

COSC 1306 – Programming for Non-Majors
Course Syllabus Fall 2023
McMurry University

Shaped by McMurry University & Christian principles to prepare students towards leadership, service, and professional success.

Course Instructor:

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Course Webpage: <https://amohan.mcm.edu/course.php?cid=MTg=>

Slack Webpage: <https://mcmcs-f23-cosc-1306.slack.com>

Instructors Office Hours:

- Monday, Wednesday: 8:00 AM – 10:30 AM, and
2:30 PM – 3:00 PM.
- Tuesday, Thursday: 8:00 AM – 9:00 AM, 11:00 AM – 12:30 PM, and
2:30 PM – 3:00 PM.

To schedule office hours, please visit the course instructor's website, click the Schedule link in the top right-hand corner under the teaching page, and book an appointment time slot.

Course Meeting Schedule:

Tuesday and Thursday: 9:30 AM – 10:50 AM, Cooke 211

Catalog Description:

An introduction to structured programming for students in non-computing disciplines. Logic and number representations are presented as they are used in programming. Students will learn how to write programs in a programming language and develop algorithms to perform computations of interest in mathematics and the sciences.

Prerequisites: None.

Course Overview:

Introduces students to the fundamental concepts of programming as a problem-solving methodology. Topics include: data types, variables, basic data operations, decision and repetition control structures, basic input and output including use of data files, programmer-defined functions, and basics of working with various Python objects. Course will also address testing, debugging, and documentation techniques. Upon successful completion of this course, students will have a working knowledge of the Python programming language and will be able to design, write, and debug Python computer programs. This is a technology-intensive course.

Required Textbook:

Textbook: Starting out with Python, 5th Edition, Tony Gaddis ISBN-13: 9780135929032.

Students with a minor in Curriculum and Instruction should refer to the Texas Essential Knowledge and Skills for your subject area at:

<https://tea.texas.gov/academics/curriculum-standards/teks-review/texas-essential-knowledge-and-skills>

Special Software Requirements:

JupyterHub, an interactive computing infrastructure and IDE managed by McM is provided to design, develop, and test programs in this course. All classwork and assignments that contains a programming component should be completed using JupyterHub. Students are responsible for setup, configuration, and use techniques if they choose to use another IDE or coding tool to develop their programs. Before submission, all the programs should be tested and verified for correctness using JupyterHub.

GitHub is an industry-standard tool for software development. In this course, GitHub is used to deliver course materials such as lecture slides. A link will be provided on the course webpage to login and connect to GitHub and access the lecture slides. Students are required to register an account with GitHub using their **McM Email** account during the first week of classes. Additionally, students are required to install GitHub on their laptops to access and submit the classwork and assignments.

Slack is an industry-standard tool used in HigherEd by students and instructors to work together to share, discuss and deeply engage with learning. In this course, Slack is used by the instructor to communicate with students regarding announcements, links to assignments, classwork activities, quizzes & exams, etc. and to facilitate q/a sessions. Students are expected to only use the q/a channel to ask questions related to classwork and assignments, and questions related to individual grades and/or class performance should only be requested through a direct message to the course instructor and NOT in the shared channels. Slack is a free application that may be installed as a mobile app and accessible through a webpage on the browser. Students are required to register an account with Slack using their **McM Email** account during the first week of classes.

A short workshop will be provided in class to ensure students can correctly set up, configure, and use these technologies in this course.

Students are **REQUIRED** to set up their IDE and Google Chrome browser with a full black background (Dark theme) before presenting their computer screen to the Instructor for getting assistance in class and/or during office hours. Due to visual impairment, the Instructor of this course cannot see a computer screen with a lighter background and it is expected that all students follow this accommodation by using these settings. Instructions will be provided and lecture (programming) demonstrations will be done using Sublime Editor on the instructor's MAC Laptop.

