Adult Basic Education Level III
Program Guide

October 1995 Edition

Division of Institutional and Industrial Education
Department of Education and Training

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Background to the ABE Level III Program Guide

ABE Level III Program Guide

This document presents a Program Guide for the Level III section of the Adult Basic Education (ABE) program for the Province of Newfoundland and Labrador. It is one of a series of three ABE Program Guides prepared under contract for the Division of Institutional and Industrial Education, Department of Education and Training, Government of Newfoundland and Labrador, in 1990 and revised in 1995.

Review of Academic Upgrading

In June 1988 the Department of Career Development and Advanced Studies established a committee with representatives from the province's community colleges and institutes and the Department to look at all the adult upgrading programs then offered through the colleges and institutes. The Adult Basic Education Review Committee was mandated to examine the Literacy Program, the Adult Basic Education Program, the Basic Training for Skill Development (BTSD) Program and the Academic Support (Concurrent Training) Program, and, through a process of study and consultation, to "recommend any necessary structural adjustments and revisions."

The committee met on a monthly basis and set up local advisory committees to discuss issues and provide feedback. In addition, informal meetings held at each community college provided all those who were interested with the opportunity to meet the committee and present their views.

The final report of the ABE Review Committee, presented in March 1989, recommended a revision of the entire adult basic education system. In October 1989, the Department of Education, which had since assumed responsibility for the community college system, contracted for the revision of the Adult Basic Education program. The objective of the revision, as recommended by the ABE Review Committee, was "to create one provincial program, consisting of Levels I, II and III, to encompass and integrate the Literacy, ABE , and BTSD programs." The Program Guide for Level III is one of three parts of the overall ABE revision.

Development of Program Guide 1990

The ABE Level III Program Guide was developed to the level of general learning objectives in 1990 by a team of experienced adult educators and high school practitioners with the advice and assistance of a Project Management Team representing the Department of Education and a Provincial Advisory Committee representing the Department and each of the provincial institutions involved in the delivery of ABE. The process of developing general learning objectives combined research and consultation. Program outlines and curriculum guides from various provinces of Canada, as well as Britain and the United States were reviewed and a large body of literature on adult education, national and international, was consulted. At the second draft stage of the development of the guide, copies of the work to date were circulated throughout the Avalon Community College region and to each of the provincial institutions. Adult education practitioners and organizers were invited to submit their views on the work and to make suggestions for changes or additions. A project validation meeting was held prior to the preparation of the final report. Adult education practitioners from the Avalon region and from each provincial institution involved in ABE delivery were invited to participate in the validation process.

ABE Program Review and Monitoring (1992-1994)

In September 1992, two years after the introduction of the new ABE program, the Department of Education and the five regional colleges commissioned a review. An ABE Review Committee representing the five colleges and the Department of Education was mandated to review all aspects of curriculum and delivery. The review included site visits and college-wide surveys. The Committee submitted a Review Report to the regional colleges and the Department of Education in May 1993. The report made recommendations based on the information collected. One of the report's recommendations was that a permanent ABE Monitoring Committee, representing the regional colleges and the Department of Education, be established. The ABE Monitoring Committee was established in September 1993. They were given the authority to recommend program changes and to establish mechanisms for continual program review.

ABE Revision (1995)

In November 1993 the Monitoring Committee conducted a survey of instructors in all ABE delivery sites. Results of those surveys were compiled and distributed to instructors. Instructor Validation Committees were appointed with representation from the five regional colleges. A Department of Education representative also participated in the validation process. Survey results were discussed in each college prior to the April 1994 validation meetings. At these meetings Instructor Validation Committees summarized recommendations for reviews of all sections of the Adult

Basic Education program. In October 1994, the Program Monitoring Committee (now the ABE Standing Committee) assigned specific portions of the review process to the five regional colleges as follows: Cabot College - revising the Level I Program Guide; Eastern College - integrating new Science learning objectives for Levels II and III; Central College - integrating new Communication Skills learning objectives for Levels II and III; Westviking College - integrating new Mathematics learning objectives for Levels II and III; Labrador College - updating course matrices. All revisions were completed in 1995.

ACKNOWLEDGEMENTS
ABE Level III Curriculum

1990 Revision

ABE Revision Project Coordinator: Mildred Minty, Avalon Community College

Revision Teams

Mathematics Committee

Chairperson: Claude Rogers, BTSD, Avalon Community College
Team: Selena Delahunty, ABE, Avalon Community College
                    Freeman Hussey, BTSD, Avalon Community College
                    John Penney, Related/ABE, Eastern Community College
                    Otto Pike, BTSD, Avalon Community College
                    Paul Barron, ABE, Avalon Community College
                    Edith Lynch, ABE, Avalon Community College
                    John Oates, Cabot Institute

General Options Committee

Chairperson: Rotating Chairperson for Each Course
Team: Roberta Yetman, ABE, Avalon Community College
                    Elaine Moores, BTSD, Avalon Community College
                    Byron Brooks, St. George's High School
                    Boyd Badcock, St. George's High School
                    Barb Watton, GED, Western Community College
                    Joan Hiller, ABE, Avalon Community College
                    Eileen Riche, ABE, Avalon Community College
                    Clarence Rideout, BTSD/ABE, Avalon Community College
                    Ivan Pearce, BTSD, Eastern Community College
                    Otto Pike, BTSD, Avalon Community College

Special thanks to Trudy Brake-Danby, Carmel Ennis-Smith and Barbara Case for their expert advice on several of the General Options courses.

Communication Skills Committee

Chairperson: Roberta Yetman, ABE, Avalon Community College
Team: Joan Hiller, ABE, Avalon Community College
Claude Rogers, BTSD, Avalon Community College
Ron Broderick, BTSD, Eastern Community College
Bill Taylor, Cabot Institute
Kathy Clarke, ABE, Avalon Community College
Rosemary Boyd-Pretty, ABE, Avalon Community College
Verna Smith, ABE, Avalon Community College

Science Committee

Chairperson: Elaine Moores, BTSD, Avalon Community College
Team: Louis Green, ABE, Avalon Community College
Charlie Snelgrove, ABE, Avalon Community College
Eric Adey, BTSD/Related, Eastern Community College
Freeman Hussey, BTSD, Avalon Community College
Jane Hryniw, BTSD, Avalon Community College
Martha Anne Woodworth, BTSD, Avalon Community College
Barry Darby, Cabot Institute
Otto Pike, BTSD, Avalon Community College
Kevin Toope, Booth Memorial High School

Special thanks to Dr. M. Collins, Dr. P. Fisher, Dr. A. Kind, Dr. A. Hay, and Dr. H. Weir, who were consulted on several of the science courses.

Management Committee

Chairperson: Malachy Mandville
Committee: Fintan Costello
Wayne Taylor
Mun Batstone

Provincial Advisory Committee

Chairperson: Mun Batstone, Department of Education
Secretary: Wayne Taylor, Department of Education
Committee: Wayne Watton, Fisher Institute
Cyril Organ, Western Community College
Shirley Crewe, Labrador Community College
John Whelan, Avalon Community College
Geoff Kelly, Central Community College
Walter Smith, Eastern Community College

Administrative Support: Carol Ann Hawco

1995 Revision

The Department of Education and Training contracted Cabot College to prepare a camera-ready copy of the 1995 revision of the Adult Basic Education Level III Program Guide. This was completed under the direction of Ruth Benson, Cabot College, and approved by the ABE Standing Committee. Design and formatting were done by Renée Roule, Cabot College.

Thanks to the ABE Review Committe, the ABE Standing Committe, the Instructor Validation Committee, and Level III instructors in the five regional colleges for their input into the revision process.

ABE Review Committee (1992-1993)

Ida Keough, Coordinator, Central College
Lorraine Baker, Labrador College
Margaret Bromley, Cabot College
Rick Dalton, Eastern College
René Enguehard, Department of Education
Jim Griffiths, Cabot College
Al Grimes, Central College
Joan March, Westviking College
Cyril Organ, Westviking College
John Taylor, Student Representative, Central College

ABE Standing Committee

Margaret Bromley (1993), Ruth Benson (1994-95), Cabot College
Shirley Crewe, Labrador College
René Enguehard, Department of Education
Cyril Organ, Westviking College
Harvey Parsons, Central College
Pamela Walsh (1993-95), Lloyd Piercey (1995), Eastern College

Level III Instructor Validation Committee (1994)

Communication Skills

Chairperson: Ruth Benson, Cabot College
Committee: Bill Carpenter, Westviking College
             Marion Cheeks, Cabot College
             Ken Clements, Eastern College
             Joan McNeil, Central College
             Kathleen Moriarty, Labrador College

Mathematics

Chairperson: Cyril Organ, Westviking College
Committee: Blaine Agriesti, Cabot College
                Bill Cotter, Westviking College
                Irvin George, Eastern College
                Cathy Jong, Labrador College
                Catherine Moss, Central College

Science

Chairperson: Pamela Walsh, Eastern College
Committee: Perry Blundon, Eastern College
                Mary Kelly, Central College
                Brenda McIssac, Westviking College
                Al Niles, Labrador College
                Marilyn Ryall, Cabot College

INTRODUCTION
Level III ABE Curriculum

Welcome to Level III of the Adult Basic Education (ABE) Program! The ABE Program comprises provincial guidelines spanning all levels of Adult Basic Education, from literacy to high equivalency, in an attempt to provide consistent and continuous educational upgrading to the adults of this province. This guide is one of a series of three ABE Program Guides prepared by contract for the Division of Institutional and Industrial Education, Department of Education and Training, Government of Newfoundland and Labrador. This document focuses on Level III. Also available are program guides for Levels I and III, and two accompanying Instructor Handbooks, one for Level I and another for Levels II and III combined.

