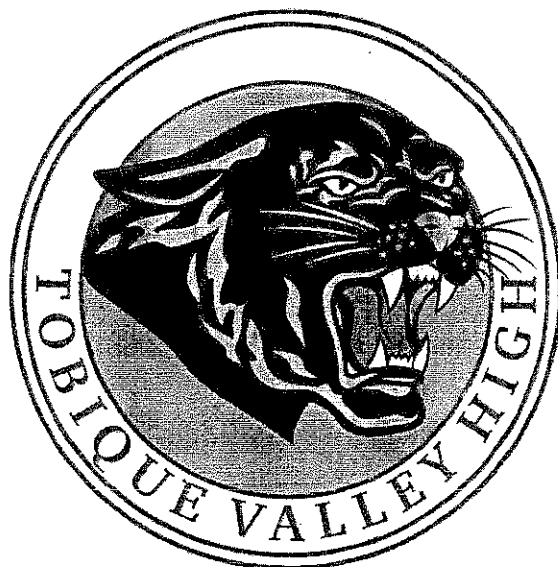


# **Tobique Valley High School**

## **Course Description Catalogue**



# INTRODUCTION AND GENERAL COMMENTS

The purpose of this guide is to provide pertinent information for students as they select grade 11 and 12 courses. The class of 2017: Graduation Requirement Template should be used as a reference. Please note that all grade 10 courses are required for graduation and are prerequisites for most grade 11 courses.

## Choosing Courses:

Each spring, students select courses for the following academic year. There is a wide variety of courses from which to choose in grades 11 and 12, and a number of factors that should be considered when making these choices. It is important that students take time to carefully consider their options since it can be difficult to make changes once scheduling for the year is complete.

## Course Load:

Students are required to take a full course load each semester. All students must attempt 20 credits and complete four semesters in order to be eligible for graduation 17 of 20 credits are required for graduation. A student needing an additional semester past the grade 12 year may take the minimum number of courses to complete graduation requirements.

## Course Descriptions:

All courses have a name and number. The first two digits indicate grade and the third digit indicates the level.

**Open or "0" courses** are offered at one level only.

**Level 2 courses** are academic/university/college preparatory.

**Level 3 courses** are general/college preparatory.

## Pre-requisites:

Please read the course descriptions and requirements carefully prior to course selection as many courses have pre-requisites. Many courses must be taken in sequence to fulfill the pre-requisite; students without pre-requisites will not be allowed to take the course. For example, Chemistry 112 must be completed before Chemistry 122.

## Course Fees:

Please note that some courses require additional supplies and/or payment of lab, studio or other fees.

## Timetables:

Timetables are computer-generated and therefore courses fall by chance into either semester. Some listed courses may be dropped due to insufficient enrollment. For senior students, certain courses required for university and college will not be completed in the first semester. However, applications to post-secondary institutions are usually assessed on past, present and predicted performance at the time of application.

## Transcripts:

All grade 11 and 12 courses and final marks are permanently recorded on a student's transcript. The school transcript provides an ongoing record of high school courses taken and marks obtained. It is the official document required by post-secondary institutions to verify a student's academic record.

There are several courses that are offered on a two year cycle.  
(Chemistry 112,122, Can. History 122, some Applied Tech courses)

Administration and Guidance can advise students in Grades 10 & 11, at the time of course selection, which year of a cycle we are in to ensure students will have the opportunity to select desired courses when they are offered.



## **Graduation Requirements**

- ELPA must be passed
- Compulsory Courses
  - English 11 (full-year, 2 credits)
  - Math 11
  - Science
  - History 11
  - Fine Arts & Life Development course
- English 12
- Total: 7 credits

# CLASS OF 2018: GRADUATION REQUIREMENTS

## YEAR 10 COURSES COMPLETED

\_\_\_\_\_ Math 10 GMF & NRF

\_\_\_\_\_ English 10

\_\_\_\_\_ Social Studies 10

\_\_\_\_\_ Science 10

\_\_\_\_\_ PIF 10

\_\_\_\_\_ Art 10 or Music 9

\_\_\_\_\_ Phys Ed. 9/10

\_\_\_\_\_ Other Elective

## YEAR 11 & 12 - COMPULSORY (7)

\_\_\_\_\_ English 112 or 113 (2 Credits)

\_\_\_\_\_ English 121, 122 or 123

\_\_\_\_\_ Math Foundations of Math 110 (academic) or Financial Workplace Math 110

\_\_\_\_\_ Science (one course) from any of:

Physics, Biology, Chemistry, Introduction to Environmental Science 120, Introduction to Electronics 110, Physical Geography 110, Human Physiology 110

\_\_\_\_\_ Modern History 111, 112 or 113

\_\_\_\_\_ Fine Arts/Life Role Development (one credit) from any of:

Visual Arts 110/120, Individual & Family Dynamics 120, Reading Tutor 120, Physical Education Leadership 120, Theatre Arts 120, Outdoor Pursuits 110, Career Exploration 110, Co-Operative Education 120, Wellness Ed 110

## Year 11 & 12 – ELECTIVES (10)

8. \_\_\_\_\_

9. \_\_\_\_\_

10. \_\_\_\_\_

11. \_\_\_\_\_

12. \_\_\_\_\_

13. \_\_\_\_\_

14. \_\_\_\_\_

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19. \_\_\_\_\_

20. \_\_\_\_\_

## ADDITIONAL NOTES

Five (5) grade 12 credits including English 12 are required for graduation.

