



Grade Twelve

Course Handbook

WINDSOR PARK COLLEGIATE

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Principal: Robbie Mager
Vice-Principals: Dana Cormier
Carly Friesen

Course Registration Instructions:

The following are the details of what you need to know the day that you sit down to sign up for your courses for next year.

Step One: Write down on the worksheet all of the courses that you have successfully completed or will complete by the end of this year.

Step Two: Decide on what programs you wish to be a part.

- High School
- AP Calculus - Online
- Career Internship Program (CIP)
- Louis Riel Arts and Tech Centre (LRATC)
- Manitoba Institute of Trades and Technology (MITT)

Step Three: On your worksheet, check off the compulsory courses (bold) that you must take next year. (Remember if you have failed a compulsory course, you must take it again.)

Step Four: Read through the list of elective courses on the following pages of the handbook.

Step Five: List five electives in order of priority from your first choice to your fifth choice. (Not all choices will be scheduled.)

- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____

Step Six: Bring these worksheets with you on course selection day so that you can easily sign up for next year. You will be signing up for your courses on-line with a Student Services Teacher.

Step Seven: Look for MyBlueprint Course Selection Sign-Off Sheet which will be sent home in the report card April 13th.

Step Eight: Sign and return MyBlueprint Course Selection Sign-Off Sheet with Registration Fees of \$140.00 by April 20th. This will determine your official registration.

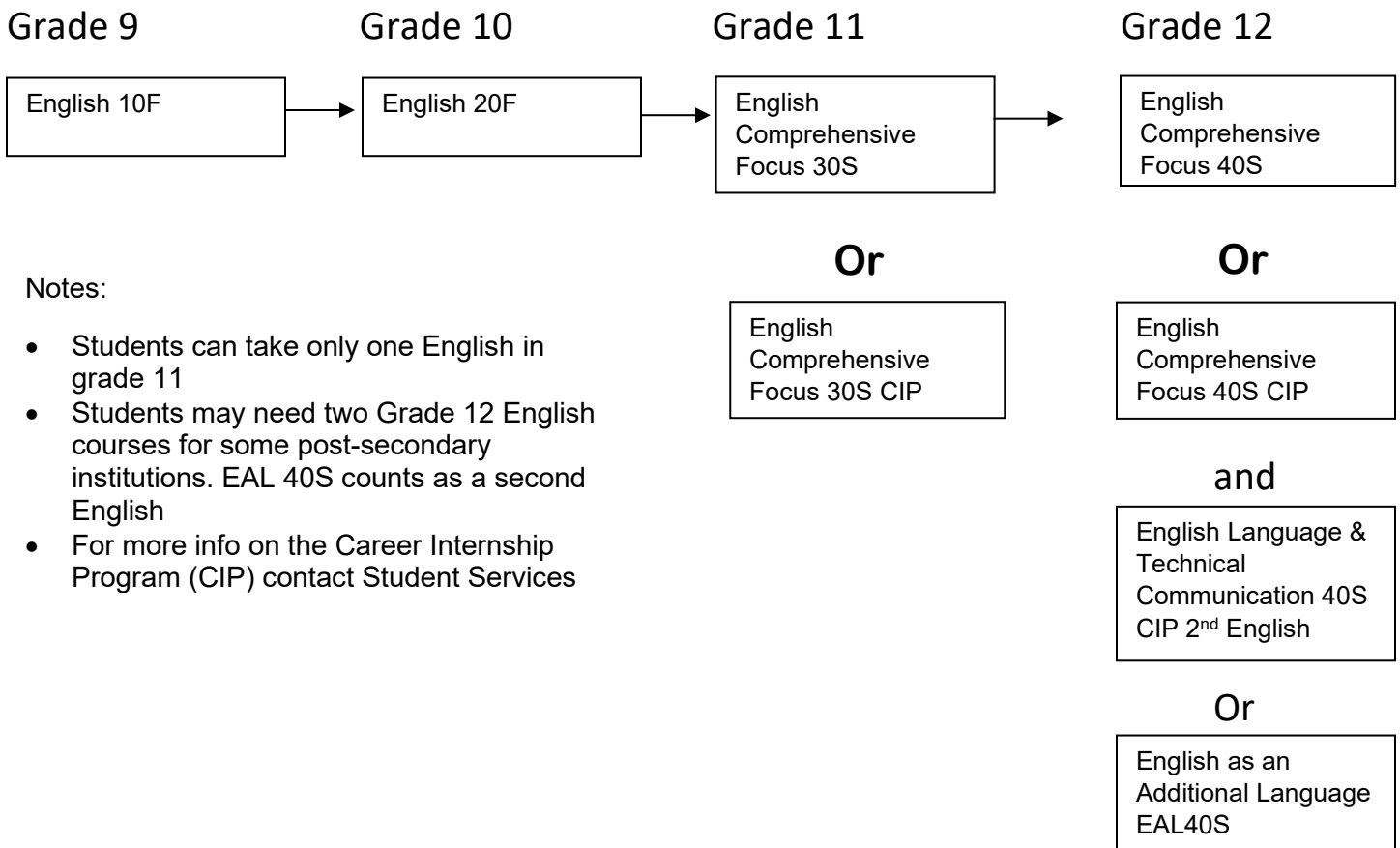
Step Nine: Timetables and opening day information will be mailed out in late August to those students that have paid school fees for 2017-2018.

