BELL HIGH SCHOOL

YEARS 3,4&5

SENIOR PROGRAMME BOOKLET

1972-73

GRADES 11,12&13

B E L L H I G H S C H O O L

You have already been told that all Secondary Schools in Ontario will be on the "credit" sytem in September 1972, and you have some idea of what this system involves. On this page, we will give you some details of the credit system as it will exist in Bell High School.

The school year will be divided into two parts or semesters. The first semester will run from September to the end of January, and the second semester will run from the first of February to the last school day in June.

Examinations will be held at the end of the first semester and again in June. Exemptions from writing any final examination, whether in January or June, may be granted by the individual subject teachers.

Some courses last only one semester, and are worth half a credit each.

Most courses last all year, and are worth one credit each.

A few courses occupy two periods a day all year, and are worth two credits each. The Auto Mechanics Major course in Grades 11 and 12 occupies three periods a day all year, and it is worth three credits.

The terms "Grade 9, Grade 10..." and "4-year, 5-year" are going to be phased out and replaced by "Year 1, Year 2..." and the words "Enriched, Advanced, Regular, Remedial," but both sets of terms will continue to be used for a while, to avoid confusion. The terms "Enriched, Advanced etc." are called "Levels of Difficulty."

All courses, at whatever year or difficulty level carry the same credit value for diploma purposes.

So far, the credit system does not affect Grade 13. The requirement for a Secondary School Honour Graduation Diploma is still the successful completion of six courses at the Grade 13 level. The student's choice of these six courses must be greatly influenced by the entrance requirements of the university or college which he or she hopes to attend.

Diploma Requirements:

The school is required to place each of the courses which it offers in one or other of four "Areas of Study". These are called:

- Communications
- Social and Environmental Studies
- Pure and Applied Sciences
- Arts

A Secondary School Graduation Diploma (Grade 12) will be granted on the recommendation of the principal of the secondary school last attended to a student who has completed satisfactorily a minimum of 27 credits in a secondary school on the following basis:

- --at least one credit from each of the four Areas of Study in each of the student's first two years in a secondary school (8 credits).
- --at least one further credit after the first two years from each of the four Areas of Study (4 credits).
- --a further 15 credits (from any of the four Areas of Study).

Prerequisites:

In Mathematics, Languages, Technical subjects and some other areas, each course is prerequisite to the one above it (i.e. it is necessary to complete French 150 before taking French 250, etc.) Consideration will be given by the Department Heads to placing a student in a higher year level than normal if he or she has some special experience or talent.

The detailed course descriptions on later pages show the prerequisites for each course.

Subject Choices and Post-Secondary Education

It has been stated frequently that each student should make his subject choices in relation to his interests, aptitudes and goals. There is a possibility that some students may be tempted to make subject choices based on interest without regard to goals. If the student's goal is Grade 13, he must be aware that Grade 13 subjects have Grade 12 (5-year) prerequisites wherever a corresponding Grade 12 subject exists. Thus Grade 12 (5-year) English is a prerequisite for Grade 13 English and so on..

It is not enough merely to choose six credits at the Grade 13 level in order to qualify for a Secondary School Honour Graduation Diploma. The choices must be made in relation to the requirements of the post-secondary programmes which the student wishes to take.

The requirements vary from one university to another. For example, the requirements for Arts at Carleton are as follows: three credits from two of English, Mathematics, a language other than English, and three additional credits. At Ottawa University, the requirements are one credit in English plus six others. If French is not taken at the Grade 13 level, the Ottawa U. student will have to take a French course at some time during his degree programme. Information about university requirements is available the Guidance office as well as in the book "Horizons" which was given to each student in Grade 12.

The Colleges of Applied Arts and Technology also have requirements for their various programmes. In general, for the various Technology courses, Mathematics and Science at the Grade 11 and 12 level are essential. For business courses, English and Grade 11 and 12 Mathematics are required.

Nursing schools require that students complete Mathematics to the end of Grade 10 and take Chemistry and Physics or Biology in Grades 11 and 12.

In Grades 11 and 12, few students really know what they will be doing in later years. This need not be a problem for the individual if his choices of subjects provides a degree of flexibility to allow for change in plans. To maintain flexibility, a student should continue with English, History and/or Geography, Mathematics, Science and a language through Grades 11 and 12. In Grade 13, the choice of subjects must be made with specific career plans in mind.

To assist you in selecting your subjects, the Guidance office provides you with the following sources of information:

"Horizons", "Spectrum", and "University Handbook"
Calendars for all universities and Colleges of Applied Arts and Technology
A comprehensive file on course requirements.

The counsellors will assist you in interpreting the sources of information when necessary, but the final decision on course and subject selection rests with the student.

Summary

Secondary School Graduation Diploma (Grade 12)

One credit from each of the four Areas of Study in each of the first two years in school. = 8

One credit from each of the four Areas of Study after the first two years in school = 4

An additional 15 credits = 15

Secondary School Honour Graduation Diploma (Grade 13)

Six credits at the Grade 13 level

(Note: Grade 13 credits may be counted towards a Grade 12 Diploma, but the same credit cannot be counted towards both diplomas)

B E F O R E Y O U F I L L O U T Y O U R O P T I O N S H E E T . . . . .

1. Remember: the choices you make now will determine the organization of Bell High School for next year. If you change your mind, tell us immediately. We will try to accommodate you, but we cannot promise to do so.

   the choices you make now will be changed according to your results in June or at Summer School. You will be consulted on any changes.

   any course may be cancelled if not enough students choose it.

2. Read your programme booklet carefully.
   See what courses are offered. Look at the prerequisites. Do not choose a course if you do not have the background for it. All programmes are subject to the approval of the Guidance Department and the Principal.

3. Choose a full timetable (8 courses) in Grades 9 and 10. Later in the year, adjustments can be made if the load proves to be too heavy
   In Grade 11, the minimum number of credits is 7, and in Grade 12 it is 6. However, you are encouraged to take more than the minimum if possible.

   FOR A DIPLOMA, YOU NEED 27 CREDITS. FOR AN EDUCATION, YOU NEED ENGLISH, HISTORY, GEOGRAPHY, MATHEMATICS, SCIENCE, A MODERN LANGUAGE AND AS MANY OTHER SUBJECTS AS POSSIBLE.
   YOU DON'T NEED SPARE PERIODS FOR ANYTHING.

4. The course codes: e.g. PMA 350:

   P (the first letter) indicates the Area of Study--Choose at least one course from each area in Grades 9 and 10, and one more in Grade 11 or 12.
   MA (the second and third letters) indicate the subject.
   3 (the first number) indicates the year level.
   5 (the second number) indicates the level of difficulty: 3 means "Remedial", 4 means 4-year, 5 means 5-year, 6 means "enriched".
   0 (the last number) will vary. If it is "0" or "6" - the course will run all year and earns one credit.
   If it is "1" or "9" it means that the course runs only for the first semester and is worth ½ credit.
   If it is "2" or "8" it means that the course runs only for the second semester and is worth ½ credit.
   If it is "3" it means that the course runs two periods per day for the first semester and is worth one credit.
   If it is "4" it means that the course runs two periods per day for the second semester and is worth one credit.
   If it is "5" it means that the course runs two periods per day all year and is worth two credits.
   Grade 13 subjects follow their own separate codes.