Grade 9 English Language Proficiency Assessment is a requirement for graduation.



# Remember

Graduation Requirements and  
Post-Secondary Admission Requirements  
are not the same

It's up to you to do some research and ensure  
you have the right courses for admission.  
What is accepted for admission at one school  
is not necessarily accepted at another

# ENROLLMENT GUIDELINES

All courses are subject to limited enrollment and may be cancelled if numbers do not warrant a place in the timetable. Staffing allocations ultimately determine availability of sections/courses. Administration reserves the right to review section/course numbers each semester.

*Important*

	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022
Rotation of Courses offered:	<ul style="list-style-type: none"> <li>• Internal Engine 110</li> <li>• Culinary 110/120</li> <li>• Early Childhood 120</li> <li>• Human Services 110</li> <li>• Law 120</li> <li>• Mill &amp; Cabinet 120</li> <li>• Media Studies 110</li> <li>• Electrical Wiring 110</li> <li>• Tourism 110</li> <li>• World Issues 120</li> </ul>	<ul style="list-style-type: none"> <li>• Sociology 120</li> <li>• Chemistry 112</li> <li>• Framing &amp; Sheathing 110</li> <li>• Physical Geography 110</li> <li>• Visual Arts 110</li> <li>• Can. History 122</li> <li>• Chemistry 122</li> <li>• Residential Finish 120</li> <li>• Electronics 110</li> <li>• Nutrition 120</li> </ul>	Same as 2016-17	Same as 2017-18	Same as 2016-17	Same as 2017-18

# APPLIED TECHNOLOGY

**NOTE:** Students who achieve a mark of greater than 70% in a skilled trades course will be credited with 80 hours towards their trade certification up to a total of 720 hours over their high school career.

## **CULINARY TECHNOLOGY 110**

### **CULINARY TECHNOLOGY 120**

**(2 credits)**

The Culinary Technology Program is designed to prepare students for employment and/or future education in the food service industry. This technology-driven and skill oriented program involves not only the "how and why" of food service preparation, but focuses on the development of personal skills and food knowledge that can be applied to the food industry. Learning experiences include planning, costing, and preparation for food service.

Culinary Technology 110 has an emphasis on bakeries, baked goods, breads, and pastries.

Culinary Technology 120 has an emphasis on food and meal preparation in a real restaurant environment.

## **FRAMING AND SHEATHING 110**

Students in this course will participate in the planning and construction of wooden structures in a large, well-equipped shop. Students will learn the safe operation of carpentry tools and equipment. Emphasis will be placed on the interpretation of the National Building Code, blueprint reading, estimating and material layout. This course will be of interest to students exploring career opportunities in the building construction industry.

## **MILL AND CABINET WORK 120**

Students in this course build a series of wooden products to learn the safe operation of woodworking tools and equipment. They also learn project planning and estimating as well as finishing and installation of cabinets and furniture. This course will be of interest to students exploring career opportunities in the building construction industry as well as those with a general interest in woodworking.

## **INTRODUCTION TO ELECTRONICS 110**

The basics of electronic theory and components of electronic devices are the subjects of this course. Students learn through a series of lab activities including many types of Direct Current circuit construction. This course will be of interest to students exploring career opportunities in many skilled trades and also those interested in many Engineering and technology disciplines. This course may be used as a Science credit for graduation purposes and also be used as an entrance elective for the University of New Brunswick. **Recommended:** Successful completion of Grade 10 Math.

## **RESIDENTIAL ELECTRICAL WIRING 110 (HOUSE WIRING)**

Students in this course will study the basic tools, materials and techniques used in residential wiring. Study includes the design and placement of circuits in a model family dwelling, according to the Canadian Electrical Code. The course will be of interest to students interested in exploring careers related to the electrical trade.

## **RESIDENTIAL FINISH 120**

This advanced building construction course focuses on the acquisition of skills and knowledge associated with the completion of a modern wood frame residential building. Students work with lab based projects to select and install insulation, wall and ceiling cladding as well as finish trim, doors and windows.

## **INTERNAL COMBUSTION ENGINE 110**

This course is the study of internal combustion engine including the construction, theory of operation and function of its system. Student disassemble and assemble engines, checking, servicing and repairing components and systems. This course would be of interest to students interested in entering or learning about the opportunities and requirements of the motor vehicle industry and students with a general interest in mechanics.



# BUSINESS, TECHNOLOGY & FAMILY STUDIES

## SCHOOL-TO-WORK TRANSITION COURSES

The following school-to-work transition courses feature an experiential component often referred to as a work placement or a Co-op placement. In addition to course content students will gain hands-on experience in a field that they may be interested in pursuing after high school. Students must complete the minimum of hours required at the workplace to be able to qualify for the credit. Students will complete a second mandatory project and presentation instead of a final examination. **Only 5 co-op credits may be used towards graduation.**

### **CAREER EXPLORATION 110 (2 credits)**

This course is aimed at offering students the opportunity to explore their personal potential and learn about career pathways of interest. After the initial in-class skills component, students will spend two hours in a workplace developing skills that will assist them in preparing for the future.

### **CO-OPERATIVE EDUCATION 120**

#### **(3 credits)**

Students may explore any career field (based on availability in our community) for three hours each school day. After the mandatory in-class component is completed, students gain experience in the desired career field for three hours each day for the remainder of the semester.