Important Note:

Once choices have been made and finalized, classes will be organized, and staff determined. Courses that have very low enrollment may not be offered or may be combined with others. It is important that you put a lot of thought into the courses that you want as it will be very difficult to make changes to course requests at a later date.

Compulsory Courses: English Language Arts:

English Language Arts Flow Chart:



Notes:

- Students can take only one English in grade 11
- Students may need two Grade 12 English courses for some post-secondary institutions. EAL 40S counts as a second English
- For more info on the Career Internship Program (CIP) contact Student Services

ENGLISH LANGUAGE ARTS COMPREHENSIVE FOCUS 40S

1 credit

PREREQUISITE: English Language Arts Comprehensive Focus 30S

Comprehensive English, designed to focus on both transactional and literary language, incorporates a balance of pragmatic language (everyday) with aesthetic language (literary). Activities in this course may include oral discussion, letter writing, improvised drama, journals, formal presentations, film, fiction (reading and writing), poetry, and a traditional novel study. Students in grade 12 are expected to write and speak using the proper conventions of language. All students write the Provincial Standards Test (Exam).

ENGLISH LANGUAGE ARTS COMPREHENSIVE FOCUS 40S -CIP

1 credit

PREREQUISITE: English Language Arts 30S or English Language Arts 30S CIP30S

English Comprehensive 40S CIP integrates regular academic programming with employability skill development to prepare students work, education and careers. CIP English is designed to focus on traditional transactional and literary language, as well as focus on personal growth, employability skills and prospective careers. Activities in this course include a traditional novel study, oral discussions, speeches, resume and cover letter development, reflective writing, public speaking, building a network of mentors and professionals in career field of interest, interview preparation, volunteering in the community, and an internship experience.

Students will:

- Complete an extended internship with a local business or non-profit organization.
- Volunteer in the community.
- Engage in job-readiness, education, work and career pathing workshops and conferences.
- Complete a 6-week Public Speaking Course
- Attend live theatre productions at the Royal Manitoba Theatre Centre.
- Build a network of professional contacts and mentors.

Special Note: Students taking ECOM40S-CIP pay a fee of \$80

ENGLISH LANGUAGE AND TECHNICAL COMMUNICATION 40S-CIP

1 credit

PREREQUISITE: English Language Arts Comprehensive 40S CIP

NOTE: This English course is compulsory for, and only open to, students enrolled in Grade 12 CIP and is to be taken as an elective.

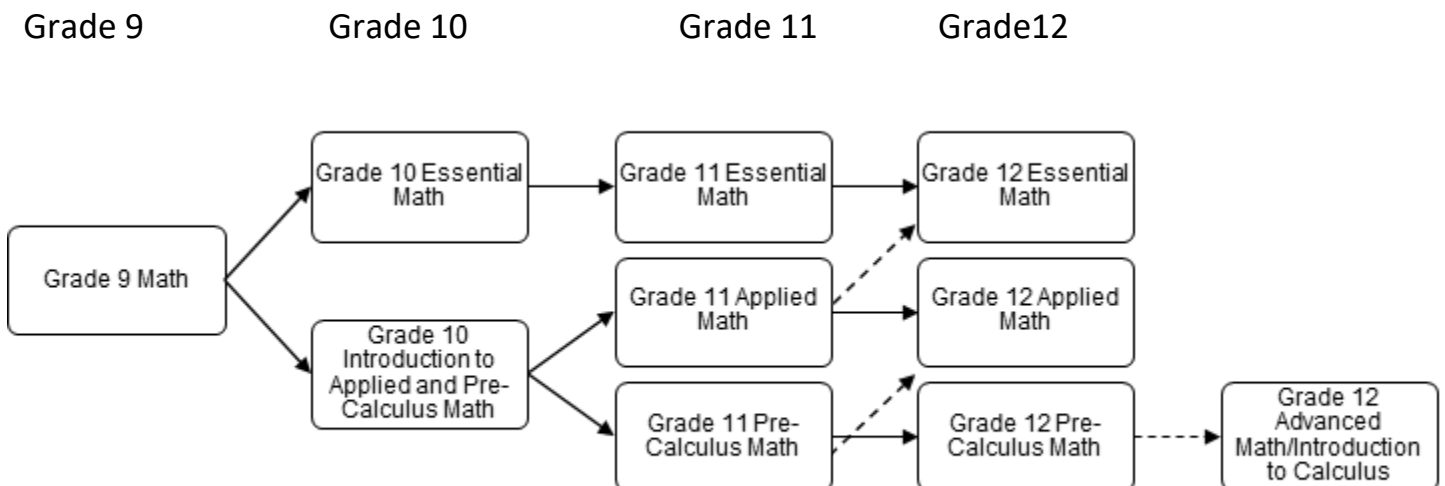
Students will discover what technical communication is, how important technical communication is to everyday life, and how technical documents are designed and organized in unique and creative ways. Students engage with specific technical documents that impact workplaces, such as memos, emails, letters, meeting minutes, business plans, and technical reports. Students will also incorporate many of their own ideas and thoughts into tasks and assignments to build a foundation of essential transferrable skills.