COURSES OFFERED IN BELL HIGH SCHOOL

Year 1 (Grade 9)	Year 2 (Grade 10)	Year 3 (Grade 11)	Year 4 (Grade 12)	Grade 13
LIST "A"	AREA OF STUDY -- COMMUNICATIONS			
English 160	English 260			English 551
English 150	English 250	English 350	English 450	
English 140	English 240	English 340	English 440	English 552
English 130				
French 160	French 260	French 360	French 460	French 551
French 150	French 250	French 350	French 450	
French 140	French 240	French 340	French 440	French 552
Français 150		French 341 (342)	French 451	
			French 456	German 551
	Shorthand 250	Shorthand 350	Shorthand 450	
		Office Practice & Business English 355	Communications & Business Procedures 455	Geography 551
				Geology 551
LIST "B"	AREA OF STUDY -- SOCIAL AND ENVIRONMENTAL STUDIES			History 551
Geography 151	Geography 252	Geography 350	Geography 450	
Geography 141	Geography 242	Geography 340	Geography 440	The Canadian Family in Perspective 551
			Geography 456	
		History: SHG 351, 352	Geology 441 (442)	
History 152	History 251	History: SHY 351, 352	History: Revolutions (451)	
History 142	History 241	History: SHY 359, 358	History: War and Peace (452)	Mathematics 551 (Algebra)
		History: SHY 341, 342	History: Far East (451)	
		Man in Society 341 (342)	History: Totalitarianism (452)	Mathematics 552 (Calculus)
			World Politics 441 (442)	Mathematics 553 (Functions)
Consumer Education 150	Retail Merchandising 250	Business Law 350	Economics 440	
		Marketing 350	Marketing 450	Biology 551
			Business Organization and Management 450	Chemistry 551
		Home Economics 351 (352)	Home Economics 451 (452)	
		Home Economics 359 (358)	Home Economics 459 (458)	Physics 551
				Music 551

Additional Gr. 13 Courses:

Mathematics 550 - a one credit course
Mathematics 554 - mathematics of investment

Note: The Senior Programme Booklet shows some new courses to be offered if there is enough interest.

Year 1 (Grade 9)	Year 2 (Grade 10)	Year 3 (Grade 11)	Year 4 (Grade 12)
LIST "C"	AREA OF STUDY -- PURE AND APPLIED SCIENCES		
Science 150	Science 250	Physics 350	Chemistry 453 (454)
Science 140		Physics 340	Chemistry 443 (444)
	Biology 340.....	Biology 340	Geology 450
Mathematics 160	Mathematics 260	Mathematics 360	
Mathematics 150	Mathematics 250	Mathematics 350	Mathematics 450
Mathematics 140	Mathematics 240	Mathematics 340	Mathematics 440
Mathematics 130	Mathematics 230		Mathematics and Business Machines 440
		Computer Science 350	Computer Science 450
Home Economics 151 (152)	Home Economics 251 (252)		
Home Economics 159 (158)	Home Economics 259 (258)		
	Accounting 250	Accounting 350	Accountancy Practice 451 (452)
Auto Mechanics 151 (152)	Auto Mechanics 251 (252)	Auto Mechanics 350	
Drafting 151 (152)	Drafting 251 (252)	Architectural Drafting 350	Architectural Drafting 450
Electricity 151 (152)	Electricity 251 (252)	Electricity 350	Electricity 450
Welding 151 (152)	Welding 251 (252)	Welding 350	
Woodworking 151 (152)	Woodworking 251 (252)	General Woodworking 350	General Woodworking 450
		Auto Mechanics Majors 340*	Auto Mechanics Majors 440*
		Building Construction 350	Building Construction 450
LIST "D"	AREA OF STUDY -- ARTS		
Art 150	Art 250	Art 350	Art 450
Music 150 (experienced)	Music 250	Music 350	Music 450
Music 156 (beginners)			
Physical Education 150 Boys-Girls	Physical Education 250 Boys-Girls	Physical Education 350 Boys-Girls	Physical Education 450 Boys-Girls
Latin 150	Latin 250	Latin 350	Latin 450
Typewriting 150	Typewriting 250	Data Processing 340	Data Processing 450
	German 250	German 350	German 450
	Spanish 250	Spanish 350	Spanish 450
	Calculating Machines 250		

(* 3 credit courses--major and related shops)

Subject Descriptions -- Year 3

Area of Study -- Communications

English (CEN 350) Prerequisite: English (CEN 250)

The course emphasizes the study of the essay and the short story. In addition, students will be given a varied assortment of poems and modern plays. One Shakespearean play will be studied and two or three modern novels will be compared. The composition part of the course is intended to assist the student to develop further the ability to speak and write clear, vigorous English.

English (CEN 340) Prerequisite: English (CEN 240 or 250)

The course has five major areas of work: poetry, essays and other non-fiction writing, novels, short stories and written English co-ordinated with the topics and types of literature studied. In addition, some plays will be studied and an exploration of the film as a means of expression will be carried out.

French (CFR 360) Prerequisite: French (CFR 260)

An enriched version of CFR 350. Students in this class will do more reading and writing than at the 350 level. Although the textbook includes several reading passages, students will begin reading more challenging short stories and novels. Students registering in this course must be prepared to set aside more time to play-writing and preparation of material for discussion in class.

French (CFR 350) Prerequisite: French (CFR 250 or 260)

Textbook used is "Ici on parle Francais" level 5. Students continue the audio-lingual programme based on phonetics, structures and dialogues. A lexical analysis which takes into account the cultural and geographic context in which the second language is to be spoken, permits selection of vocabulary essential to the student. A good part of this vocabulary consists of those words which make up the grammatical framework of the language; pronouns, prepositions, auxiliary verbs, etc. Again the reading and writing aspects of the language have increased while at the same time more emphasis is put on the study of authors.

French (CFR 340) Prerequisite: French (CFR 240)

Same course as CFR 350 omitting certain sections not considered essential at this level. Students will spend more time practising frequently-used expressions, idioms, etc. and less time on authors. Newspapers, magazines and short articles will be used instead of novels and short stories. This course is aimed at those students who have difficulty with rules of grammar and syntax and who can use locutions, expressions while ignoring their formation or their origins.

French (CFR 341) Prerequisite: French (CFR 240 or 250)

This course is for students interested in the French language and the French and French Canadian way of life, but who are unable to express themselves in French. The student will learn to develop his oral comprehension for the French language by listening to a variety of sources speaking French: teachers, tapes, radio, television, guest speakers, etc. This course, complemented by CFR 342, will put true bilingualism in practice: the students will hear French, understand and answer in English.

French (CFR 342) Prerequisite: French CFR 240 or 250)

The objectives of this course are similar to those of CFR 341; the student will develop written comprehension through newspapers, magazines, reports, etc. He will understand the written word and answer in English in writing or orally.

Shorthand (CSH 350) Prerequisite: Shorthand (CSH 250)

On completion of this course, the student will be able to write from dictation given at a rate of 80 words a minute, and type a transcript with 90 per cent accuracy. This is a saleable skill with limited application.

Office Practice (COP 355) Prerequisite: Typewriting (ATY 250)

This course is designed to prepare a student for CCB 455 through:

1. The further development of skill in the use of the typewriter.
2. An introduction to the use of other office equipment.
3. An introduction to some of the practices and procedures used in office work.
4. Practice in the student office on practical work.
5. The development of attitudes conducive to high standards of performance.

The student will acquire saleable skills of limited application.

Area of Study -- Social and Environmental Studies

Geography (SGE 350 and SGE 340) Prerequisite: Geography (SGE 151 or 141)

A systematic study of the World's Physical Geography which makes extensive use of the techniques learned in the 151 or 141 course. The student will study the landforms, climate, vegetation and soil patterns of the world from the point of view of their origins and processes of formation and the ways in which they affect Man's use of his environment (the World) at the present time. This course provides an 'Introduction' to a complete coverage of the "Systems" of the world based on Man's utilization of his environment.

World Religions (SHY 359 & SHY 358) Prerequisite: History (152 & 251)

One of the consistent threads that runs through man's history from the earliest days is some form of religious life and expression. Much of this expression derives from questions about the meaning of life and the mysteries of nature and from the search for answers to such questions. Religion and religious expression are one way of interpreting and responding to human experience and of attempting to find answers to these fundamental questions.

Apart from the general aim stated above, the particular aim of the course will be the development of a sympathetic understanding of the meaning of different religions and their effect on the life and thought of their adherents.

