**Bonar Law Memorial School**

**Course Selection Manual**

**2019-2020**

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**Introduction**

This guide is for students entering Grades 11 or 12 and is designed to help you chose courses that will meet the New Brunswick High School Graduation requirements and reflect your future post-secondary and career goals.

Your teachers can help provide you with direction and information, and are more than willing to help you with your course planning and selection. Students should take every opportunity to discuss their course options with their parents, guardians, and teachers. We are all here to help you!

**General Information**

****Unlike subject areas in Grade 9 and 10, courses in Grades 11 and 12 are called credit courses. Each course successfully completed earns credits towards graduation. The successful completion of the Grade 10 program is a prerequisite for enrollment in Grade 11 and 12 credit courses. If a Grade 10 subject is not successfully completed, a student may be required to repeat the course, complete the course in Grade 11 or attend Summer School (depending on the course and number of incomplete courses).

**Course Load:**

Students are required to register for 5 courses per semester. In Grades 11 and 12 students will attempt a total of 20 credits over 4 semesters. A final course mark of 60% or greater is required to earn a high school credit.

**Types of Courses:**

There are two types of Grade 11 and 12 courses, compulsory and elective. Compulsory courses are required for graduation and elective courses are available to support students’ interests and future career plans.

**Course Levels:**

All course names include a three-digit number. The first two digits indicate the grade level (11 or 12); the third digit indicates the level at which the course is offered:

Level 2: university, community college and private training institution preparation

Level 3: non-technical community college, private training and business college preparation

\*\*As a general rule, courses designated as Grade 11 are meant for students in Grade 11 and courses designated as Grade 12 are meant for students in Grade 12. However, students may take either level in either grade provided the prerequisites have been met.

**Choosing Level 1 and 2 courses:**

Level 2 courses are intended for those students who are planning on attending university and Level 3 Courses are intended for those students who are planning on attending college.

Students, with the help of their parents and teachers, are asked to consider their course selections carefully at the time of registration. Students should read the course descriptions, which are included in this manual, carefully and talk to individual teachers before making their final course selections. Consideration should be given to the course level, the entry requirements of their chosen field of post-secondary study, as well as their work habits and individual abilities and interests. Some courses also have a prerequisite/co-requisite or a special application process.

For example:

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| --- | --- |
| Course | Pre-requisites/Special consideration |
| Outdoor Pursuits 110 | Grade 12 students, limited enrolment |
| Co-Op Education120 | Grade 12 students, application is required |
| Physics 112 | Pre-requisite: Foundations of Math 110  \*It is also recommended that students have a minimum average of 80% in Numbers, Relations, and Functions 10 |
| English 112/113 | English Language Arts 10 |
| Biology 112 | Pre-requisite: Geometry, Measurement and Finance 10 |
| Chemistry 122/Physics 122 | Pre-requisite: Foundations of Math 110, Chemistry 112/Physics 112 |
| Biology 122/Chemistry 112 | Pre-requisites: Geometry, Measurement and Finance 10 and Number, Relations and Functions 10  Pre or Co-requisite: Foundations of Math 110 |
| Foundations of Math 110\* | Pre-requisite: Numbers, Relations, and Functions 10 AND Geometry, Measurement and Finance 10 |
| Pre-Calculus 110\* | Pre-requisite: Foundations of Math 110 |
| Workplace Math 110\* | Pre-requisite: Geometry, Measurement and Finance 10 |
| Financial and Workplace Math 120\* | Pre-requisite: Financial and Workplace Math 110 or Foundations of Math 110 |
| Foundations of Mathematics 120\* | Pre-requisite: Foundations of Math 110 |

\*The New Brunswick Mathematics Curriculum has undergone significant changes over the last few years. In order to assist students in planning their course selections and course levels, please refer to the **“High School Mathematical Pathways”** of this booklet for more information on compulsory and pre-requisite courses.

**Distance Education Courses:**

A number of courses are offered through the Department of Education’s Distance Education service. Distance Education courses are offered on-line via the Internet, and students work independently on projects and assignments. Although students are assigned an instructor and a local facilitator, **students require a high degree of self-discipline and organizational skills in order to be successful in these courses.** Students need prior approval from the Administration or Guidance Counselor before enrolling in a Distance Education course.