### **HUMAN SERVICES 110**

The aim of Human Services 110 is to increase students' awareness of the importance of human service work and prepare them for future employment and/or post secondary education. Due to the increasing elderly population and the trend towards "at home care" vs. "institution care", there is a need for trained human service workers. The course will focus on the skills to prepare people to work with the elderly and handicapped and will involve community activities.

### **CHILD STUDIES 120**

This course is designed for students who are interested in pursuing post-secondary education in early childhood education, pediatric medicine, nursing, child psychology or social work. Topics include heredity, conception, prenatal development, pregnancy and childbirth, as well as child growth and development. Learning strategies as well as intelligence and attachment theories are a major focus.

### **INDIVIDUAL AND FAMILY DYNAMICS 120**

Students will explore their own personal development through the study of themselves and their relationships with others. Topics such as personality development, relationships, dating, love, marriage and family, sexuality, reproductive systems, birth control and sexually transmitted diseases, wellness and aging, will be studied. This course is an excellent introduction to studies in sociology, psychology, teaching, social work and family life education.

**Note: Fine Art/Life Role Development credit.**

### **HOSPITALITY AND TOURISM 110**

Students will explore the sectors of the Travel Industry including accommodations, food and beverage, adventure tourism, and transportation. Students will have the opportunity to create and evaluate Hospitality and Tourism through its past and into the future. Students will learn valuable customer service skills and create a dream vacation for themselves through a term project. The skills learned will benefit the students with transferable skills for future employment opportunities. This course will explore areas of travel and tourism opportunities around the globe.

### **INTRODUCTION TO ACCOUNTING 120**

This course introduces grade 11 and/or grade 12 students to the procedures, concepts and applications of accounting. Topics which will be covered include the nature of business, accounting as a possible career, bookkeeping procedures, accounting theory, and the entire accounting cycle. In addition, we will look at various forms of business enterprises such as sole proprietorships, partnerships and corporations. This course is designed for students who intend to pursue studies in business at a post-secondary institution.  
**Lab fee: \$10.00 for required workbook.**

# ENGLISH

English Language Arts courses are skill-based programs of study that focus on three main areas of development: speaking and listening, reading and interpreting, writing and representing. Through the high school years, students will develop an awareness of how language works in a wide range of genres and will develop flexibility in using language.

**NOTE:** Grade 9, 10 and 11 English courses are full year courses; students will remain in their selected level (especially in grade 11) for the duration of the course, unless the student and teacher agree that an alternate placement is required.

## **ENGLISH LANGUAGE ARTS 112 (2 credits--full year)**

This course is designed for students whose future plans may include university study. The areas of study focus on formal and informal composition, oral communication to convey ideas, analysis of various literary texts, and exploration of literary theories and perspectives. Students will work independently and collaboratively; regular attendance is very important.

**Pre-requisite:** English 10

## **ENGLISH LANGUAGE ARTS 113 (2 credits--full year)**

This course is designed for students whose immediate future plans do not include university. The areas of study focus on practical reading, writing, and speaking skills. Students will engage in a variety of activities geared toward improving literacy skills. A collaborative film-making unit provides opportunity for students to share their stories and ask questions about the world, learning English in a nontraditional way. Most work is done in class and students are expected to work well in groups. Regular attendance is expected.

**Pre-requisite:** English 10

## **ENGLISH LANGUAGE ARTS 123 (1 credit)**

This course is designed for students whose immediate future plans do not include university. The emphasis is placed on clear communication, through both the written and spoken word. Students will continue their study of fiction, nonfiction and all types of text. Guided assignments will provide ample opportunity for students to demonstrate their literacy skills.

## **ENGLISH LANGUAGE ARTS 122 (1 credit)**

This course is designed for students whose future plans may include university study. Students are expected to exercise independent and critical thinking as textual material is studied as a class, in groups, and individually. Formal essay writing is emphasized as a measure of student competency in writing and interpreting. Increasingly challenging textual material will be presented to students to guide them along the continuum of text complexity.

## **ENGLISH LANGUAGE ARTS 121 (1 credit)**

This advanced level course is designed for students who excelled in English 111/112. It provides opportunity for the student to appreciate, experience, and interpret literature through group discussion and an application of literary theory and criticism. Class members are expected to contribute to guided discussions and are urged to develop an independent and critical understanding of material (print, visual, and audio). A semester project allows students to showcase their literacy skills.

**Pre-requisite-** English 111/112

## **JOURNALISM 120**

An elective course open to students in grade 11/12. Journalism 120 is intended for those who wish to explore journalism as a career or field of study following high school. Students who have taken Writing 110 or who have done well in English or History courses might be interested in Journalism 120. Participants will be involved in the intensive practice of writing stories and articles in various journalistic styles. This course is for writers, not just critics of writing. Students must commit to practical outcomes and work towards publication of their work. Some extra-curricular effort will also be required.

## **MEDIA STUDIES 120**

Media Studies 120 is an elective course for grade 11/12 students. In a world dominated by the mass media, this course is designed to help senior students become media literate and understand the impact of mass media on society and culture. Students learn by experiment and exploration from this activity-based course. Areas of focus will include popular culture, television/video, film, photography, journalism, and advertising. Students enrolling in Media Studies must be mature enough to meet the high level of independence, reliability and responsibility required of them.

## **THEATRE ARTS 120**

This course will introduce the grade 11/12 student to a cross sectional study of theatre and various approaches to theatre. Emphasis will be placed upon the study of theatre from a practical perspective. Other areas of interest will involve props, costumes, make-up, lighting design, stage structure, play writing and production. Students are expected to contribute significantly each day to group discussions, projects and productions. As well, a good attendance record is expected for this course.

