

SCHOOL OF COMPUTER TECHNOLOGY

COMP 2152 Open Source Development

Credit Hours: 4 Contact Hours: 56 Plar Eligible: [x] Yes [] No

Prerequisites: COMP 1230 Corequisites: None

Effective Date: January 2020

<u>Instructor/s</u>	<u>Email</u>	<u>Phone 416-415-5000 / Room</u>
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NOTE TO STUDENTS: Academic Departments at George Brown College will **NOT** retain historical copies of Course Outlines. We urge you to retain this Course Outline for your future reference.

FOR OFFICE USE ONLY

ORIGINATOR: Maziar Masoudi
SIGNATURE _____ DATE _____

CHAIR: Alber Danison
SIGNATURE _____ DATE _____

DATE OF REVISION: _____

EQUITY STATEMENT: George Brown College values the talents and contributions of its students, staff and community partners and seeks to create a welcoming environment where equity, diversity and safety of all groups are fundamental. Language or activities which are inconsistent with this philosophy violate the College policy on the Prevention of Discrimination and Harassment and will not be tolerated. The commitment and cooperation of all students and staff are required to maintain this environment. Information and assistance are available through your Chair, Student Affairs, the Student Association or the Human Rights Advisor.

STUDENT RESPONSIBILITIES: Students should obtain a copy of the Student Handbook and refer to it for additional information regarding the grading system, withdrawals, exemptions, class assignments, missed tests and exams, supplemental privileges, and academic dishonesty. Students are required to apply themselves diligently to the course of study, and to prepare class and homework assignments as given. Regular attendance, though not a requirement, is strongly advised. Past student performance shows a strong relationship between regular attendance and success.

COURSE DESCRIPTION:

This course is an introductory course to Python language. The course will focus on the planning and implementation of programs, using the grammar of the Python programming language. In this course, students will gain a basic understanding of programming in Python by creating a variety of scripts. Students will learn about language syntax, semantics, and the runtime environment, as well as common data types, data structures, control flow, files, databases and object-oriented concepts.

ESSENTIAL EMPLOYABILITY SKILLS:

As mandated by the Ministry of Training, Colleges and Universities essential employability skills (EES) will be addressed throughout all programs of study. Students will have the opportunity to **learn (L)** specific skills, to **practice (P)** these skills, and/or **be evaluated (E)** on the EES outcomes in a variety of courses. The EES include communication, numeracy, critical thinking & problem solving, information management, interpersonal and personal skills. The faculty for this course has indicated which of the EES are either Learned (L), Practiced (P) or Evaluated (E) in this course:

Skill	L	P	E	Skill	L	P	E
1. communicate clearly, concisely and correctly in the written, spoken and visual form that fulfills the purpose and meets the needs of the audience		X	X	7. locate, select, organize and document information using appropriate technology and information sources	X	X	X
2. respond to written, spoken or visual messages in a manner that ensures effective communication		X	X	8. show respect for the diverse opinions, values, belief systems, and contributions of others	X	X	X
3. execute mathematical operations accurately			X	9. interact with others in groups or teams in ways that contribute to effective working relationships and the achievement of goals	X	X	X
4. apply a systematic approach to solve problems	X	X	X	10. manage the use of time and other resources to complete projects	X	X	X
5. use a variety of thinking skills to anticipate and solve problems		X	X	11. take responsibility for one's own actions, decisions and consequences	X	X	X
6. analyze, evaluate, and apply relevant information from a variety of sources			X				

COURSE OUTCOMES:

At the end of this course, the student will reliably demonstrate the ability to:

1. Summarize the python methodology
2. Exemplify the python coding standards
3. Produce a program using python basic data structures
4. Generate content to standard output and files
5. Produce scripts that receive input from console, files, database and other APIs/libraries
6. Demonstrate the process of structuring the data using lists, dictionaries, sets and tuples.
7. Explain, organize and execute the creation functions for reusability
8. Implement the Object-oriented Programming concepts in Python.
9. Implement built-in libraries to manipulate operating systems of various platforms

DELIVERY METHODS:

The instructional methods of this course are comprised of a combination of lectures, demonstrations, hands-on exercises, and take-home assignments.

LIST OF TEXTBOOKS AND OTHER TEACHING AIDS:

Required:

1. Murach's Python Programming By Michael Urban and Joel Murach
ISBN: 978-1-890774-97-4

Recommended Resources:

1. <https://www.python.org/>

TESTING POLICY

- Students must complete tests and the final exam on the assigned day. If unable to complete the test/exam as scheduled, students are required to notify the professor at least three days prior to the date, so alternative arrangements can be made. Failure to comply with this policy may result in a zero grade.
- There will be no makeup quiz and lab exercises, for medical or other reasons. If you anticipate missing more than 2 quizzes or lab exercises for serious, major reasons, see your professor beforehand.

