

Programming Fundamentals
COSC 1336.001



WACO, TEXAS

**COURSE SYLLABUS
AND
INSTRUCTOR PLAN**

Programming Fundamentals

COSC 1336.001

Dr. Becky Sue Parton

NOTE: This is a 16-week course.

NOTE: This is a Face to Face course

Course Description:

Introduces the fundamental concepts of structured programming. Topics include software development methodology, data types, control structures, functions, arrays and the mechanics of running, testing, and debugging. This course assumes computer literacy. Semester Hours 3.

Prerequisites and/or Corequisites:

None

Course Notes and Instructor Recommendations:

Each concept in this course builds on the previous one so your best opportunity to do well is to keep up, complete all the assignments, and allot plenty of time to practice.

Instructor Information:

Instructor Name: Dr. Becky Sue Parton

MCC Email: rparton@mclennan.edu

Office Phone Number: 254-299-8269

Office Location: Business Technology 113

Office/Teacher Conference Hours:

Mondays 1:30 – 5:30

Wednesdays 10:00 – 11:00

Thursdays 10:00 – 11:00

Or by appointment

Required Text & Materials:

MindTap Programming, 1 term (4 months) Instant Access for Farrell's Programming Logic and Design Author: Joyce Farrell Edition: 9th Edition Publisher: Cengage ISBN: 978-1-337-27461-6

Additional items: We will use an online compiler to develop our C++ code:

https://www.onlinegdb.com/online_c++_compiler#

MCC Bookstore Website: <http://www.mclennan.edu/bookstore/>

Methods of Teaching and Learning:

This course is a traditional face-to-face course where we we learn general programming concepts and then put them into practice by learning C++. You will be writing programs and also taking exams over the content.

Course Objectives and/or Competencies:

A. Course Objectives: The course will teach the student the fundamental concepts of programming using logic and structured problem solving and design techniques. Structured flowcharting, pseudo code and hierarchy charts will be emphasized. The student will learn sufficient commands to work with simple programming problems and analyze more advanced programs. This is a programming logic, not a programming language course and thinking skills will be emphasized. At the end of the course, the student will be able to break large, computer-oriented problems into smaller parts and design algorithms for those parts, creating a cohesive structured solution. Creative, critical and analytical thinking skills will be practiced.


B. Course Competencies: Upon successful completion of this course, the student will be able to use modular, structured programming techniques to develop correct and welldesigned logic for common business programs. The student will be trained in the use of program development tools including: algorithms, flowcharts, pseudo code, hierarchy charts, decision tables and I/O layouts. Students will learn the concepts for data types, variable name usage, various control structures, looping, counting and accumulating, formatting, control breaking, functions, arrays, batch and interactive file updating, and basic data structures used in structured programs.

Upon successful completion of the course, the student will be able to:

1. Effectively use basic computer programming vocabulary.
2. Solve problems by analyzing them, reducing them to logical units and creating solutions using a modular approach.
3. Create documentation to describe the logic of a program, including flowcharts, pseudo code, hierarchy charts, and other selected charting techniques; and explain the functions of these various forms of documentation.
4. List and carry out the steps of designing and implementing a computer program (problem definition and analysis, logic planning, code development, testing and debugging, implementing and documentation).


5. Design program flowcharts; produce pseudo code; create hierarchy charts; code, test, and evaluate logic implemented in a high level language; and produce a documentation package.
6. Analyze solutions and documentation, and create structured solutions to problems.
7. Explain the advantages of structured design and coding concepts.
8. Illustrate the three basic logic structures (sequence, selection, and iteration) using flowcharts, and pseudo code, and a high level language.
9. Explain common business programming logic (report printing with headings, control breaks and totals, input validation, error handling, counting, accumulating, file matching, end of file logic, updating, tables, and others).
10. Interpret, modify and complete program flowchart.
11. Apply rules of structured, modular programming logic and design.
12. Complete individual assignments on schedule, and collaborate on exercises in small groups.
13. Understand basic data structures to include arrays

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Week*	Topic	Tuesday	Thursday	Assignments for the Week*
Aug. 22	Welcome	Introductions & Syllabus	“Hello World” & Coding Setup	Participation – Introductions (in class) Participation – First Program
Aug. 29	Overview	Cengage Ch. 1 (pseudocode)	Smith Ch. 1 – Intro to C++	Program Set for Chapter 1
Sept. 5	Elements	Cengage Ch. 2	Smith Ch. 2 – Variables in C++	Program Set for Chapter 2
Sept. 12		<i>Exam Review</i>	EXAM # 1	Participation – Exam Review (due by exam)
Sept. 19	Structures	Cengage Ch. 3	Smith – Ch. 3 – Structured C++	Program Set for Chapter 3
Sept. 26	Decisions	Cengage Ch. 4 (if/then, loops)	Smith – Ch. 4 – Decisions in C++	Program Set for Chapter 4
Oct. 3	Loops	Cengage Ch. 5	Smith – Ch. 5 – Loops in C++	Program Set for Chapter 5
Oct. 10	Arrays	Cengage Ch. 6	Smith – Ch. 6 – Arrays in C++	Program Set for Chapter 6
Oct. 17		<i>Exam Review</i>	EXAM # 2	Participation – Exam Review (due by exam)
Oct. 24	File Handling	Cengage Ch. 7	Smith – Ch. 7 – File Handling	Program Set for Chapter 7
Oct. 31 	Sorting	Halloween Coding “Competition” !	Cengage & Smith – Ch. 8 (part!)	Program Set for Chapter 8

