



Educating the Heart and the Mind

# St. Maurice School

of St. Vital Parish

A K-12 Parochial Catholic School

## GRADE 12 COURSE DESCRIPTIONS

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### **APPLIED MATHEMATICS 40S (1.0 credit)**

PREREQUISITE: Credit in Pre-Calculus Mathematics 30S or have special permission from administration

Applied mathematics 40S is a course intended for students who do not require any calculus as part of their post-secondary education. Students are encouraged to review post secondary institution websites for program entry requirements. It promotes problem solving skills, data analysis skills and some oral and written communication skills. Technology is an integral part of learning in Applied Mathematics and the student must become proficient in the use of a graphing calculator.

Topics studied include: permutations, combinations, probability, financial mathematics, polynomial functions, exponential functions, logarithmic functions, sinusoidal functions, design and measurement, set theory and logic.

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### **BIOLOGY 40S (1.0 credit)**

PREREQUISITE: Biology 30S

The Biology 40S course is a continuation and expansion of some of the basic concepts presented in Biology 30S. Note that this course places a much greater emphasis on the biochemistry of the cell than Biology 30S. Topics to be studied include: DNA, RNA and protein synthesis; Genetics; Biodiversity - Variety in Animals, Variety in Plants, Viruses, Monerans, Protists, and Fungi, Evolutionary Theory. Other topics may include a study of Bioenergetics: photosynthesis and/or cellular respiration. A series of representative organism dissections will be undertaken to compare the anatomies of different animal classifications. This course is largely non-mathematical, but some simple arithmetic calculations will be encountered.

*Note: Students interested in any biological or health science program at the University of Manitoba should be aware that effective September 2009 the University of Manitoba will require that students have credit in Grade 12 Biology 40S for entry into those programs.*

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### **CALCULUS 42S (AB) AP® (Advanced Placement®)**

PREREQUISITE: A minimum of 85% in Pre-Calculus Mathematics 30S

CO-REQUISITE: Pre-Calculus Mathematics 40S

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Calculus 42S is primarily concerned with developing the students' understanding of the concepts of calculus and providing experience with its methods and applications. The course emphasizes a multi representational approach to calculus, with concepts, results, and problems being expressed geometrically, numerically, analytically, and verbally. The connections among these representations are also important. Through the use of the unifying themes of derivatives, integrals, limits, approximation,



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and applications and modeling, the course becomes a cohesive whole rather than a collection of unrelated topics. Please refer to the Grade 12 AP<sup>®</sup> Program Information document on the St. Maurice School website.

*Note: Students will require the use of a TI-83 or TI-84 graphing calculator, both for in class and at homework. They may choose to purchase one for themselves or may rent one from the school for the duration of the course.*

*Note: Students will be required to purchase a consumable workbook for this course (approx. \$20)*

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## **CHEMISTRY 40S (1.0 credit)**

PREREQUISITE: A minimum of 60% in Chemistry 30S

CO-REQUISITE: Pre-Calculus Mathematics 40S

The Chemistry 40S course is a continuation and expansion of the basic concepts presented in Chemistry 30S. Note that this course places a much greater emphasis on mathematical problem solving and abstract thought than Chemistry 30S. Topics to be studied include: reaction rates and kinetics, reaction equilibrium, solubility equilibrium, acid-based theory; acid-base reactions, oxidation-reduction reactions and electrochemistry, and modern atomic structure theory.

*Note: Very good mathematical skills and problem-solving abilities are essential for success in this course. The ability to think abstractly is a great asset when studying chemistry. A strong background in Pre-Calculus Mathematics and Chemistry 30S is recommended.*

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## **CINEMA AS A WITNESS TO MODERN HISTORY 40S (1.0 credit)**

PREREQUISITE: None

This course will engage students in an exploration of the connections among cinema as an art form, cinema as a product of history, and cinema as an interpreter of history. Students will respond to and discuss the aesthetic and emotional elements of cinema and will apply historical thinking concepts to the analysis of historical themes as represented in various films and other sources. Throughout the course, students will apply critical media literacy skills in order to understand that film does not simply reflect the past, but interprets and retells the past and, at times, reconstructs it.