Students will:

- Participate in a three-month team “Tech Project” to explore entrepreneurship.
- Write a business plan that involves the creation of an innovative idea, concept, or invention.
- Compete in the LRSD Tiger’s Den Entrepreneurship Conference.
- Build a network of professional contacts and mentors.
- Engage in education, work and career development workshops and conferences.

Compulsory Courses: Mathematics:

Mathematics Flow Chart:



NOTES:

- Dashed lines - - - - indicate other possible choices.
- Taking at least one Math course is required at each grade level.
- Grade 12 Essential, Applied and Pre-calculus courses have final provincial achievement tests.
- When choosing a mathematics program, students should consider post-secondary requirements. Each of the mathematics programs is sequential, and is designed to meet different interests, learning needs and education/career goals of students. Students and parents are advised to consult with mathematics teachers and student services to decide the best program.

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Changing programs between Applied and/or Pre-Calculus and/or Essentials is allowed but can be difficult for students as they may be missing previously covered skills in that program. When students choose courses that best suit their needs and abilities, they have the greatest chance for success now, and in the future.

GRADE 12 APPLIED MATHEMATICS 40S

1 credit

PREREQUISITE: 65% or higher is recommended in Math 30S Applied

UNITS BY PROVINCIAL STRANDS:

Number Sense: Compound Interest, Investment,

Patterns & Relations: Sinusoidal Functions, Polynomial Functions, Exponential and Logarithmic Functions

Shapes & Space: Design and Measurement

Statistics & Probability: Probability, Permutations and Combinations

REQUIRED EQUIPMENT/PERSONAL SUPPLIES:

Applied Math is intended for students considering post-secondary studies that do not require a study of calculus. It is more contextual than Pre-Calculus and promotes the learning of numerical problem-solving techniques as they relate to the world.

GRADE 12 ESSENTIAL MATHEMATICS 40S

1 credit

PREREQUISITE: Math 30S Pre-Calculus or Math 30S Applied or Essential Math 30S

Grade 12 Essential Mathematics (40S) is intended for students whose post-secondary planning includes everything except a focus on Mathematics and Science-related fields. Grade 12 essential Mathematics (40S) is a one-credit course emphasizing consumer applications, problem solving, decision making, and spatial sense.

UNITS BY PROVINCIAL STRANDS:

Number Sense: Analysis of Games & Numbers, Vehicle Finance, Home Finance, Business Finance, Career Life

Patterns & Relations: Relations & Functions

Shapes & Space: Geometry and Trigonometry, Precision Measurement
Statistics & Probability: Statistics

SPECIAL NOTES:

Essential Mathematics is accepted at many post-secondary institutes. Check with a counselor or a math teacher to ensure that Essential Mathematics is a viable Elective for your chosen career path.

GRADE 12 PRE-CALCULUS MATHEMATICS 40S

1 credit

PREREQUISITE: 70% or higher is recommended in Math 30S Pre-Calculus

This course is a continuation of Math 30S Pre-Calculus.

UNITS BY PROVINCIAL STRANDS:

Number Sense: Binomial Theorem, Trigonometric Equations, and Identities

Patterns & Relations: Transformations of Functions, Trigonometric Functions, Polynomial Functions, Exponents and Logarithms, Radicals and Rationales

EQUIPMENT/PERSONAL SUPPLIES:

All students are required to have a 3-ring binder, pencil, eraser, scientific calculator (cell phone calculators are not permitted), and ruler.

SPECIAL NOTES: A mark of at least 70% in Pre-Calculus 30s is recommended to foster success in Pre-Calculus 40S. Students who experience difficulty in Mathematics would benefit from having this course in the first semester. If you are scheduled in second semester, make an appointment with Student Services during the last week of August and every attempt will be made to switch it to first semester.

