

1. **Introduction to Simulation**
 - What is Simulation?
 - Simulation in Business and Industry
 - Advantages and Limitations of Simulation
 - Simulation Study Process
2. **Overview of the Arena Simulation Environment**
 - Arena Basics and User Interface
 - Types of Models in Arena
 - Building a Simple Model
 - Animation and Output
3. **Modeling and Simulation Concepts**
 - Entities, Attributes, and Variables
 - Events and Processes
 - Queues and Resources
 - System Dynamics vs. Discrete Event Simulation
4. **Input Modeling**
 - Data Collection and Analysis
 - Probability Distributions
 - Random Number Generation
 - Fitting Distributions to Data
5. **Building Models in Arena**
 - Process Flow Diagrams
 - Modules: Create, Dispose, Process, Decide
 - Advanced Modules: Batch, Separate, Assign
 - Submodels and Modular Design
6. **Output Analysis**
 - Collecting and Analyzing Output Data
 - Statistical Analysis of Simulation Results
 - Replication and Run Length Considerations
 - Confidence Intervals
7. **Advanced Modeling Techniques**
 - Complex Process Logic
 - Resource Scheduling
 - Priority and Preemption
 - Entity Routing
8. **Verification and Validation of Simulation Models**
 - Ensuring Model Accuracy
 - Common Errors and Debugging
 - Validation Techniques
9. **Applications of Arena Simulation**
 - Manufacturing Systems
 - Service Systems
 - Supply Chain and Logistics
 - Healthcare Systems
10. **Special Topics**
 - Animation Customization
 - Advanced Statistical Tools
 - Integration with Other Software
 - Optimization in Simulation
11. **Appendices**

- Arena Module Reference
- Probability Distributions Tables
- Sample Simulation Models
- Glossary of Terms