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## **COMPUTER SCIENCE 30S (1.0 credit)**

PREREQUISITES: A minimum of 65% in Web Design 35S **AND** Credit in Introduction to Applied and Pre-Calculus Mathematics 20S **or** A minimum of 60% in Essential Mathematics 20S

The emphasis in computer science courses is on students learning to solve problems, accomplish tasks, and express creativity, both individually and collaboratively. Students will learn programming techniques and the syntax of one or more programming languages. More importantly, students will learn to adapt



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to changes in programming languages and learn new languages as they are developed. This course is designed for students who have an aptitude and a zest for problem solving and computer programming.

Students will use computers to design, write and execute programs using the JavaScript and other object-oriented programming languages.

*Note: Computer Science 30S is required for advancement into Computer Science 40S or Computer Science Principles 42S AP® (Advanced Placement®). Students seeking to register in Computer Science Principles 42S AP® must achieve a minimum final mark of 85% in Computer Science 30S and must meet the co-requisite of Pre-Calculus Mathematics 40S.*

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## COMPUTER SCIENCE 40S (1.0 credit)

PREREQUISITES: A minimum of 60% in Computer Science 30S, **AND** Credit in Pre-Calculus Mathematics 30S **or** A minimum of 60% in Essential Math 30S

This course is designed for students who have an aptitude and a zest for problem solving and computer programming. The course focuses on: Java Programs and Java Applets, building on basic programming concepts introduced in Computer Science 30S. Students will use computers to design, write and execute programs.

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## COMPUTER SCIENCE PRINCIPLES 42S AP® (Advanced Placement®)

PREREQUISITE: A minimum of 85% in Computer Science 30S

CO-REQUISITE: Pre-Calculus Mathematics 40S NOTE: AP® and Advanced Placement® are registered trademarks of the College Board. Used with Permission.

This course focuses in large part on the development of programs or parts of programs that correctly solve given problems. Emphasis will be placed on program design issues that make programs understandable, adaptable, and reusable. Design concepts such as the development and analysis of algorithms and data structures will be studied extensively.

Please refer to the Grade 12 AP® Program Information document on the St. Maurice School website.

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## DESKTOP PUBLISHING 35S (0.5 credit, Term 2)

PREREQUISITE: None

The purpose of the course is to provide students with the skills and knowledge to plan and create a variety of published print documents. Students will:

1. Define the purpose and audience for a print document.
2. Incorporate elements of good design when designing documents.
3. Plan and produce print documents conforming to recognized standards: Brochures, Flyers, CD inserts, DVD inserts, Newsletters, Posters, Programs, Yearbooks.
4. Participate in multi-user document editing and reviewing.
5. Use language and tone appropriate to the communication.
6. Critique and suggest improvements for published documents using given criteria.
7. Accept a critique of a print document and make changes based on the feedback.



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*Note: Students registering for this second term half-credit course will be directly involved in the layout and production of the school yearbook as part of their course work. Please note that students will be expected as part of the homework for this course to attend and participate at the after-school meetings of the yearbook club. It is hoped that students who complete this half-course in desktop publishing would choose to volunteer to be official yearbook personnel for the remainder of their schooling at St. Maurice.*

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## **ECONOMIC PRINCIPLES 40S (1.0 credit)**

PREREQUISITE: None

NOTE: Required course for Business Education Program (BEP) students.

Economic Principles focuses on both microeconomic and macroeconomic principles including systems and structures, supply and demand, market influences, the global market, and decision making related to economic factors. This course is designed for students wanting to learn more about how the economy impacts their personal and business decisions at a local, national, and global level. Students will learn more about their role in the economy and how economic conditions affect short- and long-term decision making. Since everyone is a participant in our economic system, all students would benefit from taking this course. It is also an excellent course for students interested in pursuing post-secondary studies in the area of business, accounting, or economics.

