St Paul Catholic High School
Grade 12 Computer Science ICS4U

Prerequisite Course: Introduction to Computer Science, Grade 11, University Preparation

Description and Overall Expectations: This course enables students to further develop knowledge and skills in computer science. Students will use modular design principles to create complex and fully documented programs, according to industry standards. Student teams will manage a large software development project, from planning through to project review. Students will also analyse algorithms for effectiveness. They will investigate ethical issues in computing and further explore environmental issues, emerging technologies, areas of research in computer science, and careers in the field.

Programming Concepts and Skills: demonstrate the ability to use different data types and expressions when creating computer programs; describe and use modular programming concepts and principles in the creation of computer programs; design and write algorithms and subprograms to solve a variety of problems; use proper code maintenance techniques when creating computer programs.

Software Development: demonstrate the ability to manage the software development process effectively, through all of its stages – planning, development, production, and closing; apply standard project management techniques in the context of a student-managed team project.

Designing Modular Programs: demonstrate the ability to apply modular design concepts in computer programs; analyse algorithms for their effectiveness in solving a problem.

Topics in Computer Science: assess strategies and initiatives that promote environmental stewardship with respect to the use of computers and related technologies; analyse ethical issues and propose strategies to encourage ethical practices related to the use of computers; analyse the impact of emerging computer technologies on society and the economy; research and report on different areas of research in computer science, and careers related to computer science.

Course Resources: USB stick for backup and a set of headphones

Catholic Graduate Expectations: Our goal for all students is to experience an education based on our Catholic Graduate Expectations.
We work in community to develop graduates that are:

- Discerning Believers Formed in the Catholic Faith Community
- Effective Communicators
- Reflective and Creative Thinkers
- Self-Directed, Responsible, Life-Long Learners
- Collaborative Contributors
- Caring Family Members
- Responsible Citizens

http://www.iceont.ca

Assessment, Evaluation and Reporting: The primary purpose of assessment and evaluation is to improve student learning. Students will understand what is expected of them, using learning goals, and success criteria, based on the overall expectations. Feedback (self, peer, teacher) supports learning, and plays a critical role in academic achievement and success.

The development of learning skills and work habits is a key indicator of future success. The following learning skills and work habits will be developed, assessed, and reported during this course:

1.	Responsibility	fulfills responsibilities and commitments *(e.g. accepts and acts on feedback)*
2.	Organization	manages time to complete tasks and achieve goals *(e.g. meets goals, on time)*
3.	Independent work	uses class time appropriately to complete tasks *(e.g. monitors own learning)*
4.	Collaboration	works with others, promotes critical thinking *(e.g. provides feedback to peers)*
5.	Initiative	demonstrates curiosity and an interest in learning *(e.g. sets high goals)*
6.	Self-Regulation	sets goals, monitors progress towards achieving goals *(e.g. sets, reflects goals)*

Group work supports collaboration, an important 21st century skill. This will be assessed only as a learning skill. Homework may also be assessed as a learning skill. Evaluation completed in class will be based only on individual student work. Regular attendance is important to support group work, various forms of feedback, and to allow students to demonstrate evidence of their learning. Students are responsible for providing evidence of their own learning (with references where required), in class, within given timelines. Next steps in response to academic integrity issues, such as lack of work completion, plagiarism, or other forms of cheating, range from providing alternate opportunities, to a deduction of marks.

The achievement chart identifies four levels, based on achievement of the overall expectations:

Level 1	achievement falls below the provincial standard	(50-59%)
Level 2	achievement approaches the provincial standard	(60-69%)
Level 3	achievement is at the provincial standard	(70-79%)
Level 4	achievement surpasses the provincial standard	(80-100%)

The report card grade will be based on evidence of student performance, including observations, conversations and student products. Consideration will be given to more recent evidence (skill development) and the most consistent level of achievement.

Mark Breakdown:

Term Work (70%) will include a variety of assessment tasks designed to demonstrate students' development in their knowledge and understanding, thinking and inquiry, communication and application, of all overall expectations.

Summative evaluation (30%) takes place towards the end of the semester, is completed in class, and provides the final opportunity for students to demonstrate what they know, and the skills they have learned, based on the overall expectations. In computer science 4U, the summative evaluation will consist of a rich summative assessment task (30%).

Awarding of Course Credit: Students who demonstrate evidence of achievement of overall expectations, ***and*** earn a mark of 50% or greater, will earn one credit for the course with the following exception:

Students who do not complete their summative evaluation (exam and/or end of year summative task) will not earn their credit regardless of their mark.

<u>Student and Parent/Guardian Acknowledgement</u>

We have read the above course outline and are aware of the student responsibilities to attend class on a regular basis and to provide evidence of learning within the established timelines.

Student's Name (print): _____ Student's Signature: _____

Parent/Guardian Name (print):_____Parent/Guardian Signature: _____