Course Description.

Expands the application of discrete event simulation and introduces continuous simulation. Develops object oriented programming techniques. Presents distributed modeling and simulation network communication protocols. Explores the practical applications of distributed simulations in industry. Lecture 4 hours. Total 4 hours per week.

General Course Purpose

This is a major course in the A.A.S. in Technical Studies: Modeling and Simulation.

Course Prerequisites/Co-requisites

Prerequisites are ITP 193 and ITP 120.

Course Objectives

Upon completion of the course, the student will be able to:

- Gather, build, and analyze a discrete event simulation.
- Introduce concepts of continuous simulation.
- Develop object oriented programming skills.
- Develop networking skills.
- Use distributed simulation protocols.
- Describe the software development lifecycle
- Implement basic distributed simulations and games.
- Develop visualization for simulation or gaming environments.

Major Topics to be Included

a. Discrete events simulation review.
b. Statistical analysis review.
c. Advanced Object Oriented Design
d. Software Development Lifecycle
e. Networking in Linux and Windows
f. Distributed Simulation Protocols (HLA, DIS and TENA)
g. Implementation of a distributed game and/or simulation
h. Adding Objects and Interactions to and HLA Architecture
i. Visualization in simulation and gaming.
j. Environmental effects in simulations and gaming environments.