Overview of this Guide

This program guide is divided into three distinct parts for ease of use and reference:

☞ Part 1 introduces the program and presents the layout of the document.

☞ Part 2 explains how to use this guide.

☞ Part 3 states the learning objectives for students in Level III of the ABE Program, suggests useful references and resources to use in facilitating the attainment of those objectives, and briefly annotates the references supplied. Full information for ordering the texts is included in the annotated bibliography sections following each content area.

ABE Framework

The revised ABE program has three Levels, as indicated in the following framework:
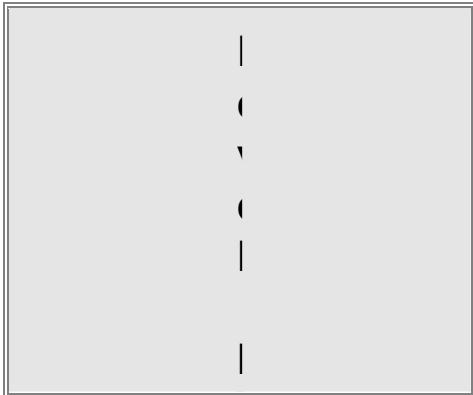
- ⇨ Communication Skills, including:
  - ⇨ Reading
  - ⇨ Writing
  - ⇨ Oral Communications
- ⇨ Mathematics
- ⇨ Science
- ⇨ General Knowledge
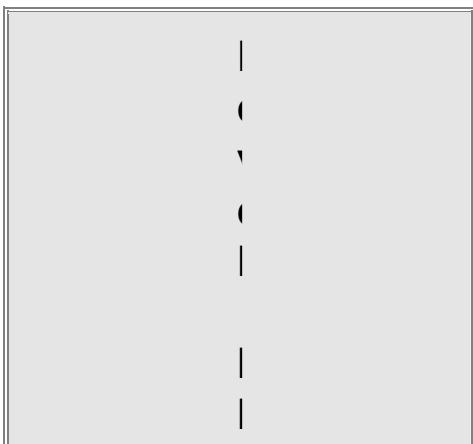
- ⇨ Communication Skills, including:
  - ⇨ Reading
  - ⇨ Writing
  - ⇨ Spelling
  - ⇨ Oral Communications
  - ⇨ Study Skills
- ⇨ Mathematics
- ⇨ Science
- ⇨ Employability Skills (Level III credits)
- ⇨ General Options (Level III credits)
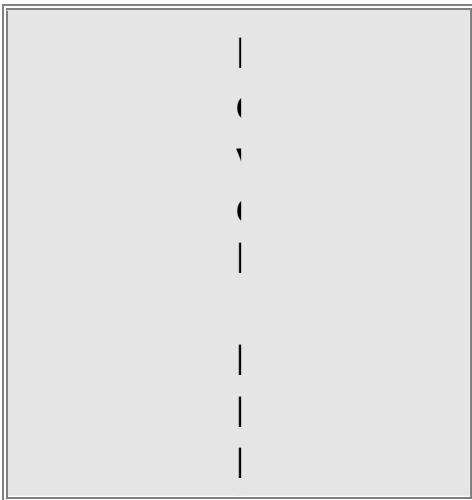
⇨ 36 credits required, including:
- ⇨ Minimum of 6 Communication Skills
- ⇨ Minimum of 6 Mathematics
- ⇨ Minimum of 6 Science
- ⇨ Minimum of 4 Employability Skills
- ⇨ Maximum of 10 General Options (May include equivalency and maturity credits)

USING THIS GUIDE
ABE Level III Curriculum

Purpose of the Guide

This program guide presents an array of learning objectives which are roughly equivalent to those which would be covered in communication skills, mathematics, science, and various other areas in the senior high school system. The Department of Education and Training offers these objectives as a description of the **minimum intended outcomes** which should be attained by students completing Level III of the ABE program. The objectives are stated to provide a **flexible structure** for course design, and to provide administrators and instructors with a planning framework for a variety of delivery methods, while ensuring that institutions in all parts of the province cover the same **minimum content** in their ABE programs. ***Thus, all Level III ABE Programs should cover at least the stated objectives.*** However, instructors, administrators, and program developers need not be limited to covering only those objectives listed. ***References and resources are suggested, rather than required, and educational institutions are free to make their own choices. Delivery methods are NOT prescribed and are entirely at the discretion of the institution offering the program.***

Content Areas

For Level III, courses are outlined in five content areas: Communication Skills, Employability Skills, Mathematics, Science, and General Options. The number of credits required in each of these areas for certification is discussed in the ABE Instructor Handbook for Levels II and III.

Course Numbers

Courses in both Levels II and III are assigned letters and a four digit number. In order to be consistent with the provincial transfer guide and the new registration system the courses have new six-digit, alpha-numerical listings. All ABE courses now begin with the letter designation "I". Subject areas are assigned as follows:

    IC represents Communication Skills
    IE represents Employability Skills
    IG represents General Options
    IM represents Mathematics
    IS represents Science
    IB represent Biology
    IH represents Chemistry

IP represents Physics

The digits in this number are of particular significance as follows:

    1st digit indicates level
    2nd digit indicates credit value of the course
    3rd and 4th digits indicate the course number

For example, IM 3215 is a mathematics course in Level III, which has a credit value of 2 toward the requirements for provincial certification, and which has been assigned the course number of 15 to distinguish it from other Level III mathematics courses.

Resource Materials

The learning objectives for each course are followed by a list of potential references and resources. **Note that references and resources are suggested, rather than prescribed**. Instructors and educational institutions are free to make other choices. Indeed, many learners do not respond well to print as a learning medium and alternate learning materials would undoubtedly be more appropriate for them. The references listed may serve as starting points. They were never intended to preclude the use of other reference texts or learning resources.

Instructor Handbooks

There are two Instructor Handbooks which supplement the ABE Program Guides. ABE Level III Instructors will find a wealth of valuable information in both the Handbook for Level I and the Handbook for Levels II and III combined. The Instructor Handbooks do not contain prescriptive information. They are, however, collections of suggestions which may help you in your delivery of the ABE Program. The Department of Education and Training recommends that all ABE instructors examine both Handbooks before instructing the courses described in the ABE Program Guides.

Purpose of the ABE Program

The ABE Program was designed with the intent of providing adults who have not completed high school with the opportunity of acquiring a solid, high-quality, educational background to allow them to function in our society, and to access avenues to further education, training, employment, and personal enrichment. It

encompasses and integrates the former Literacy, ABE, and BTSD programs into a more consistent and comprehensive curriculum.

Definition of Terms

The following terms are used in this curriculum according to these definitions:

Curriculum: an organized set of formal educational intentions.

Program: a set of courses designed to meet the stated aim of a curriculum.

Course: a set of topics that have been determined to meet the needs of the learners.

Topic: a major subdivision or grouping of the objectives of a course for the purpose of integrated study.

Learning Objective: a clear and concise statement of what the participant will be able to do at the end of the learning experience. Conditions may be given or denied as necessary.

Learning Activity: the actual learning experience prescribed to facilitate the achievement of a learning objective.

Credit: a block of content consisting of a stated range of learning objectives.

Note: A block of content may vary in appearance in terms of the number of objectives used to describe it. Some objectives may be accomplished quickly, with little work; others may require a great deal of time and practice. However, the expertise of the resource people who proposed the objectives should ensure that the credit blocks require similar amounts of work on the part of the students in order to achieve the objectives. Equivalency credits may be awarded at the discretion of the institution for courses conducted outside the ABE Program. Similarly, maturity credits may be awarded to recognize experiential learning. (See the ABE Instructor Handbook for Levels II and III for further coverage of credit attainment.)

Communication Skills

Level III Communication Skills
Introduction

Writing, reading, speaking, listening, viewing, vocabulary, study, and all communication skills are crucial to learning in all content areas. Development of these skills must continue throughout all Levels of the ABE program, in all content areas. Although the objectives are written in a particular order, reinforcement of these skills must be ongoing throughout the program. Newspapers, magazines, literary works, job-related publications, and printed matter, in all content areas, should be used to expose adult students to reading opportunities in areas of personal relevance.

Although the regular high school system of this province does not continue to offer the type of grammar courses done in junior high school, Level III of the revised ABE program does. Many of the adults who enter Level III ABE have been out of school for several years. The instructors who worked on this curriculum felt that these students would benefit greatly from a review of basic grammar skills.

The Level III Communication Skills component also seeks to take students beyond the realm of basic skills. The literature courses outlined aim to introduce students to significant works of their literary heritage, and to help students evaluate critically works of literature in terms of structural elements. These courses aim (1) to help the students repond emotionally and reflectively to the language and structure of literature, and (2) to help students value and appreciate literature as an art form which not only gives personal pleasure and enjoyment, but also deepens and broadens self-understanding. Like all literature courses, they also provide opportunities for the development and practice of written and oral communication skills.

