DMACC
DES MOINES AREA COMMUNITY COLLEGE
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http://www.dmacc.edu

COURSE SYLLABUS

CAMPUS NAME: Urban

COURSE TITLE: Python I

COURSE NUMBER: CIS189

SECTION NUMBER & CRN: CRN 21906 — WH2

INSTRUCTOR INFORMATION

NAME: Jonathan Buys

EMAIL ADDRESS: jbuys1@dmacc.edu

PHONE NUMBER: If needing to communicate via phone, please contact me first via email to set up a call. My number is 515-238-3701. You can also text message me on this number at reasonable times. Please note that I strongly prefer email communications.

OFFICE LOCATION: Online Only.

OFFICE HOURS/APPOINTMENTS: Via Blackboard Collaborate by appointment. I strive to answer communications quickly via email during normal business hours.

INSTRUCTOR INTRODUCTION: Please see information about me by visiting the "Your Instructor" section in Blackboard.

BLACKBOARD: https://dmacc.blackboard.com/

COURSE INFORMATION

SEMESTER/YEAR: 202302 Spring 2023

DATE SYLLABUS CREATED AND/OR REVISED: December 30th 2023

DAYS & TIME & LOCATION: Online, Tuesday 6-7:30

COURSE DESCRIPTION & CREDITS: https://www.dmacc.edu/Schedule/Pages/coursedescriptions.aspx
This course will focus on developing applications using the Python programming language. The student will write programs that demonstrate the use of variables, selection and loop structures, functions, collections, input, exception handling, object-oriented principles, and testing.

COURSE COMPETENCIES: https://www.dmacc.edu/Schedule/Pages/competencies.aspx
1. Perform basic programming operations in python
   - Identify different component of an IDE Declare and initialize variables
   - Distinguish between data types using variables and constants
   - Create gui applications
   - Generate random numbers

- Demonstrate Reading/Writing from/to a file
- Write console applications

2. Incorporate Processing Data
    - Write a program to input and output numeric values
    - Use arithmetic operators
    - Use logical operators
    - Format output
    - Use exceptions handling
    - Use a debugger to find coding errors
    - Process strings
    - Cast data to appropriate types
3. Implement Decision Making
    - Write if-else statements and nested if statements
    - Use compound conditions
    - Define dictionaries and methods to use for selection
4. Implement Loops
    - Code using while
    - Code using for
    - Use nested loops
    - Use break, continue and pass statements appropriately
5. Create Functions
    - Write function calls
    - Write a function that returns a value
6. Implement Collections
    - Define and manipulate arrays
    - Demonstrate how to declare and initialize Lists
    - Demonstrate sort and search arrays and lists
    - Use a tuple to solve a problem
    - Use a set to solve a problem
7. Create code using Object-Oriented Principles
    - Create class and class object(s)
    - Implement Inheritance
    - Use Polymorphism in a program
    - Implement Abstract class and abstract methods

8. Utilize appropriate tools to manipulate data
    - Use appropriate methodology to display data
    - Connect to an existing database for queries and updates

9. Demonstrate code readability, application testing and communication to other developers
    - Demonstrate the use of comments, good code layout and coding conventions
    - Develop strategies for testing your program including the use of unit testing framework

COURSE OVERVIEW: This course will focus on developing applications using the Python programming language. The student will write programs that demonstrate the use of variables, selection and loop structures, functions, collections, input, exception handling, object-oriented principles, and testing.

DMACC COLLEGE WIDE OUTCOMES: https://www.dmacc.edu/oie/Documents/DMACC%20Collegewide%20Outcomes.pdf

STUDY EXPECTATIONS/TIPS: To do well in this class, you must do your assignments regularly. Study the assigned readings and videos. Ask questions. Students are expected to devote at least three hours of study time for each contact hour. This is a fast paced, hands-on course. It is realistic to expect to spend at least 8 hours per week studying for this class.

