200.B1

VIBRANT

CÉGEP DE SEPT-ÎLES

SCIENCE (ENG)

PROGRAM DESCRIPTION

2023-2024

200.B1
Science

Program objectives

GENERAL OBJECTIVES

The goal of the *Science* program is to provide the student with a two-year pre-university education which integrates the basic components of scientific education and a thorough general education.

There are two profiles available: **Health sciences** and **Pure and applied sciences**. The first prepares the student for university studies in the medical, paramedical or other fields of study, and the second, in pure and applied science subjects. During the third and fourth semesters, the student will choose their classes based on their preferred profile.

SPECIFIC OBJECTIVES

The basic scientific education is based on 4 disciplines: biology, chemistry, mathematics and physics. The student will develop their problem-solving skills across all sciences and will acquire methods specific to the scientific process. The student will be able to reflect upon moral and ethical questions, be conscious of social and economic implications, understand the fundamental theories and laws which explain natural phenomena, acquire and apply the scientific approach and distinguish the links between different scientific disciplines, to name a few.

Admission conditions

Possess a high school diploma and have successfully completed the following courses:

- Secondary V
- Mathematics (TS or SN)
- Secondary V Chemistry
- Secondary V Physics

A DCS in *Science* allows you to pursue university studies in a number of subjects.

University subjects

HEALTH SCIENCES

- Audiology and speech therapy
- Chiropractic
- Occupational therapy
- Medicine
- Veterinary medicine
- Optometry
- Podiatry
- Dietetics
- Nursing
- Immunology
- Medical biology
- Nutrition
- Dentistry
- Pharmacy
- Physiotherapy
- Psychology
- kinesiology

PURE AND APPLIED SCIENCES

- Actuarial sciences
- Agriculture
- Agricultural economics
- Agronomy
- Forest resources management
- Architecture
- Bioagronomy
- Biochemistry
- Biology
- Biophysics
- Chemistry
- Environmental design
- Industrial design
- Teaching secondary education: mathematics, chemistry, biology, physics
- Forestry
- Computer, physics, civil, electrical, chemical, mechanical, industrial, mining, metallurgical engineering
- Geodesy
- Geology
- Mathematics
- Meteorology
- Microbiology
- Physics
- Statistics
- Law

OTHERS

Any student registered in the *Science* program also qualifies for all university programs that do not require prerequisites.

Program description

The *Science* program includes 58 2/3 credits which are distributed as follows:

GENERAL EDUCATION (26 2/3 CREDITS)

14 classes:

- Language of instruction and literature (4 classes)
- Second language (2 classes)
- Philosophy (3 classes)
- Physical education (3 classes)
- Complementary Courses (2 classes)

SPECIFIC COURSES (32 CREDITS)

12 classes among the following subjects:

- 101 – Biology
- 201 – Mathematics
- 202 – Chemistry and Integration course
- 203 – Physics
- 205 – Geology (Integration course)

Class distribution

Periods/week

Personal work
Internship/laboratory work
Theory – class

1st Semester		Weighting		
General education				
109-101-MQ	Physical Activity and Health	1	1	1
345-101-MQ	Knowledge	3	1	3
603-101-MQ	Introduction to College English	2	2	3
420-GSD-03	Computer Applications in Sciences	1	2	3
Specific courses				
101-NYA-05	Major Life Processes	3	2	3
201-NYA-05	Calculus I (IC: 420-GSD-03)	3	2	3
202-NYA-05	General Chemistry	3	2	3

2nd Semester		Weighting		
General education				
109-102-MQ	Physical Activity and Effectiveness	0	2	1
345-102-MQ	World Views (IRP: 345-101-MQ)	3	0	3
603-102-MQ	Literary Genres	3	1	3
Specific courses				
201-NYB-05	Calculus II (IAP: 201-NYA-05, 420-GSD-03)	3	2	3
202-NYB-05	Chemistry of Solutions (IAP: 202-NYA-05)	3	2	3
203-NYA-05	Mechanics (IRP: 201-NYA-05)	3	2	3

Note: Prerequisite course

A course is considered as a prerequisite to another if it provides the student with knowledge and helps them develop skills or behaviours essential to another course.