**Course Changes:**

Request for course changes will be considered only if supported by academic need, post-secondary admissions requirements/career direction. As well, enrolment in some courses may be limited for safety reasons (i.e. Industrial courses, Outdoor Pursuits 110). All course changes are completed through the Guidance Centre and will not be considered after the second full week of classes in each semester, unless there are extenuating circumstances.

**Changing courses once the semester is underway is not always possible; it pays to choose your courses carefully the first time!**

**New Brunswick High School Graduation Requirements**

In order to graduate, you must successfully complete the Grades 9 and 10 programs and pass 17 out of 20 credits in Grades 11 and 12. Of the 17 credits, seven credits are compulsory credits. The remaining ten courses are electives. A minimum of 5 courses (English and 4 others) must be taken at the Grade 12 level. You must also successfully complete the English Language Proficiency Assessment\*.

**Compulsory Courses:**

English 112 or 113 (full year course, 2 credits)

English 122 or 123 (1 credit)

One of Financial and Workplace Math 110 or Foundations of Math 110 (1 credit)

Modern History 112 or 113 (1 credit)

**One Science Credit:**

Biology 112/122

Physics 112/122

Chemistry 112/122

Introduction to Environmental Science 120

Automotive Electrical Systems 120

Physical Geography 110

Robotics and Automated Technology 120

Human Physiology 110

**One Fine Arts or Life Role Development Credit:**

Visual Arts 110, 120

Music 112

Theatre Arts 120

Reading Tutor 120

Fine Arts 110

Individual and Family Dynamics 120

Co-Op Education 120

Outdoor Pursuits 110

Physical Education Leadership 120

Entrepreneurship 110

Wellness through Phys Ed 110

Graphic Art and Design 110

Nutrition 120

\*All students in New Brunswick write the English Language Provincial Assessment (ELPA) in Grade 9. Students must achieve a score of acceptable or better the Reading component of the Assessment to receive a NB High School Diploma. Students who score a rating of “BAA” the ELPA in Grade 9 will have the opportunity to rewrite the Assessment in their Grade 11 and 12 years, and may be required to enroll in Learning Strategies 110/120 as a means of gaining additional literacy support.

**It is assumed that all students in Grade 10 will successfully complete Geometry, Measurement and Finance 10; Numbers, Functions, and Relations 10; and English Language Arts 10 before they will be permitted to take selected Math and English courses at the Grades 11 and 12 levels.**

**Preparation for Post-Secondary Education**

Preparing for post-secondary education can be a stressful task, but there are many valuable sources of information out there for students. Many post-secondary institutions offer “Student for Day” and Open Campus programs where students can attend classes, meet with instructors, and visit campus facilities. You can contact individual institutions directly or see your Guidance Counselor for assistance.

The career exploration website MyBluePrint offers online career guidance and planning tools such as resume building, interest inventories and other helpful links.

When researching post-secondary institution websites, use key words such as “admissions”, “prospective students”, “future students” and “how to apply” to help search for relevant information. Also, visit the Association of Universities and Colleges of Canada website at [www.aucc.ca](http://www.aucc.ca) for information about post-secondary options across Canada.

Other useful websites include:

[www.nbcc.ca](http://www.nbcc.ca) New Brunswick Community College (6 campuses)

[www.oultoncollege.com](http://www.oultoncollege.com) Oulton College (Moncton)

[www.easterncollege.ca](http://www.easterncollege.ca) Eastern College (8 campuses)

[www.unb.ca](http://www.unb.ca) University of New Brunswick

[www.stu.ca](http://www.stu.ca) Saint Thomas University

[www.mta.ca](http://www.mta.ca) Mount Allison University

[www.dal.ca](http://www.dal.ca) Dalhousie University

Students who wish to apply for post-secondary studies following High School should take great care in selecting their courses in Grades 11 and 12. It is important to ensure that course selections reflect the entrance requirements of the institution of your choice. The charts below give some general examples, but students are encouraged to check with the individual institutions before making a final decision regarding course selections. Admissions requirements are generally based upon the average mark attained on a combination of required and electives courses. Having the minimum number of courses required/minimum average for admissions does not always guarantee acceptance at the institution of your choice.