History of Greece and Rome (SHG 351 and 352) Prerequisite: History (152 & 251)

Recommended for students who plan to take Grade 13 History and university work in the social sciences and humanities.
Emphasis will placed on the contributions made by the Greeks and Romans to Western Civilization and will include the following topics:- Growth of city states, Athens and Sparta, Growth of Athenian democracy, the Persian Wars, Athenian Imperialism, Alexander the Great, Hellenic and Hellenistic Culture, the development of Roman Government and Law, The Civil Wars, The Roman Empire, its decline and fall, and Roman Legacy.

History: Mediaeval & Renaissance (SHY 351 & 352) Prerequisite: History 152 & 251

A study of the period with emphasis on the development of Western Civilization by examining the growth and influence of Christianity and Islam, Feudalism, The Crusades, Mediaeval Culture, Renaissance culture and the Reformation.

History: Ancient Civilization (SHY 341) Prerequisite: History 142 & 241

Ancient Civilizations will concentrate on Egyptian, Greek, Roman and Mediaeval Civilizations. A study of the pyramids, tombs, and temples of Egypt; the contributions of the Greeks to our present society and an examination of the Roman way of life and achievements. Included also are the interesting events of the Mediaeval period such as the Crusades.

History: Development of Western Civilization Prerequisite: History 142 & 241
Renaissance to 1945 (SHY 342)

The Course will start with an examination of the great works of the Renaissance artists such as Michelangelo, da Vinci, etc. From the Renaissance the sequence of events will be portrayed by the important characters in history such as Louis XIV, Napoleon, Lenin, Hitler, Churchill and others. The course of events of the two world wars will be traced by discussions of opinions formed by reading short accounts of the lives of war heroes and heroines, spies, frogmen and war aces.

Man In Society (SMS 341) & (SMS 342) Prerequisite: History 142 & 241)

Courses will introduce the student to the scientific study of human behaviour, the procedures and studies that the behavioural scientist uses in order to understand the individual and society. It will also deal with a sociological analysis of prejudice, race relations, primitive and industrial society, and contemporary problems in urban society. This course is semestered with SMS 342 Man and Crime.

Man and Crime (SMS 342) Prerequisite: History 142 & 241

The study of man in relation to crime to include historical development of criminal theories and crime, criminal law, the police, courts, penal institutions, after-care societies and special group problems. This course is semestered with SMS 341 Man in Society.

Business Law (SBL 350) Prerequisite: None

This Course is to provide students with a general introduction to the Canadian legal system with emphasis on the rights and responsibilities of individuals with particular reference to the areas of civil and commercial law.

Topics to be discussed will include the sources and development of our system of laws; administration of the law and the system of courts in Ontario; torts; the rights and responsibilities of employers and employees; the rights and responsibilities of landlords and tenants; contracts; bailments, conditional sales; patents, trademarks and copyrights; negotiable instruments; laws concerning banking and credit.

The Course will be conducted on the case method. There will be visits to the various types of courts. In addition, guest speakers on various aspects of the administration of the law and specialists in the various fields will address the Course.

Marketing (SMK 350) Prerequisite: None

On completion of this Course the student will have a knowledge of the role and importance of marketing in today's economy, and of the theory and practice of salesmanship.

The course is divided into two semesters. The first semester will consist of a survey of the field of marketing and its importance in today's economy. Subjects discussed will include marketing and the economy; industrial and consumer's goods; wholesalers and their functions; types of retail organization; store layout and display; inventories; pricing policies and procedures; brands and labels; trademarks; market research; introduction to advertising; sources of marketing information; career possibilities in marketing.

The second semester is an introduction to sales and personal selling techniques. Course content includes the salesman's company and policies; finding the right customers; preparation of the sales presentation; making the sale; closing the sale; handling objections; incentive selling; selling through various media; ethical selling practices; securing a position in the sales field.

Emphasis throughout the course will be on case studies.

Home Economics - General Introduction

The study of Home Economics in Grades 9-12 is designed as an education for family living. The family is still the basic unit of society in this age of rapid change. Among its responsibilities are the character and personality development of the child as well as the meeting of housing, clothing, economic, health and nutritional needs of family members. The Home Economics course has been planned to assist the student in preparing to meet the challenges she will face in her future roles.

Family Living (SHE 351 and SHE 352) Prerequisite: Foods & Nutrition (PHE 251& 2

Many changes in life style are becoming apparent to the modern family. The functions of the family and roles of its members are points of emphasis in the Family Living course. The family is followed from its earliest stages in Pioneer Canada, through its development to the present day. The role of women in home community and business world is discussed.

There is a study of foods, food customs and traditions of various countries and their influence on the Canadian family. Practical application includes preparation of foods from these countries.

Tailoring and Fashion (SHE 359 and SHE 358) Prerequisite: Clothing & Textiles (PHE 259 & PHE 25

At this level, a study is made into the psychology of the use of clothes as body adornment and into the evolution of dress throughout the centuries. Contributions made by famous designers to the fashion industry will also be discussed. A knowledge of art principles and their relationship to dress design attained in this course will aid the student in her choice of clothing for the individual figure type. Research will be continued into the characteristics of man-made and synthetic fibres. The clothing construction project, based on skills gained in level II, will be tailoring for advanced students and dressmaking using synthetic fabrics for less skilled students.

Area of Study -- Pure and Applied Science

Physics (PPY 350)

Prerequisite: PSC 150 or PSC 140

It is strongly recommended that a student has attained at least 60% in PSC150 (Science) or 80% in PSC 140 (Science) before selecting this course. A student with less aptitude for science and mathematics should select PPY 340 (Physics) which is less intense and theoretical.

Physics 350 serves as a good introduction and foundation for Physics 551 If a student is not going to study physics at a higher level in the future, he should select Physics 340.

The aim of this introductory course in physics is to enable a student to realize that physics is not a collection of facts which can be learned; it is a highly imaginative, intellectual structure of concepts that give a meaningful and creative picture or model of nature.

Physics 350 will give the student a general survey of some of the foundations of modern physics. The course is designed to encourage consideration of all aspects of physics - performing experiments, collecting and organizing data, solving problems, integrating concepts and using theories to explain natural events.

Summary of Topics:

- Measurements
- Motion and Force
- Laws of Motion
- Universal gravitation
- Work, power and energy
- Conservation of energy
- Vibrations and Wave Motion
  - Wave phenomena in general
  - Sound
  - Light - (geometrical and physical optics)
- Electrostatics
- Current Electricity - (Sources, Ohm's Law, electrical power and energy)
- Electro magnetism - (induced currents, D.C. motors and generators, transformers.)
- Atomic structure - (Nuclear physics, Living in atomic age)

Physics (PPY 340)

Prerequisite: Science (PSC 150 or PSC 140)

Physics 340 is designed for the student who will not be taking Physics 551 but requires some knowledge of Physics as prerequisite for his future career.

A student with less aptitude for science should select PPY 340 which covers similar topics to PPY 350.

Physics 340 is an introductory, student-centred course with many experiments. More stress will be placed on the practical applications of physics than the theory in this course.

Summary of Topics:

- Measurement
- Motion
- The Concept of Force
- Work, Energy, Power
- Machines
- Heat Units and the Measurement of Heat
- Electromagnetism
- Investigating the Atom
- Sound
- The Behaviour and Nature of Light
- Optical Instruments
- Electrostatics
- Electricity
- The Electric Motor

Biology (PBY 340) Prerequisite: Science (PSC 150 or PSC 140)

This course is intended for the student who is not proceeding into advanced Biology either in High School or University. It can be taken at any time after the first year of high school science.

Students who plan to take Science 250 next year or are taking it this year should not select Biology 340. A student, who plans to take Grade 13 Biology in the future, should select Science 250.

This biology course attempts to provide the students with an understanding of his immediate environment. He will be actively engaged in laboratory work both within the classroom and the outdoors.

The following is a list of the general topics which will provide the framework for the laboratory and field studies.