ASSIGNMENT POLICY

- All assignments must be submitted on the due date based on an instruction given by the professor. Late assignment, will be penalized 10% per day to a maximum of 5 days, the weekend included unless the student has notified the professor (via e-mail, phone or in person) ahead of the due date that he/she has a valid reason for late submission.
- Students are responsible for making sure their marks are up to date on the blackboard. **No mark will change after two weeks** from the time marks were posted on Blackboard.

EVALUATION SYSTEM:

To pass the course student must receive a minimum of 50% of total mark.

The final grade is based on student performance on examinations, project and lab tests as follows:

Assessment	Description	Outcomes assessed:	EES	Week	Weight
Lecture Quiz	The best 6 out of 8 quizzes will count.	1,2,6,7,9	1,2,3,4,5	TBA	9
Lab Test 3 x 6	Hands-On test	2,3,4,5,8,10,11	1,2,3,4,5,6,7,10	TBA	18
Lab exercises 8 x 1	Grade calculated based on atKlass statistics for each student	2,3,4,5,8,10,11	1,2,3,4,5	TBA	8
Mid-term test	Mixed format test	1,2,3,6,7,8,11	1,2,4	7	20
Final test	Mixed format test	1,2,3,6,7,8,9,10	2,4,5	15	30
Assignment 1	Individual assignment	2,3,4,5,8,10,11	1,2,3,4,5,6,7,10,11	14	15
				TOTAL	100%

*TBA the date and time will be announced at the beginning of the semester.

GRADING SYSTEM the passing grade for this course is: D (50%)

GEORGE BROWN COLLEGE				
A+/A 86-100	B+ 77-79	C+ 67-69	D+ 57-59	Below 50 F
A- 80-85	B 73-76	C 63-66	D 50-56	
	B- 70-72	C- 60-62		

Excerpt from the College Policy on Academic Dishonesty:

The *minimal* consequence for submitting a plagiarized, purchased, contracted, or in any manner inappropriately negotiated or falsified assignment, test, essay, project, or any evaluated material will be a grade of zero on that material.

TOPICAL OUTLINE:

WEEK	Topic	Content	Chapter/Reference
1		<ul style="list-style-type: none"> - Introduction to Python - Zen of Python - PEP 	1,2,5

		<ul style="list-style-type: none"> - How to use IDLE to develop programs - How to use PyCharm to develop programs - Coding 101 in Python - Basic coding skills - Test and debug a program - How to use five of the Python functions - Package and namespace 	
2		<ul style="list-style-type: none"> - Coding Basics - How to work with data types and variables - How to work with numeric data - How to work with lists and tuples - Basic skills for working with lists - How to work with a list of lists - How to work with tuples 	5,6
3		<ul style="list-style-type: none"> - How to code control statements - How to code Boolean expressions - How to code the selection structure - How to use the iteration structure 	3,4
4		<ul style="list-style-type: none"> - How to work with string - Accessing Strings - Basic Operations - String slices - Function and Methods - How to work with dictionaries - Introduction - Accessing values in dictionaries - Working with dictionaries - Dictionary properties & functions 	2,10,12
5		<ul style="list-style-type: none"> - How to work with recursion and algorithms <ul style="list-style-type: none"> - How recursion works in Python - How to use recursion to add a range of numbers - How to define and use functions and modules - How to define and use functions - How to create and use modules - 	4,13
6		<ul style="list-style-type: none"> - How to work with file I/O - Folder manipulation - An introduction to file I/O - How to use text files - How to use CSV files - How to use binary files 	7
7		Family Day Holiday	
8		Interession Week	
9		MID-TERM EXAM	
10		<ul style="list-style-type: none"> - System Applications - The sys module - The os module - The platform module - The subprocess module - Forking and piping - The socket module 	8 and Lecture Notes

		<ul style="list-style-type: none"> - Exceptions - How to handle a single exception - How to handle multiple exceptions - Standard error 	
11		<ul style="list-style-type: none"> - How to use Python to work with a database - How to connect to a SQLite database - How to execute SELECT statements - How to get the rows in a result set - How to execute INSERT, UPDATE, and DELETE statements - How to test the database code - How to handle database exceptions 	19
12		<ul style="list-style-type: none"> - How to define and use your own classes - An introduction to classes and objects - How to define a class - How to work with object composition - How to work with encapsulation 	14
13		<ul style="list-style-type: none"> - How to work with inheritance - How to define a sub-class - Polymorphism - How to work with object composition - How to work with encapsulation <p>How to override object methods</p> <ul style="list-style-type: none"> - Special methods - Inheritance & special methods 	8,15
14		<ul style="list-style-type: none"> - Python AI and Machine learning - Exam Review 	
15		FINAL EXAM	
<p>Please note: this schedule may change as resources and circumstances require. For information on withdrawing from this course without academic penalty, please refer to the College Academic Calendar: http://www.georgebrown.ca/Admin/Registr/PSCal.aspx</p>			