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Nov. 7	Modularization	Cengage Ch. 9	Smith – Ch. 9 – Adv. Modularization	Program Set for Chapter 9
Nov. 14	OOP	Cengage Ch. 10	Smith – Ch. 10 – Object Oriented	Program Set for Chapter 10
Nov. 21		<i>Optional Competition Make-up</i>	Happy Thanksgiving 	Participation – Job Posting
Nov. 28		<i>Exam Review</i>	EXAM # 3	Participation – Exam Review (due by exam)

*** Note:** Assignments for a given week are due the following Tuesday by CLASS TIME! There is no final exam for this course – we are doing the coding competition in lieu of one since it will be a comprehensive (and hopefully fun) way to reinforce all you learned across the chapters. The Program Chapter Sets may have multiple individual programs in the set – you will get one overall grade per set. More details will be provided in class & Brightspace. Exam reviews have 2 parts – you do the quiz review online to earn your points. In class review is student led – I will just be answering your questions!

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Late Work, Attendance, and Make Up Work Policies:

Assignments are to be submitted on time. If you have an extenuating circumstance, please communicate with me (in advance whenever possible) and we will work out a solution. That solution will often involve a point deduction so it is in your best interest to submit on time.

Student Behavioral Expectations or Conduct Policy:

Students are expected to maintain classroom decorum that includes respect for other students and the instructor, prompt and regular attendance, and an attitude that seeks to take full advantage of the education opportunity. As an adult, you are responsible for your education though I am here to support you! Please silence your cell phones.

I generally respond to email within 24 hours Monday-Friday. If you email on the weekend or a holiday, it will likely be the following business day before I reply.

MCC Academic Integrity Statement:

<https://www.mclennan.edu/academic-integrity>

The link above will provide you with information about academic integrity, dishonesty, and cheating. While collaboration between students is welcome to facilitate learning, each student's work must be their own. It is pretty simple – don't cheat – it only hurts you in the long run.

[Click Here for the MCC Attendance/Absences Policy](https://www.mclennan.edu/highlander-guide/policies.html)

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Course Attendance/Participation Guidelines:

If a student is not in attendance in accordance with the policies/guidelines of the class as outlined in the course syllabus as of the course census date, ***faculty are required to drop students from their class roster prior to certifying the respective class roster.*** A student's financial aid will be re-evaluated accordingly and the student will only receive funding for those courses attended as of the course census date.

Students are responsible for all class work regardless of attendance. Since this course is a face to face format, the following division policy is in place: Students enrolled in face-to-face courses are expected to attend class. Students will sign in when they arrive. The official record for student attendance is Brightspace and the instructor will update it within 24 hours of the class. If a student fails to appear for face-to-face sessions in the period prior to the census date, the instructor will drop the student for failure to attend even if they complete accessible assignments in Brightspace. Past census date, for a student to remain in a face-to-face course, they must regularly attend class. If a student misses more than 25% of class meetings prior to the 60% point of the term, the instructor will withdraw the student from the course. If a student misses more than 25% of class meetings and the class is past the 60% point for the term, the instructor will

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NOT withdraw the student. The student is assigned the grade earned for the course. If a student attends class meetings but does not complete assignments, they remain in the course and are awarded the grade earned at the end of the term. Absences are excused in accordance with MCC policy which includes (1) authorized participation in official College functions, (2) personal illness, (3) an illness or a death in the immediate family, (4) Pregnant or Parenting Protections under Title IX and/or Texas State Education Code Chapter 51, Subchapter Z, Section 51.982 or (5) any excused absences as outlined in Section IV of this policy..

<https://www.mclennan.edu/employees/policy-manual/docs/B-II.pdf> Students are required to file a written or electronic request with each instructor for an excused absence in a timely manner.