The World of the Forest. In this unit the student will study common trees (identification, reproduction, effect on the environment, and their means of securing the necessities of life). Common animals of the forest will be studied (identification, rearing and dissection of these animals). Insects receive special attention. Animal reproduction, including mammals, is also studied. Forest management is introduced with the emphasis on insects, and insecticides as pollutants of the environment.

The Small World. This unit acquaints students with bacteria and moulds. Antiseptics, the micro-biology of milk and Nematode worms are also studied.

The World of the Cell. The student is introduced to the basic unit of life, the cell. Heredity, respiration, photosynthesis and energy relationships within the cell will be investigated in the laboratory.

The World of the Past. Simple laboratory studies and assigned readings will introduce the student to the Theory of Evolution.

The Freshwater World. The students will make a detailed investigation of the organisms living in a pond which will include the preparation and maintenance of a small aquarium as well as the dissection of a fish.

Mans World. The Nature of Pollution is discussed and the level of pollution in the air, soil and water are determined in the laboratory.

Mathematics (PMA 360) Prerequisite: Mathematics (PMA 260 or 75% in PMA 250)

The third level Enriched course in Mathematics. It extends the study of topics studied in Mathematics 250/260 and begins the study of geometric proofs using transformations, ratio and proportion theorems and problems, similar triangles, inequations involving absolute value, linear systems with literal co-efficients, and trigonometric or circular functions and applications. Time is available for enrichment topics depending upon the interests of the students, and for the preparation of students for Mathematics contests which are sponsored on the national and international levels.

Mathematics (PMA 350) Prerequisite: (PMA 250 or PMA 260)

The third level Advanced course in Mathematics. It extends the study of topics studied in Mathematics 250/260 and begins the study of geometric proofs using transformations, ratio and proportion theorem and problems, similar triangles, inequations involving absolute value, linear systems with literal coefficients, and trigonometric or circular functions and applications.

Mathematics (PMA 340) Prerequisite: Mathematics (PMA 240 or 250)

The third level General Course in Mathematics. It continues the study of topics studied in Mathematics 240 and is intended to supply a basic working knowledge of practical mathematics for students desiring such a course. Trigonometry, coordinate geometry, radicals and exponents, and the exponential function are introduced. The course concludes with the study of one or two special interest topics depending upon the interests of the class.

Computer Science (PCS 350) Prerequisite: 60% in Mathematics (MAT 250 or MAT 260)

This is a first course in problem solving using the computer as an aid. The language used is FORTRAN IV with WATFOR. Students develop flow charts, write and correct programs which are run on a computer.

Accounting (PAC 350) Prerequisite: (PAC 250)

This Course continues the study of accounting theory learned in Accounting PAC 250, further develops a knowledge of accounting systems, and provides practice in performing the basic functions of recording and entering transactions in the various books of account.

Topics will include a review of general accounting principles; synoptic journals; payroll accounting; negotiable instruments; eight-column worksheets; inventory valuation; methods of calculating depreciation and depletion; methods of calculating allowances for doubtful accounts; accruals; "one-write" or peg-board accounting; case studies.

Although this Course is not a prerequisite for Accounting 450 (Accountancy Practice), students who intend to seek employment on completion of high school graduation should take it.

Architectural Drafting (PAD 350) Prerequisite: PDG 251 or PDG 151

The Architectural drafting course offers the student an opportunity to explore a specialized form of drafting.

The course consists of drawing an actual set of house plans with special emphasis on construction details and the problems facing an architect as he designs a house. There will be perspective, section views and other types of drawings that go to make up the presentation drawings.

An introduction to basic surveying will be given and the properties of various materials will be studied.

Auto-Mechanics (PAM 350) Prerequisite: PAM 251 or PAM 252

This course will be offered if there is no class for Auto-Major (PAT 340 or PAP 340). The course is set up to give a further knowledge in the operation of the automobile without taking a auto-major course.

Emphasis will be placed on theory, design and construction, so that proper maintenance may be performed.

Engine, fuel and electrical system, transmission system, and brake system are some of the topics covered. Practical work will be given to consolidate the theoretical part of the course.

Some practical applications:

- tune-up (minor)
- minor repair and adjustment to engine
- reservicing brakes
- lubrication

Building Construction (PBC 350) Prerequisite: TWW 251 or 151

Wood Frame house construction is stressed in the 3rd year. In order to construct the model, students are instructed in the elements of:

Floor Planning
Window & Door Framing
Wall Layout
Roof Framing

Details of Hardware installation, Insulation and Prefabrication techniques are also involved.

Electricity (PEL 350) Prerequisite: PEL 251 or 151

This course covers in more depth the principles of electromagnetism and magnetic circuits as applied to relays, motors and generators. Experimental study of the principles of operation, construction and characteristics of a variety of electrical machines is undertaken. Methods of starting and controlling motors involves the use of equipment in the shop. Kirchoff's Laws are used to solve network problems. Alternating current is introduced including generation of a sine wave, a.c. values of voltage and current. Power distribution, transformers, inductance and capacitance in circuits. Semi-conductor theory. Electronic projects are built by the students and the use of slide rules is encouraged.

Welding (PWE 350) Prerequisite: PWE 151 or PWE 251

In PWE 350 the student is introduced to more advanced welding techniques as in vertical and overhead welding by using both exy-acetylene and electric arc welding equipment.

A simple project is used to cover the importance of "joint design" and "welding sequence" in order to control "distortion".

The use of "welding symbols" as well as electrode and steel classification charts are also covered.

Woodworking - General (PWW 350) Prerequisite: Woodworking (PWW 151 or 251)

In the 3rd year, details of Cabinet and Furniture making are stressed. Students usually proceed to the making of more involved wood structures of their personal choice and for their personal use.

Some elements of pattern making are involved during the course.

Auto Mechanics (PAT 340 & PAP 340) Prerequisite: Auto Mechanics (PAM 251 or 151)

This is a two credit course, therefore, PAT 340 and PAP 340 must be taken together A student may be accepted into the course without the prerequisite but only with consultation with the head of the department and the instructur.

In this course, the students are introduced to trade work. Automobiles are brought into the shop to provide such work and operation that falls within the scope of the course. Specialized testing and fitting equipment will be used. Safety will be stressed throughout the course.

Some topics that will be covered are:

I. Engine - multiple cylinder engine
- valve arrangements
- engine power, factors of power, piston displacement
- common causes of abnormal engine noises

Auto Mechanics (PAT 340 and PAP 340) (Continued):

II. Engine Service Operation:
- checking engine cylinder compression
- reconditioning of valve and valve seats
- checking clearance of rod bearings etc.

III. Transmission system

IV. Engine Tune-Up

Auto Mechanics: Related Welding (PAW 342) Prerequisite: Welding (PWE 251 or PWE 151

This course is primarily for Auto Mechanic Majors and is of half-year duration. Other students may take this course if there is sufficient space. PAW 342, both oxy-acetylene and electric arc welding at an advanced level will be covered.

Auto Mechanics: Related Electrical (PAE 341) Prerequisite: None

This course covers the electrical equipment in the modern car. Basic principals in electrical theory are covered for the student who may not have taken Electricity before. The electrical systems of the car are broadly examined including the starting, ignition and charging systems. Suitable experiments are included in the course. Wiring diagrams are introduced. Storage Batteries and starter motors are covered in detail.

Area of Study -- Arts

Art (ART 350) Prerequisite: ART 150 or ART 250

Grade 11 art is not semestered. The practical or project side of the course follows as closely as possible the art history that is a major part of this grade's study. The history itself is taught with the objective of giving the student an appreciation of all types of art from all ages and of enlarging his awareness of the world around him.

Music (AMU 350) Prerequisite: Music (AMU 250)

The course builds on the skills learned in Year 2 in the areas of technique, ensemble playing and band repertoires. Students will be asked to complete specific assignments dealing with history, the major composers and the effects of history on the development of music.

