ZETECH UNIVERSITY

F-7-16

Unit Code:	*BIT 2202*
Unit Title:	*Object Oriented Programming II*
Program(s):	*BSIT*
Lecturer Name:	*Mr. Mathenge Richard*
Lecturer Contacts:	Email: richard.mathenge@zetech.ac.ke Phone No: 0722 756031
Consultation time	Thursday 0800 – 1100 hrs

UNIT DESCRIPTION

This course is an intermediate-level course in Python. Students are expected to be comfortable with the programming material that is taught in introduction to object oriented programming.
Topics covered will include lectures on the Python language and development environment as well as coverage of some select Python modules that demonstrate the versatility of the Python language.

EXPECTED LEARNING OUTCOMES

Upon completion of the course, students will attain a broad range of learning outcomes, and will be able to:

1. Understand, develop, and debug Python code.
2. Develop Python solutions.
3. Gain experience with the Python development environment.
4. Utilize new software development tools.
5. Exercise problem solving and programming skills with Python.
6. Produce a collaborative Python application.

COURSE SYLLABUS AND SCHEDULE

Week	Topic	Sub-topic
1	Version Control	Git and Github Initializing repositories and configuring git Working locally Working with a distant repository with github Creating a new repository on the command line Push an existing repository from the command line Setting up a remote directory
2	Python Basics	Python 3 overview Python features Local Environment setup Basic Syntax

		Interactive mode programming Reserved Words
3	Variable types	Multiple assignment Standard data types Numbers (int, float, complex) String List Tuple Dictionary Data type conversion Assignment 1
4	Basic operators	Arithmetic operators Comparison (relational) operators Assignment operators Logical operators Bitwise operators Membership operators Identity operators
5	Decision making	If statement, If…else, elif Loops While loop For loop Nested loops Loop control statements Break, Continue, pass
6	CAT 1	
7	Strings	Accessing strings Modifying strings Built-in string methods String constants String formatting
8	Lists Tuples	Accessing values in a list Basic list operations Indexing, slicing and matrixes Built-in list functions and methods List comprehensions Accessing values in Tuples Built-in tuple functions

9	Dictionary	Accessing values in a dictionary Updating dictionaries Properties Built-in dictionary functions and methods Assignment 2 (OOP in Python)
10	Functions	Defining a function – syntax Calling a function Function arguments(required, keyword, default and variable-length arguments) Anonymous function – lambda Scope of variables – Global vs Local
11	Modules The standard library	Import statement The from…import/import * statements The dir() function The python standard library Built-in constants Built-in functions Time, SYS,OS
12	CAT 2	Writing Continuous Assessment Test 2
13	REVISION	
14 & 15	FINAL EXAMINATION	

TEACHING/LEARNING METHODOLOGY

The course will be taught mainly through practical labs, lectures, tutorials, group discussions and student presentations

INSTRUCTIONAL MATERIALS

1. *These will include: Tablet, Smart board, LCD projector & Computers, Flipcharts, televisions, videos*

ASSESSMENT CRITERIA

Assessment Type	***Frequency***	***Percentage***
Assignment	*2*	*10%*
CATs	*2*	*20%*
Final Examination	*1*	*70%*
Total		*100%*

REFERENCE TEXTBOOKS

2. Mueller, J. P. (n.d.). *Beginning Programming with Python For Dummies*. S.l.: For Dummies.
3. (n.d.). Python 3.7.4 documentation. Retrieved from https://docs.python.org/3
4. (n.d.). Git Handbook. Retrieved from https://guides.github.com/introduction/git-handbook/
5. Shaw, Z. (2017). *Learn Python 3 the hard way: a very simple introduction to the terrifyingly beautiful world of computers and code*. Boston: Addison-Wesley.
6. Bader, D. (2018). *Python tricks: the book*. Vancouver, BC: Dan Bader.
7. Downey, A. B. (2015). *Think Python*. Sebastopol: OReilly.
8. Ramalho, L. (2016). *Fluent Python:*Beijing: OReilly.

Approval for circulation by:

Unit Lecturer Name: Mathenge Richard **Signature: ……RM……**

HoD Name: Josephine Magu **Signature: ……..**