The objectives stated in this guide were written, for the most part, in measurable terms. However, literary appreciation and values are difficult to incorporate into such a format. They are, nevertheless, essential features of all literature courses.

The Newfoundland Literature course was developed because of its interest and relevance to Newfoundland and Labrador students. That course aims to introduce students to a variety of Newfoundland and Labrador writings, to help them become familiar with the major Newfoundland and Labrador authors, and to increase their understanding and appreciation of their literary heritage. By focusing on the unique aspects of Newfoundland and Newfoundland character and culture that are reflected in the writings of Newfoundland and Labrador authors, it also aims to help students to better understand their identity as Newfoundlanders and Labradorians.

Although the skills necessary to understand literary genres in general are listed in

each course, it should be understood that in any given literary work, the student will be concerned with the predominant structural elements or literary devices. Whether these elements are studied intensely or merely reviewed will depend on the student's background in literature.

Level III Communication Skills is now comprised of:

IC 3211 Basic Grammar
IC 3112 Writing Skills
IC 3113 Evaluative Comprehension
IC 3214 A/B Oral Communications
IC 3215 Research Writing
IC 3116 Business Communications
IC 3117 Vocational English
IC 3218 A/B Introduction to Literature
IC 3219 Newfoundland & Labrador Literature
IC 3220 Canadian Literature
IC 3321 Optional Literature

Please note: IC 3218 A/B and IC 3321 have undergone extensive changes.

IC 3211
Basic Grammar

Recommendation: **This course is mandatory and must be done before IC 3112. It is required for all streams: academic, technical, and general.**

1. Overview

1.1 Define grammar.
1.2 Define and identify the eight main parts of speech.
1.3 Define and identify sentences in general and the four kinds of sentences.

2. Nouns

2.1 Identify and use number in nouns.
2.2 Identify and use kinds of nouns.
2.3 Identify and use nouns in their usage areas.
2.4 Identify and form plurals.
2.5 Identify and form possessive nouns.

3. Pronouns

3.1 Identify pronouns and explain how they differ from nouns.
3.2 Identify and use kinds of pronouns.
3.3 Identify and use pronouns in their usage areas.
3.4 Identify and use proper agreement with antecedents.

4. Verbs

4.1 Identify and use kinds of verbs.
4.2 Identify and use parts of verbs.
4.3 Identify and use verb tenses.
4.4 Identify and use irregular verbs.
4.5 Distinguish between passive and active voice.
4.6 Identify and use transitive and intransitive verbs.
4.7 Identify and use direct and indirect objects of verbs.
4.8 Identify and use linking verbs and predicate words.
4.9 Identify and use verbals.
4.10   Use correct subject and verb agreement.
4.11   Identify, and use correctly, troublesome verb pairs (may/can, lie/lay, etc.)

5. Adjectives

5.1 Identify and use kinds of adjectives.
5.2 Identify and use the concept of comparison with adjectives .
5.3 Identify, and use correctly, troublesome adjective pairs (them/those, here/there, kind/sort, etc.).

6. Adverbs

6.1 Identify and form adverbs.
6.2 Identify and use the concept of comparison with adverbs.
6.3 Identify the confusion between adjectives and adverbs.
6.4 Identify, and use correctly, troublesome adverbs (good/well, bad/badly, double negatives, etc.).

7. Prepositions

7.1 Identify and use prepositional phrases.
7.2 Identify and use correct placement of prepositional phrases.
7.3 Identify the confusion between prepositions and adverbs.
7.4 Identify, and use correctly, troublesome prepositional pairs (between/among, different from/different than, off/of, etc.).

8. Conjunctions

8.1 Identify and use kinds of conjunctions.

9. Interjections

9.1 Identify and use interjections.

10. Sentences

10.1   Identify subject and predicate of sentences.
10.2   Identify and use subjects in unusual order.

11. Clauses

11.1   Identify and use various sentence structures.
11.2   Identify and use independent and subordinate clauses including adjective clauses, adverb clauses, and noun clauses.

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12. Phrases

12.1   Identify and use kinds of phrases (prepositional, participial, gerund, infinitive, absolute).

12.2   Identify and use phrases in their usage areas (noun phrase, adjective phrase, adverb phrase).

13. Sentence Difficulties

13.1   Recognize and correct sentence fragments.

13.2   Recognize and correct run-on sentences.

13.3   Recognize and correct problems with subject and verb agreement.

14. Mechanics of Grammar

14.1   Recognize and apply rules of capitalization.

14.2   Recognize and apply rules of punctuation for periods, exclamation marks, question marks, commas, semicolons, colons, hyphens, dashes, apostrophes, parentheses, and quotation marks.

14.3   Recognize and apply rules of spelling.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Basic Language Skills. (1983). Cambridge.

Basic Skills in English. Joy Littell (ed). (1985). McDougall, Littell & Company. ISBN: 0-86609-488-1).

Building English Skills: Skills Practice Book, (Blue Level). Canadian edition. (1983). Toronto. Irwin Publishing.

Business English. (4th edition). Jeanne Reid, Mary Lu Suri. & John A Kushner. (1986). Gregg Division, McGraw -Hill Ryerson.

Business English and Communications. Stewart, Clark, Zimmer, and Hume (eds.). (1980). McGraw -Hill Ryerson Ltd. Toronto. ISBN: 0-07-548978-3.

The Communications Handbook. Paula Geophert (ed). (1982). Nelson Canada.

English Made Easier. Joseph Bellafiore. Amsco. ISBN: AS150P.

English Skills by Objectives. (Books 1-3). (1985). Cambridge.

Handbook of English. Harry Shaw (ed). (1986). McGraw-Hill Ryerson Ltd. Toronto. ISBN: 0-07-584986-4.

Progressions. Barbara Fine Clouse. (1993). Maxwell Macmillan Canada. Toronto. ISBN: 0-02-322971-3.

Mastering Effective English. (4th edition). Margaret Larock, Jacob Tressler, and Claude Lewis. (1980). Copp Clark Pitman. (May be out of print).

Put it in Writing: Improving Sentences. (1987). Cambridge.

Scholastic Composition (Levels 1-6). Scholastic Incorporated.

Scope English: Grammar and Composition (Levels 1-6). Scholastic Incorporated.

Studying English. [English 013]. Open Learning Agency.

Student Course Manuals for Distance Learning. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay

On-Line Resources: Westviking Gopher

IC 3112
Writing Skills

> *Recommendation: This course is mandatory and must be done after IC 3211. It is required for all streams: academic, technical, and general. The work completed in this course will be evaluated in accordance with the concepts learned in IC 3211.*

1. Principles of Paragraph/Essay Construction

1.1 Identify basics of a paragraph.
1.2 Identify basics of an essay.
1.3 Identify various methods of paragraph development.
1.4 Identify characteristics of paragraphs and essays.
1.5 Identify types of paragraphs and essays.

2. The Writing Process

2.1 Compare and contrast "writing" and the "writing process".
2.2 Identify and apply steps in the prewriting and planning stage.
2.3 Identify and apply elements of the first draft.
2.4 Edit composition for final draft.

3. Narrative Essays

3.1 Read and evaluate sample narrative essays.
3.2 Write narrative essays.

4. Descriptive Essays

4.1 Read and evaluate sample descriptive essays.
4.2 Write descriptive essays.

5. Expository Essays

5.1 Read and evaluate sample expository essays.
5.2 Write expository essays.

ABE Level III Curriculum

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

ABE Communications 3 Writing Book. B.C. Ministry of Education. (1984). Open Learning Agency.

The Communications Handbook. Paula Goephert (ed.). (1982). Nelson Canada.

Contest Essays by Canadian Students. Hookey and Hiltz (eds.). (1991). Harcourt, Brace and Company. Toronto. ISBN: 0-03-922669-7.

Developing Writing Skills (Canadian edition). William W. West, Stephen D. Bailey, and Bernice L. Wood. (1981). Prentice-Hall.

Fit to Print: The Canadian Student's Guide to Essay Writing. Joanne Buckley. (1991). Harcourt, Brace Jovanovich. Toronto. ISBN: 0-7747-3144-3.

For the Love of Literature: Reading and Writing Non-Fiction (part of the series Understanding Literature). Janet M. Davis. (1989). Media Materials Inc.

Mastering Effective English (4th edition). Margaret Larock, Jacob Tressler, and Claude Lewis. (1980). Copp Clarke Pitman. (May be out of print)

Reading and Writing English. [English 010]. Open Learning Agency.

A Writer's Guidebook. R.M. Frew, R.C. Guches, & R.E. Mehaffy. Pippin Publishing Ltd. ISBN: PK62850.

The Writing Process Wheel. Alan J. Hooper. Educational Design, carried by Monarch Books of Canada. ISBN: 0-87694-333-4.

Writing Prose: Techniques and Purposes. Thomas S. Kane, Leonard J. Peters, David Jackal, & Maurice R. Legris. (1987). Oxford University Press. ISBN: 195405714.