The content of this course builds on itself throughout the semester. Consequently, it is important that students master early concepts, as they will become building blocks for concepts introduced later in the course. Students should seek extra help as soon as possible if they feel that they are getting behind on the course material.

TEXTBOOKS & MATERIALS

REQUIRED TEXTBOOKS & ISBN: None.

TECHNOLOGY NEEDS: Reliable access to a PC/Laptop to complete assignments

REQUIRED MATERIALS: Reliable internet access

SOFTWARE APPLICATIONS: Materials in this class are presented in a variety of programming text editors, Jupyter Notebooks, and occasionally PyCharm EDU. Most of these products are freely available for download. Instructions are given in module 1 for completing these installations.
Software notice: “All the software used in this class is copyrighted; therefore, it is not for distribution, copying, or personal use. This software is the property of Des Moines Area Community College.”

COURSE POLICIES

ATTENDANCE/PARTICIPATION: You are expected to:

- Log into your online course minimally three times per week.
- Check your DMACC email at least three times per week.
- Be active and present in the course – participating in discussions and discussion boards

- Ask questions of material that you don't understand and answer questions for material that you do understand.
- Submit assignments before they are due in order to give yourself adequate time should a problem arise.
- Have access to a dependable computer and Internet connection.
- Have a back-up plan in case the computer or connection fails.
- Communicate with me regarding any issues with course materials, grades, or technical issues.
- Use your DMACC email address to communicate with me.
- Call or email the DMACC Helpdesk with any technical issues.

Please note that this course is online only. You can work on this course in Iowa or England, as long as you have a computer and Internet connection. It is because of this convenience that I expect you to be prepared, present and active online.

WEATHER-RELATED CANCELLATIONS:

1) **Online, hybrid, and virtual classes:** Online, hybrid, and virtual classes will continue as scheduled even if DMACC locations (campus, center, site, etc.) are cancelled. Only on-campus classes, labs, events, and 3rd party sites such as clinicals will be cancelled for weather-related closures.
2) **Classes meeting on campus, at a center/site, or 3rd party location such as clinicals:** Classes meeting on any campus, center/site, or a 3rd party location such as clinicals are cancelled when that campus, center, or site is closed due to weather. Online, hybrid, and virtual classes will continue when campuses, sites, or centers are closed due to weather.

GRADING CRITERIA: Based on percentage of points possible accumulated throughout the course. Points will be awarded for exams, quizzes, assignments, projects and participation.

A = 93-100% A- = 90-92%	B+ = 87-89% B = 83-86% B- = 80-82%	C+ = 77-79% C = 73- 76% C- = 70-72%	D+ = 67-69% D = 63-66% D- = 60-62% F = 0-59%

Please see the My Grades section in Blackboard for a list of assignments and point value. Note that this may change throughout the semester but generally your grades will be as follows:

- Weekly assignments – ~84% of your grade
- Final project – ~16% of your final grade

Providing you with feedback in my top priority. I strive for the following turn-around time:

- Assignments, quizzes, groupthink tools (blogs, journals, wikis & discussion boards) grades and feedback – within 5 days of the due date
- Late work – within 7 days from when you submitted the work to me

Classroom Conduct: https://www.dmacc.edu/handbook
You are expected to be kind and courteous to all of your classmates and instructors in all classes at DMACC. This course is no different. Please take time to review these websites on Netiquette. You are expected to follow the guidelines on these sites.

- http://www.studygs.net/netiquette.htm
- http://www.albion.com/netiquette/corerules.html

Late Assignments: Each assignment will have a due date. After the due date, 50 percent may be deducted for each late assignment. No credit after assignment is 7 days late. No credit on any assignments after the last assignment at the end of the term. Late assignments must be submitted via the appropriate location in Blackboard. If the assignment is not available, late work is no longer being accepted for it. It is the responsibility of the student to retrieve assignments from Blackboard before the weekly due date and to submit assignments using the correct links. No late work will be accepted for the final week of classes.

