ACIT 1515 - Scripting for IT

School:	School of Computing and Academic Studies
Program:	Computer Information Technology Diploma
Course Credits:	4
Minimum Passing Grade:	50%
Start Date:	September 08, 2020
End Date:	December 11, 2020
Total Hours:	60
Total Weeks:	15
Hours/Weeks:	4
Delivery Type:	Lecture/Lab
CRN:	34319

Instructor Details

Name: Rob Neilson
Email: Rob_Neilson@bcit.ca
Location: n/a (this course is delivered online)
Office Hours:

The instructor is available for online help/consultation via email and/or the Discord app. Refer to the course D2L page for hours and availability.

Course description

The course introduces the fundamental concepts of programming for IT professionals, with a focus on scripting languages that are commonly found in the workplace. Projects, assignments, and activities are representative of tasks that IT professionals are likely to encounter in the workplace. Students taking this course will design, implement, test, and debug programs that incorporate: variables, expressions, assignments, I/O, conditional and iterative control constructs, functions, and parameter passing. The course assumes no previous programming experience

Course goals

The January 2020 offering of ACIT 1515 will be delivered using the Python 3 programming language. The focus is on procedural programming (OOP with Python is covered in the follow on course, ACIT 2515). Students will learn to write and run programs from the Windows command line, as well as from an IDE.

Course learning outcomes / competencies

Upon successful completion of this course, the student will be able to:

- Write simple procedural programs.
- Review and analyze the behaviour of simple programs.
- Apply the techniques of decomposition to break a program into functions and modules.
- Choose appropriate data structures, conditionals and iteration constructs for a given programming task.

- Write programs that use primitive data types, variables, strings, expressions, and command line I/O.
- Write programs that use conditional and iterative control structures, functions, and parameter passing.
- Write programs that use each of the following data structures: tuples, lists, sets, and dictionaries.
- Write programs using the standard libraries available with the chosen programming language.
- Write programs that use file I/O to provide persistence across multiple executions.
- Test and debug simple programs.

Evaluation criteria

Criteria	%	Comments
Online Participation	10	Students must complete at least 80% of participation activities to pass this course.
Weekly Quizzes	20	Quizzes are done online, through D2L. Lowest two quiz scores are not counted.
Lab Exercises	20	One lab exercise will be graded each week (ten in total).
Midterm Asessment	25	Hands-on assessment. See below for details.
Final Assessment	25	Hands-on assessment. See below for details.
Total	100%	

Online Participation Details:

- Weekly online activities involve completing online Participation and Challenge activities in the course zyBook.
- Participation is automatically tracked in the zyBook, with multiple Activities in each chapter.
- Participation and Challenge Activities must be completed prior to the start of class.
- Students must complete a minimum of 80% of the Participation and Challenge Activities to pass this course.

Lab Exercise Details:

- Lab exercises are started in class each week. Some exercises will be due by end of class, and others before 6:00am on the day of class the following week. Due dates will be announced in class and posted in D2L. Late submissions not accepted.
- Not all submissions are graded. The instructor will select one submission for assessment in each of weeks 2,3,4,5,6,8, 9,10,11,12. (10 in total).

Midterm and Final Assessment Details:

- The midterm and final assessments are practical hands-on tests which involve writing programs in a controlled test environment.
- Each assessment is comprehensive and covers all material / skills covered up to the date of the assessment.
- To pass the course, students must earn at least 25/50 on the combined total of the midterm and final assessments.

Attendance requirements

Classes are delivered online using the Zoom app. Attendance is required. Students should be logged into the Zoom meeting a few minutes prior to the start of class, and are expected to be participating in the class until it ends, or they are dismissed by the instructor. Students who are not participating during class will be marked as absent.

Regular attendance in classes is critical to student success, and is monitored. Unapproved absence of 2 or more classes may result withdrawal from the course or program. Please see Policy 5101 - Student Regulations: http://www.bcit.ca/files/pdf/policies/5101.pdf.

In case of illness or other unavoidable cause of absence, the student must communicate *as soon as possible* with his/her Instructor indicating the reason for the absence.

