

## GRADE 12 COURSE DESCRIPTIONS

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SUBJECT: BIOLOGY 40S

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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SUBJECT: 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, and applications and modeling, the course becomes a cohesive whole rather than a collection of unrelated topics. Please refer to the Grade 12 AP® 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 home work. 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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SUBJECT: CHEMISTRY 40S

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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SUBJECT: CINEMA AS A WITNESS TO MODERN HISTORY 40S  
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 / 40S / 42S-AP®

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SUBJECT: COMPUTER SCIENCE 30S  
PREREQUISITES: A minimum of 60% in Web Design 35S  
AND  
Credit in Introduction to Applied and Pre-Calculus Mathematics 20S  
or  
A minimum of 60% in Essential Math 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 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 microcomputers to design, write and execute programs using object oriented programming languages.

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SUBJECT: COMPUTER SCIENCE 40S  
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 microcomputers to design, write and execute programs.

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SUBJECT: COMPUTER SCIENCE PRINCIPLES 42S AP® (Advanced Placement®)  
PREREQUISITE: A minimum of 85% in Computer Science 30S  
CO-REQUISITE: Pre-Calculus Mathematics 40S  
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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.

Topic Outline:

1. Object-Oriented Program Design

2. Program Implementation
3. Program Analysis
4. Standard Data Structures
5. Standard Algorithms
6. Computing In Context

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SUBJECT: DRAMA 35S (½ credit, Term 2)  
PREREQUISITE: None  
Maximum Class Size: 20 Note: This course will not run if fewer than 6 students register for it.

This course is intended to further develop thoughts, feeling, beliefs and actions through imagination, interaction and reflection. Students will continue to develop diverse dramatic skills and will work to understand the context in which drama exists. Students will explore various roles in the theatre (sound, set design, costume design etc.) and how they work in harmony to produce a finished theatrical production. Students will build all of these skills by helping with the spring drama production.

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SUBJECT: ECONOMIC PRINCIPLES 40S  
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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SUBJECT: ELA: COMPREHENSIVE FOCUS 40S  
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.

Note: The Grade 12 Provincial Standards Test mark for English (30% weight) will be applied to the final mark for ELA: Comprehensive Focus 40S (ENC40S) for all students, except those who are not registered in ENC40S, in which case the Provincial Standards Test mark for English (30% weight) will be applied to the final mark for ELA: Literary Focus 40S (ENL40S).

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SUBJECT:	ELA: LITERARY FOCUS 40S
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.

Note: The Grade 12 Provincial Standards Test mark for English (30% weight) will be applied to the final mark for ELA: Comprehensive Focus 40S (ENC40S) for all students, except those who are not registered in ENC40S, in which case the Provincial Standards Test mark for English (30% weight) will be applied to the final mark for ELA: Literary Focus 40S (ENL40S).

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SUBJECT:	ENGLISH LITERATURE AND COMPOSITION 42S AP® (Advanced Placement®)
PREREQUISITE:	A minimum of 85% in ELA: Comprehensive Focus 30S, or A minimum of 80% in ELA: Literary Focus 30S
CO-REQUISITE:	ELA: Literary Focus 40S
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English Lit 42S AP® will engage students in the careful reading and critical analysis of literature. Through the close reading of selected texts, students should deepen their understanding of the ways writers use language to provide both meaning and pleasure for their readers. As they read, students will consider a work's structure, style, and themes as well as the use of figurative language, imagery, symbolism, and tone. In short, students of this course must work to attain an advanced knowledge and skill level conducive to an introductory university course. Please refer to the Grade 12 AP® Program Information document on the St. Maurice School website.

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SUBJECT:	ESSENTIAL MATHEMATICS 40S
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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SUBJECT:	PHYSICAL EDUCATION / HEALTH 40F (Active Healthy Lifestyles, General)
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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SUBJECT:	PHYSICS 40S
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)

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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SUBJECT:	PRE-CALCULUS MATHEMATICS 40S
PREREQUISITE:	A minimum of 60% in Pre-Calculus Mathematics 30S

Grade 12 Pre-Calculus Mathematics 40S is designed for students who intend to study Calculus and related mathematics as part of their post-secondary education. The course is comprised primarily of a high-level study of theoretical mathematics with an emphasis on problem solving and mental mathematics. Topics include: Transformations, Functions: Radical, Polynomial, Exponential, Logarithmic, Rational, Unit Circle, Trigonometric Functions, Graphs and Identities, Functions operations and Permutations, Combinations, and Binomial Theorem. Students are required to learn mathematical concepts through practice and regular homework. Many of the questions and problems on exercises, tests, and examinations can be expected to be different from those presented in class. TI-83 graphing calculators may be made available to the students of this course during class time.

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SUBJECT:	PSYCHOLOGY 40S
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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SUBJECT: RELIGION 41G (½ credit)  
PREREQUISITE: None

St. Maurice School's Religion courses follow the religious education series approved by the Canadian Conference of Catholic Bishops (CCCCB). 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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SUBJECT: TOPICS AND TRENDS IN BUSINESS 40S  
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.

#### VISUAL ARTS 30S / 40S

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SUBJECT: VISUAL ARTS 30S (Grade 11 level 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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SUBJECT: VISUAL ARTS 40S (Grade 12 level 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.

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