Advanced Mathematics/Introduction to Calculus 45S

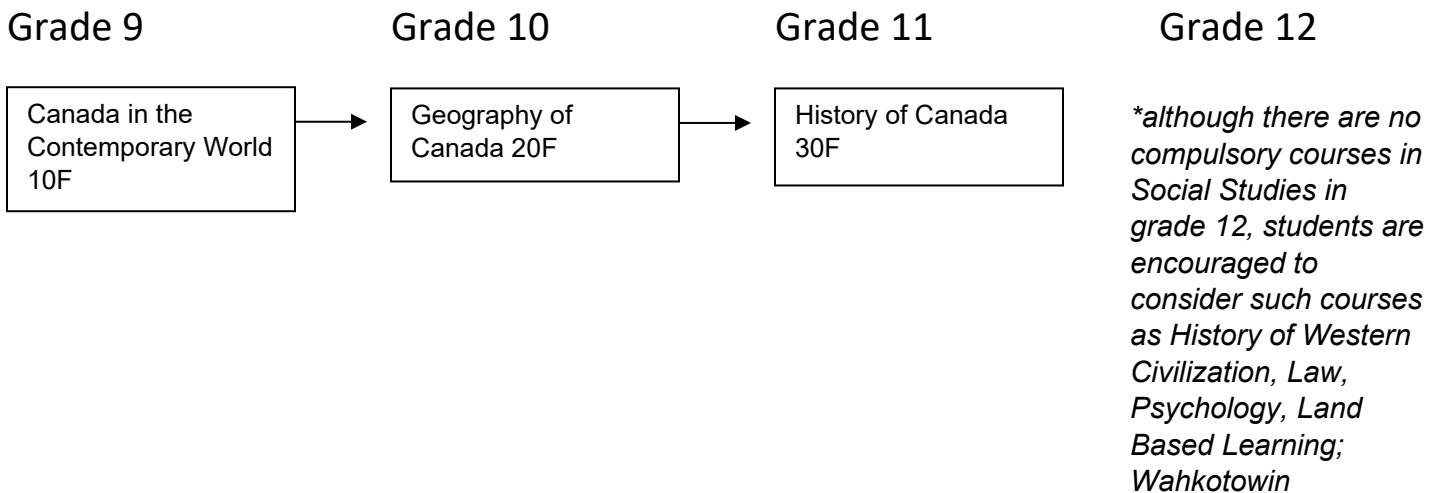
1 credit

PREREQUISITE/COREQUISITE: Pre-Calculus Math 40S

This course introduces areas of mathematics that are covered in post-secondary programs within Manitoba and outside of the province. This course will be most helpful for those students planning to study engineering, mathematics, science, computer science, or other mathematics-oriented programs. Students should consider their interests, both future and current. Students, and parents are encouraged to research the admission requirements for post-secondary programs of study, as they vary by institution and by year.

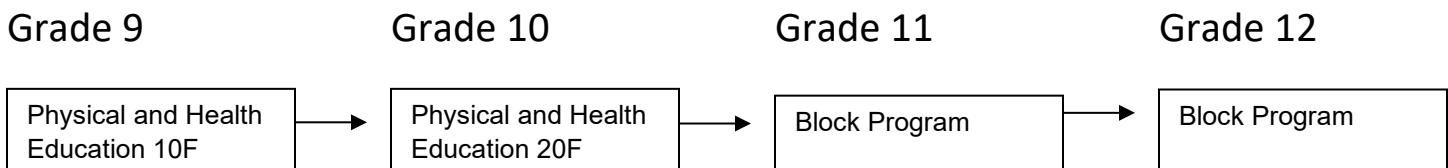
Compulsory Courses: Social Studies:

Social Studies Flow Chart:



Compulsory Courses: Physical and Health Education:

Physical and Health Education Flow Chart:



GRADE 12 PHYSICAL EDUCATION 40F (REGULAR)

1 credit

PREREQUISITE: Physical Education 30F- Complete/Incomplete

Students in Grade 11/12 have voice and choice with regards to earning their physical education credit. They do not have a physical education class assigned to their schedule. Instead, they will have a “spare” that would traditionally be their physical education class. They are required to attain 110 hours of physical activity to achieve their physical education credit. There are a few ways they can complete this credit. Students can sign up for 11 two weeklong activity blocks that occur during their spares. One block equates to 10 hours of physical activity. Activity blocks include orientation, low organizes games, volleyball, basketball, weight training, health, racquet sports, stick sports, outdoor activities, yoga, power walking and many more. Two of these blocks are mandatory: an orientation block at the beginning of the semester, and a health block. Students can also choose to accumulate practicum hours or flex blocks to use towards their credit. To accumulate blocks and hours, students may combine any of the following:

- A. In Class Blocks: 1 block = 10 hours
- B. Practicum hours: *(MAX 50hrs): Practicum hours include moderate-vigorous physical activity that occurs outside of class time. Examples include involvement with extracurricular activities (basketball, hockey, volleyball, dance, gymnastics, etc.), exercising at the YMCA, and cycling or walking on evening and

weekends. Students are required to discuss practicum hours with their physical education teacher and are reminded that 50 is the maximum amount of hours they can record towards their credit.

- C. Flex Blocks: 1 Flex Block=10hrs. These are offered periodically throughout the school year (evenings and/or weekends) and consist of activities such as: golfing, hiking, curling, biking, fishing, disc golf, referee clinics, skating, ski trips. 1 Flex Block = 10hrs
- D. A blend of all the above. For example, a student may complete 5 blocks (50 hours), 30 practicum hours (30 hours) and partake in 3 flex blocks (30 hours) for a total of 110 hours. Some students may do 6 activity blocks (60 hours) and 50 practicum hours (5 hours) for a total of 110 hours.

