Fall 2014

CLASSES [MW 4PM – 5:15PM, ATC 4.902]

ATEC 6362-012 Modeling and Simulation (Studio Art)
CS 6301-012 Special Topics in Computer Science (Lecture)

GOALS

To (1) learn dynamic system modeling by grounding the methods in a rich multimedia environment (Max/Msp), and (2) learn abstract concepts through transfer to other domains.

BENEFITS

You will learn dynamic system modeling and computer simulation, a visual multimedia programming language, and a multi-language environment

PEOPLE

Dr. Paul Fishwick, Instructor, Email: paul.fishwick@utdallas.edu, Web: http://creative-automata.com Office: by email schedule
Karen Doore, Teaching Assistant, Email: kdoore@utdallas.edu Office Hours: TBA

SOCIAL & CLOUD

Google Group: modsim14@googlegroups.com
UTD Galaxy

EXPENSES

Must purchase (1) a Cycling ’74 Student license of Max/Msp/Gen http://cycling74.com unless you have other access, and (2) a set of headphones or earbuds that have a microphone (or you may have a pair already)

GRADING

Attendance will be taken – mandatory [counts negatively toward grade]
70% Projects (Explorations of Concepts using Max/Msp/Gen/Jitter)
30% 2 Tests (15% each on learned concepts)

UTD Galaxy for grading and assignments
TEACHING STYLE

Hands on with computers, case studies, invited speakers, student talks

CONCEPTS

All concepts will be integrated within the Max/Msp environment

Time Management: physical vs. virtual time, discrete vs. continuous

Processes: sequential, parallel, distributed

Systems Thinking: flow (control, data, transitional) signals, input, output, state, event, modularity, aggregation, abstraction, feedback

Statistical Models: Distributions, Time Series (AR)

State Models: Finite State Machines, Markov models, Petri networks, Production rule, Cellular Automata

Functional Models: Network, Logic Circuit, Queuing models

Recursion and Feedback: Difference, Differential, L Systems, Compartmental, System Dynamics, Kinetic graphs