**Note: Fine Art/Life Role Development credit.**

## **WRITING 110**

This is an elective course for grade 11/12 students who wish to improve and enrich their writing skills. The focus will be on writing as a process: brainstorming, outlining, drafting, polishing, and publishing. Many formats will be explored such as free writing, exposition, description, process analysis, narration, book/movie reviews. Within the course structure there is opportunity for creative expression. Assessment will be frequent and will include portfolio assessment, tests, term projects and publishing assignments. Students whose work is complete and whose attendance is exemplary may opt to participate in literary showcase in lieu of a written exam.

## **READING TUTOR 120**

This course presents a unique opportunity for students with good academic achievement, excellent attendance and good communication skills. Under the guidance of the instructor, tutors work on a one-to-one basis with students who are seeking to raise their reading level and to improve their writing skills. Tutors learn basic reading theory and teaching techniques, and are assigned one student to work with for the term. A real commitment is required (in attendance and day by day planning), since the student depends on the tutor. This is a chance to make a positive contribution to our school, to acquire leadership skills, and to experience a real-life-teaching situation. This course is recommended for those planning careers in education, guidance or the social services.

**Note: Fine Art/Life Role Development credit.**

# **FINE ARTS**

**NOTE:** Fine Arts courses may be used as a Fine Arts/Life Role Development credit except for Aboriginal Art 110.

**NOTE:** Students **MUST** not have any outstanding arts fees from grade 9 or 10 art classes prior to enrolling in any art electives.

## **VISUAL ARTS 110**

The student will be working towards an emphasis on personal expression and individual style. This course focuses on drawing, painting, print making, sculpture, art appreciation and art history.

## **GRAPHIC ART AND DESIGN 110**

If you find logos, comics, T-shirt design or illustrations interesting and would like to learn how to successfully create them, then Graphic Art and Design 110 will prove both enjoyable and useful. You will learn the technical side of the graphic process along with how to communicate your own original ideas. Images will be created by hand and/or scanned and manipulated by the use of a computer.

# HEALTH & PHYSICAL EDUCATION

## **NUTRITION FOR HEALTHY LIVING 120**

Informative class which provides the student with accurate details on healthy food choices and proper nutrition throughout the lifecycle. This course also looks at social concerns regarding food including the problems arising from living in an affluent society as well as the devastation of hunger. Foods labs supplement course content and provide healthy alternatives to conventional meals and snacks. They also allow students the opportunity for a hands – on approach to healthier lifestyle choices without compromising taste. Students interested in pursuing careers in nutrition, dietetics, Kinesiology or personal training, or those wishing to improve their personal knowledge of a healthy lifestyle and overall fitness, should strongly consider this course.

## **OUTDOOR PURSUITS 110**

The focus of this course is to develop personal outdoor recreation skills based on environmental ethics. Class outings are compulsory and may take place during class or for an extended period of time. The class will participate in several half day and full day outings as well as a **mandatory overnight camping excursion**. The course will take advantage of local outdoor adventure areas; activities may include hiking, canoeing, rock climbing, and swimming. (Many of these activities have a high risk of injury when safety guidelines are not followed.) Students must be prepared to plan, lead and evaluate outing experiences from a personal and group perspective.

Students are admitted to the course based on:

1. Strong attendance during the previous academic year.
2. Ability to work independently and collaboratively with minimal supervision.
3. Mature and responsible work ethic.

## **PHYSICAL EDUCATION LEADERSHIP 120**

The focus of this course is to develop leadership skills through the medium of physical education and recreation. The following inter-related units will be considered throughout the semester: Leadership Theory, Sports Administration, Teaching, Officiating, Coaching and sports Medicine. Students will also be required to teach specific lessons/skills as part of their developmental experience. Students will be expected to participate in public speaking and frequently conduct presentations to the class.

In addition to the academic requirements in the classroom, students must also commit to volunteering 30 hours of extracurricular involvement outside the normal classroom setting. Some of this time may be assigned at

## **WELLNESS PHYS ED 110**

This course is intended to allow students an opportunity to be active, while further enhancing their decision-making skills towards personal wellness.

40% of the course will be theoretical in a classroom setting with the remaining 60% spent on practical work in an active setting. This course will help students increase their awareness of the role of physical activity towards a healthy, active lifestyle.

# MATHEMATICS

Mathematics is a useful, exciting and creative area of study that can be appreciated and enjoyed by all students. It helps them develop their ability to solve problems and to reason logically. Mathematics offers to these curious, energetic students a way to explore and make sense of their world.

## FINANCIAL & WORKPLACE MATH 110

This course is the first of two courses designed for entry into many trades and technical programs and for direct entry into the work force. Concepts of right triangles, trigonometry, and angles of elevation and depression are applied to contextual problems. Scale models and drawings of 2-D and 3-D objects are constructed from various views and perspectives. Students are challenged to solve problems that involve numerical reasoning. Costs and benefits of renting and leasing and buying are explored, investment portfolios analyzed and personal budgets developed. Students manipulate and apply formulas in a variety of ways and solve problems using proportional reasoning and unit analysis.