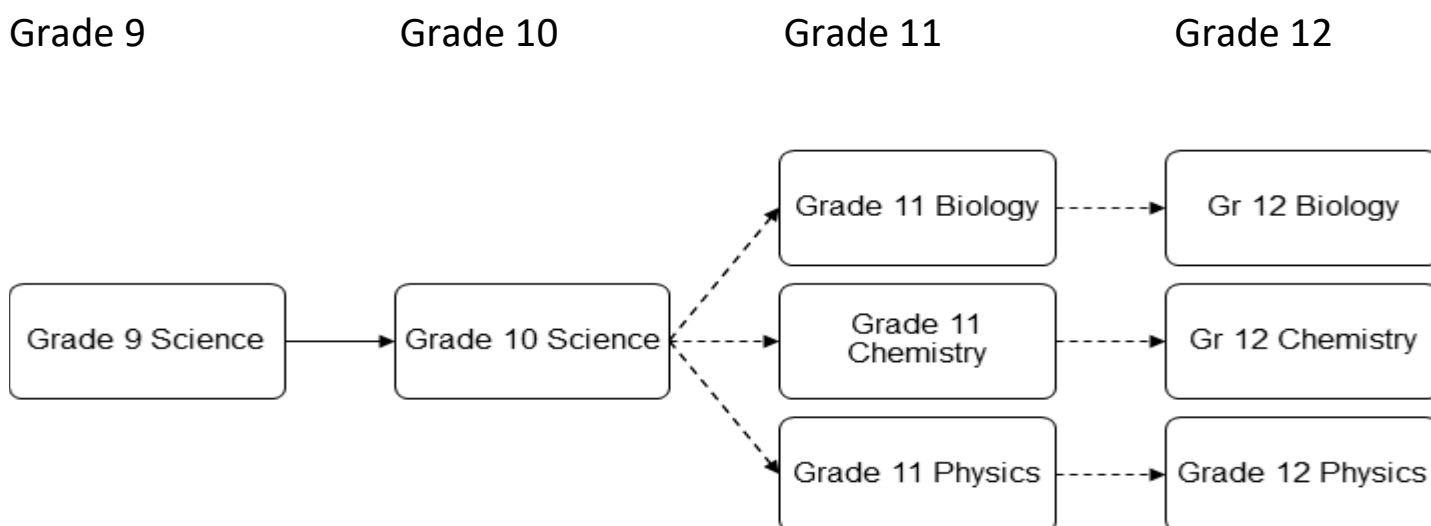
If a student is completing practicum hours, they are required to track them on an Excel document that will be provided to them during the orientation block. Students are required to participate in bi-weekly meetings with their assigned physical education teacher to ensure they are keeping up with their hours and blocks.

1 block contains 10 classes, and 10 hours total. If a student has more than 2 unexplained absences, they will not receive credit for that block. They will be responsible for signing up for a new block, or logging practicum hours if it fits with their schedule.

Grade 12 Elective Courses:

SCIENCES

Science Flow Chart:



Important Note:

- Dashed lines ----- indicate optional pathways.
- Grades 9 and 10 Science are compulsory. Science courses are optional in Grades 11 and 12.
- After graduation, students may wish to go to register in a post-secondary program. Some programs may have prerequisites courses. If you have not taken the required credits in high school, you will have to upgrade in post-secondary before beginning the program.

PREREQUISITE: Science 20F, Biology 30S recommended

Topics revolve around the many areas of inheritance of genetic traits, molecular genetics, evolution, and biodiversity.

UNITS OF STUDY:

- Understanding Biological Inheritance – Dominant and Recessive traits, Cell Division, Mutations and Genetic Disorders
- Molecular Genetics – DNA Structure and function, DNA replication, Protein Synthesis, Genetic Engineering, and current topics in Molecular genetics
- Evolutionary Theory – Natural Selection, Speciation, Population Genetics, Mechanisms of Evolution
- Biodiversity – Classification, evolution, and Phylogeny
- The importance of maintaining biodiversity including, maintaining a diverse gene pool, economic value, and the sustainability of an ecosystem.

EQUIPMENT / PERSONAL SUPPLIES: Students will be required to have a scientific calculator.

CHEMISTRY 40S

1 credit

PREREQUISITE: Chemistry 30S, Pre-Calculus 30S OR Applied Math 30S

The course further explores how and why reactions occur and are affected by various conditions.

UNITS OF STUDY:

- Aqueous reactions – Chemical reactions that occur in water.
- Kinetics – Qualitative and quantitative properties that affect the speed of reactions.
- Chemical Equilibrium – Qualitatively and quantitatively determining how reactions behave and change under various conditions.
- Acids and Bases – Strength of Acids and Bases and quantifying pH.
- Electrochemistry – Batteries and chemical reactions that create or use electricity.
- Atomic structure – Quantum model of the atom and light spectra.

EQUIPMENT / PERSONAL SUPPLIES: Students will be required to have a scientific calculator.

PHYSICS 40S

1 credit

PREREQUISITE: Physics 30S, Pre-Calculus 30S

The course continues the topics introduced in Physics 30S. The focus in this course is to build upon and explore the concepts initiated in Physics 30S.

