DOUGLAS COLLEGE

COMMERCE AND BUSINESS ADMINISTRATION

CSIS 1175-006 – **INTRODUCTION TO PROGRAMMING**

Semester	Winter 2021	Lecture/Lab	Fri.	12:30-15:20	Online
Instructor	Saeed Mirjalili	Office Hours	Tue./Thu.	15:30-16:30	Online
Email	mirjalilis@douglascollege.ca	Office Hours	Mon./Wed.	14:30-15:20	Online

DESCRIPTION

This course introduces students to computing science and programming. It includes fundamental concepts and terminology of computing science, program design and fundamental building blocks for programming in a high-level language. Topics cover, but are not limited to program structure, data types, arrays, operators, control structures, methods, classes, objects, and fundamental algorithms, forms, GUI controls and their properties.

METHOD OF INSTRUCTION

Lecture: 2 Hours per week, Lab: 1 Hours per week, Total: 3 Hours per week

Note:

- In addition to the regularly scheduled classes and labs, students are expected to spend **at least 6 hours a week** out of class on this course.
- This course may involve group work.

TEXTBOOKS/MATERIALS

- **Textbook:** Doyle, Barbara. *C# Programming: From Problem Analysis to Program Design*, 5th Edition. Cengage Learning, 2016. [Vitalsource electronic version].
- **Software:** Visual Studio 2019, Blackboard Learning System
- **A USB drive** will be useful
- **Personal Computer** at home is highly recommended

LEARNING OUTCOMES

The student will be able to:

1) Explain the process of program design and development
2) Design a program to solve a well-defined problem
3) Implement a program from a design using structured programming or OOP
4) Explain the differences among the various data types
5) Explain the differences between variables and constants, and be able to use them in programs
6) Select appropriate scope for a variable, explain the differences between local and global variables
7) Perform number and string manipulations including the use of built-in methods
8) Format values for output using formatting methods and output boxes
9) Explain the purpose of methods and be able to write reusable code using void or value methods
10) Explain the role of parameters and be able to differentiate between value and reference parameters
11) Evaluate conditions using the relational operators and combine conditions using logical operators
12) Explain and code selection logic using if, if-else, if-else-if, and switch statements
13) Explain and code looping routines do-while, while, for, and foreach
14) Explain what arrays are and use one-dimensional arrays to hold data
15) Explain and write code to interact with text or binary files
16) Pass arrays between methods
17) Use object-oriented terminology correctly
18) Explain the difference between a class and an object
19) Create a class that has properties and methods
20) Use property procedures to set and retrieve properties of a class
21) Make use of overloaded constructors and overloaded methods
22) Explain the difference between shared members and instance members.
23) Be familiar with some of the fundamental searching and sorting techniques
24) Explain what a form is, how to create it, and be able to manipulate the properties of a form
25) Explain what objects are, and be able to add controls to a form
26) Use the properties of a control and explain the events that can occur with a control
27) Explain how to accept input through input boxes

COURSE CONTENT

1) Programming in general
   - Program development cycle
   - Programming tools – flowcharts, pseudocode
   - Compilation and Execution Process
   - Using an IDE
   - How to Debug a Program
2) Programming in C#, .NET
   - Elements of a C# program
   - Comments
   - Numbers, variables, constants
   - Strings
   - Input and output using text boxes
3) Methods
   - Value returning and void

- Scope of variables
- Value and reference parameters
- Predefined Methods – numeric and strings methods
- Recursive Calls

4) Decisions
   - Relational and logical operators
   - If-else blocks
   - Switch statements
   - Ternary Operator
5) Repetitions
   - Do-while and while loops
   - For and foreach loops
   - Nested Loops
   - Continue and Break Statements
6) Arrays
   - Creating and accessing arrays
   - Passing arrays between methods
   - Array Methods
7) Fundamental Algorithms
   - Searching and sorting
8) Classes
   - Properties
   - Constructors and Overloading
   - Class Type Objects
9) Files
   - Reading and writing text and binary files
10) Introduction to Windows Programming
   - Forms, controls, properties, events

REGULATIONS FOR STUDENTS

Communication with Your Instructor

- You can send an email to your instructor and ask for help on any subject that your instructor can help you
- Use your college email account. Emails from free email services (e.g. Gmail, Hotmail, etc.) might not be answered.
- Include your Course and Section number in the subject line of your email. E.g. CSIS1175 Section ##.

Assignment Due Dates

- Every assignment due date will be announced on Blackboard.
- Late assignments will not be accepted and will receive zero.
- Students are requested to keep extra copies (i.e. file backups) of their assignments in case of any possible errors by the instructor/Network/Blackboard.

Quizzes and Examinations

- Will be held according to the schedule.
- The missed exams will be assigned a mark of zero. Very special cases might be considered provided there are verifiable documents.