**Pre-requisite:** Geometry, Measurement & Finance 10.

## FOUNDATIONS OF MATHEMATICS 110

This course is a pre-requisite for a second **Foundations of Mathematics** course in Grade 12 providing a pathway designed for entry into academic programs not requiring pre-calculus. It is also a pre-requisite for the pre-calculus pathway. Students develop spatial sense and proportional reasoning through problems that involve rates, scale diagrams and relationships among similar 2-D and 3-D shapes and objects. Students develop logical reasoning skills and apply this to proofs and problems involving angles and triangles, the sine law and the cosine law. Students model and solve problems involving systems of linear inequality in two variables and explore characteristics of quadratic functions. Costs and benefits of renting and leasing and buying are explored and investment portfolios are analyzed.

**Pre-requisites:** Geometry, Measurement and Finance 10 and Number, Relations and Functions 10.

## PRE-CALCULUS 110

This course, followed by later courses in Pre-Calculus and Calculus, is designed for entry into post-secondary programs requiring Pre-Calculus. Students demonstrate an understanding of absolute value of real numbers and solve problems that involve radicals, radical

expressions, and radical equations. Students determine equivalent forms, simplify rational expressions, and solve problems that involve rational equations. They develop an understanding of angles in standard position ( $0^\circ$  to  $360^\circ$ ) and solve for these angles using the three primary trigonometric ratios. Polynomial expressions are factored and absolute value functions and quadratic functions are analyzed and graphed.

Students solve problems that involve quadratic equations and solve, algebraically and graphically, problems that involve systems of linear-quadratic and quadratic-quadratic equations in two variables. They also solve problems that involve linear and quadratic inequalities in two variables, and quadratic inequalities in one variable.

**Pre-requisite:** Foundations 110 is a pre-requisite or co-requisite for Pre-Calculus 11.

## FINANCIAL & WORKPLACE MATH 120

This is the second of two courses in the Financial and Workplace pathway designed for entry into post-secondary trades and technical programs or for direct entry into the work force. Topics include measuring, sine and cosine laws, properties of polygons, transformations of 2-D and 3-D shapes, small business finance, linear relationships, data interpretation, and probability. Opportunity is given to research and present an historical event or an area of interest that involves mathematics.

**Pre-requisite:** Financial and Workplace Math 110 or Foundations of Mathematics 110.

## FOUNDATIONS OF MATHEMATICS 120

This is the second of two courses in the Foundations of Mathematics pathway designed for entry into post-secondary academic programs not requiring pre-calculus. In statistics students are introduced to normal curves, and learn to interpret statistical data, using confidence intervals, confidence levels, and margins of error. To develop logical reasoning students analyze puzzles and games, and solve problems that involve application of set theory and conditional statements. The validity of odds and probability statements are assessed and problems are solved that involve probability of two events, the fundamental counting principle, permutations, and combinations. The binomial theorem is used to expand powers of a binomial. Data is represented using polynomial functions, exponential and logarithmic functions and sinusoidal functions to solve problems. This course completes the Foundations of Mathematics pathway.

**Pre-requisite:** Foundations of Mathematics 110

Mathematics  
Continued

**PRE-CALCULUS A 120**

This course is a pre- or co-requisite for **Pre-Calculus B 120**. Students demonstrate and apply an understanding of the effects of horizontal and vertical translations, horizontal and vertical stretches, and reflections on graphs of functions and their related equations. They are introduced to inverses of functions, logarithms, and the product, quotient and power laws of logarithms and use these laws and the relationship between logarithmic and exponential functions to solve problems. Students are introduced to angles in standard position, expressed in degrees and radians, and to the unit circle. The six trigonometric ratios and the sine, cosine and tangent functions are used to solve problems. First and second degree trigonometric equations are solved algebraically and graphically with the domain expressed in degrees and radians. Trigonometric identities are proven using reciprocal, quotient, Pythagorean, sum or difference, and double-angle identities.

**Prerequisite:** Pre-Calculus 110

**PRE-CALCULUS B 120**

This course is a pre-requisite for **Calculus 120**. Students analyze arithmetic and geometric sequences and series to solve problems. They learn to factor polynomials of degree greater than 2, and to graph and analyze polynomial functions. They also graph and analyze radical, reciprocal and rational functions, building a function toolkit. Students are introduced to the concept of limits and determine the limit of a function at a point both graphically and analytically. They explore and analyze left and right hand limits as  $x$  approaches a certain value using correct notation, analyze the continuity of a function and explore limits which involve infinity.

**Pre-/Co-requisite:** Pre-Calculus A 120

**CALCULUS 120**

This is the last course offered in the Pre-Calculus Pathway, and follows *Pre-Calculus B 120*. This course develops the concepts of average and instantaneous rates of change. Derivatives are determined by applying the definition of a derivative and the derivative rules including the Chain Rule, and are determined for trigonometric functions. Limits and derivatives of exponential and logarithmic functions are found. Calculus techniques are used to sketch graphs of functions, and to solve optimization problems. Problems are solved involving inverse trigonometric functions, involving related rates and involving the application of the integral of a function from a variety of fields. The definite integral and the antiderivative of a function are determined.

**Pre-Requisites:** Pre-Calculus A 120 AND Pre-Calculus B 120.

*This course is recommended for students interested in post-secondary programs in science, engineering and mathematics, though it may not be a required entrance requirement. Students should check entrance requirement for the specific program and institution in which they are interested.*

# SCIENCES

## BIOLOGY 112

This course is geared to students in who have an interest in nature and living things.

Laboratory work and demonstrations will supplement classes. Topics covered are cell biology, classification and a survey of the five kingdoms of living organisms.