**University BOUND?**

|  |  |
| --- | --- |
| Bachelor’s Degree | Minimum Entrance Requirements |
| Arts (BA) | -English 122 (min. grade of 60%), plus 5 electives |
| Science (BSc) | -English 122  -Pre-Calculus 12A and 12B  -Chemistry 122 and one of Physics 122, Biology 122, Geology 122  -I elective |
| Business Administration (BBA) | -English 122  -Pre-Calculus 12A and 12B (or Foundations of Mathematics 120 depending upon post-secondary institution)  -3 electives |
| Engineering (BEng) | -English 122 (minimum grade of 70%)  -Pre-Calculus 12A and 12B (minimum grade of 70%)  -Chemistry 122 (minimum grade of 70%)  -Physics 122 (minimum grade of 70%)  -1 elective |
| Nursing (BN) | -English 122 (minimum grade of 70%)  -Pre-Calculus 11 or Foundations of Mathematics 120 (minimum grade of 70%)  -Chemistry 122 (minimum grade of 70%)  -Biology 122 (minimum grade of 70%  -2 electives |
| Computer Science (BCSc) | -English 122 (minimum grade of 60%)  -Pre-Calculus 12A and 12B (minimum grade of 65%)  -1 of Physics 122, Chemistry 122 or Biology 122 (minimum grade of 65%)  -2 electives |
| Fine Arts (BFA) | -English 122  -Art portfolio or music audition is usually required |



Course usually accepted at Canadian universities:

Pre-Calculus 12A/B Foundations of Mathematics 120

Biology 122 Canadian Geography 120

Canadian History 120 Chemistry 122

Economics 120 Physics 122

French 122 Canadian Literature 120

Political Science 120 World Issues 120

Check with individual universities when considering the following electives:

Co-op Education120 Computer Science 120

Environmental Science 122 World Issues 120

Intro to Accounting 120 Journalism 120

Law 120 Media Studies 20

Theatre Arts 120 Visual Arts 120

PE Leadership 120 Writing 110

**CoLLEGE BOUND?**

Students interested in applying to a public or private college following graduation should also consider their course selections carefully. Admissions requirements often differ from college to college and from program to program. Some courses may require more advanced level High School courses, or specialized courses. Admissions requirements may also include a student portfolio, a personal interview and letters of reference.

|  |  |  |
| --- | --- | --- |
| College | Program(s) | Admissions Requirements |
| New Brunswick Community College (NBCC) | |  | | --- | | Automotive Service Technician, Bricklaying, Criminal Justice, Early Childhood Education, Education Assistant, Electrical, Human Services, Machinist, Office Administration, Refrigeration and Air Conditioning Technician, Sheet Metal Fabrication | | -HS Diploma, Adult HS Diploma, or GED Diploma of HS Equivalency (Profile A) |
| New Brunswick Community College (NBCC) | Business Administration: Accounting, Business Administration: Investment Management, Business Administration: Marketing, Civil Technician, Electronic Game Developer, Welding Technology | -HS Diploma, Adult HS Diploma, or GED Diploma of HS Equivalency  -Foundations of Mathematics 110  (Profile B) |
| New Brunswick Community College (NBCC) | Health Information Management, Medical Laboratory Assistant, Process Control Technical | -HS Diploma, Adult HS Diploma, or GED Diploma of HS Equivalency  -Foundations of Mathematics 110  -2 Sciences, including one fromBiology 112 or 122, Chemistry 112 or 122, Physics 112 or 122  (Profile C) |
| New Brunswick Community College (NBCC) | Civil Engineering Technology, Electrical Engineering Technology, Power Engineering Technology, Respiratory Therapy | -HS Diploma, or Adult HS Diploma, or GED Diploma of HS Equivalency  -Pre-Calculus 110  -2 or 3 Sciences, including onefrom Biology 112 or 122, Chemistry 112 or 122, Physics 112 or 122  (Profiles I and J) |
| New Brunswick Community College (NBCC) | Medical Laboratory Technician | -HS Diploma, or Adult HS Diploma or GED Diploma of HS Equivalency  - Foundations of Mathematics 110  -3 Sciences, at least one from Biology 112 or 122, Chemistry 112 or 122, Physics 112 or 122  (Profile D) |
| NB College of Craft and Design | All programs | -It is recommended that students take either Financial and Workplace Mathematics 12 or Foundations of Mathematics 12 for admission. |
| Oulton College | Dental Hygiene | 3 credit university-level Biology, Chemistry and English |
| Oulton College | Pharmacy Technician | Foundation of Math 110 or 120  Level 2 English and Biology  Physics 11 or 12 considered an asset |

\*Admissions requirements are subject to change from year to year-students should check with individual institutions for the most up to date admissions information.

