
SIMULATION MODELING
for
SYSTEM DESIGN AND ANALYSIS

Continuing Education Program Course 03-704
14-18 April 2003

FORT LEAVENWORTH, KANSAS

SYNOPSIS: This course is designed for military planners, systems analysts, management scientists, engineers, computer scientists, and technical managers who would like to use simulation to design and optimize real-world systems. It encompasses a full spectrum of applications including defense, computer and communications systems, manufacturing, transportation, healthcare, services, and process reengineering. The course presents definitive methods for developing a simulation model, ensuring its validity, choosing simulation software, selecting input probability distributions, analyzing simulation results, and project management. A case study illustrates the step-by-step application of simulation modeling techniques. All course topics will be developed from scratch, with the only prerequisites being knowledge of probability, statistics, and computer programming.

At the end of the course, each participant will be able to model complex real-world systems efficiently, choose a simulation package appropriate for a particular problem, decide what probability distributions to use as input to a simulation model, determine if a particular simulation model is a valid representation of a proposed system, analyze simulation output data correctly, use techniques that may greatly reduce the cost of obtaining a specified level of statistical precision, and identify pitfalls that have caused the conclusions drawn from many simulation studies to be invalid.

TEXT: Participants will receive the text Simulation Modeling and Analysis, 3rd Edition, McGraw-Hill (2000) by Averill Law and David Kelton, together with bound copies of the course materials used in presenting the course.

DR. AVERILL M. LAW: Dr. Law, President of Averill M. Law & Associates, is one of the world's foremost experts on simulation modeling. He has been a simulation consultant to numerous organizations including Accenture, ARCO, Boeing, Compaq, Defense Modeling and Simulation Office, Kimberly-Clark, M&M/Mars, Oak Ridge National Lab, 3M, Xerox, as well as the U.S. Air Force, Army, and Post Office.

Dr. Law has presented more than 350 simulation short courses in 17 countries, including 29 for the U.S. Army and 22 for the U.S. Air Force. He has written or co-authored numerous papers and books on simulation, operations research, statistics, manufacturing, and communications, including the definitive book Simulation Modeling and Analysis that is used by more than 80,000 people worldwide. He developed the ExpertFit[®] distribution-fitting software, and he also developed several videotapes on simulation modeling. He wrote a regular column on simulation for *Industrial Engineering* magazine.

Dr. Law has been a tenured faculty member at the University of Wisconsin and the University of Arizona. He has a Ph.D. in industrial engineering and operations research from the University of California at Berkeley.

ADMINISTRATIVE INFORMATION

PURPOSE: The ORSA CEP was initiated to support the OPMS Functional Area 49 Program and now supports the overall Department of Defense analytical effort by providing instruction in highly demanded and used ORSA techniques in DOD.

PLACE: Fort Leavenworth, Kansas.

ELIGIBILITY: Military Officers who possess OPMS Functional Area 49 (ORSA) and civilian GS-1515 analysts. A graduate degree in ORSA or ORSA-related field is preferred. This course is a special offering being put on for personnel at Fort Leavenworth. Others may attend on a space available basis.

CLASSIFICATION: All materials are unclassified.

FUNDING: All costs for the course, to include registration and issue materials, will be paid by ALMC. Travel and TDY payments for all personnel must be made by the attendee's parent organization.

APPLICATION: Personnel desiring to attend should apply via their Training Officer through the Army Training Requirements and Resources System (ATRRS), School Code 907, Course Code ALMC-SE, offering 03-704.

POINT OF CONTACT AT FORT LEAVENWORTH: DSN 552-9244, (913) 684-9244

GENERAL INFORMATION: Further information regarding the program may be obtained from the ORSA CEP course director at DSN 539-4249/4226, commercial (804) 765-4249/4226 or e-mail orsacep@lee.army.mil

SCHEDULE: The course begins at 0900 on Monday 14 April and concludes at 1100 on Friday 18 April 2003.