PEA: Prerequisite – required establishment

PER: Prerequisite – relative establishment (50 %)

PEC: Prerequisite – concurrent establishment

3rd Semester		Weighting		
General education				
109-103-MQ	Physical Activity and Autonomy (IAP: 109-101-MQ, 109-102-MQ)	1	1	1
602-COM-R4	Français langue seconde	2	1	3
603-103-MQ	Literary Themes	3	1	4
Specific courses				
201-NYC-05	Linear Algebra (IAP: 420-GSD-03)	3	2	3
203-NYB-05	Electricity and Magnetism (IAP: 203-NYA-05)	3	2	3
One course among the following				
201-GSE-SI	Probability and statistics (IAP: 201-NYA-05, 420-GSD-03)	3	2	3
202-GSD-SI	Organic Chemistry (IAP: 202-NYA-05, 202-NYB-05)	3	2	3

4th Semester		Weighting		
General education				
345-GST-SI	Ethics (IRP: 345-101-MQ, 345-102-MQ)	3	0	3
602-PRO-R4	Français langue seconde (IAP: 604-10X-MQ))	2	1	3
603-GTM-SI	English for Programs: Non-Fiction	2	2	2
XXX-GTX-03	Complementary Course #1	2	1	3
Specific courses				
203-NYC-05	Waves, Optics and Modern Physic (IAP: 203-NYA-05)	3	2	3
One course among the following				
101-GSD-SI	General Biology (IRP: 101-NYA-SI)	3	2	3
201-GSF-SI	Calculus III (IAP: 201-NYB-05, 201-NYC-05)	3	2	3
One course among the following				
202-GSE-SI	Integration (Health Sciences) (In the process of completing all the program courses)	3	2	3
205-GSA-SI	Integration (Pure and applied sciences) (In the process of completing all the program courses)	3	2	3

SPECIFIC COURSES

Discipline: Biology

101-NYA-05 **A**
Major Life Processes
3-2-3

This course covers living beings in their natural environment. Living matter is an important facet of the world and it is essential for *Science* students to properly understand its composition and the way in which it functions. This course is **mandatory** for all students registered in the *Science* program. It is taken in the first semester, I order to situate and identify living matter in the world that surrounds us from the very beginning of the program.

Students will approach the study of living entities from different angles. They will learn that all living organisms are comprised of the same basic organic molecules and are formed by cells. The organization of these entities is dependent on genetic information, also known as DNA. This information can undergo a number of changes, which explains the evolutionary process and the diversity of life on Earth.

The fundamental notions of this course are as follows: the chemical composition of life, cells, genetic information and its involvement in evolution and in the diversity of life, and the interactions between these organisms and their environments.

Throughout the course, the laboratory sessions will introduce the student to the experimental approach and to writing lab reports.

101-GSD-SI **H**
General Biology
3-2-3 **PER: 101-NYA-05**

In the General Biology course, students will learn how living organisms function. It is a university prerequisite for health sciences programs.
Living matter is an element of the world that surrounds us and it is crucial for students in *Science* to properly understand the functioning of life on Earth.

We will explore the key functions of living matter from an evolutionary perspective.

The objects of study primarily include the way in which cells function, as a basic unity of life. The student will learn about membranes, metabolism and cellular work.

Then, the student will learn about embryonic development through to the formation of the three embryonic layers.

Lastly, the student will learn how the different systems which ensure the 3 living functions work. These are: self-preservation (digestive, respiratory, circulatory and excretory systems); self-regulation (hormonal and nervous systems) and self-replication (reproductive system). Laboratory sessions complement these subjects while helping the student better understand their theoretical concepts.

Discipline: Mathematics

201-NYA-05 **A**
Calculus I
3-2-3 **PEC: 420-GSD-03**

The objectives of the Differential Calculus course are to make the first contact with the fundamental notions of the limit, continuity and derivability of a function: moving from a step-by-step study of a function to an ongoing study of a function. Moreover, studying functions helps in determining their critical points, growth intervals and concavity. We will complete the course by identifying the optimal solutions for certain applications in different subjects: physics, chemistry, biology, economy, etc.

201-NYB-05 **H**
Calculus II
3-2-3 **PEA: 201-NYA-05**
420-GSD-03

In the Integral Calculus course, the student will learn to identify the beginnings of certain ongoing functions, calculate the area under the curve, and determine the volume and surfaces of some R3 solids through different techniques specific to integral calculus.