Physical Education (ABP 350, AGP 350) Prerequisite: ABP/AGP 250 or ABP/AGP 150)

Four courses of study - semestered ½ yearly. Each course counts half a credit. One credit constitutes two different half courses in the same year or in different years. Each course will contain a unit of Health education.

Course A.
Aerobics - To develop a high level of cardio-vascular fitness through running and associated activities as developed by Dr. K. Cooper.

Course B.
Individual Sports - A program of carry over activities of an individual recreational or competitive nature.

Course C.
Team Sports and Officiating - A practical and theoretical study of methods of play and rules of popular Canadian games.

Data Processing (ADP 340) Prerequisite: None

On completion of this course, the student will be able to:

1. Demonstrate his knowledge of the basic concepts and vocabulary relating to Electronic Data Processing.
2. Use the computer for simple business applications.

Latin (ALA 350) Prerequisite: ALA 250

The course of study pursued in ALA 250 is continued, and through the study of passages in The Dolphin Latin Reader, the student is made aware of the fact that Latin was the language of all literate people until the late Middle Ages. Film strips illustrate Roman society and everyday life.

German (AGR 350) Prerequisite: AGR 250

"Sprich mal Deutsch, book 2" follows, with some significant variations, the general format of book 1.

The main characters this time are an English student, and the staff of a travel agency in Hamburf for which he works as a courier. This affords a framework for giving cultural information not only about all areas of Germany, but also other German-speaking countries.

The student has gained a good working knowledge of the declension system from book 1, and book 2 now expands his knowledge of verbs.

Again, there are colloquial dialogues, many oral exercises designed to make use of the skills learnt, and the regularly spaced review lessons.

Students are now encouraged to write their own dialogues and short compositions, to retell orally stories which they have heard, and to react spontaneously to everyday situations such as buying theatre tickets, or ordering a meal in a restaurant.

There are tapes to accompany this book, and use is made throughout the year of a variety of readers.

Spanish (ASP 350) Prerequisite: Spanish (ASP 250)

This course is a continuation of the A.L.M. programme begun in ASP 250. There is a continued emphasis on oral work along with more comprehensive written communication. As well, there is some study of Spanish culture. At the completion of this course, the student should have a good grounding in early all aspects of Spanish grammatical construction.

Year 4 -- Subject Descriptions

Area of Study -- Communications

English (CEN 450) Prerequisite: English (CEN 350)

The literature part of the course is a survey of Shakespearean tragedy, modern plays, essays, short stories, poetry and the novel. By the end of the year, the student is expected to have mastered a knowledge of critical techniques and vocabulary concerning the types of writing studied. The use of library facilities for research is encouraged during the year. A variety of work in composition is carried out.

English (CEN 440) Prerequisite: English (CEN 340 or 350)

The course will stress the study of mass media: radio, television, recorded documentaries, newspapers, magazines and the cinema; in addition, students will study a wide range of novels, non-fiction, prose, short stories, poems and plays. The course will stress the study of contemporary material in all types of writing. Written reports will form a major phase of the composition work.

French (CFR 460) Prerequisite: French (CFR 360)

This is an enriched version of French 450. Students will participate in oral presentations of their readings and discussions within their group or the whole class. They will begin the reading of serious works by well-known authors. It is hoped to arrange exchanges with students of francophone schools and to view stage plays and movies totally in French.

French (CFR 450) Prerequisite: French (CFR 360 or 350)

There is a marked increase in reading and writing at this level. Students have now studied most of the essential rules of grammar and should be ready to apply them in writing short essays. Reading becomes the main aspect while all discussions are done orally. Authors are studied more intensively and the seminar method is used for the presentation of authors in class. Students must be prepared to do all their work in French.

The text used in Ici on parle Français, Level 6 with the accompanying exercise book.

French (CFR 440) Prerequisite: French (CFR 340 or 350)

This is the last level of the series of courses begun with French 140 and it does not qualify a student to take French in Grade 13. Students will read French newspapers and magazines; discussion of current events will be emphasized. The oral aspect of language learning is the most important one, although students should be able to write short compositions.

French (CFR 451) Prerequisite: French (CFR 340 or 350)
(Half-credit course)

The aim of this course is to develop a vocabulary of business, office procedures and communications in the commercial world. The emphasis will be on structures, expressions, technical terms, locutions etc. commonly used in this milieu. The stress will be on oral-aural skills; writing and reading will be of minor importance. Good pronunciation will be of primary importance.

French (CFR 456) Prerequisite: French (CFR 350 or 340)

The aim of this course is to gain an insight into the origins and development of modern languages. It is more of a special interest course in which a considerable

amount of reading and research will be required. The language of communication will be English, although the knowledge of a second or a third language would be a great asset.

Shorthand (CSH 450) Prerequisite: Shorthand (CSH 350)

On completion of this course, the student will be able to write from dictation given at a rate of 100 words a minute, and type a transcript with 90% accuracy.
This is a saleable skill with broad application.

Communications and Business Procedures (CCB 455): Prerequisite: Office Practice 350 (Two credit course)

This course is designed to prepare a student for office employment through:

1. the further development of skills in the use of office equipment.
2. a knowledge of common practices and procedures used in office work.
3. the further development of attitudes conducive to high standards of performance.
4. the ability to compose mailable business communications.
5. practical work experience in a business office.

The student will acquire saleable skills of general application.

Area of Study -- Social and Environmental Studies

Geography (SGE 450) Prerequisite: Geography 151 and 252

The patterns of Economic activity deals with the ways in which man has utilized the differing regions of the earth on the basis of its resources and his own culture. The primary producing industries of the world are studied as the means by which the raw materials for industrialization are produced as well as simply from the point of view of food production. The characteristics of manufacturing and its effect on the environment (urbanization) are also studied to show why certain areas of the world are not only well developed but also present problems to the populations of those areas.

Geography (SGE 440) Prerequisite: Grade 9 Geography

The regional geography of North America provides an in-depth study of Canada and the United States from the point of view of typical areas which serve to illustrate the nature and characteristics of the physical and human environment. The course is particularly suited to those students who do not plan to continue into Geography at the Grade 13 level because it will provide a much greater awareness of their continent's attributes and problems. The regions studied should provide a cross-section of the varying conditions which exist in this continent to make a student aware of the vast contrasts and disparities which are present.

Geography (SGE 456) Prerequisite: Geography 151 and 252

This new course will introduce students to a study of the Urban Environment. To help understand the problems faced by people living in cities, students will study the historical growth of the city from ancient times, the economic basis of the city, land use within the city plus some specific problems faced by many cities (transportation, urban renewal, zoning, suburban sprawl, housing crisis). Extensive use will be made of guest speakers who are expert in specific fields of city management or development, in addition to field trips to study the city from within.

Environmental Geology (SGL 441, 442) Prerequisite: Grade 9 Geography

The main purpose of this course is to investigate the geological basis of man's environment and the ways in which he can use or abuse it. Part of the investigation

Environmental Geology (SGL 441, 442) Continued:

will relate to natural resources, both renewable and non-renewable, their assessment and utilization. Causes and effects of unusual geological hazards such as earthquakes, volcanic eruptions, floods and landslides will be considered. The role of oceanography and the future use of the sea floor resources will be assessed. The evolution of man into an urban dwelling species will be discussed.

History (SHR 451): A Study of Modern Revolutions: Prerequisite: History 152 & 251 (Half-credit course)

This course will examine the revolutions in France, Russia and Britain as well as one of the more recent ones such as that in Cuba to show causes and steps in their progress. The analysis of revolution by Crane Britton will be studied and his conclusions tested by reference to the above examples.

History (SHY 452): War and Peace in the Twentieth Century: (Half-credit course)
Prerequisite: History 152 & 251

The origins of World War I and World War II will be studied, as well as the peace treaties and their effects.

The Cold War with all the important events and issues will be examined especially the ones which have greatly influenced the political affairs of our time. The general character and nature of war will be scrutinized and the two World Wars compared.