UNITS OF STUDY:

- Mechanics – How objects move in two dimensions using vectors.
- Fields – The interaction of various fields (electric, magnetic, electromagnetic, and gravitational).
- Electricity – Electric circuits.
- Medical Physics – Types of radiation and radioactive decay.

EQUIPMENT / PERSONAL SUPPLIES: Students will be required to have a scientific calculator.

COMPUTER SCIENCE

COMPUTER SCIENCE 40S

1 credit

PREREQUISITE: Computer Science 30S (Recommended)

This course is intended for students who would like to pursue further studies in computer science. Students will develop knowledge, skills, and attitudes applicable to situations beyond computer science. Students will learn how to work both independently and collaboratively to complete a challenging series of tasks and projects. Students will use interactive software such as Processing, OnlineGDB, and other professional interactive environments to solve problems using simulations and complex coding techniques. Coding languages include Java, C++, and C# as well as a requirement to build proficiency in personal areas of interest in a new language independently.

INFORMATION COMMUNICATION TECHNOLOGY

YEARBOOK

APPLIED TECHNOLOGY - YEARBOOK YB40S

1 credit

PREREQUISITE: None

Yearbook 40S immerses students in DSLR photography, providing invaluable tips to master the craft. Students, in a leadership role, document diverse high school moments, from electrifying sporting events to the nuanced scenes of everyday classroom activities. The course emphasizes honing photography skills, layout, and design, guiding students in the artful arrangement of photos, thoughtful color selection, and seamless text integration for a visually appealing yearbook. The practicum project involves students collaboratively assuming leadership roles in creating and publishing the school's yearbook.

ARTS

CONCERT BAND 40S

1 credit

PREREQUISITE: None

Concert band is a performance-based course with a focus on the skills required for making music as part of an ensemble. Instruction in theory, instrumental technique, composition, and application of skills are the primary focuses of this course. Students at this level are expected to exhibit a degree of musical independence with a particular focus on technique and ensemble skills. The band is highlighted through performative work such as concerts, in class presentations and playing tests. The intention of this course is to develop an appreciation for the fun of making and listening to music.

EQUIPMENT AND PERSONAL SUPPLIES

Students using division owned instruments will be charged a course fee of \$100, in addition to the \$20 general course fee. This is to account for the cost of maintenance, cleaning, repairs, and supplies. Students may rent or purchase their own instrument which must be pre-approved by the teacher.

DRAMA 40S

1 credit

PREREQUISITE: None

This is a performance-based course. Drama students learn about theatre by engaging in warm-up games, improvisation, scene work, exercises, and formal productions. This course emphasizes group work and the development of introspection. Class activities vary from year to year, with potential areas of study including theatre sports, stage make-up, tableaux, theatre history, stage combat, and the technical aspects of theatre.

Course fee: \$20

GUITAR 40S

1 credit

PREREQUISITE: Music Guitar 30S

This is a performance-oriented course. Students will perform as part of the full guitar ensemble, in smaller groups and in solo presentations. More emphasis will be placed on small group work. Students will expand their familiarity with the entire fret board. An increasingly divergent range of styles and playing techniques will be studied.

A course fee of \$20.00 applies to all Guitar students. Method books and music sheets will be supplied by the school at no cost to the student.

MUSICALTHEATRE 40S

1 credit

Prerequisite: None

These courses develop a stronger understanding of musical theatre through the performance and production of an annual school show. Note that this course is not offered during the regular school day. Rehearsals, performances, set up, and building often take place after school hours and on weekends.

PERFORMANCE STUDENTS

Students from all grades will study characterization, vocal projection, blocking, storytelling, choreography, and performance while sharing a creative adventure with other members of the course. Although there is no prerequisite for this course, this class does require an audition. If not selected for an on-stage role, students are encouraged to participate in the production course.

PRODUCTION STUDENTS

Theatre production students work on the technical requirements for the show. Students learn about stage management, lighting, sound operation, set design and construction, costume design and construction, and theatrical house management.

Course Fee: \$35

VISUAL ARTS 40S

1 credit

PREREQUISITE: Art 30S

Whether you are continuing your artistic journey or starting a new one, this course has something for you. Initial projects are designed to lead students towards independent exploration which provides the opportunity for students to control their learning by designing their own projects and art medium choices. With the support of the teacher, you will build confidence and acquire skills to strengthen your artistic voice. Create art that is

challenging and meaningful to you. Special support will be given to those compiling a portfolio for future pursuits.

Studio Fee: \$30

FRENCH

FRENCH - COMMUNICATION AND CULTURE 40F

1 credit

PREREQUISITE: French 30F

This course is a participation-based course where students acquire French communication skills such as reading, writing, listening, and speaking while learning about French culture in Canada and around the world. A heavier emphasis is placed on the acquisition of spoken language. Be ready to speak and interact with your peers on a daily basis through small group activities, songs, and lots of games.

