Taught by LEO Faculty

CSC 122 (3cr)
Section W1
Introduction to Programming
Computer Science Department
Summer 2021

Instructor: Brian McBride
Schedule: Online Asynchronous – zyBooks & Blackboard
Office Hrs: by Appointment
E-mail: brmcbrid@umich.edu (I'll respond within 24 hrs.)
Zoom: https://zoom.us/
ID: **972 3630 5527**
Password: **mcbride**
Web Pages: https://bb.umflint.edu
https://learn.zybooks.com
Textbook: zyBooks- CSC 122: Introduction to Programming (required)
ISBN: 978-1-394-11718-5
1. Sign in or create an account at learn.zybooks.com
2. Enter zyBook code: **UMFLINTCSC122McBrideSummer2021**
3. Subscribe: Cost $77

Python 3.9.5: https://www.python.org/downloads/ (optional)

Course Description:

Data entry, algorithm understanding, and program construction from an algorithm. Students learn to prepare input, interpret output and translate into a programming language existing and designed algorithmic solutions to problems.

Course Objectives:

- Understand the foundations of computer programming
- Understand how computation is used to solve problems
- Understand basic algorithms for solving problems
- Understanding common errors in computation
- Understand how to test and debug computer programs

The only way to learn programming in any language is by doing. This requires a lot of practice writing code, making errors, and correcting them.

Schedule

Week	Reading, Participation Activities, & Challenge Activities	zyLabs
1	1.1 Programming (general) 1.2 Programming using Python 1.3 Basic input and output 1.4 Errors 1.5 Development environment 1.6 Why whitespace matters 1.7 Python example: Salary calculation 1.8 Additional practice: Output art **All Assignments and Quiz Due:7/5**	zyLab training: Basics zyLab training: Interleaved input LAB: Formatted output: Hello LAB: Formted output: No parking sign LAB: Input: Welcome message LAB: Input: Mad Lib LAB: Warm up: Hello world LAB: Basic output with variables
2	2.1 Variables and assignments 2.2 Identifiers 2.3 Objects 2.4 Numeric types: Floating-point 2.5 Arithmetic expressions 2.6 Python expressions 2.7 Division and modulo 2.8 Module basics 2.9 Math module 2.10 String basics 2.11 String formatting 2.12 Representing text 2.13 Standard library **All Assignments and Quiz Due:7/12**	LAB: Divide by x LAB: Driving costs LAB: Using math functions LAB: Building height calculator LAB: Acreage calculator LAB: Pay raise calculator
3	3.1 If-else branches (general) 3.2 If-else statement 3.3 More if-else 3.4 Equality and relational operators 3.5 Boolean operators and expressions 3.6 Order of evaluation 3.7 Code blocks and indentation 3.8 Conditional expressions 3.9 Handling exceptions using try and except **All Assignments and Quiz Due:7/19**	LAB: Smallest number LAB: Primary color mixing LAB: Priority point ticket calculator

4	4.1 Loops (general) 4.2 While loops 4.3 More while examples 4.4 Counting 4.5 For loops 4.6 Counting using the range() function 4.7 While vs. for loops 4.8 Nested loops 4.9 Developing programs incrementally 4.10 Break and continue 4.11 Loop else **All Assignments and Quiz Due:7/26**	LAB: Factorial calculator LAB: Prime number checker
5	5.1 User-defined function basics 5.2 Function parameters 5.3 Returning values from functions 5.4 Dynamic typing 5.5 Reasons for defining functions 5.6 Function stubs 5.7 Functions with branches/loops 5.8 Functions are objects 5.9 Functions: Common errors 5.10 Scope of variables and functions 5.11 Namespaces and scope resolution 5.12 Function arguments 5.13 Keyword arguments and default parameter values 5.14 Multiple function outputs 5.15 Help! Using docstrings to document functions 5.16 Engineering examples **All Assignments and Quiz Due:8/2**	LAB: Unit tests LAB: Kinematics calculator LAB: Coin return calculator

6	6.1 List basics 6.2 Lists 6.3 List methods 6.4 Iterating over a list 6.5 Membership and identity operators 6.6 Getting both index and value when looping: enumerate() 6.7 List games 6.8 List nesting 6.9 List slicing 6.10 Loops modifying lists 6.11 List comprehensions 6.12 Sorting lists 6.13 Additional practice: Engineering examples **All Assignments and Quiz Due:8/9**	LAB: Filter and sort a list LAB: Middle item LAB: Replacement words LAB: Find the largest and smallest values in a list LAB: Magic square checker
7	7.1 String methods 7.2 String slicing 7.3 Advanced string formatting 7.4 Splitting and joining strings **All Assignments and Quiz Due:8/13**	LAB: Checker for integer string LAB: Name format LAB: Count characters

Student Assessment:

There are a total of **2,233** points available in this course distributed as follows:

Category	Points	Percentage
Participation Activities	650 pts.	29%
Challenge Activities	298 pts.	13%
zyLabs	879 pts.	40%
Quizzes	406 pts.	18%

Grading Scale by Final Percentage:

A+ (97-100)	**A (94-96)**	**A- (90-93)**
B+ (87-89)	**B (84-86)**	**B- (80-83)**
C+ (77-79)	**C (74-76)**	**C- (70-73)**
D+ (67-69)	**D (64-66)**	**D- (60-63)**
E (<60)		

DISABILITY AND ACCESSABILITY SUPPORT SERVICES (DASS):

The University of Michigan–Flint strives to make learning experiences as accessible as possible and complies with Section 504 of the Rehabilitation Act of 1973 and the American with Disabilities Act. The university provides individuals with disabilities reasonable accommodations to participate in educational programs, activities, and services. Students with disabilities requiring accommodations to participate in class activities or meet course requirements should self-identify with Disability and Accessibility Support Services as early as possible at (810)762-3081 or accessibility@umflint.edu. The office is located in 285C University Pavilion, inside the Student Success Center. Students are expected to discuss course accommodations with their professors as early as possible.

Assignments:

- **Participation Activities** are their to check your understanding, but remember zyBooks always gives you the correct answer so you should never miss any of these points.
- **Challenge Activities** are small auto-graded assignments to complete on your own. Always ask for help if you get stuck.
- **zyLabs** are opportunities for you to apply what you have learned by creating Python code to solve small problems. These labs are auto-graded, so you can submit as many times as you'd like until you get all of the points. Always ask for help if you get stuck.
- There are seven due dates, one for each zyBook chapter, you must keep track of throughout the course. All assignments and quizzes **must** be completed on time!

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Academic Integrity:

http://catalog.umflint.edu/content.php?catoid=5&navoid=221#Student_rights

Important Dates:

- Withdraw from all courses deadline with $100 fee *July 12th, 5:00pm*.
- Drop course deadline with fee adjustment *July 12th, 5:00pm*.
- Final drop date without petition is *August 13th, 5:00pm*.
- Chapter 1 assignments and quiz due July 5th
- Chapter 2 assignments and quiz due July 12th
- Chapter 3 assignments and quiz due July 19th
- Chapter 4 assignments and quiz due July 26th
- Chapter 5 assignments and quiz due August 2nd
- Chapter 6 assignments and quiz due August 9th
- Chapter 7 assignments and quiz due August 13th

NOTE: This syllabus represents a general plan for the course and deviations from this plan may be necessary throughout the duration of the course.