

TABLE OF CONTENTS

Mathematical Models in Epidemiology

- Introduction : A prelude to mathematical epidemiology
- Simple compartmental models for disease transmission
- Endemic disease models
- Epidemic models
- Models with heterogeneous mixing
- Models for diseases transmitted by vectors models for tuberculosis.
- Models for HIV-AIDS
- Models for influenza
- Models for Ebola
- Models for malaria
- Dengue fever and the Zika virus
- Disease transmission models with age dependence
- Spatial structure in disease transmission models
- Epidemiological models incorporating mobility, behavior, and time scales
- Challenges, opportunities, and theoretical epidemiology.