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## **ELA: COMPREHENSIVE FOCUS 40S (1.0 credit)**

PREREQUISITE: ELA: Comprehensive Focus 30S or ELA: Literary Focus 30S

In ELA: Comprehensive Focus 40S, students develop a range of comprehension and literary skills that will enhance their appreciation of a variety of pragmatic and aesthetic texts. Pupils will analyze and compose works that inform, entertain and persuade. They will also develop an understanding of the methods authors employ to convey meaning, experience, and emotion. A wide range of activities and assessment tools will be employed in this course including essays, creative writing pieces, presentations and exams.

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## **ELA: LITERARY FOCUS 40S (1.0 credit)**

PREREQUISITE: Credit in ELA: Literary Focus 30S, or A minimum of 60% in ELA: Comprehensive Focus 30S

ELA: Literary Focus 40S is intended to deepen students' engagement with aesthetic texts. Students will learn to examine and articulate a wide range of responses to texts. They will also examine the importance of prior knowledge in how they perceive the world. Pupils will use both analysis and criticism to develop their understanding and comprehension of creative works and forms, and will examine the cultural context in which texts are produced and the values inherent in these works. They will also recognize the factors that shape their own products of expression. A wide range of activities and assessment tools will be employed in this course including essays, creative writing pieces, presentations and exams.



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## **ESSENTIAL MATHEMATICS 40S (1.0 credit)**

PREREQUISITE: Credit in a Grade 11 Mathematics course.

Students will work on the following mathematical concepts and skills which they will experience in everyday life in a technological society: Vehicle Finance, Home Finance, Business Finance, Statistics, Probability, Precision Measurement, Geometry and Trigonometry and Career Life.

Grade 12 Essential Math is intended for students whose post-secondary planning does not include a focus on mathematics and science-related fields (quoted from the Manitoba Curriculum Framework of Outcomes document).

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## **PHYSICAL EDUCATION / HEALTH 40F (Active Healthy Lifestyles, General) (1.0 credit)**

PREREQUISITE: Physical Education / Health 30F

This compulsory full-credit course is designed to help youth take greater ownership of their own physical fitness, to encourage them to seek out activities that interest them, and to engage in active lifestyles into their futures. Students will study topics related to fitness management, nutrition, social/emotional health, and personal development. The focus of this content will be on health and personal planning. These topics will make up the core 40% IN-class component of the course content. For the remaining 60% of the course, students will be required to develop and implement, on their own time, a personal physical activity plan as part of a physical activity practicum. Students will be introduced to risk management planning to minimize the associated risks of the activities they have chosen.

As part of earning a credit for this course, students will be required to submit a personal fitness portfolio containing elements such as a fitness plan, physical activity log, and/or journal entries. Students will be graded for completion of the course with a Complete or Incomplete designation.

*NOTE: Parents/guardians will be required to review the student's physical activity plan and sign a Parent Declaration and Consent Form acknowledging their approval of the chosen activities and acceptance of the responsibility for risk management, safety, and supervision. Parents/guardians will also be required to verify the entries of the student's physical activity log through a sign-off procedure.*

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## **PHYSICS 40S (1.0 credit)**

PREREQUISITE: A minimum of 60% in Physics 30S

CO-REQUISITE: Pre-Calculus Mathematics 40S

The Physics 40S course is a continuation and expansion of the basic concepts presented in Physics 30S. This course places a much greater emphasis on mathematical problem-solving and abstract thought than Physics 30S. Topics to be studied include: Kinematics, Dynamics, Impulse and Momentum, Free Fall, Projectile Motion, Circular Motion, Work and Energy, Gravitation, Electric and Magnetic Fields, Electric Circuits, Electromagnetic Induction, and Medical Physics. (some topics subject to change)