Student Course Manuals for Distance Learning. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

On-Line Resources: Westviking Gopher

IC 3113
Evaluative Comprehension

> *Recommendation:* **This course is intended to develop the learner's ability to comprehend and evaluate what is being read/heard. Therefore, in addition to the main textbook for this course (Transitions), supplementary materials such as the following should be used: newspapers, periodicals, radio, television, essays, dialogues, letters to the editor, and editorials displaying examples of argumentation and persuasion.**

1. Reading and Thinking

1.1 Identify and explain levels of reading comprehension.
1.2 Identify and explain levels of thinking.

2. Propaganda and Advertising

2.1 Define and recognize uses of propaganda.
2.2 Define and recognize techniques of propaganda.
2.3 Recognize uses of propaganda in advertising.
2.4 Recognize and define popular techniques used in advertising.

3. Argumentation and Persuasion

3.1 Review characteristics of narrative, descriptive and expository essays.
3.2 Identify characteristics of the two types of expository essay (argumentation and persuasion).
3.3 Explain formulation of a thesis statement through choosing an issue, examining it thoroughly, and writing topic sentences.
3.4 Identify qualities of a good thesis statement.
3.5 Define and identify two broad categories of evidence (fact and opinion).
3.6 Define and identify six specific types of evidence.
3.7 Explain "counter arguments".
3.8 Explain inductive reasoning and deductive reasoning as ways to use evidence.
3.9 Recognize logical fallacies (that is, errors in reasoning).
3.10 Organize ideas for writing focusing on structure, coherence, purpose and audience, tone and usage.

4. Assignment

4.1 Use the concepts learned in this and any other writing course to write at least ONE argumentative and ONE persuasive essay.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Critical Reading for Proficiency. (Books 1, 2 & 3). Stuart Margulies. Educational Design, carried by Monarch Books of Canada.

Improving Reading in Every Class. (Abridged 3rd edition). Ellen Lamar Thomas and H. Alan Robinson. Allyn and Bacon.

Mastering Effective English. (4th edition). Margaret Larock, Jacob Tressler, and Claude Lewis. (1980). Copp Clark Pitman. (May be out of print)

Reading and Critical Thinking. Books 1 & 2. Donald Barnes & Arlene Burgdorf. Educational Design, carried by Monarch Books of Canada.

Transitions: Language Arts for Young Canadians. V. Cooper, C. Reid, G. Reid, & L. Small. (1988). Breakwater.

Student Course Manuals for Distance Learning. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

National Film Board   ACCESS Network Videos

Media and Society.

Instructional Materials Centre has a large selection of films and videos on the media and advertising.

On-Line Resources: Westviking Gopher

IC 3214 A/B
Oral Communications

> **Recommendation: This course may be split into two parts, A and B, worth one credit each. Learners may do Part A only for one credit, or both for two credits. Learners should show evidence of completion of the basic skills in Part A before doing Part B.**

PART A

1. Basic Concepts of Oral Communications

1.1 Identify goals and purposes of communication.
1.2 Recognize importance of communication.
1.3 Identify types of communication (verbal, non-verbal).
1.4 Identify mechanics of the communication process.

2. Listening Skills

2.1 Distinguish between hearing and listening.
2.2 Identify detrimental listening habits.
2.3 Identify types of listening (active, passive).
2.4 Identify active listening techniques.

3. Speaking Skills

3.1 Demonstrate self-confidence through group introductions and short speeches about self-attributes and interests.
3.2 Apply speaking skills by giving short speeches (announcements, introduction of speakers, thanking speakers, "how to" speeches, impromptu speeches).

4. Interviews

4.1 Practice job interviews

5. Group Dynamics

5.1 Identify rules for group participation.
5.2 Participate in group/classroom discussions.
5.3 Participate in consensus-seeking exercise.

PART B

6. Advanced Speaking Skills

6.1 Identify techniques for improving effectiveness in making formal speeches (cue cards, key words, forceful beginnings, improved memory, repetition, forceful endings, speeches matched to audience, visual aids).

6.2 Apply advanced speaking skills to prepare formal speeches.

7. Interviews

7.1 Conduct journalistic/informational interviews.

8. Formal Discussions and Meetings

8.1 Participate in panel discussions.

8.1 Conduct a symposium.

8.3 Participate in a forum.

9. Debates

9.1 Participate in a traditional debate.

9.2 Participate in a cross-examinational debate.

9.3 Participate in a parliamentary debate.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Building a Speech. Sheldon Metcalfe. (1991). Holt, Rinehart, & Winston, Inc. carried by Harcourt-Brace & Company.

Business English and Communication (4th Canadian edition). Clark, Zimmer, Tinervia and Hume. (1986). McGraw-Hill Ryerson.

Communication Skills for the World of Work. Thomas Cheesboro, Linda O'Connor, & Francisco Rios. (1990). Prentice-Hall.

Mastering Effective English (4th edition). Margaret Larock, Jacob Tessler, and Claude Lewis. (1980). Copp Clark Pitman. (May be out of print)

People and Communications: Communications in Organizations. Desmond W. Evans. (1984). Copp Clark Pitman.

Person to Person; An Introduction to Speech Communication. Kathleen Galvin & Cassandra Book. (1985). National Textbook Company.

Transitions: Language Arts for Young Canadians. V. Cooper, G. Reid, g. Reid & L. Small. (1988). Breakwater.

Speaking Our Minds: A Guide to Public Speaking for Canadians. Barnard Sandie. (1990). Prentice-Hall Canada Inc. ISBN: 0-13-825894-5

Student Course Manuals for Distance Learning. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

National Film Board.

Parliamentary Procedure.

ACCESS Network Videos

On-Line Resources: Westviking Gopher

Other Resources: Field Trips

IC 3215
Research Writing

1. Review

1.1 Review different types of essays.
1.2 Review five parts of the writing process.

2. The Research Essay: Getting Started

2.1 Define "research" and identify what research allows us to do.
2.2 Identify and explain steps involved in choosing a topic.
2.3 Evaluate importance of making a deadline schedule.

3. Capturing the Essence of Sources

3.1 Explain concept of bibliography cards and their use.
3.2 Explain concept of note cards and their use.
3.3 Define and apply following techniques for identifying and presenting information: precis-writing, paraphrasing, and summarizing.
3.4 Identify "plagiarism" and how to avoid it.
3.5 Define and apply following additional techniques for identifying and presenting information: expanding, interpreting, analyzing, comparing and contrasting, classifying, and supporting.

4. Organizing a Comprehensive First Draft

4.1 List preliminary items necessary in a research paper.
4.2 Label contents of the main text of a research paper.
4.3 List categories of reference matter that are usually included at the end of a research paper.
4.4 Write first draft of a research paper.

5. Further Writing

5.1 Write final thesis statement, choose best method of development for essay, and write final outline for first draft completed above.
5.2 Write second draft of research essay.
5.3 Revise second draft.
5.4 Prepare final, polished copy of research essay.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

The Communications Handbook. Paula Goephert (ed). (1982). Nelson Canada.

Fit to Print: The Canadian Student's Guide to Essay Writing (2nd edition). Joanne Buckley. (1991). Harcourt Brace and Company.

Handbook of English. Harry Shaw (ed). McGraw-Hill Ryerson Limited. Toronto. (1986). ISBN: 0-07-584986-4.

How to Write a Research Paper. (1989). Lee Canter & Associates Inc.

Mastering Effective English (4th edition). Margaret Larock, Jacob Tressler, and Claude Lewis. (1980). Copp Clark Pitman. (May be out of print)

Search and Shape. Stanley Sparkes (ed). (1988). Glovertown Literary Creations.

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

On-Line Resources: Westviking Gopher

IC 3116
Business Communications

> *Recommendation:*   *This course is a general course, but it may be completed by students in the university/technical stream.*

1. Basic Skills Review

1.1 Review spelling rules.
1.2 Review abbreviation rules.
1.3 Review punctuation rules.
1.4 Recognize and apply rules for use of numbers.
1.5 Review use of reference materials.
1.6 Review "writing process" (as in CS 3112).

2. Business Letters

2.1 Review principles of communication that promote "goodwill" and get positive results.
2.2 Review requirements of a successful letter.
2.3 Identify parts of a business letter and their location on a page.
2.4 Identify and use four main business letter styles.
2.5 Identify and write main kinds of business letters.

3. Memorandums

3.1 Describe purpose and characteristics of memorandums.
3.2 Write memorandums.

4. Informal Reports

4.1 Describe purpose of informal reports.
4.2 List kinds of informal reports.
4.3 List parts of an informal report.
4.4 Write informal reports.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

ABE Communications 3 Writing Book. B.C. Ministry of Education. (1984). Open Learning Agency.

Better Business Writing (Revised Edition). Susan L. Brock. (1988). Crisp Publications, Inc., carried by Reid Publishing, Ltd. ISBN: 0-931961-25-4.

Business English and Communication (4th Canadian edition). Clark, Zimmer, Tinervia and Hume. (1986). McGraw-Hill Ryerson.

The Communications Handbook. Paula Goephert (ed.). (1982). Nelson Canada.

Handbook of English. Harry Shaw (ed.). McGraw-Hill Ryerson. Toronto. (1986). ISBN: 0-07-584986-4.