Learning resources

Software:

- Windows 10 (students must have admin priviledges on their machine; a Windows 10 VM is acceptable for use in this course)
- Python version 3 (installed during first class)
- a text editor (installed during first class; editor tbd)
- Microsoft Visual Studio Code (most recent stable build)

Online Course Delivery Tools:

- Zoom (for lessons)
- Discord (office hours and student support
- BCIT Learning Hub (D2L) (instructions, links to materials, deadlines, announcements, assignment submission, quizzes, exams)

Textbooks / Reference material:

Students are required to have a subscription to the online ACIT 1515 Python 3 textbook, from zyBook.com. Instructions to subscribe:

1. Create an account at zyBooks.com (note: students must use their my.bcit.ca email address when creating an account)
2. Enter zyBook code BCITACIT1515NeilsonFall2020
3. Click Subscribe

Students must have their own laptop computer for use in class.

Course specific requirements

This course is delivered using a 'flipped' learning model which requires significant online content and activities that are required to be completed prior to the start of each class. Lack of participation in the online portion (pre-class activities) of this course may result in failure of the course.

Statement for prior learning assessment

Students with previous programming experience: if you feel that you are already able to meet the requirements of this course, speak with the instructor.

Course schedule and assignments

Week #	Week of	Primary Topic	Supplementary Topic	Online Activity (do this before class)
1	Sep 9	Python Intro	Python Install; Interactive Python Shell; Editors; cmd line	zyBooks 1: Getting Started
2	Sep 14	Variables and Data Types	import string, math; debugging with print statements	zyBooks 2: Variables and Data Types
3	Sep 21	Functions	Comments, docstrings, program documentation	zyBooks 3: Functions
4	Sep 28	Branching (Conditional Execution)	IDEs and Debuggers	zyBooks 4: Branching
5	Oct 5	Iteration (While Loops)	User input validation (no regex)	zyBooks 5: While Loops
6	Oct 12	Iteration (For Loops)	Simple Lists are Introduced	zyBooks 6: For Loops
7	Oct 19	*Midterm Exam*		
8	Oct 26	Lists		zyBooks 7: Lists
9	Nov 2	Dictionaries		zyBooks 8: Dictionaries
10	Nov 9	String Manipulation		zyBooks 9: String Manipulation
11	Nov 16	File I/O	import csv, json	zyBooks 10: File IO
12	Nov 23	Exception Handling	regex	zyBooks 11: Exceptions
13	Nov 30	File Systems and Native OS Calls	import sys, os	zyBooks 12: File Systems
14	Dec 7	*Final Exam*		

Dues dates:

- there are weekly quizzes (online in D2L) that are due by 6:00 am on the day of your class each week – except in weeks 1, 7, 14
- weekly lab assignments must be completed and submitted to D2L by 6:00am on the day of your next class (specific deadlines posted in D2L)

Note: in a 15 week term there is an additional week of content which covers topics related to module and packages, as well as variable length arguments lists. The instructor will try and include some of this contents when there is time during the course. The zybook chapter is included and it is highly recommended that students complete this on their own so they are prepared for the follow on course, ACIT 2515.

BCIT policy

Any student who needs special assistance in the event of a medical emergency or building evacuation (either because of a disability or for any other reason) should promptly inform their course instructor(s) and Accessibility Services of their personal circumstances.

Human Rights, Harassment and Discrimination:
The BCIT community is made up of individuals from every ability, background, experience and identity, each contributing uniquely to the richness and diversity of the BCIT community as a whole. In recognition of this,

and the intrinsic value of our diversity, BCIT seeks to foster a climate of collaboration, understanding and mutual respect between all members of the community and ensure an inclusive accessible working and learning environment where everyone can succeed.

Respect, Diversity, and Inclusion is a supportive resource for both students and employees of BCIT, to foster a respectful learning and working environment. Any student who feels that they are experiencing discrimination or harassment (personal or human rights-related) can confidentially access this resource for advice and support. Please see Policy 7507 – Harassment and Discrimination and accompanying procedure.

Students should make themselves aware of additional Education, Administration, Safety and other BCIT policies listed at https://www.bcit.ca/about/administration/policies.shtml