

COURSE OUTLINE – subject to changes :

L-01	Mon	11	Jan	welcome to mcs 260 – computer literacy and Python scripting
L-02	Wed	13	Jan	computer architecture – first steps with Python
L-03	Fri	15	Jan	the von Neumann machine – calculating in the Python shell
	Mon	18	Jan	Martin Luther King, Jr., Day. No classes.
L-04	Wed	20	Jan	numbers, variables, and assignments – writing Python scripts
L-05	Fri	22	Jan	operating systems – the os module – turtle graphics
L-06	Mon	25	Jan	syntax and semantics of languages – strings, lists, tuples
L-07	Wed	27	Jan	mass storage, files, databases – dictionaries – anydbm
L-08	Fri	29	Jan	boolean algebra – flowcharts – conditional execution

Project One due on Monday 1 February at noon

L-09	Mon	1	Feb	transistors and logic gates – operations on numbers, strings
L-10	Wed	3	Feb	flip-flops and registers – lists as queues and stacks
L-11	Fri	5	Feb	adder circuits – loops with while and for – estimating pi
L-12	Mon	8	Feb	simulations with random numbers – binary expansion – break
L-13	Wed	10	Feb	top down design of programs – functions in Python
L-14	Fri	12	Feb	local and global variables – arguments of functions

Project Two due on Monday 16 February at noon

L-15	Mon	15	Feb	functional programming – lambda forms – list comprehensions
L-16	Wed	17	Feb	organization of data on files – manipulating files
L-17	Fri	19	Feb	data compression – format conversions – using buffers
L-18	Mon	22	Feb	networking and internet – markup languages – urllib
L-19	Wed	24	Feb	review for the first midterm on lectures 1 to 18
L-20	Fri	26	Feb	first midterm exam on the first 18 lectures
L-21	Mon	29	Feb	software engineering – bottom up design – modules in Python
L-22	Wed	2	Mar	software development cycle and quality – modular design
L-23	Fri	4	Mar	software licensing and open source – modules and packages

Project Three due on Monday 7 March at noon

L-24	Mon	7	Mar	object-oriented programming – UML – classes in Python
L-25	Wed	9	Mar	data and functional attributes – operator overloading
L-26	Fri	11	Mar	encapsulation and inheritance – polymorphism and wrapping
L-27	Mon	14	Mar	software testing, verification techniques – assert
L-28	Wed	16	Mar	exceptions – defining, raising, and handling exceptions
L-29	Fri	18	Mar	complexity and cost – complexity classes – timing programs
L-30	Mon	28	Mar	graphical user interfaces – using Tkinter, a GUI toolkit
L-31	Wed	30	Mar	expression evaluation – graphing functions – canvas widget
L-32	Fri	1	Apr	entering data with a scale – development of animations

Project Four due on Monday 4 April at noon

L-33	Mon	4	Apr	class hierarchies – visualization with inheritance
L-34	Wed	6	Apr	cellular automata – the game of life, a Tkinter application
L-35	Fri	8	Apr	processes and threads – lifecycle of a thread
L-36	Mon	11	Apr	object-oriented implementation of predator-prey simulation
L-37	Wed	13	Apr	review for the second midterm on lectures 21 to 36
L-38	Fri	15	Apr	second midterm on lectures 21 to 36
L-39	Mon	18	Apr	network programming – the socket module
L-40	Wed	28	Apr	high level parallel processing – multiprocessing
L-41	Fri	22	Apr	recursive algorithms – recursive images, fractals

Project Five due Monday 25 April at noon

L-42	Mon	25	Apr	review of the first 18 lectures
L-43	Wed	27	Apr	review of topics covered on the second midterm
L-44	Fri	29	Apr	cumulative review

Tuesday 3 May : 8:00AM - 10:00AM, final exam, room to be announced.