\*\*Effective April 1st of each academic year, students in grade 11 are permitted to apply to NBCC programs for early admissions status

**Above all, selecting courses for Grades 11 and 12 requires some thought. Students need to consider their post-secondary and career plans, as well as their abilities and work habits. Ask questions and gather as much information as possible before you make your final decision.**

**If you have any questions about course registrations, Graduation requirements or post-secondary options, please feel free to contact Guidance.**

**COURSE DESCRIPTIONS**

Please note that elective course offerings vary from year the year, depending upon demand, staffing and timetable constraints.

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**THE ARTS**

**THEATRE ARTS 120**-presents the exciting world of theatre and provides students with an opportunity to develop speaking and delivery skills, critical and creative thinking skills, and to build self-confidence. Group activities (charades, pantomime, and skits) and presentations are major course components and are 75% of the student’s mark. Students learn terminology related to the theatre, theatre history (Greek, Roman and Elizabethan periods) and the roles of the various individuals involved in the theatre.

**VISUAL ARTS 110-** builds on the experience and knowledge gained in Visual Arts 9/10. The studio work remains in the areas of drawing, painting, printmaking and 3-dimensional work and stresses personal expression and the development of individual imagery and there are further requirements in art criticism and art history.

**VISAUL ARTS 120-** Students work through a review of skills and concepts and choose blocks that lead to advanced work on a particular medium. Students are required to critique, in writing, aspects of process and product.

**ENGLISH LANGUAGE ARTS**

**ENGLISH LANGUAGE ARTS 112-** is designed to provide the academic student with exposure to various literary genres and to enhance reading, writing, speaking and literary skills. Students will study the short story, essay, novel, poetry and drama (Shakespeare or contemporary). An exam, worth 30% of the final mark, is written at the end of the course. English 112 is a full year, two-credit course. Prerequisite: English 10 and a teacher recommendation.

**ENGLISH LANGUAGE ARTS 113-** is designed to allow students to read and respond to a wide variety of texts. Units of study will allow students to explore different forms of public speaking and oral presentations, from debates to seminars and speeches. There will also be an emphasis upon contemporary drama. Special consideration will be given to developing various reading and comprehension strategies in students, as well as to projects which consider the philosophies of a differentiated curriculum. English 113 is a full year, two credit course. Prerequisite: English 10 and teacher recommendation.

**ENGLISH LANGUAGE ARTS 122**- as with English 112, this course further examines the various genres introduced in English 10 and 11, but uses a more advanced level of subject matter. Prerequisite: English 112.

**ENGLISH LANGUAGE ARTS 123**- is designed to enable students to examine a variety of texts and to provide students with a variety of writing/responding situations. Special attention will be given to developing various reading and comprehension strategies in students, as well as projects which consider the philosophies of a differentiated curriculum. Prerequisite: English 112 or 113.

**MEDIA STUDIES 120-** offers an introduction to the impact of mass media on the individual and society. The television/video unit is compulsory, accompanied by a choice of three additional units on advertising, film, print and electronic journalism, photography, drama, radio/sound communication. Primarily, the student learns through experiment and exploration; the course is practical and activity based. Students must be mature enough to meet high levels of independence, reliability and responsibility.

**READING TUTOR 120-** pairs students with younger struggling readers. Teachers coordinate the program, provide tutor training, and oversee the activities of the partners and offer guidance and support to both tutors and readers. Tutors select the reading materials and plan and implement the daily activities for the readers. Tutors acquire reading/writing tutoring skills and develop interpersonal, organizational, planning and problem solving.

**LEARNING STRATEGIES 110-** is a required course for those students in Grades 11 and 12 who have not successfully completed the Reading component of the Grade 9 English Language Proficiency Assessment. This course is designed to focus upon fundamental reading and writing strategies.