Learning Objectives

The learning objectives, departmental program goals, university competency(s), and the evidence used to demonstrate student achievement are provided in the table below:

Learning Objective	Department	University	Evidence
Identify and describe programming concepts and techniques.	(1,2)	(1)	Exams & Quizzes
Demonstrate ability to design and implement algorithms to solve selected problems.	(1,2)	(1)	Assignments
Demonstrate ability to use proper programming techniques.	(1,2)	(1)	Assignments
Demonstrate ability to use an Integrated Development Environment to write and test program code and debug programs.	(1,2)	(1)	Assignments

Computer Science Department Program Goals

1. Be able to apply fundamental principles of computer science, mathematics, and science to solve complex problems.
2. Be able to analyze, design, implement, and evaluate a computer-based system, process, component, or program using current techniques, skills, and tools to meet desired user requirements.
3. Understand and apply best practices and standards for systems development including design and implementation.
4. Be able to work effectively in teams to accomplish a common goal.
5. Be able to analyze the impact of computing on individuals, organizations, and society, including ethical, legal, security, and policy issues, and to understand their own professional, ethical, and social responsibilities.
6. Be able to communicate effectively.
7. Recognize the need for and be able to engage in continuing professional development.

University Competencies: (general education)

1. Students will demonstrate critical thinking to address complex and real-world issues.
2. Students will demonstrate effective communication to address complex and real-world issues.

University Policies:

Student Support: Information about disability, counseling, and health services available to students can be found on the McM Web site for current students at:

<https://amohan.mcm.edu/upload/university-resources.pdf>

<https://mcm.edu/student-success-support/health-wellness/>

Mindset for Success: The course instructor will provide feedback regarding the student's performance in the course by the end of the 4th week of classes and after the midterm. Students may access all their grades throughout the semester using the Moodle Gradebook. If a student is at risk at the end of the 4th week or their grade is below a C- at midterm, the student will receive a message from the Mindset for Success Office and their academic coach regarding the academic performance. Your academic coach can provide you with strategies and connect the student to resources that will help to do well in this course.

Course Instructor Policies:

Academic Dishonesty: First infraction can result in a grade of zero for all students involved and repeated infractions can result in a course grade of F. Examples include, but are not limited to plagiarism such as submitting a copy of someone else's work (source code, algorithm, paper, spreadsheet, presentation, database, etc.), even with changes; failure to provide accurate and complete references and citations for research-based assignments; and cheating on an exam or assignment that indicates collaboration is NOT allowed.

Attendance: Students are required to attend all scheduled classes. An absence will be excused for school activities approved by the VP of Academic Affairs; prolonged illness or hospitalization and family emergency documented with the Dean of Students; unusual duty requirements (Dyess AFB personnel only); and may be excused at instructors discretion for acute illness. Students must contact the instructor BEFORE an excused absence to make arrangements to complete assignments that are due during the excused absence. Work is NOT an excused absence. Repeated or excessive tardiness or early departure from class may be considered an unexcused absence. Students may be dropped from the class, with a grade of WF (instructors discretion), after 3 unexcused absences.

Make-up Work: Generally, only allowed for prolonged illness or hospitalization, family emergency, or unusual duty requirements of Dyess AFB personnel. Must be completed within one week of return to class unless other arrangements are made with the instructor. Assignments due during an authorized absence due to an approved school activity are still due as scheduled.

Classroom Expectations: All students are expected to do the following during every lecture and these are important to achieve the learning goals of the course and to become better as a learner:

1. Attentively listen to classes and try to participate in all class discussions.
2. Bring your laptop to every class session (working and charged)!
3. Bring a notebook, pen/pencil, and other stationary items and take detailed notes every class period.
4. Clarify with the Professor, if a lesson is confusing.
5. Complete all the reading assignments thoroughly.
6. Do the in-class exercises thoroughly.

Grade Determination: Graded work contributes to student course grades based on the weights and scale provided in the grading sub-section of this syllabus. Requests for an incomplete grade will be evaluated on a case-by-case basis at the instructors discretion. Such requests must be approved by the VP for Academic Affairs and require extenuating circumstances documented with the Dean of Students. Examples include (but are not necessarily limited to) those listed for Make-up Work. Failure to complete assignments, involvement in school activities, and work do NOT constitute extenuating circumstances as they are generally scheduled, well in advance, and students are expected to manage their time accordingly.

Other General Policies:

- All electronic devices not expressly allowed by the instructor for class activities must be turned off or silenced and put away so they are not available during class. Your laptop must be silenced during class. Headphones or earbuds will NOT be worn during class. Computer and other device use unrelated to class activity (e.g., texting and Web surfing) is not allowed during class. Violation of the above policies will not be tolerated and could result in the student being asked to depart class for the remainder of the session as an unexcused absence for the first violation and being dropped from the class with a grade of WF for repeated violations. Exceptions for keeping cellphones available are allowed at the instructors discretion but the student must inform the instructor about the situation, e.g. family pregnancy or illness.
- The official method of email communication is via the McM student email system. In the professional world, employees will have separate accounts for business use and personal use. Get used to it - McM email is our official “business” system and students are expected to check it regularly.
- Hats and sunglasses are not to be worn during lectures.