201-NYC-05 **A**
Linear Algebra
3-2-3 **PEA: 420-GSD-03**

In this course, the student will learn to apply linear algebra and vector-based geometry methods to problem solving. More specifically, the course deals with the following mathematical concepts: the matrix and determinant (definitions, properties, function, applications); Gauss-Jordan methods and the reverse matrix method for solving linear

equation systems; geometric and algebraic vectors (scalar, vectorial and mixed); algebraic structures and complex numbers; vectorial space (bench mark, base, dimension, linear combination, linear independence); geometric applications (lines and planes, intersections, calculating angles and distances).

201-GSE-SI **A**
Probability and statistics
3-2-3 **PEA: 201-NYA-05**
420-GSD-03

In addition to providing a first introduction to notions in statistics, this Probability and Statistics course aims to develop the student's critical and analytical mind in modern statistics studies. The student will learn the study of probability and different laws: binominal, Poisson distribution, normal, student's t-distribution).

The student will also learn how to use interval estimation and how to test hypotheses for certain statistical parameters such as: the average and proportion and the difference between two averages.

201-GSF-SI **H**
Calculus III
3-2-3 **PEA: 201-NYB-05**
201-NYC-05

The Advanced Integral and Differential Calculus course is a formal review of the analytical notions from an intuitive perspective in the previous Calculus courses, as well as a study of new notions, namely the analysis of functions with many variables. Two course objectives will be met; ensuring the mastery of the fundamental notions of analyzing functions with one variable such as limit, continuity and derivability, through a more thorough theoretical process. The second objective is to promote access to a scientific specialization by developing methods for calculation by generalized application such as partial derivatives, integral multiples and differential equations.

Discipline: Chemistry

202-NYA-05 **A**
General Chemistry
3-2-3

Science students will take this course during the first semester of the program. It is a mandatory chemistry course for Health Sciences and Pure and Applied Sciences profiles.

Various elements of this first course are prerequisites for the program's other chemistry courses. This course is therefore the basis of college-level chemistry education.

It builds on various high school chemistry, physics and mathematics prerequisites. The student will apply their knowledge in various interdisciplinary contexts, including physics and biology.

This course looks at the links between the structure of atoms and molecules, and the behaviour of matter: the fundamental notions of chemistry.

The student will learn about the structure of the atom, the periodic table, the different types of chemical bonds, the forms of molecules and the different states of matter.

The student will carry out lab experiments which will introduce them to the basic techniques and help them better understand the course's theoretical notions.

Content:

- Orbitals and electron presence probabilities, quantum numbers.
- Elements: periodic classification, normal physical state, periodic properties, oxidation numbers.
- Bond formations: energy aspect.
- Intermolecular bonds.
- Molecular structure prediction.
- Intermolecular bonds and states of matter.
- Nomenclature of elements, ions and inorganic molecules.
- Calculations of atoms and molecules.
- Basic experimental techniques in chemistry.

202-NYB-05 **H**
Chemistry of solutions
3-2-3

This 2nd Chemistry course is mandatory for all students in the *Science* program. It is taken during the second semester.
This course builds on knowledge of molecular structure and different types of bonds, as well as different prerequisites in physics and mathematics. The student will apply their knowledge to various interdisciplinary contexts. They will use certain notions in physics and will solve problems using different mathematical operations. Certain course content elements are prerequisites for the Organic Chemistry course and others will be applied in the program's Biology course.

This course aims to apply and complete the knowledge from the previous Chemistry course; the student will study the properties in solutions, the

notion of balance, chemical kinetics and basic notions of redox and of electrochemical cells. The student will carry out laboratory experiments which will help them better understand the course's theoretical content while introducing them to new experimental techniques.

Content:

- Preparing solutions (qualitative study).
- Concentration units.
- Colligative properties: boiling and freezing points, osmotic pressure, Raoult's law.
- Reaction kinetics: qualitative aspect, speed equation and integrated speed equation applied to 1 and 2 type reactions, energy aspect, rate constants, half-reaction time.
- Le Chatelier's Principle.
- Balances in aqueous solutions (qualitative and quantitative aspects): acid-based reactions, redox reactions, solubility.

Applications:

- calculations for solutions, reactions, kinetics, balance and redox;
- experimental techniques

202-GSD-SI **A**
Organic Chemistry
3-2-3 **PEA: 202-NYA-05 or 202-NYB-05**

In the *Science* program, this course is given to students in the third semester.