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*Note: Very good mathematical skills and problem-solving abilities are essential for success in this course. The ability to think abstractly is a great asset when studying physics. A strong background in Pre-Calculus Mathematics and Physics 30S is recommended.*

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## **PRE-CALCULUS MATHEMATICS 40S (1.0 credit)**

PREREQUISITE: A minimum of 60% in Pre-Calculus Mathematics 30S

This course is intended for students who expect to learn theoretical calculus as part of their post-secondary education. Students are strongly recommended to consult post-secondary institution websites for entry requirements. This course has a strong emphasis on graphing functions, solving functions, and trigonometry. Topics include: unit circle, trigonometric functions, trigonometric identities, trigonometric equations, permutations, combinations, binomial theorem, function operations, function composition, polynomial functions and their graphs, radical functions and their graphs, rational functions and their graphs, and transformation and mapping as a graphing strategy.

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## **PRINT COMMUNICATIONS 25S (0.5 credit, Term 1)**

PREREQUISITE: Applying ICT 1 15G, or credit in a Computer Studies or Keyboarding Course

This course is meant to provide students with the skills and knowledge to plan and create documents for personal and business communications. They will learn to produce printable documents that conform to recognized, real-world standards. They will be taught to produce: business letters, labels and envelopes, meeting agendas, meeting minutes, research papers in a universally accepted style (examples: MLA, APA, Chicago...), resumes and cover letters. They will participate in multi-user document editing and reviewing. They will learn to use language and tone appropriate to the communication and will incorporate elements of good layout when designing documents.

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## **PSYCHOLOGY 40S (1.0 credit)**

PREREQUISITE: None

Psychology 40S is the scientific study of human behaviour and mental processes. This course exposes students to the major topics found in the field of psychology. Units of study include biopsychology, individual and group behaviour, learning and memory, developmental psychology and cognitive psychology. Students will explore the practical applications of psychological knowledge as well as the theoretical aspects of this field of study.



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## **RELIGION 41G (0.5 credit)**

PREREQUISITE: None

St. Maurice School's Religion courses follow the religious education series approved by the Canadian Conference of Catholic Bishops (CCCB). The course is designed to assist young men and women to understand themselves as moral persons living the way of Christ through an examination of ethical theories, the revelation of sacred Scripture, and the experience and teaching of the Catholic Church.

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## **TOPICS AND TRENDS IN BUSINESS 40S (1.0 credit)**

PREREQUISITE: None

NOTE: Required course for Business Education Program students.

Topics and Trends in Business uses an inquiry-based learning model to allow students to explore current and/or emerging topics, trends, and opportunities related to business at a local, national, or global level. Students will design, recommend, and/or implement an action plan based on their inquiry findings. This course is designed to allow students to focus on issues about which they are passionate.

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## **VISUAL ARTS 30S (Grade 11 level credit) (1.0 credit)**

PREREQUISITE: Art 10S, or Art 20S, or Prior Written Permission of Instructor

NOTE: This course description is subject to change pending a new curriculum document from Manitoba Education.

Students will study the fundamentals of design in more depth than in previous years. Students will keep a sketch book and do art exercises as well as finished drawings and paintings. Drawing and painting will be the core area of emphasis although students will be able to explore other art forms on an individual basis.

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## **VISUAL ARTS 40S (Grade 12 level credit) (1.0 credit)**

PREREQUISITE: Art 10S AND Art 20S, OR Art 30S, OR Prior Written Permission of Instructor

This course is intended for students who plan to study Fine Arts in their Post Secondary Education. Students are expected to be self directed in their development as an artist. Evaluation will be on idea journals and portfolio entries students will produce. The teacher will act as a resource person but will provide structure and deadlines as needed. Note for Grade 11 and 12 Visual Arts Courses: The following Art course levels will be combined into the same timetable slot: Art 30S and Art 40S. Should space become an issue, priority will be given to those students eligible for Art 40S then Art 30S.