**LANGUAGES**

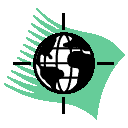
**POST INTENSIVE FRENCH 112, 122-** the post intensive French language program offers a multi-dimensional approach to the teaching and learning of a second language. These courses cover the language skills necessary for effective communication in French in daily situations. They are designed for students who wish to broaden their communicative ability in the second language. Post intensive French 112 and 122 are not appropriate for students with a background in French immersion.

**FI LANGUAGE ARTS 110, 120-** uses a multi-dimensional approach to the teaching and learning of a second language. These courses emphasize the use of the language as an instrument for communication and reflection and a factor in students’ personal development.

**SPANISH 110 (on-line) -** employs an interactive tutorial method of course delivery to introduce students to the basic elements of the Spanish language and Hispanic culture. Students will have the opportunity to practice the language and learn through live, online group sessions. Course themes, including Who Am I?, My friends, This Is my Family, My House Is Your House and My Town, and topics for virtual partner projects have been selected with the interests of the student in mind.

**SPANISH 120 (on-line)-** requires students to improve their knowledge and ability level in the language. This will be accomplished by engaging students in the exploration of the Hispanic culture through the areas of travel, fashion and music. Over the course of the term, students will be required to engage in various online group sessions and will be expected to complete projects with a virtual partner.

**MI’KMAQ 110-** students learn to read and write in Mi'kmaq using the Francis Smith writing system. Introductory lessons focus on the letters and their corresponding sounds. Later lessons include pronouns, forming the possessive and verb conjugation. Basic vocabulary is introduced throughout the course. Students will be provided with opportunities to practice their newly acquired skills through dictations, question sheets and online activities.



**SOCIAL STUDIES**

**MODERN HISTORY 112-** is a compulsory course for academic students; History 112 covers topics from the end of traditional society in Western Europe (17th and 18th century) to the end of the 20th century. It includes such areas as the French and Industrial Revolutions, 19th Century Conflict Ideas and the 20th Century-World Wars, Totalitarianism, the Holocaust, and the Cold War. This course is primarily research based and requires the completion of a series of assignments.

**MODERN HISTORY 113-** is delivered using traditional and non-traditional methods; this course covers the period of the 20th century. It includes a mix of lectures, question and answer, group and individual assignments and projects. Topics include World Wars 1 and 2, Totalitarianism, the Holocaust, the Roaring Twenties, and the Great Depression and the world since 1945.

**PHYSICAL GEOGRAPHY 110**- is considered both a science and a social studies credit. It introduces students to the earth's physical systems. A general introduction is followed by studies of the universe, the earth in space, map reading and imagery interpretation. Students may then decide to study either climate or geology. Climate includes the study of weather systems, weather maps and forecasting as well as the world's natural regions. Geology includes, among other topics, the study of continental drift, volcanoes, earthquakes and weathering. Weekly assignments must be submitted and tests will be written as each unit is completed

**CANADIAN GEOGRAPHY 120-** is an introductory course on the economic and social geography of Canada. The course is designed to introduce Canada, its landforms and climate, and how these have related to our patterns of settlement and the development of our economic base. It is a study of the ever-changing cultural and physical landscapes of Canada and how they impact on each other.

It examines physical systems and how they inter-relate with man-made systems and structures. The course concludes with a look at an environmental issue currently of importance to the lives of Canadians. The course is completed through a series of specific subject-related projects.

**CANADIAN HISTORY 122-** is a study of Post-Confederation with an emphasis on the 20th century. Units are: MacDonald Era: Expansion and Consolidation; 1867-1896, Canada’s Century Begins: 1896-1920, New Challenges and New Ideas: 1920-1945, Canada and the Global Community; 1945-Present. Themes may include English-French relations, First Nations, Continentalism, Regionalism, Canadian Identity and social themes. The roots of these themes will be woven in the Post-Confederation study.

**NATIVE STUDIES 120-** the course covers topics as Treaties, Residential Schools, NB First Nation Communities, Legislation and Policy Impacting First Nations, Post-Colonization, Reconciliation, The UN Declaration of Indigenous Rights, and First Nations and Global Conflicts.