In this course, we use an approach that has been regularly used in the last few years; that of linking chemical reactivity to the electronic structure of molecules. Such an approach uses reasoning and is an intellectual challenge for the student. Moreover, it gives purpose to the semester's activities. The student must coordinate facts that seem dispersed and bring together extremely numerous and specific properties to general cases which are less common. The student will face a number of situations in which they will develop their analysis and synthesis skills. They must have thoroughly understood the lessons in the two previous Chemistry courses in order to apply them efficiently when needed. In this sense, this course contributes to the student's basic education.

In this course, the student will learn the atomic structure of carbon, l'écriture organique, isomerism, reactivity, types and mechanisms of reactions; they will study the main organic functions. They will carry out laboratory experiments which will help them better understand the course's theoretical content while introducing them to new experimental techniques.

This Organic Chemistry course builds on the concepts studied in previous Chemistry courses as well as certain physics prerequisites. Depending on the situation, we will establish links between biology and physics knowledge. The student will apply their knowledge within different interdisciplinary contexts, including biology.

Content:

- Molecules
- Forms of molecules
- Functions
- Isomerism
- Nomenclature
- Reactivity
- Reactions
- Mechanisms
- Main functions

Discipline: Physics

203-NYA-05 **H**
Mechanics
3-2-3 **PER: 201-NYA-05**

This course introduces the student to the major laws of movement and their applications in concrete situations. We use differential and integral calculations as well as vectorial calculations for the mathematical representation of physical phenomena. More specifically, the course deals with the following subjects: vectorial and scalar quantities, one- and two-dimension kinematics, Newton's Laws of Motion, power and dynamics of particles, circular motion, work, energy, movement and collision quantity, the rotation of a rigid body, simple harmonic movement. The student will also learn about the experimental procedures: measurements and graphic results analysis.

203-NYB-05 **A**
Electricity and Magnetism
3-2-3 **PEA: 203-NYA-05**

This course aims to present the fundamental laws of electricity and magnetism as well as their applications in simple situations. More specifically, the student will develop a thorough understanding of the notions of electric force, electric current, electric potential and electric capacity. They will learn, with the help of Kirchhoff's Circuit Laws, how to calculate currents in circuits with multiple paths and with resistance and capacitors. Lastly, they will learn about the sources of magnetic fields, magnetic force and electromagnetic induction.

203-NYC-05 **H**
Waves, Optics and Modern Physic
3-2-3

PEA: 203-NYA-05

The student will be introduced to the phenomena of waves: sound waves, vibrating strings and electromagnetic waves. They will learn about the behaviour of light with the help of geometric and physical optics. The course presents the main phenomena of modern physics which lead to wave-particle duality. It will introduce the student to nuclear physics: nuclear fission, nuclear fusion, natural radioactivity.

Integration Course

202-GSE-SI **H**
Integration (Health Sciences)
3-2-3

At the end of the *Science* program, the student must be able to see continuity between the courses of a same discipline, establish links between them and integrate their acquired knowledge and skills in order to accomplish complex tasks in new situations within the field of science.

The importance of the integration objective by the College Education Regulations combined with the requirement of a comprehensive exam which measures whether the student has met all program objectives and standards, are a strong incentive to establish a distinct academic activity which specifically targets this objective.

The common theme will be organic chemistry.

The comprehensive program exam is an integral part of the course.

Students must submit their work in accordance with the predetermined requirements in correct and accurate French.

Course summary

One of the important course principles is to provide the student with a chance to apply the scientific procedure. The student must present the results of their work in the form of a complete report, in word-processing format, according to the predetermined requirements.

Research projects allow the student to integrate both their experimental skills and the fundamental knowledge acquired in the course and in other program courses, within a scientific procedure. Moreover, it includes bibliographic research, the use of software and a first introduction to a laboratory approach not covered in their other courses.

Content:

- Integration
- Interdisciplinarity
- Problem-solving
- Notions in biochemistry
- 1st research (1 discipline)
- 2nd research (2 disciplines)
- 3rd research (3 disciplines)

205-GSA-SI **H**
Integration (Pure and applied sciences)
3-2-3

At the end of the *Science* program, the student must be able to see continuity between the courses of a same discipline, establish links between them and integrate their acquired knowledge and skills in order to accomplish complex tasks in new situations within the field of science.

The importance of the integration objective by the College Education Regulations, combined with the requirement of a comprehensive exam which measures whether the student has met all program objectives and standards, are a strong incentive to establish a distinct academic activity which specifically targets this objective.

The common theme will be geology.

The comprehensive program exam (CPE) is an integral part of the course.