Teaching and Learning Methods

The primary mode of learning in this class is following along with the posted course material, completing the assignments as instructed by the specifications, and reading the textbook and other accompanying materials provided by the instructor. Students are responsible for reading online resources as needed to expand on the topics that are discussed in the lectures. The instructor will ask questions to stimulate thinking and participation. Students comments and questions are highly encouraged during the class and via the course Slack channel.

Grading and Evaluation

The grading and evaluation process will be simple, clear, and transparent to the class members. The course grade book is managed by Moodle. The grade book is accessible to the students who are registered in the course. At any time during the semester, students can monitor their progress by looking at the Course Grade Book. All the graded activities will be logged in the grade book. It is the responsibility of the student to track their progress using the grade book and discuss this with the instructor regularly. If a student finds any grading discrepancy, it is highly recommended that this issue should be immediately discussed with the Instructor within a week from the time that the graded work was returned. The total grade for the course will be based on the following, weighted appropriately:

- Midterm Exam (15%)	93 – 100 (A)
- Final Exam (25%)	90 – < 93 (A-)
- Assignments (40%)	87 – < 90 (B+)
- Quizzes (10%)	83 – < 87 (B)
- Attendance and Class Participation (10%)	80 – < 83 (B-)
	77 – < 80 (C+)
	73 – < 77 (C)
	70 – < 73 (C-)
	67 – < 70 (D+)
	63 – < 67 (D)
	60 – < 63 (D-)
	< 60 (F)

A more detailed breakdown of the expectations for grades in the course is as follows:

- **Exams:** Two exams will be given in this course, namely midterm and finals. The Exam format will be shared later. The finals will be cumulative, as later parts of the course will build on your knowledge from previous weeks. Raw grades for the exams are based on the accuracy and merit of the content. In addition, the grades for the exams will be affected negatively if the quality of language used or the mechanics of the calculations undermines the overall logic and credibility of the content.
- **Assignments:** In this course, 4 assignments will be given, where students will investigate some of the topics that are noted in the textbook and lecture in more detail. This investigation will take the form of solving one or more coding challenges, answering one or more problems prompted by the textbook, and/or a guided walkthrough of a new concept.
- **Quizzes:** Once in two to three weeks, an online/paper quiz will be administered that serves to test your knowledge on some of the fundamental topics discussed in the lecture materials and the textbooks. The Quiz format will be shared later.
- **Attendance and Class Participation:** Students are expected to attend lecture sessions at the stated class time. Interaction with the professor and your classmates is important in this course. Students will be expected to join discussions in class, meet up with the instructor during office hours, complete in-class activities for participation credits, and provide feedback on the pace and content of the course to the instructor. There will be one or more in-class activities given every week graded based on submission. These in-class activities will be helpful to retain the concepts discussed during lectures, reinforce the learning from the previous week, practice hands-on, and be better prepared for completing the assignments, quizzes, and exams effectively!

Class Preparation

To minimize confusion and maximize learning, students must invest time to prepare for class discussions and lectures. Students are expected to review assigned materials before they are discussed in class and complete supporting assignments as directed. Expect an average of about 6 hours per week for reading and assignments outside of class. Expect to be called upon to participate in discussions, explain assignment solutions, and write or analyze program code. You are expected to bring your laptop (working and charged) to every class session and check Slack and Email frequently for assignment links and announcements. During the lecture, the course instructor will often pose demanding questions that could require deeper thinking and/or group discussion. Only students who have prepared for class by reading the assigned material and reviewing the current assignments will be able to effectively participate in these discussions. More importantly, only prepared students will be able to acquire the knowledge and skills that are needed to be successful in both this course and the field of computer science. This is NOT a lab-based course! Some class time may be available to work on assignments but students will need to work outside of class to complete the assignments. There will be proper time allocated during every class for answering questions from students related to the course materials discussed so far. Note down your questions and ask at the start of the class to clarify!