## CHEMISTRY 112

This is an introductory course in chemistry. This course continues to build upon chemical concepts learned in grade 10. Students planning on taking nursing, engineering or science (pure and applied) should consider taking this course. Topics covered are atomic bonding, chemical reactions, mathematical calculations related to reactions and solutions.

**Pre- or Co-requisite:** Foundations of Mathematics 110

## CHEMISTRY 111

This is an enriched chemistry course designed for students who are planning to take courses in science or engineering at the university level. Students selecting this course should have better than average ability in science and mathematics. The course covers all of the topics covered in Chemistry 112, with enrichment, and it also includes atomic and molecular orbital theory and gas laws.

**Pre- or Co-requisite:** Foundations of Mathematics 110

## CHEMISTRY 122

Students planning on taking science, engineering or nursing should take this course. It is a continuation of grade 11 Chemistry. Topics covered include organic chemistry, chemical equilibrium, acid-base chemistry and energy changes. A good background in chemistry 11 and Foundations of Mathematics 110 is an asset.

**Pre-requisite:** Chemistry 111/112 & Foundations of Mathematics 110

## HUMAN PHYSIOLOGY 110

The goal of this course is to build an understanding of the physiology of the human body. This course focuses on developing an understanding of the structure and functioning of each human body system, including the causes, symptoms, and treatments of diseases and conditions. This includes the ways in which the health of each system impacts on, and is impacted by the health of the whole body. By the end of the course students will have developed a holistic personal wellness plan, demonstrating their understanding of overall health, human physiology, and the effect of

## BIOLOGY 122

This course is recommended for students who intend to study science at University. Topics covered include the nervous system, the endocrine system, the reproductive system, genetics, the structure of DNA, DNA replication, protein synthesis and evolution. The Biology 111/112 and Chemistry 111/112 courses would be helpful but they are not pre- or co-requisites.

## BIOLOGY 121

This course is designed for students who have demonstrated a high level of achievement in previous science courses. Topics covered include the nervous system, the endocrine system, the reproductive system, genetics, the structure of DNA, DNA synthesis, protein synthesis and an overview of the chordates.

The Biology 111/112 and Chemistry 111/112 courses would be helpful but they are not pre- or co-requisites.

## INTRO TO ENVIRONMENTAL SCIENCE 120

The objective of this course is for students to develop the knowledge base and skills for investigating and analyzing environmental issues and for communicating their knowledge and analysis to others.

Students will:

1. Identify the impact of personal behaviours on the environment, and recognize that caring for and sustaining natural environments is an element of responsible global citizenship.
2. Investigate, analyze and compare historical to current land and water use in New Brunswick and the factors that impact our sustainable development.
3. Analyze and propose solutions to current environmental issues through research, experimentation and a presentation of their findings with respect to the issue.

## PHYSICAL GEOGRAPHY 110

The course provides a general introduction to physical geography and includes such topics as: The Earth as a rotating planet, Weather and Climate systems, Systems and Cycles of the solid Earth, Volcanoes, Tectonics, Landform Evolution, Soils, the Environment and the Biosphere. This course is recommended to those who are planning on pursuing university or college programs in geology, forestry, civil engineering, urban or rural planning or any field related to the mining industry. We recommend that students have a strong showing in Science 10 as we will be covering topics related to both physics and chemistry.

## PHYSICS 112

An introductory physics course designed for students intending to go to university or technical school following graduation. Topics include kinematics and dynamics in one dimension, momentum, work, energy and power, waves, light and sound.

**Pre- or Co-requisite:** Foundations of Mathematics 110

## PHYSICS 122

Students planning to take science or engineering at university should take this course. It is a continuation of Physics 112. Topics covered include 2-dimensional kinematics and dynamics, circular motion, gravitation, electric and magnetic fields, static and current electricity. It is highly recommended to students who are considering taking this course that they have successfully completed Pre-Calculus.

**Pre-requisite:** Physics 112 & Foundations of Mathematics 110

# SECOND LANGUAGES / MODERN LANGUAGES

## Oral Proficiency Assessment: Grade 12

An oral proficiency assessment will be administered to all Grade 12 students enrolled in a French course (ie. Immersion or PIF). Students will receive a certificate of oral proficiency at the end of the grade 12.

## POST INTENSIVE FRENCH

During Intensive and Post-Intensive French, students engage in interesting activities and projects that foster conversations among students while developing reading and writing skills.

Both Intensive and Post-Intensive French promote learning French through language-based activities versus learning subjects, such as science and social studies in French. Intensive French incorporates some of the instructional strategies used to teach English in the primary grades. Listening, speaking, reading, viewing, writing and representing are modeled and developed in an integrated fashion through learning experiences which revolve around a theme or a project that require authentic communication.

Intensive French focuses first on speaking (fluently and accurately) supported by reading and writing. In the course of a day students read and write about topics that they can speak about easily and correctly.

## PIF (Post Intensive French) 110

This course is designed for students who have successfully completed Post-Intensive French in grades 9 and 10. Different themes are explored to improve students' understanding (reading and listening) and production (speaking and writing) of French.

## PIF (Post Intensive French) 120

The course is designed for students who have successfully completed Post-Intensive French in grade 11. Different themes are explored to improve students' understanding (reading and listening) and production (speaking and writing)

## SPANISH 110

The primary objective of this introductory course is to develop initial communicative abilities in the Spanish language. Students taking this course will experience continual practice in communicating and will become familiar with common Hispanic customs and traditions. This course is open to grade 11 and 12 students.