Course Grading

Grade Calculation:

Type of Activity	# and Points Each	Overall Pts	Overall %
Exams	3 @ 100 points each	300	30%
Programming Sets	10 @ 50 points each	500	50%
Participation	6 @ 25 points each	150	15%
Coding Competition	50 points	50	5%
		1000 points	100%

Grade Scale:

900 – 1000 points = A 800 – 899 points = B 700 – 799 points = C
600 – 699 points = D Below 600 points = F

Updated 07/18/2023



ACADEMIC RESOURCES/POLICIES

Accommodations/ADA Statement:

Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact the Accommodations Coordinator as soon as possible to provide documentation and make necessary arrangements. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by the Accommodations Coordinator. For additional information, please visit www.mclennan.edu/disability.

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:

disabilities@mclennan.edu 2542998122 Room
319, Student Services Center

Title IX:

We care about your safety, and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report an incident of sexual misconduct are encouraged to immediately contact the acting Title IX Coordinator at titleix@mclennan.edu or by calling, Dr. Claudette Jackson, (Accommodations/Title IX) at (254) 299-8465. MCC employees are mandatory reporters and must report incidents immediately to the Title IX Coordinator. Individuals may also contact the MCC Police Department at (254) 299-8911 or the MCC Student Counseling Center at (254) 299-8210. The MCC Student Counseling Center is a

confidential resource for students. Any student or employee may report sexual harassment anonymously by visiting <http://www.lighthouse-services.com/mclennan/>. Go to McLennan's Title IX webpage at www.mclennan.edu/titleix/. It contains more information about definitions, reporting, confidentiality, resources, and what to do if you or someone you know is a victim of sexual misconduct, gender-based violence or the crimes of rape, acquaintance rape, sexual assault, sexual harassment, stalking, dating violence, or domestic violence.

Student Support/Resources:

MCC provides a variety of services to support student success in the classroom and in your academic pursuits to include counseling, tutors, technology help desk, advising, financial aid, etc. A listing of these and the many other services available to our students is available at <http://www.mclennan.edu/campus-resource-guide/>

Academic Support and Tutoring is here to help students with all their course-related needs. Specializing in one-on-one tutoring, developing study skills, and effectively writing essays. Academic Support and Tutoring can be found in the Library and main floor of the Learning Commons. This service is available to students in person or through Zoom. You can contact the Academic Support and Tutoring team via Zoom or email (ast@mclennan.edu) by going to our website (<https://www.mclennan.edu/academic-support-and-tutoring/>).

College personnel recognize that food, housing, and transportation are essential for student success. If you are having trouble securing these resources or want to explore strategies for balancing life and school, we encourage you to contact either MCC CREW – Campus Resources Education Web by calling (254) 299-8561 or by emailing crew@mclennan.edu or a Success Coach by calling (254) 299-8226 or emailing SuccessCoach@mclennan.edu. Both are located in the Completion Center located on the second floor of the Student Services Center (SSC) which is open Monday-Friday from 8 a.m.-5 p.m.

Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff. To schedule an appointment, go to https://mclennan.co1.qualtrics.com/jfe/form/SV_07byXd7eB8iTqJg. Both the Completion Center and Paulanne's Pantry are located on the second floor of the Student Services Center (SSC).

MCC Foundation Emergency Grant Fund:

Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all. Should an unexpected expense arise, the MCC Foundation has an emergency grant fund that may be able to assist you. Please go to

<https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html>

to find out more about the emergency grant. The application can be found at

https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf.

MCC Academic Integrity Statement:

Go to www.mclennan.edu/academic-integrity for information about academic integrity, dishonesty, and cheating. The unauthorized use of artificial intelligence (AI) for classwork can be a violation of the College's General Conduct Policy. Whether AI is authorized in a course and the parameters in which AI can be used in a course will be outlined by each instructor.

Minimum System Requirements to Utilize MCC's D2L|Brightspace:

Go to <https://www.mclennan.edu/center-for-teachingandlearning/FacultyandStaffCommons/requirements.html> for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

Minimum Technical Skills:

Students should have basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

Backup Plan for Technology:

In the event MCC's technology systems are down, you will be notified via your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

Email Policy:

McLennan Community College would like to remind you of the policy (<http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf>) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are

expected to read and, if needed, respond in a timely manner to college emails. For more information about your student email account, go to www.mclennan.edu/studentemail.

Instructional Uses of Email:

Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with their students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

Email on Mobile Devices:

The College recommends that you set up your mobile device to receive McLennan emails. If you need assistance with set-up, you may email Helpdesk@mclennan.edu for help.

You can find help on the McLennan website about connecting your McLennan email account to your mobile device:

- [Email Setup for iPhones and iPads](#)
- [Email Setup for Androids](#)

Forwarding Emails:

You may forward emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may be lost or placed in junk or spam filters.

For more helpful information about technology at MCC, go to [MCC's Tech Support Cheat Sheet](#) or email helpdesk@mclennan.edu.

Disclaimer:

The resources and policies listed above are merely for informational purposes and are subject to change without notice or obligation. The College reserves the right to change policies and other requirements in compliance with State and Federal laws. The provisions of this document do not constitute a contract.