Assignment Submission and Late Policy

Every assignment has a due date and time. Failure to submit the assignment by the deadline will result in a late submission penalty. Assignments submitted within one week of the deadline will receive automatic grade reductions of 10% (in addition to any points deducted for errors). Assignments will not be accepted more than one week past the deadline. School activities and excused absences do not extend due dates as activities and due dates are generally scheduled well in advance and students are expected to manage their time accordingly. Network or computer-related problems are NOT acceptable excuses for late work do NOT wait until the last minute to complete or submit an assignment and keep backup copies of all work. Late submissions may not be accepted at the instructors discretion.

Communication with Instructor

The instructor will use the Course Slack page and his McMurry email account to communicate with the class members. The Slack messages and Emails from students will be responded to as a high-priority item. In general, you could expect the instructor to reply to your messages during:

- scheduled office hours
- morning time between 7.00 am –8.00 am
- afternoon time between 3.00 pm –4.00 pm

The instructor does not usually check his Slack and Email during weekends. Hence, plan it accordingly to send a message to the instructor during weekdays. Students who are struggling with the course material or who have a question about an assignment or exam(s) should promptly reach out to the instructor ahead of time rather than waiting till the last minute. Attending Office Hours is the best way to get the right support from the instructor outside the classroom.

Honor Code

All students enrolled in this course are bound by the Honor Code. It is expected that your behavior will reflect that commitment. To this end, it is expected that you will adhere to the following Policy:

Honor Code Policy

It is recognized that an essential part of the learning process in this course, derives from thoughtful discussions with the instructor, and fellow students. Such dialogue is encouraged. However, it is necessary to distinguish carefully between the student who discusses the principles underlying a problem with others, and the student who produces assignments that are identical to, or merely variations on, someone else's work. It will therefore be understood that all assignments submitted for grading are to be the original work of the student submitting the assignment, and should be completed following the provisions of the Honor Code. Appropriate action will be taken when assignments give evidence that they were derived from the work of others.

You are encouraged to periodically review the specifics of Academic Dishonesty as stated in the Student Handbook. Additionally, the course instructor has requested that the following phrasing be included on all submissions of graded work along with the student's full name:

“This work is mine unless otherwise cited.”

Structure of this semester

In the table provided next page, an outline of the topics covered this semester is provided. Some shifting in the schedule of topics is possible, but the exam dates are firm.

P.S. next page ...

Table: Tentative Schedule

Week	Date	Topics	Readings
1	08/28 - 09/03	Introduction to Programming	Chapter 1
2	09/04 - 09/10	I/O Processing-1	Chapter 2
	Thu, 7th Sep	Assignment-1 Released Getting started with Python	
3	09/11 - 09/17	I/O Processing-2	Chapter 2
4	09/18 - 09/24	Decision Structures-1	Chapter 3
	Tue, 19th Sep	Quiz-1	
	Thu, 21st Sep	Assignment-1 Due No Class (Convocation)	
5	09/25 - 10/1	Decision Structures-2	Chapter 3
	Thu, 28th Sep	Assignment-2 Released Control Flow in Python	
6	10/2 - 10/8	Repetition Structures-1	Chapter 4
7	10/9 - 10/15	Repetition Structures-2	Chapter 4
	Tue, 10th Oct	No class (Fall break)	
	Thu, 12th Oct	Assignment-2 Due Quiz-2	
8	10/16 - 10/22	Reserved Week for Exam	
	Thu, 19th Oct	Midterm	
9	10/23 - 10/29	Functions	Chapter 5
	Thu, 26th Oct	Assignment-3 Released Holistic Programming in Python	
10	10/30 - 11/5	Files and Exceptions	Chapter 6
11	11/6 - 11/12	Lists and Tuples	Chapter 7
	Thu, 9th Nov	Assignment-3 Due Quiz-3	
12	11/13 - 11/19	Strings	Chapter 8
	Thu, 16th Nov	Assignment-4 Released Data Analytics in Python	
13	11/20 - 11/26	Dictionary and Sets	Chapter 9
	Thu, 23rd Nov	No class (Thanksgiving break)	
14	11/27 - 12/3	Classes and Objects	Chapter 10
	Thu, 30th Nov	Assignment-4 Due Quiz-4	
15	12/4 - 12/10	Reserved Week for catch up	
		Tue, Dec 12th, Final Exam (10:30 AM to 12:30 PM)	