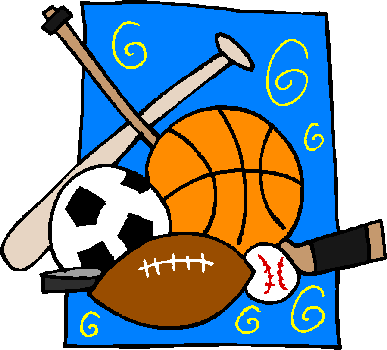
**ECONOMICS 120-** provides students with a basic understanding of the Canadian economic system and the interacting roles of its major economic institutions. The course is designed to develop an awareness of the concepts and techniques used in making economic decisions and to ensure a better understanding of the major economic problems of the day. Students will be required to complete several assignments as well as one major research project in this course.

**LAW 120-** introduces students to general concepts of the law and the courts. Areas of study include the origins of the Canadian legal system, criminal law, civil and human rights and torts/civil law. Case studies are used to illustrate situations within these areas of law. Students will communicate with the distance facilitator using email and chat. Communication will also involve an oral component, using Intertwine, to increase students' aural communication skills.

**WORLD ISSUES 120**- examines various issues that are global in nature and that require a global solution. The concept of the global village is studies, as is the relationship between nations as players in the global community.

**PHYSICAL EDUCATION**

**HEALTH AND PHYSICAL EDUCATION 120-** is designed for grade 12 students interested in physical activities and healthful living, combined with a desire to develop leadership skills. Time outside of regular school hours is required for some class projects. Projects undertaken involve both the school and the community. Themes may include management, teaching, coaching, officiating, first aid, and organizational planning and leadership theory.

**OUTDOOR PURSUITS 120-** will develop personal outdoor recreation skills based on environmental ethics. Students will gain a greater appreciation for the natural environment and its potential to enhance an active living lifestyle. Students must complete a series of out-trips that may be day-trips, overnight excursions or extended trips. This course will take advantage of local outdoor access and could include camping, hiking, canoeing, archery and other adventure activities. Students must be prepared to lead and evaluate out-trip experiences from personal and group dynamic perspectives.

**WELLNESS THROUGH PHYS. ED. 110-** is intended to allow students an opportunity to be active, while further enhancing their decisions making skills towards personal wellness. This course will help students increase their awareness of the role physical activity in shaping a healthy, active lifestyle.

**YOGO 110**- will examine various styles and characteristics of yoga. It is an expectation that students will develop their personal practice of yoga that can be pursued over the long term for personal fitness and recreation. Students will be participating in a variety of activities that will include both physical practice and classroom theory.

**FAMILY STUDIES**

**HUMAN SERVICES 110-** increases student awareness of the importance of human service work and aims to prepare them for future employment and/or post-secondary education. Due to the increasing elderly population and the trend towards “at home care” versus “institutional care,” there is a need for trained human service workers. The course focuses on the skills to prepare people to work with the elderly and the handicapped, and involves community activities.

**EARLY CHILDHOOD SERVICES 110-** helps students understand the role of the caregiver as well as the parents in a child’s development. The theory in Early Childhood Services 110 best applies to the age group infancy to two year olds. It prepares students for entry-level jobs in the child care profession through knowledge of physical, social, emotional and intellectual development. This course will focus on the skills to prepare young people to work with children.

**CHILD STUDIES 120-** explores how children develop physically, socially, emotionally, and intellectually. Issues are discussed regarding the “quality of life” and human development, “society’s basic unit,” the family plus basic parenting skills in our complex, consuming, and technological society. The importance of the need to provide love, continuity and stability, as well as basic food, clothing, and shelter requirements is addressed. The course includes a variety of human-centered experiences from conception through to the development of the school age child. Observations and experiences with children are an essential part of this program.

**NUTRITION FOR HEALTHY LIVING 120**- studies the science of food relating to Canada’s Food Guide and the relationship between food and nutrition and wellness. Safety and sanitation, dietary planning, food preparation and the concept of nutritional wellness are emphasized. Nutrition issues are discussed regarding food on a global and regional level, food trends and lifestyles, eating disorders, and new food technologies. Hands-on experiments are an integral part of this course.

**INDIVIDUAL and FAMILY DYNAMICS 120-** takes a look at life and living within the family. Topics of the course include: personality development, understanding of self, adult roles and relationships, marriage preparation and planning, pregnancy and infant development, social issues and family crises. Students have an opportunity to examine their own family roles and to look ahead to roles they may hold in the future.