HUMAN ECOLOGY

TEXTILE & DESIGN 40G

1 credit

PREREQUISITE: None

This is a hands-on course where the projects will be based on the experience the student has in the sewing lab. There are four required project to ensure that each student can complete required skills in the lab and the remainder of the course consists of choice projects. The focus of the class will be design and construction of textiles and textile products. Supplies for required projects are available to students in the classroom. Many supplies are also available for choice projects but if specific materials or patterns are needed, they are the student's responsibility.

FAMILY STUDIES 40S

1 credit

PREREQUISITE: None

This Family Studies course gives students the opportunity to discover how individuals, families and society are interconnected in the lives of all people. Students will explore who they are as individuals and who they want to become by understanding their personal values and goals. Emphasis will be placed on communication skills, values clarification, and self-exploration. Also, students will study families and their changing structures and functions. Students will acquire skills and knowledge necessary to strengthen bonds through their lives. This credit can be used for University acceptance.

FOOD AND NUTRITION 40S

1 credit

PREREQUISITE: None

In this course students are challenged with the issue of hunger, both locally and globally and reflect on what can be done to alleviate the problem. That leads into the study of international food and research on a country of choice kicks off the presentation of "Food Folklorama". We touch on the topic of alcohol and nutrition as well as food trends and technology. And finally, concentrate on developing life skills by planning nutritious meals within a limited budget.

In cooking classes, the focus is more experimental and challenging, but will also be practical in order to offer a healthy repertoire of everyday recipes for future independent living.

HUMANITIES

Land-Based Learning: Wahkohtowin 40S

1 credit

Prerequisite: None

The Grade 11/12 Land-based Learning course supports the empowerment of students through hands-on and experiential learning opportunities provided on the land and in local community spaces. Students will participate in off-site activities including, wood-cutting, gathering and harvesting of plants and medicines, shoreline and ice fishing, berry picking, preparing and storing food from the land, historical and science-based walking tours, and Indigenous perspectives in community places and spaces. Learners will engage with various community members and teachers throughout the course with specific emphasis on storytelling, sharing, and relationships. Students will consider their identity in relation to their learning and will be provided opportunities to reflect upon concepts such as belonging, mastery, independence, and generosity as it relates to life and land.

GLOBAL ISSUES: CITIZENSHIP AND SUSTAINABILITY 40S

1 credit

Prerequisite: None

NOTE: We recommend that students pursuing post-secondary college or university studies consider this 40S course with its emphasis on oral and writing skills for an academic audience.

Students conduct inquiry into the social, political, environmental, and economic impact of a variety of contemporary and emerging issues in the world. Through their inquiry they focus on questions of quality of life locally, nationally, and globally. This course is based on the principles of active democratic citizenship, ecological literacy, critical media literacy, and ethical decision-making, and consolidates learning across the disciplines to empower students as agents of change for a sustainable and equitable future. A component of the course is the planning and implementation of a community-based action-research project.

LAW 40S

1 credit

PREREQUISITE: None

This course provides an excellent opportunity for students to acquire knowledge of basic legal principles and practices, and to make them aware of their legal rights and responsibilities as they arise in everyday life.

UNITS OF STUDY INCLUDE:

- Foundations of the Canadian Legal System
- Criminal Law
- Civil Law, Tort Law
- Contract Law, Family Law
- Other topics of interest may be covered as time permits

*Active participation, including debates, case studies, view real life trials online, visit to the Law Courts and mock trials are included as part of this course.

PSYCHOLOGY 40S

1 credit

PREREQUISITE: None

Psychology is the scientific study of the mind and behavior. Psychologists are actively involved in studying and understanding mental processes, brain functions, and behavior. Studying Psychology provides students with lifelong skills such as dealing with societal issues proactively, critical thinking and solving problems, learning, and nurturing healthy relationships. Psychology uses the scientific method to discover ways of understanding the complexities of human thought and behavior, as well as differences among people.

This course exposes students to the major topics found in the field of psychology. It also emphasizes the issues that are of particular interest and relevance to students completing their secondary education.

SPECIFIC TOPICS OF INTEREST INCLUDE:

- Introduction to Psychology and Research Methods
- Personality Traits, Disorders and Psychopathology
- Neuropsychology, Cognition and the Human Brain
- Adolescence
- Consciousness and Dreams
- Abnormal Behavior, Stress and Coping
- Social Psychology

SPECIAL NOTES: Completion of this course qualifies for post-secondary entrance.

English for Academic Success 40S

1 credit

Prerequisite: None

This grade 12 course is designed for students who wish to further develop the academic English language skills required for success in post-secondary education.

This course is designed to help ensure success for students across a number of subject areas, with emphasis on the sciences, mathematics, and social sciences, as well as help prepare students for post-secondary study.

Students will develop skills such as interpreting and producing subject area texts, completing various forms of student-led inquiry and classroom interactions. They will interact with material drawn from a variety of subject areas in order to improve their skills in reading, writing, listening and speaking, and to enhance their use of learning strategies.

