DEREE COLLEGE SYLLABUS FOR: CS 3153 BUSINESS PROBLEM SOLVING	
(Updated Spring 2021)	**UK LEVEL: 5** **UK CREDITS: 15** **US CREDITS: 3/1/3**

PREREQUISITES:	CS 1070 Introduction to Information Systems **or** ITC1070 Information Technology Fundamentals
CATALOG DESCRIPTION:	Problem solving, analysis, and processing of business data implemented with a high-level general-purpose object-oriented programming language.
RATIONALE:	The module is intended to provide students with an understanding of the role business computing can play in solving problems arising in current business settings. Students will solve problems, explore real-world business challenges, and create practical and contemporary applications using a structured high-level general-purpose programming language such as Python. The knowledge and skills acquired in this module can be applied to any setting requiring problem-solving with programming. The module is suitable for students with no or minimum prior programming experience pursuing a career or postgraduate studies and research in Business and Economics.
LEARNING OUTCOMES:	As a result of taking this course, the student should be able to: 1. Demonstrate understanding of problem solving via programming principles by formulating algorithmic solutions to problems 2. Analyse the effectiveness of a solution to a given problem 3. Develop a program as a solution to a given problem by implementing the necessary programming constructs and techniques.
METHOD OF TEACHING AND LEARNING:	In congruence with the teaching and learning strategy of the college, the following tools are used: ➢ Lectures and class discussions. ➢ Laboratory sessions involving practice in problem solving and program design and development. ➢ Office hours held by the instructor to provide further assistance to students. ➢ Use of the Blackboard Learning platform (communication, posting of lecture notes / assignments' instructions / timely announcements, online submission of assignments, etc).
ASSESSMENT:	**Summative**:

First Assessment - Midterm Examination	**40%**	Programming problems
Final Assessment – Group Project	**60%**	Development of a solution to a problem (Groupwork: requirements analysis/application development/documentation)

Formative:

Programming problems assigned on Blackboard	**0%**

The formative assessment(s), which include individual and group assignments, aim to prepare students for the summative ones.

	The First Assessment tests Learning Outcomes 1 and 2. The Final Assessment tests Learning Outcome 1, 2 and 3. The final grade for this module will be determined by averaging all summative assessment grades, based on the predetermined weights for each assessment. If students pass the comprehensive assessment that tests all Learning Outcomes for this module and the average grade for the module is 40 or higher, students are not required to resit any failed assessments. (Guidelines and assessment rubrics are distributed on the first day of classes along with the course outline).
INDICATIVE READING:	**REQUIRED READING:** E-book (creative commons license): Charles R. Severance (2016). Python for everybody: Exploring Data Using Python 3. Creative Commons Attributions - https://www.py4e.com/book.php **RECOMMENDED READING:** Andrew N. Harrington. **Hands-on Python Tutorial**, Release 1.0 for Python Version 3.1+. http://anh.cs.luc.edu/python/hands-on/3.1/Hands-onPythonTutorial.pdf Richard Halterman. Fundamentals of Python Programming (2017). http://python.cs.southern.edu/pythonbook/pythonbook.pdf Tony Gaddis. **Starting out with Python**, latest edition. Pearson. Brian Jones, Davide Beazley (2013). **Python Cookbook**, 3rd Edition, Recipes for Mastering Python 3. O'Reilly Media. Brad Miller, David Ranum, Jeffrey Elkner, Peter Wentworth, Allen B. Downey, Chris Meyers, Dario Mitchell. How to think like a computer scientist. Open Source interactive e-book, GNU Free Documentation License. http://interactivepython.org/runestone/static/thinkcspy/index.html
INDICATIVE MATERIAL: (e.g. audiovisual, digital material, etc.)	**REQUIRED MATERIAL:** N/A **RECOMMENDED MATERIAL:** N/A
COMMUNICATION REQUIREMENTS:	Use of appropriate academic conventions as applicable in oral and written communications.
SOFTWARE REQUIREMENTS:	• MS-Office 365 applications • A high-level general-purpose structured object-oriented programming language such as Python.
WWW RESOURCES:	https://www.python.org http://www.codecademy.com/tracks/python http://learnpythonthehardway.org/book/ http://corepython.com/ http://www.diveinto.org/python3/ http://pymbook.readthedocs.org/en/latest

	http://greenteapress.com/thinkpython/
	http://interactivepython.org/runestone/static/pythonds/index.html
	http://www.python-course.eu/python3_course.php
	http://www.dabeaz.com/per.html
	http://docs.python-guide.org/en/latest
INDICATIVE CONTENT:	1. Introduction to Programming Languages 2. Problem solving and algorithmic thinking 3. Python Basics 4. Working with variables and operations 5. Control Structures 6. Repetition Structures 7. Working with Text 8. Functions and Modules 9. Lists 10. File Input & Output 11. Testing and debugging techniques.