Exam 3 covering Chapter 8 through Chapter 11 in the *zyBooks* course will consist of writing code. Students will take their exam during their respective regular laboratory class session either on Tuesday, April 13th, or Friday, April 16th. This exam is closed book and closed notes. You will have 1 hour 30 minutes to complete this exam that consists of two complete, yet short, Python 3 programs, which means approximately 45 minutes per program. No calculators may be used on the exam.

This code-writing exam will be given using our traditional Linux CSE machines where you will be able to edit and run your Python 3 code, checking for errors. While you will have access to code in your own Linux directory or my public directory, you will not have access to any notes or the Internet outside of this Linux environment. *Note that you may not add my lecture notes or similar files as an aid for your exam.* You can, however, access the built-in Python help system on our Linux CSE machines provided you know how to use it.

* Face-To-Face assessment exams will be closed-book/closed-notes and will be completed in the lab classroom during the assigned lab section time using the lab computers and applicable software. The TA for the lab section will monitor student progress during the exam. *If you are registered in the face-to-face lab section (CSCE 1035-306) and cannot attend in person due to COVID-19 issues, you are to notify your instructor as soon as possible BEFORE the exam so that alternate arrangements can be made. Failure to do so may result in a zero for the exam.*
* Remote assessment exams will be closed-book/closed-notes and will be completed during the assigned lab section time using Zoom with your webcam, microphone, and speaker turned on. You must not turn these devices off during the exam or you may be subject to academic integrity violations. This applies to students registered in the remote lab section (CSCE 1035-397). If you have connectivity issues during the exam, please contact your instructor **immediately** via Zoom or e-mail so that it can be resolved during the exam window. Your instructor will be continuously monitoring Zoom and e-mail during this time.

You should review your textbook, the lecture notes, class code examples and past lab assignments to prepare for this exam.

You should be familiar with the structure of a basic Python 3 syntax and how the interpreter works, which also includes knowing the difference between functions and methods. You will be asked to write two complete, though small, Python 3 programs, so you should be familiar with the basic structure to start writing a Python 3 program as well as the following:

**Chapter 8 – Lists and Dictionaries**

* Define, use, access, modify, and manipulate lists, including nested lists (especially understand how to do a 2-D list).
  + Be familiar with common list operations, in addition to slicing and negative indexing access.
  + Be able to add elements to a list (several ways).
  + Be able to remote elements from a list (several ways).
  + Be able to modify elements in a list, plus miscellaneous list operations including sorting.
  + Be able to iterate over a list to access or modify elements using a loop, but also the built-in iterating functions.
  + Basic understanding of list comprehension will be evaluated.
* Be able to pass command line arguments to your program, including how to check the number of arguments.
* Define, use, access, modify, and manipulate dictionaries.
  + Be able to create dictionaries that include common dictionary operations.
  + Be able to use the dictionary methods to modify, remove, and gain access to dictionary elements (including using both the key and value).
  + Be able to iterate over a dictionary with the various methods (e.g., items(), keys(), etc.)

**Chapter 9 – Classes**

* Be able to declare and use a class, including instantiating a class object.
  + Be able to declare and use class and instance attributes and methods, as well as initialize attributes with the \_\_init\_\_() constructor.
  + Be able to add class customization by overriding the \_\_str\_\_() method.

**Chapter 10 – Exceptions**

* Be able to handle multiple exceptions, including general exception as well as common exceptions (e.g., ZeroDivisionError, ValueError, etc.).
  + Be able to use the try-except-else-finally structure for exceptions, including how to exit for an unrecoverable exception.
  + Be able to use exceptions with functions.
  + Be able to raise your own exceptions, including a user-defined exception.

**Chapter 11 – Modules**

* Be able to work with modules, including built-ins (such as math, sys, etc.) and your own defined modules.
  + Be able to use the import as well as the from … import … statements.
  + Be able to execute a module as a script or use as an importable module.
  + Be able to reload modules.
* Packages will not be tested in this exam.
* Be able to use the dir() command to find more information on built-ins, accessible functions, etc.

While the focus of this exam will be on lists and dictionaries (Chapter 8), classes (Chapter 9), exceptions (Chapter 10), and modules (Chapter 11), you are still expected to be able to execute the functionality found in earlier chapters, such as using print(), input(), format(), if-elif-else statements, while and for loops, functions, strings, functionality from the math module, and general workings of containers such as lists, tuples, dictionaries, etc.