## SPANISH 120

Spanish 120 builds on students' competence and provides students with opportunities to develop their competence to a Basic level as defined by the New Brunswick Second Language Oral Proficiency Scale.

Students completing this course will be able to satisfy minimum courtesy requirements and maintain very simple face-to-face conversations on familiar topics. The student will be able to ask for help and to verify comprehension of native speech in face-to-face interaction.

Students interested in post-secondary Spanish courses are encouraged to take this class as it permits a more in-depth study of the language.  
**Recommended:** Spanish 110

**SPANISH 110 & SPANISH 120** are offered by Distance Ed. only.



# SOCIAL STUDIES

## MODERN HISTORY 112

This course is designed for students who plan to attend post-secondary institutions. Students will learn about the most significant events and forces in the western world over the last 300 years which will include rights and revolution, nationalism and war. Students will become increasingly proficient in historical thinking, research and analysis and will demonstrate a competence in written and oral expression.

**Recommended:** Final mark of 70% in Social Studies 10

## MODERN HISTORY 111

This is an enriched course for students wishing an in depth approach to history. Beginning with the reasons for the French Revolution and ending with the impact of the Cold War, students will use historical thinking, research and analysis to examine events and their consequences.

Extensive use is made of the seminar method and Socratic circles. For the university bound student, for the student who reads avidly and for the student who likes to express himself/herself both orally and in writing, this course should interest you.

## MODERN HISTORY 113

This course will enable the student to examine and become aware of the causes and impact of certain historical events and forces that have shaped the modern world. Topics include the French and Industrial Revolutions, war and nationalism, totalitarianism and total war, crimes against humanity, and war by proxy. Students will practice historical thinking skills and be able to make connections between historical events and the present.

This course will appeal to students with various learning styles.

## CANADIAN HISTORY 122

This is a Canadian History course for grade 11/12 students interested in history and wanting to learn more about the five key relationships that make up Canadian History and how they have evolved over time. Emphasis will be on relationships between English and French, Aboriginal peoples, Immigrants and individuals and the State and our relationships with the United States and the United Kingdom.

**Recommended:** Final mark of 70% in History 112

## LAW 120

This course will provide students with a basic knowledge of the Canadian legal system and its operations as well as an awareness of the impact of the law on their lives. It will provide an introduction to the concepts and principles of civil and criminal law. Major topics include foundations of the legal system, criminal law, human rights, torts, and family law. Students will experience practical exposure to the law through guest speakers, a courtroom visit and daily current event discussions.

## WORLD ISSUES 120

This course is a study of global issues. It focuses on current world problems with emphasis on current events, their historical background, present situation, attempted solutions and ongoing problems. Students investigate current issues and country conflicts, with seminar presentation, Socratic circles and discussion.

## SOCIOLOGY 120

This course is an introduction to sociology. Students will develop the ability to both examine and question the world around them. They will explore the links between society and individual experiences. Through various teaching and learning methods, students will learn about such topics as culture, socialization, social control, social movements, and a special interest topic through a seminar presentation. This is an excellent course for anyone interested in social issues, social inequities, and social justice.

**Recommended:** Final mark of 70% in Grade 111/112 Modern History

## ECONOMICS 120

This course is an introductory economics course aimed at familiarizing students with economic principles and providing them with an appreciation of the major economic issues in our society such as unemployment, inflation, GDP, provincial and federal budgets, as well as with programs, strategies, and regulations created to deal with these issues. Units include introductory concepts, supply & demand, the stock market, economic indicators, money and the Canadian banking system and stabilization policy.

# High School Mathematics Pathways

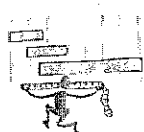


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An understanding of math is essential for all students in today's world. The K-12 mathematics curriculum in New Brunswick is designed to help students prepare for whatever they choose to do after high school. The curriculum is focused on providing students with the skills and knowledge to confidently solve problems and contribute to society.

The courses for Grades 9 to 12 are organized into three "pathways": Financial and Workplace Mathematics, Foundations of Mathematics and Pre-Calculus. This brochure explains the pathways and the courses included in each.

## ◆ Financial and Workplace Mathematics



## ◆ Foundations of Mathematics



## ◆ Pre-Calculus



Each pathway is designed to provide students with the mathematical competencies and critical thinking skills they will need after high school. Students should select courses in the pathway that best fits their interests and plans for after high school, similar to selecting other elective courses. Each pathway provides students with a different focus of math concepts and skills. Students may choose to take additional mathematics courses beyond what they need to graduate to better prepare them for what they want to do after high school.

## REQUIRED COURSES

For graduation, students will successfully complete:

Mathematics 9 (Grade 9)

Geometry, Measurement, and Finance 10 (Grade 10)

Number, Relations, and Functions 10 (Grade 10)

Plus pass one of the following Grade 11 courses:

Financial and Workplace Mathematics 110

OR

Foundations of Mathematics 110



How are pathways different from levels?

Levelled courses are developed for different academic abilities. "Pathways" of courses are designed to better meet your interests and needs for after high school.

What if I don't know what I want to do after I graduate? Can I switch pathways?

Yes. If you have started to take courses in one pathway, you can take courses in another one, as long as you complete the prerequisites. You will receive credit for all math courses you take.

Should I take more math courses, even if I don't need them to graduate?

You may need specific courses for entrance to post-secondary programs. You will also increase your math skills and keep them current which will help you no matter what you decide to do after high school.