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**BIOLOGY 112**- is a life science course which encourages students to develop their scientific thinking skills and conceptual ability through the use of class discussions, biological theory and lab investigations. Topics include: Characteristics of living thing; Cell structure and function; Classification systems; Bio-diversity; specialized systems; Adaptations and interactions that allow survival in the natural world.

**BIOLOGY 122**- is a further study of life sciences, issues in biology and biological systems that builds upon previously explored topics of 112. Biology 122 curriculum is enhanced with class discussions of current biological issues and advanced lab investigations. Topics include: organ systems; reproduction; genetics; ecology. Prerequisite: Biology 112.

**INTRODUCTION TO ENVIRONMENTAL SCIENCE 120-** The objective of this introductory 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 investigate population growth and resource limitations, ecology of natural systems, historical and current approaches to the environment from various worldviews, and sustainability of natural environments.  They will explore the interconnectedness of natural ecosystems and human dependence and impact on these systems.  They will recognize the importance of considering environmental, social, cultural and economic aspects of an issue to find solutions.  Students will complete a research project on a current issue and present their findings, and will further explore this and other environmental issues through various methods of inquiry.

**CHEMISTRY 112**- include the study of Atoms; Molecules; Atomic Theory; Periodic Table of Elements; Compounds; Mixtures; Chemical formulas and equations; Solutions; Stoichiometery of solids, liquids and gases. This course is a prerequisite for Chemistry 122.

**CHEMISTRY 12**- topics include: Energy changes; Reaction enthalpies; Equilibrium in chemical systems; Acid-base chemistry and Organic Chemistry. Quantitative and graphical analysis skills are an integral component of this program. Prerequisite: Chemistry 112.

**PHYSICS 111-121**- are sequential courses that utilize the discovery approach to scientific learning. Since these are enriched courses, students should have a genuine interest in science and better than average achievement in science and mathematics. The scientific method is used in gathering experimental data, and laboratory work is the focus of these courses. Topics are the same as in Physics 112-122, but the depth of coverage is greater.

**PHYSICS 112**- includes the study of energy transfer by waves; properties of sound; fundamentals of light; reflection and refraction; mirrors and lenses; static and current electricity as well as an introduction to linear motion. This course is a prerequisite for Physics 122.

**PHYSICS 122**- Topics include: Linear motion; 2D-Forces; Impulse; Momentum; Conservation Laws and Power. Since quantitative and graphical analysis skills are a large component of this program, students should have good math skills. Prerequisite: Physics 112.

**HUMAN PHYSIOLOGY 110**- is designed to appeal to a wide range of learners including students for whom this will serve to fulfill their science graduation requirement and students who will take additional science courses. A study of Human Physiology will be relevant to every student, providing the, with the tools they will need to make informed choices about their own health and that of others It will also be relevant to those students who will be going on to careers in the social sciences, health care abd medicine. This course focuses on the biology and healthy functioning of all the major human body systems and how wellness ca be compromised by struggles with mental and social health, lifestyle choices and disease.

**MATHEMATICS**

**FINANCIAL and WORKPLACE MATHEMATICS 110**- is designed to provide students with the mathematical understandings and critical-thinking skills identified for entry into the majority of trades and for direct entry into the work force. Topics include geometry, financial mathematics, number, algebra, measurement, statistics and probability.

**FOUNDATIONS of MATHEMATICS 110**- is designed to provide students with the mathematical understandings and critical-thinking skills identified for entry into the majority of trades and for direct entry into the work force. Topics include geometry, financial mathematics, number, algebra, measurement, statistics and probability.

**PRE-CALCULUS 110**- is designed to provide students with the mathematical understandings and critical-thinking skills identified for entry into post-secondary programs that require the study of theoretical calculus. Topics include algebra and number, trigonometry, relations and functions, function toolkit, limits and derivatives.

**PRE-CALCULUS 120A/ 120B**- introduces students to inverses of functions, logarithms and their related equations. Students are also introduced to six trigonometric rations and the sine, cosine and tangent functions are used to solve problems. Pre-Calculus A is a pre/co requisite for Pre-Calculus B.

**CALCULUS 120-** is the final course in the Pre-Calculus Pathway and is recommended for students interested in post-secondary programs in science, engineering, and mathematics. Pre-Calculus 120A and B are pre-requisites for this course.