Mastering Effective English. (4th edition). Margaret Larock, Jacob Tressler, and Claude Lewis. (1980). Copp Clark Pitman. (May be out of print)

People and Communications: Communications in Organizations. Desmond W. Evans. (1984). Copp Clark Pitman.

Secretary's Key. Karen Lidgren. (1991). Jesperson Press. ISBN: 0-921692-36-6.

Student Course Manuals for Distance Learning. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

On-Line Resources: Westviking Gopher

IC 3117
Vocational English

1. Job Search

1.1 Identify various career interest areas and occupational clusters.
1.2 Identify job trends in your community/province.
1.3 Explore various sources of job leads.
1.4 Outline how to organize a job search.

2. Employment Correspondence

2.1 List most common ways of contacting a potential employer (telephone, letter, visit).
2.2 List important considerations for completing application forms.
2.3 Complete sample application forms.
2.4 Describe qualities of a good resume.
2.5 List categories in a resume.
2.6 Write a personal resume.
2.7 Write letters requesting references.
2.8 Write a variety of employment related, follow-up letters.

3. Job Interview

3.1 Apply important steps in the preinterview stage.
3.2 Critically analyze what to do and what not to do during an interview.

4. Work Environment

4.1 Explain employer's expectations of his/her employees.
4.2 Explain employee's expectations of his/her employer.
4.3 Explain major areas of concern about getting along at work.

5. Technical Writing

5.1 Explain importance of, and the procedure for, identifying your audience when you do technical writing.

5.2 Explain stylistic considerations necessary when doing technical writing.

5.3 Explain various visual aids that can be used to illustrate technical writing.

5.4 Write a technical description of a mechanism.

5.5 Write a technical description of a process.

5.6 Write a set of instructions for doing a task.

5.7 Write various informal reports, such as work orders, inspection and progress reports, accident reports, and research/survey reports.

6. Formal Meetings

6.1 Describe "Parliamentary Procedure" and the running of a formal meeting.

6.2 Describe characteristics of a formal meeting.

6.3 Participate in a formal meeting.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Communication Skills for the World of Work. Thomas Cheesebro, Linda O'Connor, & Francisco Rios. (1990). Prentice-Hall.

Mastering Effective English. (4th edition). Margaret Larock, Jacob Tressler & Claude Lewis. (1980). Copp Clark Pitman. (May be out of print)

Words on Work: An Integrated Approach to Language at Work. Stanley A. Nemiroff, Olivia Rovinescu, Clifton B. Ruggles, & David W. Booth. (1981). Globe/Modern Curriculum Press, carried by Prentice-Hall Canada, Inc.

Writing on the Job. Robert Mehaffy & Irene Mehaffy. Pippin Publishing Ltd. ISBN: PK62893.

Technically-Write! Ron S. Bliq. Prentice-Hall Canada, Inc,. (1992).

Career Skills. Joan Kelly-Plate & Ruth Volz-Patton. (1991). Glencoe/McGraw-Hill. ISBN: 0-02-675680-3.

How to Write for the World of Work. Pearsall, Cunningham, and Tovey. Holt, Rinehart, Winston. (1988).

Technical English: Reading, Writing, and Speaking. Pickett and Laster. (1988). Harper Collins Publishers, Inc.

You're Hired: Job Search Strategies for the 90's. George Kent. (1989). Copp Clark Pitman Limited. ISBN: 0-7730-4924-X.

Business English and Communication. Stewart, Clark, Zimmer, and Hume (eds.). McGraw-Hill Ryerson Limited. (1980). ISBN: 0-07-548978-3.

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

ACCESS Network videos.

On-Line Resources: Westviking Gopher

IC 3218 A/B
Introduction to Literature

Recommendation: This course may be split into two parts, A and B, worth one credit each. Learners may do Part A for one credit, or both parts for two credits. Learners should show evidence of completion of the basic skills in Part A before doing Part B. Part A would include objective ONE and any THREE of the other FIVE objectives; Part B would include ALL of the remaining objectives in the course.

1. Overview

1.1 Differentiate the FIVE major genres of literature.
1.2 Classify commonly used literary techniques and devices which are specific to genres chosen (eg. theme, foreshadowing, symbolism, dialogue, etc., etc.).

PART A. DO ANY **THREE** OF THE FOLLOWING **FIVE** UNITS.
PART B. DO **ALL** REMAINING UNITS.

2. Short Stories

2.1 Read a minimum of FOUR short stories.
2.2 Analyze how at least SIX literary techniques/devices are used in short stories.
2.3 Assess one short story that you especially enjoyed and support your answer with evidence from the short story.

3. Essays

3.1 Read a minimum of FOUR essays.
3.2 Analyze how at least SIX literary techniques/devices are used in the essays.
3.3 Assess one essay which you especially liked and support your answer with evidence from the essay.

4. Novels

4.1 Read a minimum of ONE fiction and ONE nonfiction.
4.2 Analyze how at least SIX literary techniques/devices are used in the novels.
4.3 Assess one novel which you especially enjoyed and support your answer with evidence from the novel.

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5. Poetry

5.1 Read a minimum of 12 poems.
5.2 Analyze how at least EIGHT literary techniques/devices are used in the poems.
5.3 Assess TWO poems you especially enjoyed and support your answer with evidence from the poems.

6. Drama

6.1 Read a minimum of TWO plays.
6.2 Analyze how at least SIX literary techniques/devices are used in the plays.
6.3 Assess one play which you especially enjoyed and support your answer with evidence from the play.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

> Anthology of Verse. Roberta A. Charlesworth. Oxford University Press.
>
> Approaches to Literature - Genres. D.W.S. Ryan and T. P. Rossiter (Editors). (1986). Jesperson Press. ISBN: 0-920502-80-6
>
> Approaches to Literature - Themes. D.W.S. Ryan and T.P. Rossiter. (Editors). (1986). Jesperson Press. ISBN: 0-920502-78-4
>
> Approaches to Literature - Modes. D.W.S. Ryan and T.P. Rossiter. (Editors). (1987). Jesperson Press. ISBN: 0-920502-82-2
>
> English. [ENG3A-M]. Independent Learning Centre. Kwik-Kopy Printing.
>
> Heath Literature for Composition. Alice S. Landy and Robert F. Sommer. (1990). D.C. Heath and Company. ISBN: 0-669-20884-1
>
> Literary Essays and Short Stories. Ryan & Rossiter. (1982). Jesperson Press.
>
> Norton Anthology of Poetry. Allison Barrows. (1983). Norton. ISBN: 039-39-522-4X
>
> Norton Anthology of Short Fiction. Cassil. (1986). Norton. ISBN: 039-39-547-9X
>
> Poetic Insight. D.W.S. Ryan and T.P. Rossiter. (Editors). (1984). Jesperson Press. ISBN: 9-920502-63-6
>
> Scope English: How to Read Literature (Levels One to Six). Anne Marie Mauser & John Alan Mauser. Scholastic.
>
> Searchlights. Book Society.
>
> Understanding Literature. Janet M. Davis. (1989). Media Materials, Inc.
>
> Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

A large selection of films and videos on all aspects of literature is available from both the:

Instructional Materials Centre: ACCESS Network Videos

National Film Board.

On-Line Resources: Westviking Gopher

IC 3219
Newfoundland and Labrador Literature

> *Recommendation: Students should accomplish the following objectives through examining a variety of Newfoundland writings, including a minimum of ten poems, five essays, five short stories, two plays, and two novels. Communications Skills 3218 is recommended as a prerequisite.*

1. Newfoundland and Labrador Essays

1.1 Examine literary devices used in selected essays.
1.2 Analyze writers' methods of essay development and organization.
1.3 Relate essays studied to Newfoundland and Labrador character and/or culture.

2. Newfoundland and Labrador Short Stories

2.1 Examine elements of selected short stories.
2.2 Examine literary techniques used in selected short stories.
2.3 Examine authors' methods of developing various elements of the short stories.
2.4 Analyze selected short stories by relating specific elements and/or literary techniques to the overall meaning and structure of the short story.
2.5 Relate short stories to aspects of Newfoundland and Labrador character and/or culture.

3. Newfoundland and Labrador Novels

3.1 Examine elements of selected novels
3.2 Examine literary techniques used in selected novels.
3.3 Examine authors' methods of developing various elements of novels.
3.4 Analyze selected novels by relating specific elements and/or literary techniques to the overall meaning and structure of the novel.
3.5 Relate novels to aspects of Newfoundland and Labrador character and/or culture.

4. Newfoundland and Labrador Drama

4.1 Examine technical aspects of selected plays.
4.2 Examine literary elements used in selected plays.

4.3 Examine literary devices used in selected plays.

4.4 Appraise authors' methods for developing various aspects of selected plays.

4.5 Analyze selected plays by relating various elements and techniques to the overall meaning and structure of plays.

4.6 Relate plays to aspects of Newfoundland and Labrador character and/or culture.

5. Newfoundland and Labrador Poetry

5.1 Examine elements used in selected poems.

5.2 Identify literary devices used in selected poems.

5.3 Analyze selected poems by relating various elements and literary devices to the overall meaning and form of the poem.

5.4 Relate poetry to aspects of Newfoundland and Labrador character and/or culture.

5.5 (**Optional**) Using previously learned writing skills, create poetry reflecting the images, setting, theme and characters of Newfoundland and Labrador.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Landings: Newfoundland and Labrador Literature Anthology. Norman, Sparkes, and Warr. (1984). Breakwater.