Course summary

One of the important course principles is to provide the student with a chance to apply the scientific procedure. The student must present the results of their work in the form of a complete report, in word-processing format, according to the predetermined requirements.

Research projects allow the student to integrate both their experimental skills and the fundamental knowledge acquired in the course and in other program courses, within a scientific procedure. Moreover, it includes bibliographic research, the use of software and a first introduction to a laboratory approach not covered in their other courses.

Content:

- Integration
- Interdisciplinarity
- Problem solving
- Biochemistry notions
- 1st research (1 discipline)
- 2nd research (2 disciplines)
- 3rd research (3 disciplines)
- C.P.E. (4 disciplines)

GENERAL EDUCATION COURSES

109-101-MQ **A**
Physical Activity and Health
1-1-1

A healthy mind in a healthy body.
This is now the chance to concentrate your effort on your body. How is your fitness level? How much can you improve by training for an entire semester? What are all the ramifications of being active? How can your lifestyle affect your health? All those questions will be answered by the experience you will go through in this gym class. You will learn theory, but most of the time you will live it.

109-102-MQ **W**
Physical Activity and Effectiveness
0-2-1

A healthy mind in a healthy body.
This is now the chance to concentrate your effort on your body. How is your fitness level? How much can you improve by training for an entire semester? What are all the ramifications of being active? How can your lifestyle affect your health? All those questions will be answered by the experience you will go through in this gym class. You will learn theory, but most of the time you will live it.

109-103-MQ **A**
Physical Activity and Autonomy
1-1-1

Did you ever think that playing in a hockey league, getting your yellow belt in judo, or running in your neighbourhood could be part of a college course? This is the case here, you will build this course with physical activity you like to do. And with motivation and determination, you will develop all the autonomy you need to pursue active living beyond your studies.

Courses from group 1

109-111-SI / Training methods - Physical activity and health (109-101-MQ)
The student will learn notions about health, fitness and motivation factors in fitness. The fitness activities suggested by this course will consist of a mix of training methods that can be practice either in group or individually. (Ex: jogging, spinning, circuit training, workout, etc…)

109-112-SI / Sports - Physical activity and health (109-101-MQ)
The student will learn notions about health, fitness and motivation factors in fitness. The fitness activities suggested by this course will consist of a mix of many sports and fitness activities that can be practiced in Sept-Iles. (Ex: volleyball, basketball, badminton, football, hockey, ultimate Frisbee, etc…)

Courses from group 2

109-201-SI / Badminton - Physical activity and effectiveness (109-102-MQ)
The student will learn to apply a procedure that will help improve his technical and tactical skills in badminton. The course will consist of a 2 hours period per week, for 15 weeks.

109-202-SI / Volleyball - Physical activity and effectiveness (109-102-MQ)
The student will learn to apply a procedure that will help improve his technical and tactical skills in volleyball. The course will consist of a 2 hours period per week, for 15 weeks.

109-203-SI / Cross-country skiing - Physical activity and effectiveness (109-102-MQ)
The student will learn to apply a procedure that will help improve his technical skills in cross-country skiing and modify his approach to winter outdoor activities. This course will spread over a 10 weeks period, to witch one or two nights or week-end mandatory activities will be added to complete the 30 hours needed for that specific course.

109-204-SI / Touch-Football - Physical activity and effectiveness (109-102-MQ)
The student will learn to apply a procedure that will help improve his technical and tactical skills in touch-football. This course will spread over a 10 weeks period, to witch one or two nights or week-end mandatory activities will be added to complete the 30 hours needed for that specific course.

Courses from group 3

109-301-SI / Individual training – Physical activity and autonomy (109-103-MQ)
From an autonomous approach, the student will use the knowledge he acquired in the two first courses to plan and practice a chosen physical activity that will improve his fitness and lifestyle in order to have a positive impact on his general health. The student will be individually monitored. Coaching will be done regarding the fitness program that the student will have elaborated himself.

345-101-MQ **A**
Knowledge
3-1-3

In this course students apply a logical analytical process to how knowledge is organized and used. We

choose one theme to organize this exploration around, to recognize the basic elements of a field of knowledge, situate a field of knowledge within its historical context, organize the main components into coherent patterns and produce a synthesis. Students research and present various projects.

603-101-MQ **A**
Introduction to College English
2-2-4

In this course you will read a variety of different types of essays. You will also practice writing essays that use rhetorical patterns such as: narration, description, example, comparison, process analysis, classification and definition. We will explore what makes a great essay and practice organizing our ideas into well-structures texts that make our ideas clear to our readers.