Extra Credit: No extra credit for late assignments. Extra credit awarded at my discretion.

Class Cancellation Procedure: Since this is a virtual/online course, students will still be held to the same due dates for course materials in the event of college closing early for weather. In the event of an emergency, please check your email or our Blackboard course for instructions.

Academic Misconduct and Plagiarism: DMACC's Academic Misconduct Policy (ES4670) prohibits plagiarism; falsification; unauthorized collaboration during an exam, project, or assignment; or the misrepresentation of identity by a student or individual to complete an exam, course, or project. Plagiarism is defined as presenting someone else's work or ideas as your own by including it into your work without citing the original author's work. Academic Misconduct may be intentional or unintentional in nature. Academic Misconduct may result in sanctions for the student. Sanctions are issued based on the severity and nature of the misconduct. It is the student's responsibility to become familiar with and follow DMACC's Academic Misconduct procedure at https://dmacc.link/ES4670.

SUPPORT SERVICES/ACCOMMODATIONS

Services for Students with Disabilities: https://www.dmacc.edu/disabilities
Any student with a documented disability who requires reasonable accommodation should contact the Disability Services Coordinator at **515-964-6850** or the counseling & advising office on any campus to apply for services.

COURSE SYLLABUS

Disclaimer: "This syllabus is representative of materials that will be covered in this class; it is not a contract between the student and the institution. It is subject to change without notice. Important: **All students are strongly encouraged to visit the myDMACC portal to review policies and procedures.** Any potential exceptions to stated policies and requirements will be addressed on an individual basis and only for reasons that meet

specific requirements. If you have any problems related to this class, please feel free to discuss them with me."

NONDISCRIMINATION STATEMENT

Des Moines Area Community College shall not engage in nor allow discrimination covered by law against any person, group or organization. This includes in its programs, activities, employment practices, or hiring practices, and harassment or discrimination based on race, color, national origin, creed, religion, sex, sexual orientation, gender identity, age, disability, genetic information (in employment) and actual or potential parental, family or marital status. Veteran status in educational programs, activities, employment practices, or admission procedures is also included to the extent covered by law.

Individuals who believe they have been discriminated against may file a complaint through the College Discrimination Complaint Procedure. Complaint forms may be obtained from the Campus Provost's office, the Academic Deans' office, the Judicial Officer, or the EEO/AA Officer, Human Resources. ADA questions and concerns may be directed to the Section 504/ADA Coordinator at 2006 S. Ankeny Blvd, Bldg. 6, Ankeny, IA 50023, phone 515/964-6857, dso@dmacc.edu. Title IX questions and concerns may be directed to the Title IX Coordinator at 2006 S. Ankeny Blvd., Bldg. 1, Ankeny, IA 50023, phone 515/964-6216, Title9@dmacc.edu. Questions or complaints about this policy may be directed to the Director of the Office for Civil Rights, U.S. Department of Education, John C. Kluczynski Federal Building, 230 S. Dearborn St., 37th Floor, Chicago, IL 60604-7204, phone 312/730-1560, fax 312/730-1576, TDD 800-877-8339, email OCR.Chicago@ed.gov.

NON-DISCRIMINATION PROCEDURE INFORMATION:
Students who wish additional information or assistance may refer to Student Services procedure ES 4645 Discrimination and Harassment Complaint procedure located at https://dmacc.link/ES4645.

DIVERSITY, EQUITY, AND INCLUSION INFORMATION:
DMACC supports diversity, equity, and inclusion in all aspects of college and community life. The Director of Diversity Equity Inclusion may be contacted at 515 964-6299 or newittstruck@dmacc.edu. The Associate Director of DEI Student Engagement may be contacted at 515 964-6271 or nmstepletonhardin@dmacc.edu.