History (SHF 451): China and Japan Prerequisite: History 152 and 251 (Half-credit course)

The aim of this course is to broaden the Canadian student's understanding of these two strong nations of East Asia which have placed themselves in powerful positions in the global community as a result of their rapid post-war transition to modern industrial nations. The student's attention will be centred upon the social, economic and political changes in the 20th century. He will compare and contrast the distinctive approaches taken to create an industrial society by Japan, China and his own Western World: he will evaluate the extreme cultural differences between the Eastern and Western parts of the world; he will explore East-West relations from the imperialist age of pre-World War I to the present. Finally, he will determine the roles of China and Japan in such world concerns as peace, trade and overpopulation.

History (SHD 452): Totalitarianism in the Twentieth Century:
Prerequisite: History 152 & 251: (Half-credit course)

It is hoped that from this course, the student will acquire a deeper understanding of the causes and characteristics of the totalitarian states as they existed in Nazi Germany under Hitler, in fascist Italy under Mussolini, and in Communist Russia under Stalin. Totalitarianism is the 20th century form of absolute government which seeks to obtain total state control of the individual citizen. This goal has been made possible in the present century as a result of technological advances, particularly in the field of mass media.

World Politics (SWP 441): Modern Dictators and International Relations:
Prerequisite: History 152 & 251 (Half-credit course)

This course is an introduction to many concepts in political science, and to the development of different types of government in the twentieth century.. The student will see the major forces operating in society, understand the present international situation and attempt to anticipate trends for the future.

The study of modern dictators and international relations will include the following topics: The rise of modern dictators in Europe and Latin America; international relations; the work of the United Nations: comparative political systems, (the theory and practice of communist and democratic forms of government.

World Politics (SWP 442): Communism, Democracy and the Third World:
Prerequisite: History 152 & 251 (Half-credit course)

The course will deal with the following topics:
Communism in China, Cuba and Eastern Europe; the Emerging Nations after World War II: a comparative study of government in Canada, the United States and the Union of Soviet Socialist Republics.

Economics (SEC 440) Prequisite: History 152 & 251

This course is designed to give the student a general knowledge of private (monetary) and government (fiscal) functions of the Canadian economy. It includes discussions and assignments on topics from private budgeting to governmental budgeting. Topics included are: supply and demand in the Canadian economy; sources of revenue and expenditure of all levels of government; Labor organizations; the banking system and money supply; a comparison of the Canadian economy with other world economies.

Marketing (SMK 450) Prerequisite: None

This course is a detailed study of advertising and sales promotion. The topics are: historical development of advertising; types of advertising; media; composition of an advertisement; slogans and trademarks; the advertising campaign; sales promotion; window displays; interior displays; packaging and labelling.

Business Organization and Management (SBM 450): Prerequisite: None

On completion of this course, the student will be able to (1) describe Canada's economic system and how it functions; (2) report on a business, describing its financial, administrative, production and marketing activities; (3) identify, analyze and recommend solutions to common business problems.

Home Economics (SHE 451, 452): Management and Consumer Concerns:
Prerequisite: None (Half-credit course)

This course has been particularly designed to prepare the student for her future roles. It involves an advanced study of management, including use of time and energy, meal management and money management.

Consumer Education is studied. Topics dealt with are the role and responsibilities of the consumer and the various types of consumer protection.

The practical side of the course includes demonstrations, meal planning, preparation and service, with special emphasis on the various aspects of the management process.

To assist the student in developing an understanding of world food problems, the course includes a study of World Nutrition.

Home Economics (SHE 459, 458): Housing and Interior Decoration
Prerequisite: None (Half-credit course)

A study of housing types, interior decoration and household furnishings will be offered. The development of housing from the early beginnings in Canada to modern housing styles and the architects who influenced them will be studied. Problems of the modern world such as urban renewal, community planning and public housing will be developed. Students will discuss various styles of housing, the advisability of renting or buying, favourable locations for housing, and legal problems.

In interior decoration, art principles will be applied to the choice of interiors in the home. A study will be made of styles of furniture, table appointments, household textiles and electrical equipment. A home furnishing project will incorporate all of the information in this area, and will aid the student who will shortly set up her own apartment. An item for use in the home, such as a rug or curtain sample will be constructed.

Area of Study -- Pure and Applied Sciences

Chemistry (PCH 453, 454) Prerequisite: PSC 150 and PSC 250; PPY 350 (Physics) is also recommended

Chemistry 453, 454 serves as a good introduction and foundation for Chemistry and Biology at the Grade 13 level. If a student is not going to study Chemistry at a higher level in the future, then he should select Chemistry (PCH 443, 444) which would be adequate background for Biology 553, 554.

Summary of topics: atomic theory; electrons and the Periodic Table; Binary compounds and equations; Chemical bonding; molecular shapes and polarity; simple organic compounds; oxides, acids, bases and salts; compounds and equations with radicals; solutions and ions in solution; reactions in solution and the activity series; reduction-oxidation reactions and ionic equations; chemical reactions and energy; States of Matter; Gas laws; Moles and compounds; moles and equations.

Chemistry (PCH 443, 444) Prerequisite: PSC 150/140 and 250/240

Chemistry 443, 444 is designed for the student who will not be taking Chemistry at the Grade 13 level but who requires some knowledge of Chemistry as a prerequisite for his or her future career. A student with less aptitude for science should select Chemistry 443, 444 which covers topics similar to PCH 453, 454 but is less intense and theoretical.

A student who wishes to take only Biology in the field of science in Grade 13 and who is not a strong science student will find this course to be adequate background for the Biology, providing that he can attain 66% or better.

Summary of topics: classification of matter; the atomic theory and the Periodic Table; binary compounds and bonding; simple organic compounds: oxides, acids, bases and salts; solutions; chemical energy; states of matter; Gas laws: Possible optional topics: metals, corrosion, fuels, electrochemistry, pollution, plastics and rubber.

Geology (PGL 450) Prerequisite: PSC 150 and PSC 250

The role of the planet Earth will be discussed together with theories regarding its internal structure and composition. The nature of the Earth's crust is less speculative and its study will involve both theoretical and practical work, particularly with respect to minerals and rocks. Present-day geological processes on the Earth's surface and analogous processes throughout geological time will be discussed and interpreted. There will be a detailed investigation of the local geology and any participating student must be prepared to undertake a small number of field studies.

Mathematics (PMA 450) Prerequisite: PMA 350

This is the fourth level Advanced course in Mathematics. It extends the study of topics studied in Mathematics 350 including the quadratic function, the quadratic equation, elementary theory of equations, circles and spheres, similar polygons and solids, analytical geometry of the straight line and circle, and the exponential and logarithmic functions.

Mathematics (PMA 440) Prerequisite: PMA 350 or 340

This is the fourth level General course in Mathematics. The course covers probability and statistics, polynomials, rational expressions, quadratic equations and trigonemetry. Optional topics depending upon the students' interests include: mathematics of investment, home ownership, conic sections, income tax and vectors in space.

Mathematics and Business Machines (PMB 440) Prerequisite: M & BM 340 (present course)

This course is designed to extend the work of Mathematics and Business Machines 340

Mathematics and Business Machines (PMB 440) Continued:
with the operation of desk adding machines and calculators of various types. It includes a study of selected commercial applications of the business machines available and the associated mathematics. Considerable time will be spent in perfecting fast and accurate operation of the standard ten-key machines by touch.

Computer Science (PCS 450) Prerequisite: PCS 350

This course extends the work of Computer Science (Mathematics) 350 by doing more difficult problems including subprograms. Some time will be devoted to the study of machine language and the operation of computing machines. Students may do problems of their own choice and interest.

Accountancy Practice (PAP 451, 452) Prerequisite: Accounting 250

The object of this course is to further develop accounting theory and practice. On completion of the course, the student should be capable of assuming employment in a junior accounting capacity in business, and/or have a suitable background as a basis for further study in accounting either for professional qualification or at a post-secondary institution.

