COURSE OUTLINE – subject to changes :

L-1	Mon 12 Jan	Welcome to MCS 472 – Statistical Reasoning
L-2	Wed 14 Jan	Statistical Distributions – Taguchi Quality Control
L-3	Fri 16 Jan	The Monte Carlo Method – averaging simulations
	Mon 19 Jan	**Martin Luther King day – no classes**
L-4	Wed 21 Jan	Proposals for Project I, Report Writing
L-5	Fri 23 Jan	Data Analysis with pandas
L-6	Mon 26 Jan	z-transforms and linear recursions
L-7	Wed 28 Jan	filters and stability
L-8	Fri 30 Jan	Bode plots, feedback, decibels
L-9	Mon 2 Feb	Sampling, properties of DFT
L-10	Wed 4 Feb	Filter design and FFT
L-11	Fri 6 Feb	Image processing with FFT
L-12	Mon 9 Feb	**Presentations of Project I**
L-13	Wed 11 Feb	**Presentations of Project I**
L-14	Fri 13 Feb	**Presentations of Project I**
L-15	Mon 16 Feb	Linear Programming
L-16	Wed 18 Feb	Regression
L-17	Fri 20 Feb	Least Squares Chebyshev and Fourier
L-18	Mon 23 Feb	Cost-Benefit Analysis
L-19	Wed 25 Feb	Microeconomics – Macroeconomics
L-20	Fri 27 Feb	review for the midterm exam
L-21	Mon 2 Mar	**Midterm Exam**
L-22	Wed 4 Mar	supervised and unsupervised Machine Learning
L-23	Fri 6 Mar	Machine Learning with scikit-learn
L-24	Mon 9 Mar	an introduction to Deep Learning
L-25	Wed 11 Mar	face recognition; ranking data
L-26	Fri 13 Mar	ordinary differential equations; the scientific method
L-27	Mon 16 Mar	**Presentations of Project II**
L-28	Wed 18 Mar	**Presentations of Project II**
L-29	Fri 20 Mar	**Presentations of Project II**
L-30	Mon 30 Mar	dynamics in mechanics and biology
L-31	Wed 1 Apr	models of pursuit; multiple mass springs and traffic; nonlinear systems
L-32	Fri 3 Apr	frequency domains, signals and plants
L-33	Mon 6 Apr	cascading plants, circuits, stability
L-34	Wed 8 Apr	filters and feedback
L-35	Fri 10 Apr	control, root locus, Nyquist analysis
L-36	Mon 13 Apr	introduction to partial differential equations
L-37	Wed 15 Apr	separation of variables: solving problems
L-38	Fri 17 Apr	trafic flow modeling
L-39	Mon 20 Apr	periodic steady state; the Helmholz equation
L-40	Wed 22 Apr	modeling vibrations by Bessel functions
L-41	Fri 24 Apr	review for the final exam
L-42	Mon 27 Apr	**Presentations of Project III**
L-43	Wed 29 Apr	**Presentations of Project III**
L-44	Fri 1 May	**Presentations of Project III**

Final exam: in the week of 4 May, date, time, and room to be announced.