ADA/SECTION 504 INFORMATION:
The Academic Support Services Director is the official Student Accommodation Officer/Section 504/ADA Coordinator for DMACC. The ADA Coordinator's office is located in Bldg. 6-10E on the Ankeny Campus and may be contacted by voice (515-964-6857). The ADA Coordinator is responsible for ensuring that the college complies with federal regulations that guarantee qualified students with disabilities equal access to all programs and services. Any student, faculty, or staff member may contact the ADA Coordinator's office for clarification of federal regulations, appeal of a grievance, or resolution of a disability-related problem.

ADDITIONAL INFORMATION

DMACC supports student success through our Early Alert System. Early Alert connects students to available resources such as advising, counseling, tutoring and more. Faculty members may refer students to these supports in cases in which a student is showing difficulty in attendance, course work, and/or reported situations in which more support could

aid in college success. Students are encouraged to respond to all DMACC phone calls or emails and take full advantage of available resources to support a positive college experience. More information may be found at https://earlyalert.dmacc.edu.

To access additional information related to DMACC policies and procedures that impact the classroom (use of technology, weather-related cancellations, classroom conduct, etc.) please reference the myDMACC student portal.

If you do not have access to a computer and need a printed version of any of the information described above, contact your instructor.

COURSE SCHEDULE

Week or Date	Assignment	Due Date
Week 1	• Understand course setup/using Blackboard • Introduce yourself • Install Python and an IDE • Verify e-text • Use Python shell • Write your first program • Understand the interpreter • Learn about numbers • Use arithmetic operations • Learn Python data types • Define variables and constants • Run a Python script	Jan 17, 2023
Week 2	• Learn about strings and lists • Learn basic input and output • Understand Python's treatment of data types • Logical Operators • Write a program	Jan 24, 2023
Week 3	• Conditional Statements **if**, **if-else**, **if-elif** • Logical operators	Jan 31, 2023
Week 4	• Exceptions with **try** and **except** • Input validation • Functions in Python	Feb 7, 2023
Week 5	• Create a **for** loop • Use **range()** function • Sentinel flags • Create a **while** Loop • Use **pass**, **break, else**, and **continue** statements	Feb 14 2023
Week 6	• Learn about functions • Introduction to Unit Testing	Feb 21, 2023
Week 7	• Learn ordered collections: lists • Use lists to sort and search data • Learn an immutable collection: tuples • Read from and write to files • Learn **datetime** in Python	Feb 28, 2023
Week 8	• Learn unordered collection: **set/frozenset** • Learn unordered collection: dictionaries • Write Unit Tests • Implement a selection using a dictionary • Learn non-built in collection: array	Mar 7, 2023
Week 9	• Develop a Python module • Create and utilize Python packages • Define a Python namespace • Write a graphical user interface (GUI) • Optional: Practice writing a web scraper	Mar 21, 2023
	Spring Break - March 13 - 18	

Week or Date	Assignment	Due Date
Week 10	• Introduction to Object-Oriented Programming • Learn Object-Oriented Principle Encapsulation • Introduction to Object-Oriented Principle Polymorphism • Design and Implement Classes: Constructors and Methods • Create Objects • Plan Testing & Test Classes	Mar 28, 2023
Week 11	• More Class Practice • Learn Object-Oriented Principle Inheritance • Learn Object-Oriented Principle Polymorphism • Write Base and Derived Classes • Introduction to Custom Exception Classes	Apr 4, 2023
Week 12	• More Class Practice: Gather Data and Store in Class Objects • Write Custom Exception Classes • Plan Testing for Handling Custom Exception Classes • Learn Object-Oriented Principle Abstraction • Write a Python Abstract Base Class	Apr 11, 2023
Week 13	• More on GUIs: Visualize Data Gathered • Use a database with Python • Final Project Specifications	Apr 18, 2023
Week 14	• Begin Final Project	Apr 25, 2023
Week 15	• Continue Final Project • Report Progress Final Project	May 2nd, 2023
Final Class	• Final Course Evaluation • Present Final Project	May 2nd, 2023