The course will include a review of basic accounting theory and its application; additional cash transactions; the voucher system; departmental accounting; manufacturing accounting; partnership accounting; accounting for limited companies; "one-write" or pegboard accounting; machine applications of accounting; classified financial statements and elementary statement analysis; elementary budgeting.

Architectural Drafting (PAD 450) Prerequisite: Drafting 350

This course is a continuation of the third year drafting course, and is of interest to anyone who is considering further study in architecture, engineering or related areas. The student will design and draw a complete set of detail working drawings for a small commercial building or a residence of his choice.

Surveying will be continued and more emphasis will be placed on the study of the properties and strength of various materials.

Building Construction (PBC 450) Prerequisite: Building Construction 350

Post and Beam, and Heavy Timber are the two types of construction stressed in the fourth year.

Details of laminates, concrete, specifications, codes and levelling instruments are gone into at this stage.

A small group will choose its type of structure and using the techniques of that building type, will proceed to construct a model.

Electricity (PEL 450) Prerequisite: Electricity 350

Alternating current circuits are covered in depth in this course. Slide rules are required. Other topics include: review of A.C. values of current and voltage; inductance, capacitance, reactance and impedance in series and parallel circuits; impedance and vector diagrams; calculations and related experiments.

Students will also deal with resonance and its use in circuits; polyphase systems; star and delta connections; alternators and A.C. motors--study of principles of operation, construction and characteristics; transformers--principles, types and uses; electronics--semiconductor theory related to diodes and transistors; electronic projects are built by the students.

Due to the formulae and calculations involved, it is recommended that the student be proficient in mathematics at this level.

General Woodworking (PWW 450) Prerequisite: Woodworking 350

Students in the fourth year general course become involved in the more advanced elements of: (1) planning and design of projects, (2) mass production, (3) powered equipment, (4) the technology of wood.

Many students enjoy the freedom of choice of projects in the course while at the same time becomming aware of advanced details in structures made in wood.

Auto Mechanics Majors (PAM 440) Prerequisite: Grade 11 Auto Majors (Three-credit course)

In this course, a great deal of time is spent in the diagnosis and servicing of common mechanical and electrical problems in automobiles.

This will include the complete reservicing of the engine, fuel and carburetion systems, the electrical system, running gear and brake system.

Safety precautions with regard to toxic and explosive gases and fumes will be stressed, together with high standards of shop and personal cleanliness.

When a student completes this course, he will start with his third 1800 hour period of apprenticeship.

The course consists of four parts: Auto Mechanics--Theory, Auto Mechanics--Practical, Related Electrical and Related Welding Shops. The student who chooses PAM 440 will automatically be scheduled for all four parts.

Area of Study -- Arts

Art (ART 450) Prerequisite: Art 350

In Grade 12, Art History is again a major part of the course with less accent on the broad range of art and more concern with the artist as an individual. Projects and practical work when possible are again a continuation of the art history. The complete course of study is made available to students at the beginning of the year so that major projects may be done at the student's own pace. Examinations in history are usually of a research or an open book type.

Music (AMU 450) Prerequisite: Music (AMU 350)

The course builds on the skills learned in Year 3 in the areas of technique, ensemble playing and band repertoires. Students will be asked to complete specific assignments dealing with history, the major composers and the effects of history on the development of music.

Physical Education (ABP 450, AGP 450) Prerequisite: Phys Ed one of 250 or 150

The health course is designed to give the student a greater appreciation of his physical and social development.
Four courses of study - semestered half yearly. Each course counts half a credit. One credit constitutes two different half courses in the same year or in different years. Each course will contain a unit of health education.
Course A.
Aerobics - To develop a high level of cardio-vascular fitness through running and associated activities as developed by Dr. K. Cooper.
Course B.
Individual Sports - A program of carry over activities of an individual recreational or competitive nature.
Course C.
Team Sports and Officiating - A practical and theoretical study of methods of play and rules of popular Canadian games.

Latin (ALA 450) Prerequisite: Latin 350

The course begun in Year 1 is now completed and the student is introduced to the great writers: Caesar, Cicero, Sallust, Nepos, Livy in prose; Vergil, Horace, Catullus, Ovid, Juvenal, Martial in poetry. As well, more aspects of Roman civilization are treated through film-strips.

Data Processing (ADP 450) Prerequisite: Data Processing 340

On completion of this course, the student will be able to demonstrate his knowledge of the more advanced concepts and vocabulary relating to Electronic Data Processing, and to use the computer for more complex business applications.

German (AGR 450) Prerequisite: German 350

Sprich mal Deutsch, Book 3 builds on the basics of Books 1 and 2 to develop more complex linguistic skills. Grammar and syntax are consolidated and expanded by enlarged review lessons.

The situation framework--that of a student radio station--alows much scope for variety of content.

Oral/aural skills are enlarged by means of "broadcast interviews" which give rise to guided discussions. These interviews are on tapes--the students having no texts--and introduce a selection of regional accents, e.g., a Swiss housewife talking about her shopping habits; a young Berlin student talking with his father about changing conditions in their city. Writing skills are enlarged by means of regular guided compositions.

Photographs and accompanying texts give a good background to the geography history and cultural life of German-speaking peoples.

A selection of readers is also provided, and the students are encouraged to read on their own. German-language newspapers are also available.

Spanish (ASP 450) Prerequisite: Spanish 350

This course continues emphasis on oral and written communication in Spanish. At the same time, the student will concentrate on many aspects of Spanish literature. On completion of this course, the student should be able to communicate with a fair degree of fluency in Spanish.

Year 5 (Grade 13) -- Subject Descriptions

There are no Areas of Study or prescribed subjects in Grade 13. All courses have a credit value of one each, and a diploma will be granted on the successful completion of six courses at the 500 level.

The most important factor in the choice of Grade 13 credits is the entrance requirements of the particular post-secondary institution which the student plans to attend. Each student is responsible for finding out what these requirements are and for making the appropriate choices.

No half credits are permitted in Grade 13, but there is no limit on the number of whole credits which may be taken in any one subject.

English 551 — Prerequisite: English 450

The course will consist of a study of Shakespearean drama, narrative poetry, essays and short stories and the modern novel. Oral and written reports will be required of all students.

English 552 — Prerequisite: English 450

This course will be organized around the following themes: comment on society; personal values; war and peace; mass media. Related writing, language study and oral work will be part of the course.

French 551 — Prerequisite: French 450 or 460

All four skills of language learning are developed in this course. Students complete and polish the points of grammar learned in levels 1 to 4; they are expected to write compositions and to be able to discuss their readings orally within their class or group.

The texts are: Dale and Dale: Cours Moyen-Superieur de Français
Gabrielle Roy: Rue Deschambault
Camus: L'etranger

French 552 — Prerequisite: French 450 or 460

This course is designed for students wishing a second credit in French. These students must register in French 551 which is the basic course for Grade 13.

In French 552, students must be prepared to devote a considerable amount of time to reading and writing. The language of communication is French. Very little grammar is involved in this course, as it is thoroughly examined in French 551. The emphasis is on French and French Canadian literary works of the 20th century.

The texts are: Yves Theriault: Agaguk
Jean Anouilh: Antigone
Gratien Gelinas: Hier, les enfants dansaient
Marcel Pagnol: Topaze
Antoine de St-Exupery: Le Petit Prince
Claire Martin: Kamouraska
Selected poems by Prevert, Verlaine and Nelligan

Geography 551 — Prerequisite: Geography 151 and 350

The Geography of Canada provides an in-depth look at the physical, economic and international relationships which exist in this country, and between it and the outside world. The course also attempts to orientate the student towards the techniques of individual study. Canada is studied on a systematic basis with regional similarities or disparities being highlighted to show both unifying or differentiating trends.