The Newfoundland Character: An Anthology of Newfoundland and Labrador Writings. Ryan and Rossiter. (1984). Jesperson.

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

There are some films and videos on aspects of Newfoundland literature and heritage available from both the:

Instructional Materials Centre: National Film Board

On-Line Resources: Westviking Gopher

IC 3220
Canadian Literature

> *Recommendation: Students should accomplish the following objectives through examining a variety of Canadian writings, including a minimum of ten poems, five essays, five short stories, two plays, and two novels, one of which should represent a novelist from Atlantic Canada. Aspects of Canadian character and culture as reflected in the literature should be considered. Communications Skills 3218 A/B is recommended as a prerequisite.*

1. Canadian Essays and Short Stories

1.1 Identify past and present short prose, authors giving special emphasis to the Atlantic region.

1.2 Write brief biographical sketches of four Canadian authors who specialize in short prose.

1.3 Using basic components of the short story, interpret themes of selected short stories.

1.4 Using basic types of literary essays, interpret the themes of selected essays.

1.5 Identify various unique characteristics of Canadian essays and short stories according to their geographical regions.

1.6 Using previously learned writing skills, create an example of short prose which reflects the character and culture of the Atlantic region.

2. Canadian Novels

2.1 Write brief biographical sketches of at least six Canadian novelists.

2.2 Compare and contrast fictional and non-fictional Canadian novels.

2.3 Identify themes of selected novels.

2.4 Compare themes and writing styles of selected novels.

2.5 Compare basic components of the selected novels (plot, setting, characters, etc.) with regard to the novel's regional influences.

3. Canadian Drama

3.1 Write brief biographical sketches of at least three Canadian playwrights.

3.2 Read or view examples of dramatic scripts representing unique regions of Canada in the selected plays.

3.3 Interpret themes of these selected plays in terms of their unique Canadian characteristics.

3.4 Using basic components of most dramatic works, compare a Canadian play to that of another country.

4. Canadian Poetry

4.1 Identify poets from all regions of the country.

4.2 Write short biographical sketches of five Canadian poets.

4.3 Interpret themes of selected poems.

4.4 Identify setting of the selected poems (urban, rural, coastal, wilderness, etc.).

4.5 Listen to examples of traditional and contemporary Canadian poetry.

4.6 Identify distinctive elements of Canadian poetry.

4.7 Compare these unique characteristics to traditional characteristics of poetry.

4.8 Identify Canadian images in the works studied.

4.9 Relate personal experiences to those portrayed in Canadian poetry.

4.10 Compare poets and poems of Newfoundland to those of other regions of Canada.

4.11 Identify themes of Canadian poetry which have emerged as a result of such factors as climate, geography, and the nature of our people.

4.12 (**Optional)** Using previously learned writing skills, create poetry reflecting the images, setting, themes,and characters of Canada.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

    Cues and Entrances. (1977). Henry Bessell. Gage Publishing.

    Easterly. B.E. Hatt. (1983). Academic Press.

    Heartland. K. MacLean Broughton. (1983). Nelson.

    Poems of a Snow-Eyed Country. R. Woollott & R. Souster. (1988). Academic Press.

    Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

A large selection of films and videos on Canadian authors is available from both the:

Instructional Materials Centre

National Film Board

Canadian Authors I
Video compilation of Atwood, Mowat and W.O. Mitchell.
VHS   185 145

Canadian Literature
7 films based on works by renowned Canadian writers.
VHS   180 261

On-Line Resources: Westviking Gopher

IC 3321
Optional Literature

Recommendation: Students should accomplish the following objectives through examining a variety of writings, including a minimum of ten poems, five essays, five short stories, two plays, and three novels. Due to the length of the reading component, students may find it advantageous to carry this course over a period of time, while doing other courses. A writing course may be ideal with this course.

1. Development of Literature

1.1 Define literature.
1.2 Outline historical development of literature.
1.3 Define myths and legends, and give examples.
1.4 Describe major genres of literature.

2. Essays

2.1 List characteristics of essays.
2.2 Distinguish between formal and informal essays.
2.3 Classify elements of essays.
2.4 Classify writers' methods of essay development and organization.

3. Short Stories

3.1 List characteristics of short stories.
3.2 Identify elements of the short story.
3.3 Evaluate these elements in selected short stories.
3.4 List the literary techniques of the short story.
3.5 Evaluate these literary techniques in selected short stories.
3.6 Assess authors' methods of developing various elements of the short stories.
3.7 Analyze selected short stories by relating specific elements and/or literary techniques to overall meaning and structure of short story.

4. Novel

4.1 List characteristics of a novel.

4.2 Identify elements of the novel.

4.3 Evaluate these elements in selected novels.

4.4 List literary techniques of novel.

4.5 Evaluate literary techniques used in selected novels.

4.6 Assess authors' method of developing various elements of the novel.

4.7 Analyze selected novels by relating specific elements and/or literary techniques to overall meaning and structure of novels.

5. Drama

5.1 List characteristics of plays.

5.2 Distinguish between types of drama (comedy and tragedy).

5.3 Examine technical terms related to staging of plays.

5.4 Analyze technical aspects used in selected plays.

5.5 Evaluate literary elements important to drama.

5.6 Examine literary devices important to drama.

5.7 Assess authors' methods for developing various aspects of selected plays.

5.8 Analyze selected plays by relating various elements and techniques to overall meaning and structure of plays.

6. Poetry

6.1 List characteristics of poetry.

6.2 Distinguish among types of poetry.

6.3 Examine elements important to poetry.

6.4 Analyze these elements in selected poems.

6.5 Evaluate literary devices important to poetry.

6.6 Classify literary devices used in selected poems.

6.7 Analyze selected poems by relating various elements and literary devices to overall meaning and form of the poem.

7. Thematic approach

7.1 Choose a theme (eg. love, conflict, survival, etc.) and assess how it is evident in a number of genres.

ABE Level III Curriculum

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Anthology of Verse. Roberta A. Charlesworth. Oxford University Press.

Approaches to Literature - Genres. D.W.S. Ryan and T.P. Rossiter (eds.). (1986). Jesperson Press. ISBN: 0-920502-80-6.

Approaches to Literature - Themes. D.W.S. Ryan and T.P. Rossiter (eds.). (1986). Jesperson Press. ISBN: 0-920502-82-2.

Approaches to Literature - Modes. D.W.S. Ryan and T.P. Rossiter (eds.). (1987). Jesperson Press. ISBN: 0-920502-82-2.

English. [ENG3A-M]. Independent Learning Centre. Kwik-Kopy Printing.

Heath Literature for Composition. Alice S. Landy and Robert F. Sommer. (1990). D.C. Heath and Company ISBN: 0-669-20884-1.

Literary Essays and Short Stories. Ryan & Rossiter. (1982). Jesperson Press.

Norton Anthology of Poetry. Allison Barrows. (1982). Norton. ISBN: 039-39-522-4X.

Norton Anthology of short Fiction. Cassil. (1986). Norton. ISBN: 039-39-547-9X.

Poetic Insight. D.W.S. Ryan and T.P. Rossiter (eds.). (1984). Jesperson Press. ISBN: 9-920502-63-6.

Scope English: How to Read Literature (Levels one to six). Anne Marie Mueser & John Alan Mueser. Scholastic.

Searchlights. Book Society.

Understanding Literature. Janet M. Davis. (1989). Media Materials, Inc.

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

A large selection of films and videos on all aspects of literature is available from both the:

Instructional Materials Centre: ACCESS Network videos

National Film Board.

On-Line Resources: Westviking Gopher

Level III Communication Skills
Annotated Bibliography

> **Note:** **A plethora of communication skills textbooks exists so this annotated bibliography and the potential resources list should not be construed as exhaustive. Most of the textbooks which you have been using will be equally relevant for this version of the program. You are encouraged to continually seek new or better references.**
>
> **Books listed may not be currently in print. ISBN numbers are listed where available.**

ABE Communications 3 Writing Book. B.C. Ministry of Education. (1984). *Open Learning Agency.*
> *A distance education package used in British Columbia which covers writing descriptions, narrations, fact and opinion, short reports, business letters, and applying for a job. Instructor's guide, test answer pad, supplement (sentence skills, spelling, and vocabulary) and student test pad are available.*

Anthology of Verse. Roberta A Charlesworth. *Oxford University Press.*
> *Used in the school system.*

Approaches To Literature - Genres. D.W.S. Ryan and T.P. Rossiter (Editors). (1986). *Jesperson Press.* ISBN: 0-920502-80-6
> *An anthology which takes a genre approach to the reading of literature. Provides students with a variety of reading experiences by introducing them to the major literary genres: short story, poetry, drama, and essay; and the minor genres: myth and legend, fable and folk tale, allegory and parable, proverb and epigram, letter and diary. One of a series, including Approaches To Literature - Themes and Approaches To Literature - Modes.*

Approaches To Literature - Modes. D.W.S. Ryan and T.P. Rossiter (Editors). (1987). *Jesperson Press.* ISBN: 0-920502-82-2
> *An anthology which takes a modal (eg. tragic, comic, romantic, fantastic, contemplative, etc.) approach to the reading of literature. One of a series, including Approaches To Literature - Themes and Approaches To Literature - Genres.*

Approaches To Literature - Themes. D.W.S. Ryan and T.P. Rossiter (Editors). (1986). *Jesperson Press.* ISBN: 0-920502-78-4
> *This anthology takes a thematic approach to the reading of literature. This text is one of a series, including Approaches To Literature - Genres and Approaches To Literature - Modes.*

Basic Language Skills. (1983). *Cambridge.*
> *This comprehensive grammar review workbook contains pretests, posttests, and answer keys, and was designed for adults.*

Better Business Writing (Revised Edition). Susan L. Brock. (1988). *Crisp Publications, Inc.*, carried in Canada by *Reid Publishing, Ltd.*. ISBN: 0-931961-25-4
   Covers most of the objectives for IC 3116 Business Communications, including grammar skills, business letters and memorandas.