Rules and Regulations for Tests/Exam

- Phone must be switched off and placed on top of the table face up.
- Communication and exchange of information with others are not allowed.
- There are more rules specific to each exam that will be announced prior to the exam.
- Violation of the above rules and regulations will result in a mark of "0" and will be asked to leave the test/exam venue immediately. Incident will be reported to the department.

Preparation, Attendance and Participation

- Students are encouraged to participate and learn.
- Attendance will be checked on a frequent but irregular basis.
- Some important dates/requirements/changes may be announced during a lecture/lab. Students must ensure they are informed whether present in the class or not.
- While in class, please avoid any source of distraction:
  - turn off (or do not bring) your cell phone.
  - do not use the computer/ internet other than for educational purposes related to the lecture/lab
  - do not bring food or beverages with strong smell
  - do not chat with the student next to you.

Academic Integrity

- The College values academic integrity.
- Plagiarism is presenting or submitting as one's own work, research, words, ideas, artistic imagery, arguments, calculations, illustrations or diagrams of another person or persons without explicit or accurate citation or credit; this includes submission of purchased material as well as material in which the student has permitted someone else (a fellow student, tutor, mentor or teaching assistant, friend, etc.) to contribute unacknowledged.
- Self-plagiarism is submitting one's own work for credit in more than one course without the permission of the instructors, or re-submitting work, in whole or in part, for which credit has already been granted.
- Cheating is the possession or provision of unauthorized aids, assistance or materials in the preparation of assignments, during examinations or in the completion of practical work (in clinical, practicum or lab settings).
- See the Academic Integrity policy for other definitions of academic dishonesty.

- Academic dishonesty will be treated as a serious offence. Discipline can range from a zero grade on the exam or assignment in which the offence occurred to suspension or expulsion from the College.
- **NOTE**: It is your responsibility to protect your work and not to provide it to others.
- Students can collaborate and help each other, but if a student provides his/her own work to another student to be copied, all parties involved in this act are penalized. In these situations, all parties are invited to an interview with the instructor and their answers to questions determine if it has been a help that resulted in learning or just copying the work for sole purpose of gaining marks.

Student Effort

In addition to the regularly scheduled classes and labs, students are expected to spend **at least 6 hours a week** out of class on this course. If you find yourself regularly spending time significantly in excess of this, come and discuss this as soon as possible.

Class Cancellation

If a class is cancelled due to instructor illness or other unforeseen circumstance, a notification will be made through Blackboard. It is the responsibility of students to be proactive and to check their announcements and/or e-mail before coming to class. Every effort will be made to ensure that the notification is made as soon as possible.

MEANS OF ASSESSMENT

Assignments	11%	To be done outside the classroom, an opportunity to practice skills taught in the class
Midterm Exam	30%	Given near the middle of the term to verify the skills learnt from the beginning to that date
Final Exam	35%	A cumulative exam that verifies all the skills taught over the semester.
Quizzes	24%	4 quizzes (4 x 6%)
Total	100%	

Letter Grading Scheme is based on Douglas College Grading Policy.

In order to pass the course, students must, in addition to receiving an overall course grade of 50%, also achieve a grade of **at least 50% on the combined weighted examination components** (i.e. quizzes, tests, and exams).

A student MUST complete at least 71% of all the evaluations for this course in order to obtain credits; otherwise, he/she **will be assigned a final grade of UN**.

Effective Jan 2019, students must obtain **a minimum C grade** in CSIS1175 before they can register in CSIS2175.

COURSE SCHEDULE

Date	Topic
Jan. 8	Orientation Ch 1 – Intro. To Computing and App. Development
Jan. 15	Ch 2 – Data Types and Expressions
Jan. 22	Ch 2 – Data Types and Expressions
Jan. 29	QUIZ 1 (Chapter 1, 2)
	Ch 3 - Methods and Behaviors
Feb. 5	Ch 5- Making Decisions
Feb. 12	QUIZ 2 (Chapters 3, 5)
	Ch 5- Making Decisions Ch 6 - Repeating Instructions
Feb. 19	**Study break - classes cancelled**
Feb. 26	MIDTERM EXAM (Chapters 1,2,3,5,6)
Mar. 5	Ch 4 - Creating Your Own Classes
Mar. 12	Ch 7 – Arrays
Mar. 18	QUIZ 3 (Chapters 4, 7)
	Ch 8 – Advanced Collections (some sections of the chapter)
Mar. 25	Ch 13 - Working with Files
Apr. 1	QUIZ 4 (Chapters 8, 13)
	Ch 9 - Introduction to Windows Programming Parts of Ch 11 and 12
Apr. 14 – 22	Final Exam Week (Check the final exam schedule for potential scheduling conflicts) Comprehensive exam (Chapters 1 to 9 and 13 and parts of 11 and 12)

Note that the exact course content and schedule of topics shown above may be altered at the instructor's discretion.

Wish you all the best for this course and this semester