Geology 551 — Prerequisite: Geology 450

Concepts of Geological Time based on the evidence of fossils (Relative Dating) and radiometric methods (Absolute Dating) will be discussed. The sequence of sedimentary strata throughout geological time is described, together with the distribution of fossils. Students will be introduced to the basic interpretation of simple geological maps and structures. The geological distribution and relative importance of mineral deposits will be studied with particular reference to Canada. Field studies of local geology will form a sequel to those undertaken in the previous year.

German 551 — Prerequisite: German 450

This is considered as a preparation year for University studies, and basic skills are consolidated with this end in view. Knowledge of grammar and syntax is systematically reviewed and expanded, and is used in a variety of written exercises. Compositions, comprehension exercises, and the retelling of stories heard or read are written regularly.

Literature is also studied at this level. Short stories, poetry and extracts from longer works of all periods are read and discussed, and students are encouraged to read further (a selection of literary texts is provided) on their own, with a view to obtaining a broad background to German culture, and a framework within which to place further studies.

Some study of style is also attempted through both reading and writing. The co-operation of teachers of music, art and English is much appreciated in their help with provision of resource materials.

History of Canada and the United States 551. Prerequisite: History 350 or History 450

The course will be divided into two equal semesters. The first semester will include the following topics in Canadian History: Responsible Government; Confederation, The Development of Canadian Nationalism, Economic problems of the thirties Economic Nationalism of the Sixties; and the Indian struggle for power and recognition.

The second semester will include the following topics on American History: Development of American Democracy; The Civil War and Reconstruction; Progressivism, The New Deal; and the American foreign policy from 1890 to 1970.

The Canadian Family 551 (Sociology) — Prerequisite: History 450 or History 350

The course is designed especially for students interested in a social science career. It will introduce the student to the behaviourial scientist's approach to the study of the individual and society.

The following topics will be covered in the first half of the course: an introduction to sociology as an analytical and methodological discipline; Socialization and the development of the personality based on concepts from psychology and sociology: The theory of society - the concept of culture, norms and values, status and roles, and institutions: An analysis of the social characteristics of adolescence, courtship, marriage, and the structure of the family in Canada and other societies: A sociological analysis of selected social issues to be chosen from topics of interest to the student.

...continued

The Canadian Family 551 (Sociology) continued -

The second part of the course will cover the following topics: Research in the social sciences - (practical experience designing a specific questionnaire, for distribution, analysis and presentation of findings): A study of traditional Chinese society and the changes brought about by communism especially the commune system, Utopian community and family experiments - Israeli Kibbutz, the Oneida Community, the Society family system, and the Hutterite community: the development of the western family structure and Zimmerman's theory of social change: The changes taking place in our modern society and an analysis of the middle class family in America.

Mathematics 550 — Prerequisite: Mathematics 450

A fifth level course for students who want one credit in Mathematics. Credit for this course would not be given if either Functions and Relations 553, or, Calculus 552, or, Algebra 551 were being used for credit. Course consists of functions as a mapping, second degree relations in the plane, differential calculus and applications, mathematical induction and the binomial theorem and probability. Optional topics may include complex numbers, and polar coordinates.

Mathematics 570 — Prerequisite: Mathematics 450

Some Grade 13 Mathematics courses may be taken by private study by special arrangement, after the year is started.

Algebra 551 — Prerequisite: Mathematics 450

This course is the study of sets, subsets, and permutations, mathematical induction and the binomial theorem, vectors, equations of lines and planes and systems of linear equations. Optional topics may include matrices and linear transformations, complex numbers and polar coordinates, examples of groups, probability, and logical reasoning.

Calculus 552 — Prerequisite: Mathematics 450

This is an introductory course in differential and integral calculus including applications, and, a study of complex numbers and polar coordinates.

Functions and Relations 553 — Prerequisite: Mathematics 450

This course is the study of the function as a mapping, second degree relations in the plane, trigonometry and transformations in the plane. Optional topics may include matrices and transformations, complex numbers and polar coordinates, logical reasoning, mathematics of investment, and statistics and probability.

Mathematics of Investment 554 — Prerequisite: Mathematics 450

Topics studied would be series, interest, annuities certain, payment of debts, depreciation, bond valuation, stocks, variation, functions, permutations and combinations, binomial theorem, and life insurance. Optional topics may include taxes, succession duty taxes, and foreign exchange.

Biology 551 — Prerequisite PCH 453/454 or 443/444

It is recommended that a student also have a knowledge of Physics 350 or 340.

This course is designed for students who are planning future studies in science and biology; however, the course would be very interesting for those who do not intend to take further courses in biology.

After a brief review of the methods used by scientists, the student launches into a study of the evolution of life. Darwin's principles are studied and these are then applied to the chemistry of evolution. During this study, the student learns the chemical basis for the energy of life.

With this background, the chemical nature of the cell's nucleus is investigated and the chemical foundations (gene theory) of inheritance are introduced.

The fundamental structure of life, the cell, is investigated and the unifying idea of the cell theory is presented. The development of the multicellular life forms is studied.

The process of reproduction is explored and the forces of heredity are explained.

The student will dissect the major systems of multicellular organisms.

The student then investigates the behaviour of plants and animals with the emphasis on the response of living things to stimulations from the environment.

Finally, the student studies the interactions of groups of living things. The principles of ecology are presented and applied to populations, communities and societies. The role of the human species in ecology is discussed.

Throughout the course the student is expected to perform numerous laboratory investigations invdving chemistry, the miscroscope and various types of measurement. The scientific collection and logical interpretation of data is stressed.

The student may apply these principles of inquiry to an independent research project at the end of the course.

The student's performance will be evaluated on the basis of tests and laboratory work.

Chemistry 551 — Prerequisite: Chemistry 450

It is strongly recommended that a student have attained at least 60% in Chemistry 453(4) before selecting this course. A good background in mathematics will also be necessary.

Chemistry 551 emphasises the observation, organization and the use of chemical data to recognize trends or regularities in nature.

Much emphasis will be placed on problem solving and the recognition of chemical concepts as they relate to the physical environment.

All through the course, special attention will be given to the chemistry of consumer products, industrial processes of some important products, and the use of chemistry to solve some environmental problems.

Summary of Topics:

- Energy and its Effects
- Atoms and Molecules
- Chemical Dynamics
- Thermodynamics
- Equilibrium (e.g. General Solubility, Acids and Base)
- Study of Light and Atomic Structures (e.g. orbitals)
- Application of Kinetic Theory to the States of Matter.
- Properties of Matter and How to Measure Them
- Reaction to Kinetics
- Electro-chemistry (e.g. batteries, fuel cells)
- Bonding and Shapes of Molecules
- Families of Elements in the Periodic Table
- Introductory Organic Chemistry

Physics 551 Prerequisite: Physics 350

It is strongly recommended that a student have attained at least 60% in PPY 350 (Physics) before selecting this course.

Since this course involves a great deal of mathematics, a good background of mathematics is necessary to be successful in Physics 551.

Fundamental to the philosophy of this course in Physics is reliance on the development of physical principles from experimental data obtained, whenever possible, from experiments which the student performs himself. These laboratory experiences are supplemented by films and textbooks in order to increase the opportunities for inductive reasoning.

The laboratory, films and the textbooks constitute the essential media through which the student learns how knowledge is acquired experimentally and woven into the physical theory.

Summary of Topics:

Optics and Waves (light, particle model, wave propagation, interference, wave model)
Law of inertia and Newton's Law
Motion in the Earth's gravitational field
Universal gravitation law and the solar system
Momentum and the conservation of momentum
Work and Kinetic Energy
Potential energy
Electric forces and electric charges
Energy and motion of charges in electric fields
Electric fields and electric potential
The electro magnetic spectrum
Rutherford's model of the atom
Photons
Matter waves
Energy levels of the hydrogen atom

Music 551 Prerequisite: Completion of levels one to four, or a proven ability to enter at level five.

This course will lead to a high standard of playing ability.

Theory will require Grade II rudiments, form, creativity (simple composition) research (each student will be encouraged to present a lecture on some aspect of musical development) history - from Mediaeval through to the modern age.