

# Science

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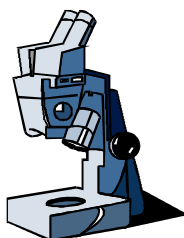
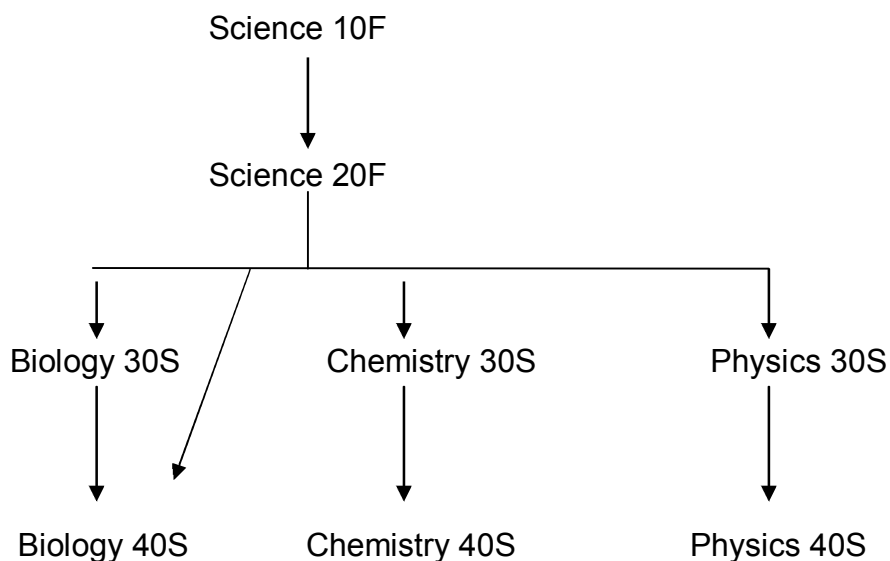


**Did you know:** (using the University of Manitoba as an example)

- That Physics 40S and Chemistry 40S are required for admission to the following programs of study: Engineering, Dentistry, Medicine, pre-vet programs
- That Chemistry 40S is required for admission to the following programs of study: Agriculture, Dental Hygiene, Human Ecology (except Family Studies), Physical Education and Pharmacy (if you do not have Physics 40S or Biology 40S)
- To be accepted into Science or Engineering a minimum mark of 60% in the 3 prerequisite courses is required. As enrollment is limited in these faculties a much higher overall average may be required to achieve a successful application for admission eg. 85% in Engineering

**Did you know:** (using Red River College as an example)

- That Physics 40S is not required for any programs, but is recommended for the following courses: Civil Engineering, Mechanical Engineering, Electrical Engineering and Radiotherapy
- That Chemistry 40S is required for Chemical & Biosciences Technology



## Science 10F

**1 credit**

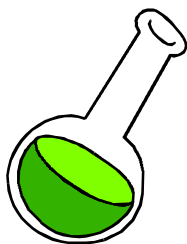
Compulsory

This course outline includes 3 teaching units:

- Reproduction
- Atoms, Elements & Compounds
- Nature of Electricity

The overall skills & attitudes used in the learning process of this course will include:

- Initiating
- Researching
- Planning
- Observing, Measuring,



- Recording
- Analyzing & interpreting
  - Concluding & Applying
  - Reflecting on Science & Technology
  - Demonstrating Scientific & Technological Attitudes

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## Science 20F

**1 credit**

Prerequisite: Science 10F

Compulsory

This course includes 3 teaching units:

- Dynamics of Ecosystems
- Chemistry in Action
- Physics – Motion

## Chemistry 30S

**1 credit**

Prerequisite: Science 20F and Math 20S(applied or pre-calculus)

The Chemistry 30S curriculum provides a foundation for the development of scientific literacy in all students.

Curriculum skills and attitudes include:

- Critical & Creative thinking
- Problem Solving (Inquiry)
- Science, Technology & Society: Issues
- Science, Technology & Society: Technology
- Careers in the Sciences
- Communication

Chemistry 30S teaching units may include:

- Chemistry in a Changing World
- Physical Properties & Changes
- Chemical Reactions
- Solubility
- Acids & Bases
- Organic Chemistry
- Gases

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## Biology 30S

**1 credit**

Prerequisite: Science 20F

This course emphasizes laboratory work; over twenty experiments are performed including a series of dissections on a fish, frog and pig.

Topics covered in this course include:

- Wellness & homeostasis
- Digestion & nutrition
- Transportation & respiration
- Excretion & waste management
- Protection & control

## **Physics 30S**

**1 credit**

Prerequisite: Science 20F & Pre-Calculus Math 20S or Applied Math 20S

The main emphasis of this course is an overall introduction to the various topics in Physics. Topics covered in this course are:

- Motion
- Accelerated motion
- Newton's laws
- Momentum and impulse
- Work & energy
- Waves

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## **Biology 40S**

**1 credit**

Prerequisite: Science 20F or Biology 30S

This course is designed to encourage students to be independent learners and to prepare students for further study in Biology at the post-secondary level.

Topics covered in this course include:

- Understanding biological inheritance
- Mechanisms of inheritance
- Evolutionary theory & biodiversity
- Organizing biodiversity
- Conservation of biodiversity

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## **Chemistry 40S**

**1 credit**

Prerequisite: Chemistry 30S

This is a continuation of Chemistry 30S. This course is designed for students who wish to take further studies in science related fields such as Engineering, Agriculture, Nursing etc.

Topics covered in this course are:

- Measurement, observation, reporting
- Kinetics
- Chemical equilibrium
- Acid-base equilibrium
- Solubility equilibrium
- Oxidation and reduction

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## **Physics 40S**

**1 credit**

Prerequisite: Physics 30S

Recommended: Applied Math 30S or Pre-Calc Math 30S

The emphasis of the course is on expanding the concepts first introduced in Physics 30S

Physics 40S is designed to teach physics concepts through exploring cutting-edge technology. This course will challenge students to think logically and encourage them to consider traditional Physics laws in a new light.

Topics covered in this course are:

- Mechanics
- Dynamics
- Electric field and forces
- Magnetism
- Modern Physics