Building a Speech. Sheldon Metcalfe. (1991). *Holt, Rinehart, & Winston, Inc,* carried by *Harcourt-Brace & Company.*
   Probably too high a reading level for ABE students, but would be valuable as a teacher's resource. It contains chapters on communication, audience analysis, listening skills, speech anxiety, speech construction, and delivery.

Building English Skills: Skills Practice Book, Canadian edition. (1983). Toronto: *Irwin Publishing.* ISBN 7725-51421.
   Part of a series of skills workbooks. Covers the basic grammar course well.

Business English and Communication (4th Canadian edition). Clark, Zimmer, Tinervia and Hume. (1986). *McGraw-Hill-Ryerson*.
   Covers objectives for oral communications and business communications.

The Communications Handbook. Paula Goephert (ed.). (1982). *Nelson Canada*.
   Useful as a reference book, but contains no practice exercises. Available through School Supplies, Pleasantville.

   Student Text Level 1: 0590711377
   Student Text Level 2: 0590711385
   Student Text Level 3: 0590711393
   Student Text Level 4: 0590711032
   Student Text Level 5: 0590711040
   Student Text Level 6: 0590711059
   Teaching Guide/Activity Masters 1-3: 0590711407
   Teaching Guide/Activity Masters 4-6: No Longer Available

Communication Skills for the World of Work. Thomas Cheesebro, Linda O'Connor, & Francisco Rios. (1990). *Prentice-Hall.*
   Workbook coverage of communication, listening skills, sending skills, writing skills, employability skills.

Communication Skills for the World of Work. Thomas Chesebro, Linda O'Connor, Francisco Rios. (1990). *Prentice-Hall.*
   Workbook coverage of communication, listening skills, sending skills, writing skills, employability skills.

Critical Reading for Proficiency. (Books 1, 2, & 3). Stuart Margulies. *Educational Design*, carried by *Monarch Books of Canada*.
   Teaches all of the higher-level critical thinking and critical reading skills. Book 1 is at reading level 5-6, book 2 at 7-8, and book 3 at high school level.

Cues and Entrances. Henry Bessell. (1977). *Gage.*
   Used in the high school system.

Developing Writing Skills (Canadian edition). William W. West, Stephen D. Bailey, Berenice L. Wood. (1981). *Prentice-Hall.*
> *Used in the school system. It was designed for senior high school students, and contains many examples of good professional writing. It has a Canadian context and many student activities. The teacher's guide is available free from School Supplies.*

Easterly. B. E. Hall. (1983). *Academic Press.*
> *Used in the high school system.*

English [ENG3A-M]. Independent Learning Centre. *Kwik-Kopy Printing.*
> A *distance education package designed to provide an Ontario Grade 11 equivalency in the study of literature. Covers the novel, short story, essay, other prose, poetry, and play. Texts, lesson materials, and cassettes are included.*

English Made Easier. Joseph Bellafiore. *Pippin Publishing*. ISBN AS150P.
> *Grammar, sentences, spelling, punctuation, and vocabulary in a full-language program for the less academically-inclined students.*

English Skills by Objectives. (Books One to Three). (1985). *Cambridge.*
> *Provides comprehensive workbook coverage of grammar and writing. Designed for adults, skills-oriented, and contains self-tests, pretests, and posttests.*

Fit to Print: The Canadian Student's Guide to Essay Writing (2nd edition). Joanne Buckley. (1991). *Harcourt-Brace & Company.*
> *Written as a text for writing courses at the university, college, and secondary levels. Emphasizes different kinds of essays across the curriculum, such as the research essay, the essay exam, and the book review.*

Health Literature For Composition. Alice S. Landy and Robert F. Sommer. (1990). *D.C. Heath and Company.* ISBN: 0-669-20884-1
> *Provides an extensive selection of essays, short stories, plays and poetry by well-known writers.*

Heartland. K. MacLean Broughton. (1983). *Nelson.*
> *Used in the high school system.*

How to Write a Research Paper. (1989). *Lee Canter & Associates Inc.*
> *Concise, paperback, "how-to" manual.*

Improving Reading in Every Class. (Abridged 3rd. edition). Ellen Lamar Thomas and H. Alan Robinson. *Allyn and Bacon.*
> *Used in the school system as a teacher's resource. Covers vocabulary, comprehension, problem-solving, study skills, and reading in different content areas. Available free from School Supplies.*

In Your Own Words: A Writing Program for Adults. (Vol.2, Paragraph Competency). *Cambridge.*
> *Workbook on paragraph writing, designed for adults.*

Landings: Newfoundland and Labrador Literature Anthology. Norman, Sparkes, and Warr. (1984). *Breakwater.*
    Good source of Newfoundland writing.

Literary Essays and Short Stories. Ryan & Rossiter. (1982). *Jesperson.*
    Used in the high school system.

Lost At Sea (Volume Two). Robert Parsons. (1992). *Creative Publishers*, a division of *Robinson-Blackmore Printing & Publishing Ltd.* ISBN: 1-895387-09-4
    A Newfoundland collection of tales of human endurance and tragedy at sea by a local writer. It may be used as a potential resource for IC 3219 Newfoundland and Labrador Literature.

Mastering Effective English. (4th edition). Margaret Larock, Jacob Tressler, and Claude Lewis. (1980). *Copp Clark Pitman.* The ISBN is 0773023070.
    Used in the school system. A good reference for most of the communication skills courses. Grammar, writing, comprehension,oral communications, research, business English, aspect of vocational communications, and literature are all covered.

The Newfoundland Character: An Anthology of Newfoundland and Labrador Writings. Ryan and Rossiter. (1984). *Jesperson.*
    Good source of Newfoundland writing.

The Norma and Gladys. Gary Cranford. (1994). Flanker Press ISBN 096987670X
    Good source of Newfoundland and Labrador writing.

People and Communications: Communications in Organizations. Desmond W. Evans. (1984). *Copp Clark Pitman.* ISBN 0273019724.
    Covers objectives for oral communications and business communications.

Person to Person: An Introduction to Speech Communication. Kathleen Galvin & Cassandra Book. (1985). *National Textbook Company.*
    Covers most of objectives for the oral communications. Workbook available.

Poems of a Snow-Eyed Country. R. Woollott & R. Souster. (1988). *Academic Press.*
    Used in the high school system.

Poetic Insight. D.W.S. Ryan and T.P. Rossiter (Editors). (1984). *Jesperson Press.* ISBN: 9-920502-63-6
    Provides a good selection of poems for IC 3318 Introduction To Literature. Selections are arranged according to the different types of poetry (eg. narrative and song, alliteration and onomatopoeia, simile and metaphor, etc.).

Put it in Writing: Using Paragraphs. (1987). *Cambridge.*
    Workbook designed for adults. Concentrates on paragraphs. Activity book available.

Put it in Writing: Using Words. (1986). *Cambridge.*
    Workbook for adults. Covers almost all of the objectives in the writing skills unit. Activity book available.

Put it in Writing: Improving Sentences. (1987). *Cambridge.*

Sentence construction was designed for adults. Activity book available.