**TECHNOLOGY / VOCATIONAL EDUCATION**

**INTERNAL COMBUSTION ENGINES 11**- is designed to develop proficiency in the repair, overhaul, service and testing of the internal combustion engine. The theory of operation of the engine and its components is emphasized along with the development of manipulative skills and work habits.

**FRAMING AND SHEATHING 110-** develops knowledge and skills required in the construction of frame buildings. Students study the methods and materials used in framework, from the foundation to the roof, including basic rafters and trusses.

**MILL AND CABINET WORK 120**- stresses safety in the use of hand tools, power tools and machines in the carpentry shop. It includes practical planning and project work.

**RESIDENTIAL FINISH 120**- includes instruction in the safe use of hand tools, power tools, and machines in the carpentry shop. Methods of preparing, joining and finishing stock are covered. Projects are used as a means to develop practical skills.

**GRAPHIC ART AND DESIGN 110**- is the creative planning and presentation of visual communication to attract attention or communicate effectively. The course promotes the skills and knowledge that are necessary to understand and develop imagines, signs, symbols, logos, etc. that communicate a message or value. The development of visual communication skills is assisted by technology.

**METALS FABRICATION 110 (WELDING)-** is a welding course is concerned with the process used in industry to cut, form and fasten metal. Emphasis is placed on the development of basic skills needed to use electric-arc and oxyacetylene welding and cutting processes including the preparation of material for welding. Machines and processes used to layout cut and form sheet metal are also included.

**INTRODUCTION TO APPLIED TECHOLOGHY 110-** students will complete a series of projects from the areas of woodworking, motor working, plumbing, drywall repair, electrical, manufacturing and construction.

**INFORAMTION TECHNOLOGY 120-** Focuses on two major learning modules: Windows and Microsoft.

**COMPUTER AIDED DESIGN 110 (CAD**)- is designed to give students a solid knowledge base of drafting as well as to introduce them to the actual skills necessary to visualize and graphically represent design. The nature of the activities and the use of AutoCAD LT 2004 will interest a wide range of students beyond those preparing to pursue a career in the drafting/ technology/engineering areas.

**CULINARY TECHNOLOGY 110**- is designed to prepare students for employment or future education in the food service industry. This technology-driven and skill oriented program involves the “how and why” of food service preparation, and the development of personal skills and knowledge that can be applied to the food service industry. Laboratory experimentation, food preparation and service are an integral part of the program.

**CULINARY TECHNOLOGY 120-** focuses on learning skills that are transferable to future learning and/or food service employment. New technology is introduced, as well as food preparation in quantity, using standardized recipes. Sanitation and safety are stressed. Students work together as an effective team.

**DIGITAL PRODUCTION 120**- is a skill-based course. Students will study Web development, digital imaging, digital animation and digital audio. The skills that are developed will allow students to build complex Web and Multimedia productions.

**COMPUTER SCIENCE 120-** is recommended for students with a strong interest in computer programming. Students will learn the basic syntax of the Java language, program Java Applets and write simple programs using object-oriented design principles. The course provides a good foundation for students who wish to pursue a post-secondary program in computer science.

**ROBOTICS AND AUTOMATED PROCESSINF 120**- introduces students to the skills and knowledge required to pursue further students in the robotics field. Students can eaily transfer skills and knowledge gained in this course to other technology fields.

**ENTREPRENEURSHIP 110-** includes studies on the organizing and management of a business, including the risks taken for the sake of profit.

**FASHION DESIGN 120-** provides students with the opportunity to develop an understanding of the World of Fashion and the fundamentals of fashion design.

**HOSPITALITY AND TOURISM 110**- is designed to help students acquire career information, develop skills to work in the hospitality and tourism industry, and gain practical experience in that industry.

**CO-OPERATIVE EDUCATION 120-** provides experiential work-based education that extends the learning process into the workplace. It integrates classroom theory with employability and career skill development. After completing the pre-employment course component, students are placed in work where they are provided with challenging tasks and responsibility, and learn by doing. Students spend the equivalent of two periods, normally on a daily basis, at the workplace. The course is based upon a collaborative partnership between the school and business/industry.

**BUSINESS ORGANIZATION AND MANAGEMENT 120**- introductory course in business organization, operation and management designed for those students intending to pursue further study in Business Administration or Economics.