345-102-MQ **W**
World Views
3-0-3 **IRP: 345-101-MQ**

In this course students investigate how individuals, groups, societies, or nations organize ideas, perceptions, and values into explanatory patterns. Students will explore major ideas and value systems by which people seek to explain the world and their place in it by looking at the way individuals and societies view human endeavors, today and in the past. Close examination of the worldviews of a variety of groups helps students be more aware of their personal viewpoint and the affect this perspective has on their understanding of their world.

603-102-MQ **W**
Literary Genres
2-2-3

This course teaches you to use an analytical approach to interpreting imaginative literature. You will explore a variety of works from three different genres: fiction, poetry and drama. You will practice finding literary techniques and devices in the works you read. This experience will help you analyse works and allow you to share your ideas about what we have read in the form of presentations and critical essays.

603-103-MQ **A**
Literary Themes
2-2-3

This course asks you to examine a variety of texts from a thematic perspective and explore their cultural context and value systems. A theme extends beyond the boundaries of a particular work; a theme connects to our world. Your interpretation of a theme arises out of your personal experience, background, and knowledge. If you explore the elements of a work, look for clues that reinforce important ideas, and apply a critical approach to literary themes, you will gain insight into the text and, perhaps, into your life.

345-GTS-SI **W**
Ethics
3-0-3 **IRP: 345-102-MQ**
IRP: 345-102-MQ

In this course students try to understand how humans decide what is right and wrong. Students explore ideas that can help them decide what to do in difficult situations. This is called applied ethics: we begin by learning about several moral theories that can be used to frame a problem; then we look at a variety of ethical issues and use the moral theories to explore possible solutions. More than memorizing concepts and struggling with “thought problems”, the ideas explored in this course should help students respond to complicated ethical issues in their field of study, in their work, and in their personal lives.

603-GTM-SI **W**
English for Programs
2-2-2

In this course you will read, analyse and write about non-fiction works from a variety of disciplines. You will get a better understanding of how writing is adapted to various disciplines and do research that is related to your field of study. You will use a variety of tools to present information including: concept maps, slide presentations, movie making software, and Prezi. You will practice writing in a variety of formats including: précis, analysis, critique, poster, blog, letter, curriculum vitae and reflective portfolio.

COMPLEMENTARY COURSES

120-GTB-SI
Nutrition, a science of Everyday Life
1-2-3

You make choices every day that involve your nutrition and health. What should I eat for breakfast? Should I really eat whole wheat bread? Should I have one scoop of ice cream or two? Should I go to the gym at noon?

Nutrition is always in the headlines: trans fats, organic food, antioxidant supplements, Atkin's, Montignac diets, food linked to cancer prevention…

We often forget that our body is really a "machine" with needs based on scientific evidence.

This course will guide you through the critical thinking processes needed to apply the nutrition knowledge to your everyday choices. You will taste and cook some nutritious alternatives, analyse your own diet and develop the decision – making skills needed to navigate the scores of choices you face when deciding what to eat and **what to believe.**

Competency statement:
"By applying the scientific method, the student will be able to elaborate and evaluate an appropriate diet to meet nutritional needs for different life situations".

420-GSD-03 A
Computer Applications
1-2-3

This introductory course familiarizes students with the functionality of the internal SLC computer network, the Microsoft Windows Operating System and the Microsoft Office Applications Suite. Course content explores the effective use of the student intranet site and email system, the theory and concepts of computer hardware and software, the Windows operating system, file management techniques and Internet browsers. Students are also introduced to the current version of Microsoft Word and how to open, save and print files, create documents, edit and format texts, insert lists, tables and graphics, add and edit equations, and use referencing tools. Using Microsoft Excel, students create workbooks and worksheets, format worksheets, manipulate data cells and ranges, work with formulas and functions, and create and edit various charts from data. Students will learn programming Maple language to create charts from mathematical equations.

607-GTA-SI
Introduction to Spanish
2-1-3

In this course you will read, analyse and write about non-fiction works from a variety of disciplines. You will get a better understanding of how writing is adapted to various disciplines and do research that is related to your field of study. You will use a variety of tools to present information including: concept maps, slide presentations, movie making software, and Prezi. You will practice writing in a variety of formats including: précis, analysis, critique, poster, blog, letter, curriculum vitae and reflective portfolio