For more information, contact the Guidance Counsellor at your school or go to: [www.careercruising.com](http://www.careercruising.com) (login information available from Guidance Dept.)

### GRADE 9:

**Mathematics 9**

**Length:** Full year

**Prerequisite:** Grade 8 mathematics

**Topics:** exponents and bases, linear relations and equations, polynomials, circle properties, surface area, scale diagrams, data collection and displays, histograms, probability

### GRADE 10:

**Geometry, Measurement and Finance 10**

**Length:** 1 semester

**Prerequisite:** Mathematics 9

**Topics:** Pythagorean Theorem, polygons, angles, trigonometric ratios, metric and Imperial systems of measurement, surface area and volume, unit pricing, currency exchange, income (gross & net pay), credit cards, loans, interest

### GRADE 10:

**Number, Relations and Functions 10**

**Length:** 1 semester

**Prerequisite:** Mathematics 9

**Topics:** prime factors, common factors, square and cube roots, irrational numbers, integral and rational exponents, polynomial expressions, trinomial factoring, linear relations and functions, slope, distance formula, midpoint formula

# High School Math Pathways: Which one is best for you?



**FINANCIAL AND WORKPLACE MATHEMATICS** This pathway is designed for students who plan to take post-secondary programs that require applied mathematics or who plan to enter the workforce directly after high school.



## FOUNDATIONS OF MATHEMATICS

This pathway is designed for students who plan to take post-secondary academic programs that do not require calculus.



## PRE-CALCULUS

This pathway is designed for students who plan to take post-secondary programs that require calculus.



### GRADE 11 COURSES

#### **Financial and Workplace Mathematics 110**

**Length:** 1 semester

**Pre-requisite:**

*Geometry, Measurement, and Finance 10*

**Topics:** right triangles, trigonometry, scale models & drawings, numerical reasoning, renting & buying, investment portfolios, personal budgets, application of formulas, slope, proportional reasoning.

**Opens doors to programs such as:**

**College diplomas:** Early Childhood Education, Firefighting, Drafting, Welding, Plumbing, Carpentry.

**Bachelor degrees:** Arts and Fine Arts

#### **Foundations of Mathematics 110**

**Length:** 1 semester

**Pre-requisites:**

*Number, Relations, and Functions 10 and Geometry, Measurement, and Finance 10*

**Topics:** numerical & logical reasoning, angles & triangles, sine & cosine law, systems of linear inequalities, quadratic functions, renting & buying, investment portfolios

**Opens doors to programs such as:**

**College diplomas:** Medical Technology, Business Administration, Practical Nursing

**Bachelor degrees:** Arts and Fine Arts

#### **Pre-Calculus 110**

**Length:** 1 semester

**Pre- or Co-requisite:**

*Foundations of Mathematics 110*

**Topics:** absolute value functions, radical expressions & equations, rational expressions & equations, angles & trigonometric ratios ( $0^\circ$ - $360^\circ$ ), polynomial factoring, systems of equations, quadratic functions & equations, linear & quadratic inequalities.

**Opens doors to programs such as:**

**College diplomas:** Engineering and Environmental technology.

**Bachelor degrees:** Nursing

### GRADE 12 COURSES

#### **Financial and Workplace Mathematics 120**

**Length:** 1 semester

**Pre-requisite:**

*Financial and Workplace Mathematics 110 or Foundations of Mathematics 110*

**Topics:** measuring, sine & cosine laws, properties of polygons, transformations of 2-D & 3-D shapes, small business finance, linear relationships, data interpretation, probability.

**Supports:**

**College diplomas:** Art and Design, Forest Technology, Business

#### **Foundations of Mathematics 120**

**Length:** 1 semester

**Pre-requisite:**

*Foundations of Mathematics 110*

**Topics:** normal distribution, standard deviation, confidence intervals, set theory, conditional statements, probability, binomial theorem, polynomial, exponential, logarithmic & sinusoidal functions.

**Opens doors to programs such as:**

**College diplomas:** Engineering Technology, Computer Technician, Pharmacy Technology

**Bachelor degrees:** Nursing, Kinesiology, Business Administration, Economics, Psychology

#### **Pre-Calculus A 120**

**Length:** 1 semester

**Pre-requisite:**

*Pre-Calculus 110*

**Topics:** graphs of functions & related equations, inverse, radical, exponential & logarithmic functions, angles in standard position in degrees & radians, unit circle, trigonometric ratios & sine, cosine and tangent equations to solve problems, trigonometric identities.

**\*Most post-secondary programs that require Pre-Calculus A 120, also require Pre-Calculus B 120**

#### **Pre-Calculus B 120**

**Length:** 1 semester

**Pre- or Co-requisite:**

*Pre-Calculus A 120*

**Topics:** arithmetic & geometric sequences & series, polynomial factoring & functions, reciprocal and rational functions, function toolkit permutations, combinations & binomial theorem, limits & continuity of functions.

**Opens doors to programs such as:**

**Bachelor degrees:** Science, Computer Science, Engineering, Mathematics

#### **Calculus 120**

**Length:** 1 semester

**Pre-requisites:**

*Pre-Calculus A 120 and Pre-Calculus B 120*

**Topics:** rates of change, derivatives of functions, derivative rules, inverse trig functions, optimization problems, definite, integrals, antiderivatives, application of integrals

**Supports:**

**Bachelor degrees:** Science, Computer Science, Engineering, Mathematics



It is important to confirm entrance requirements for the specific program(s) in which you are interested as these requirements can vary between institutions and programs of study.