INDUSTRIAL ARTS

METALWORK TECHNOLOGY 40G

1 credit

PREREQUISITE: None

Metalwork Technology allows students to explore the processes involved in the manufacturing and fabrication of metal products with a “hands on” approach. Small engine repair included and a strong focus of career explorations in related trades.

Areas of study: Oxy acetylene welding, Mig welding, Plasma cutting, CNC operations, Aluminum sublimation, Layout and design, Problem solving, General metal working

Possible Projects: Motorized go carts, power scooters, tree stands, mig cube, screwdrivers, skateboard rails, outdoor firepit, wood burning meat smokers, pizza cutters, magnetic pick-up tools to name a few.

WOODWORK TECHNOLOGY 40S

1 credit

PREREQUISITE: None

The initial phase of this course zeroes in on the art of furniture design and cabinet making. Students will embark on creating a substantial project based on a set of detailed plans. This hands-on experience lays the foundation for mastering essential skills in crafting larger-scale wooden pieces. As we progress, the course takes an exciting turn towards student choice. In this phase, you are the architect of your woodworking journey. You get to decide and dive into projects that genuinely interest and excite you. The spotlight is on your creativity as you explore various areas within woodworking, honing in on the aspects you wish to learn or expand your knowledge on.

Areas of study: Safety, Layout and design, Project planning, Wood joinery, Fine measurement, Drawer and door creation, Career paths, Hand tools, Power Tools and Machinery, Finishing Techniques, CNC technologies and Measurement.

Possible Projects: Bedside cabinets, End tables, Guitars, Desks, Books shelves, Entertainment units, Storage systems, Wooden Paddles, Outdoor Furniture and Wooden Art.

GRAPHIC COMMUNICATION TECHNOLOGY 40S

1 credit

PREREQUISITE: None

This area of study is designated to allow student to work effectively with materials, applications, equipment, and technology in the graphics field to communicate visually.

This course offers hands-on experiences and problem solving daily. Evaluation will be biased on individual assignments, projects, group problem-solving activities, and self reflection. This course will be of interest to students who are considering a career in commercial art, architecture, interior design, fine arts, drafting and design, electronic imagery, photography or other related fields.

Areas of study: Computer generated design, Desktop publishing, introduction to animation, introduction to practical photography, Basic house planning and layout, Advertising and design, Industry norms.

Possible Projects: custom skateboard decks, airbrushed t-shirts, largescale metal panels, choice projects, 3D Home design, Prime lens Photography challenge and much more.

Electronics/Robotics 40S

1 credit

PREREQUISITE: None

This course provides both theory and practical experiences, as well as 3D modeling and problem-solving opportunities.

For the robotics portion students will build various robots; both user controlled and autonomous (coded); for classroom-based competitions. Using an Engineering notebook to record data, game strategies and iterations

to effectively reflect on their learning, students will exercise soft skills to share ideas and collaborate. Utilizing the Engineering design loop, students will adapt base robot builds to make the experience their own.

Competitions Include:

Platform Placer: Students will create manipulators to move, place and arrange balls, platforms and rings combining robot design and driver skills.

Treasure Hunt: Students will code robots with manipulators and optical sensors to collect red balls and hoard them for their team, while avoiding all other colors of balls.

Skills Manitoba: This competition changes yearly but as a Provincial competition it provides students the opportunity to show off their skills against other Manitoba schools. Winning students represent their province in Nationals which requires traveling to the hosting city that year.

The electronics portion has students working with coding and Arduino technology to create various complex circuits for projects such as a useless device and voice-controlled servos.

ADVANCE ENGINEERING 40S

1credit

PREREQUISITE: None

Welcome to Advance Engineering! Building on the foundations from the past few years, this course is highly recommended for those seeking an advanced exploration, though its not mandatory. For each project, you'll receive specific objectives, and your mission is to craft a solution. Utilizing our cutting-edge machinery and embracing a self-guided experience along with trial and error, you'll bring your ideas to life, making necessary adaptations along the way. Having an open mindset is your key to success as you navigate the challenges that lay ahead.

Areas of study: Mechanical engineer, Structural Engineering, Electronics, and Pneumatics/Hydraulics, Alternative Energies

Possible Projects: Remote controlled vehicles and machines, reverse egg challenge, 3D printed prosthetic limbs, and much more.

SECONDARY EDUCATION INFORMATION

Graduating from high school does not automatically qualify students to attend university and/or college. Each Post-Secondary Institution has its own set of entrance requirements and criteria. Visit the websites for the most up to date information on program entrance requirements. If you are unsure, about your course selection, make an appointment in the Academic Centre to go over your choices.

A general rule for schools in Manitoba – you will need 5, grade 12 level courses – not including Phys. Ed.

University of Manitoba – www.umanitoba.ca – click on Future Students on the Home page.

University of Winnipeg – www.uwinnipeg.ca - click on Future Students on the Home page.

Red River College – www.rrc.mb.ca – click on Programs & Courses on the Home page

Louis Riel Art and Technology Centre & Winnipeg Tech Centre: Resources are available in the Academic Centre.