St. Marcellinus Secondary School - DPCDSB

COURSE OUTLINE

Course Code: ICS4C
Course Name: Grade 12, Computer Programming – College Preparation
Teacher: Mrs. C. Manoil
Textbook: none, course notes provided by the teacher

This course further develops students' computer programming skills. Students will learn object-oriented programming concepts, create object-oriented software solutions, and design graphical user interfaces. Student teams will plan and carry out a software development project using industry-standard programming tools and proper project management techniques. Students will also investigate ethical issues in computing and expand their understanding of environmental issues, emerging technologies, and computer-related careers.

A. PROGRAMMING CONCEPTS AND SKILLS - OVERALL EXPECTATIONS

By the end of this course, students will:

- use data structures in the design and creation of computer programs
- demonstrate the ability to use standard algorithms in the design and creation of computer programs
- demonstrate an understanding of object-oriented programming concepts and practices in the design and creation of computer programs
- create clear and accurate internal and external documentation to ensure the maintainability of computer software

B. SOFTWARE DEVELOPMENT - OVERALL EXPECTATIONS

By the end of this course, students will:

- design standard algorithms according to specifications
- design software solutions using object-oriented programming concepts
- design user-friendly graphical user interfaces (GUIs) that meet user requirements
- participate in a large student-managed project, using proper project management tools and techniques to manage the process effectively.

C. PROGRAMMING ENVIRONMENT - OVERALL EXPECTATIONS

By the end of this course, students will:

- demonstrate the ability to use project management tools to plan and track activities for a software development project
- demonstrate the ability to use software development tools to design and write a computer program.

D. COMPUTERS AND SOCIETY - OVERALL EXPECTATIONS

By the end of this course, students will:

- analyze and apply strategies that promote environmental stewardship with respect to the use of computers and related technologies
- demonstrate an understanding of ethical issues and practices related to the use of computers
- investigate and report on emerging computer technologies and their potential impact on society and the economy
- research and report on the range of career paths and lifelong learning opportunities in software development or a computer-related field.

Prerequisite: Introduction to Computer Programming, Grade 11, College Preparation

My signature below indicates that I have read the Course Handout, and I am in agreement with its contents.

Parent's/Guardian's Signature: _____ **Date:** _____

Units of Study:

Unit 0: Intro/Computer Ethics (1 per)
Unit 1: Computer/Humanity/Earth(5 per)
Unit 2: Prog. Concepts Review(10 per)
Unit 4: File Input/Output (15 per)
Unit 5: Topics in C.S. (4 per)
Unit 6: Objects and Classes (15 per)
Unit 7: GUI (15 per)
Unit 8: Arrays (10 per)
Unit 3: Software Dev. Cycle (4 per)
Unit 9: Team Project (10)
Final Evaluation (1 per)

Student Expectations:

- The computer/ media equipment shall be used for the express purpose of education.
- Students must like solving problems
- Students must be willing to work in groups and on their own as per situation
- Plagiarism of any kind will result in a mark of 0 in all categories
- If a student cannot explain their code, or pseudo-code, the assignment will be considered plagiarized.
- All assignments must be submitted in the form of source code. Complied binaries will not be accepted.
- All assignments will follow appropriate course naming and documentation conventions.
- Be positive, timely, inquisitive, and willing to be challenged. Respect yourself, others and the lab.
- Students will be given ample time in which they can plan and execute their solutions in class. The use of a home computer is not necessary for successful completion of this course.

Course Grade Weighting:

1. **Student marks** will be determined by evaluating process & product according to 4 categories:

Term Work: 70%		**Final Evaluation: 30%**	
Category	***Weight***	***Task***	***Weight***
Knowledge and Understanding	25%	Culminating Assessment	10%
Thinking	25%	Final Exam	20%
Communication	20%		
Application	30%		

2. Feedback will also be provided for student **learning skills**. Working independently, teamwork, organization, work habits/homework, and initiative are assessed apart from student achievement in the four categories outlined above and will conform to the coding:

E – Excellent G – Good S – Satisfactory N - Needs Improvement

3. Each unit will conclude with a **Unit Test or Summative Task**. *Any examination or test missed due to truancy will not be rescheduled, and will be assigned a mark of zero."* Students missing an evaluation for a legitimate reason must provide a note from a parent/guardian that acknowledges that the parent is aware that a scheduled assessment has been missed.

4. **Assignments** will be assigned each class. If you have difficulty with any course work, it is **YOUR** responsibility to seek extra help as needed. Please do not hesitate to ask for help so that you do not get too far behind!

5. If you **miss a class** for any reason, you are responsible for the work and any assignment done during that class. Any handouts distributed will be kept in the classroom for you to pick up.

May God bless your efforts. Welcome to the Class!