SU DEPARTMENT OF COMPUTER SCIENCE SYLLABUS (Tentative)
COSC 118 Introductory Scientific Programming

Description: A first course for students interested in using computer programming for scientific applications. Design, implementation and testing of Python programs will be the central focus of the course. (Three hours lecture and two hours lab per week.)

Text: "Starting Out With Python", by Tony Gaddis, Pearson, Addison Wesley, 4th Edition.

Topics	Weeks
An Introduction to Computers	
An introduction to the basic programming concepts.	1.0
Problem Solving	
An introduction to the software life cycle, program design, and programming tools.	1.0
Fundamentals of Programming	
Control structures, event-driven programming, numerical calculations, string manipulation, Input and Output.	1.0
Procedures	
Functions, parameter passing and Modular Design.	1.0
Branching	
Logical operations, If blocks and case structures.	1.0
Repetition	
Loops and using repetition to process data.	2.0

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Introduction to classes and instances   1.0

NumPy, MatPlotLib, and Modules

Introduction to Modern Scientific Python Modules

Exams/Projects	<u>3.0</u>
	14.0