Reading and Critical Thinking. Books 1 & 2. Donald Barnes & Arlene Burgdorf.
Educational Design, carried by *Monarch Books of Canada*. ISBN [Book 1]: 0-87694-237-0,
ISBN [Book 2]: 0-87694-000-9.
> *Book 1 introduces students to fundamental literal, inferential, and evaluative thinking
> skills at reading level 5-7. Book 2 teaches more advanced thinking skills necessary to
> understand high school reading matter, at level 7-9. Teacher's guide available.*

Reading and Writing English. [English 010]. *Open Learning Agency.*
> *A distance education package used in British Columbia which with tapes and
> assignment files. Covers reading, grammar, and writing of narration, description,
> exposition, letters, and short reports.*

Scholastic Composition (levels 1-6). *Scholastic Incorporated.*
> *Covers sentence-building exercises, writing different syntactic structures, composition
> goals, writing assignments, and editing. Two teaching guides cover the six levels;
> activity masters are available.*

Student Text Level l: 0590711377
Student Text Level 2: 0590711385
Student Text Level 3: 0590711393
Student Text Level 4: 0590711032
Student Text Level 5: 0590711040
Student Text Level 6: 0590711059
Teaching Guide/Activity Masters 1-3:   0590711407
Teaching Guide/Activity Masters 4-6:   No Longer Available

Scope English: Grammar and Composition (Levels One to Six). *Scholastic Incorporated.*
> *Series designed for students having trouble with studying English. Texts, workbooks,
> teaching guides, answer keys, and anthologies are available.*

Level 1 Hardcover Student Text (1984):   0590076922
    Workbook: 0590314130
    Teacher's Guide: 0590314149
    Printmaster Tests: 0590314157
Level 2 Hardcover Student Text (1984):   0590076949
    Workbook: 0590314211
    Printmaster Tests: 0590314238
Level 3 Hardcover Student Text (1984):   0590076965
    Workbook: 0590314297
    Teaching Guide: 0590314300
    Printmaster Tests: 0590314319
Level 4 Hardcover Student Text (1984):   0590076981
    Workbook: 0590314378
    Teaching Guide: 0590314386
    Printmaster Tests: 0590314394
Level 5 Hardcover Student Text (1984):   0590077007
    Workbook: 0590314459
    Teaching Guide: 0590314467
    Printmaster Tests: 0590314475
Level 6 Hardcover Student Text: 0590077023
    Workbook: 059031453X

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Teaching Guide: 0590314548
Printmaster Tests: 0590314556

Scope English: How to Read Literature (Levels One to Six). Anne Marie Mueser & John Alan Mueser. *Scholastic*.
Workbook approach to reading literature. Wide variety of samples in each workbook. Six levels in series.

Search and Shape. Stanley Sparkes (ed.). (1988). *Glovertown Literary Creations*.
Used in the school system. Covers objectives for the research writing.

Searchlights. *Book Society*.
Used in school system.

Secretary's Key. Karen Lidgren. (1991). *Jesperson Press*. ISBN: 0-921692-36-6
Although developed for secretarial program students, it may be used as a resource for the IC 3116 Business Communications course.

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Studying English. [English 013]. *Open Learning Agency*.
A distance education package used in British Columbia. Provides comprehensive coverage of English grammar and writing skills. Designed for English as a Second Language students, but is quite usable for all students. Booklets and assignment files are included.

Transitions: Language Arts for Young Canadians. V. Cooper, C. Reid, G. Reid, & L. Small. (1988). *Breakwater*.
Used in the high school system and covers evidence, argumentation, persuasion, and propaganda.

Understanding Literature. Janet M. Davis. (1989). *Media Materials, Inc.* ISBN MM30230, MM30260.
A two-book series, For the Love of Literature: A Survey of Fiction and For the Love of Literature: Reading and Writing Non-Fiction, introduces the terms and concepts necessary for an understanding of both fiction and non-fiction. Provides a collection of high-interest, low-readability level selections in workbook format.

Words on Work: An Integrated Approach to Language and Work. Stanley A. Nemiroff, Olivia Rovinescu, Clifton B. Ruggles, & David W. Booth. (1981). *Globe/Modern Curriculum Press*, carried by *Prentice-Hall Canada, Inc*.
Provides reading practice in a work context.

Writer's Guidebook, A. R.M. Frew, R.C. Guches, & R.E. Mehaffy. *Pippin Publishing Ltd.* ISBN PK62850.
Complete text for the student who has not yet mastered the basic skills for English composition. Students progress from sentence writing to creating each part of the composition, to the research paper. Grammar and style reference appended.

Teacher's guide available.

Writing on the Job. Robert Mehaffy & Irene Mehaffy. *Pippin Publishing Ltd*. ISBN PK62893.
Workbook designed to improve the writing skills of anyone preparing to enter the working world. Sentence elements, punctuation, business letters and informal reports are covered.

The Writing Process Wheel. Alan J. Hooper. *Educational Design,* carried by *Monarch Books of Canada.* ISBN 0-87694-333-4.
Manipulative, visual tool for helping students improve their writing.

Writing Prose: Techniques and Purposes. Thomas S. Kane, Leonard J. Peters, David Jackal, & Maurice R. Legris. (1987). *Oxford University Press*. ISBN 195405714
Used in the school system. Contains many examples of good prose, and is useful as a teacher's resource.

You're Hired! Job Search Strategies for the 90s. (1989). George E. Kent. *Copp Clark Pitman*.
Short, concise, and easy to read.

Films and Videos:

Media and Society. *National Film Board.*
A three-video series features 19 films and is accompanied by a comprehensive resource guide. Available for rental or purchase.

Other resources for Communication Skills:

The Canadian Writer's Handbook. William E. Messessey. *Prentice Hall*.

English the Easy Way. Elliot Schachter Clark. *Nelson Canada*.

Handbook of English. Harry Shaw. *McGraw-Hill Ryerson*. Toronto.

On-Line Resources: Westviking Gopher

Employability Skills

Level III Employability Skills
Introduction

The courses listed in this new section are familiar courses, formerly contained within the General Options section. During 1995-96 we hope to increase the course offerings in this section, keeping in mind the everchanging needs caused by the expansions in technology and the changes in work as we know it. Hopefully, these additional courses will include articulated first-year, college-level courses (eg. Employability Skills) which will enable the ABE student to enter post secondary studies with college-level credits transferred from ABE. **Note: Career Awareness and Personal Development courses can no longer be counted as Communication Skills credits.**

Employability Skills are comprised of:

IE 3211 Consumer Studies
IE 3212 Computer Studies
IE 3213 Career Awareness
IE 3214 Personal Development

* *Please note changes in course numbers and credit values.*

IE 3211
Consumer Studies

1. Consumer as a Decision-Maker

1.1 Distinguish between needs and wants of a consumer.
1.2 State values and goals of the adult as a consumer.
1.3 Describe how standard of living affects consumer behaviour.
1.4 Describe characteristics of our free enterprise system.

2. Role of Business

2.1 Explain how business plays a role in need satisfaction.
2.2 Outline marketing procedures.
2.3 Analyze effects of advertising upon consumer.
2.4 Describe role played by business in government transactions.

3. Managing Personal Resources

3.1 Prepare a budget from a given case study.
3.2 Explain types of investment, including certificates, bonds, stocks, life insurance, RRSP's, and term deposits, and risks involved.
3.3 Outline various financial institutions that operate in our society, including banks, trust companies, credit unions, finance companies, stock brokers, and investment companies.
3.4 Explain use of credit, including sources, types, and cost.
3.5 List pros and cons of using credit.

4. Effective Consumer Purchasing

4.1 Justify importance of being an informed consumer in purchasing food and clothing, considering factors such as nutritional needs, grades, standards, quality, comfort, and style.
4.2 Describe considerations in selecting housing and furnishings, including types of housing, personal needs, legal aspects, and the cost of owning versus the cost of renting housing.
4.3 Summarize costs of transportation, including private versus public forms of transportation, leasing versus purchasing, used versus new car purchase, warranties, and sales contracts.
4.4 Identify different types of insurance (including automobile, life, home, group, etc.), costs, and benefits of each type.
4.5 Rank importance of health and recreation in comparison with other needs.

5. Consumer Protection

5.1 Identify federal and provincial government agencies designed to help protect the consumer, including Agriculture Canada, Consumer and Corporate Affairs, Health and Welfare Canada, Industry, Science and Technology Canada, Department of Development and Tourism, Newfoundland and Labrador Development Corporation.

5.2 Describe role played by private agencies in consumer protection, including Better Business Bureau, Trade Association, Canada Standards Association, and Consumer Association of Canada.

5.3 Explain how and why consumers can protect themselves in our society.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Business Today: An Introduction. John Kwekkeboom. (1987). *McGraw-Hill Ryerson.*

Consumer Studies. [BCS2G-M and BCS2G-P]. Independent Learning Centre. *Kwik-Kopy Printing.*

Scholastic Real Life Reading (Canadian Edition). Robert S. Mellott. (1990). *Scholastic Canada Ltd.* ISBN: 0-590-73470-9

Scholastic Real Life Consumer Economics (Canadian Edition). Sylvia Hill. (1991). *Scholastic Canada Ltd.* ISBN: 0-590-73467-9

Films and Videos:

Instructional Materials Centre has a large selection of films and videos on various aspects of consumerism.

ACCESS Network videos

Other resources:

Consumer & Corporate Affairs Canada
Department of Justice, Consumer Affairs Branch

IE 3212
Computer Studies

1. Role of Computers in Society

1.1 Distinguish between a computer and a computer system.
1.2 Describe three types of computers.
1.3 Outline history of computer development.
1.4 Describe capabilities and limitations of computers.
1.5 List available careers involving computers.
1.6 State legal principles relating to computer software copyright laws.
1.7 Describe applications of computers in society.
1.8 Describe social impact of computers.
1.9 Describe possible future trends in computer uses.

2. Components and Functions of a Computer System

2.1 Define "hardware".
2.2 List input and output devices.
2.3 Define central processing unit.
2.4 List storage devices.
2.5 Describe proper care of hardware.
2.6 Define software.
2.7 Describe types of application software.
2.8 Describe proper care of software disks.

3. Keyboard

3.1 Identify alphabetic, numeric, cursor control, special, and function keys.
3.2 Describe function of each of these types of keys.

4. Disk Operating System (Recommended minimum of 3 hrs.)

4.1 Define operating system.
4.2 Boot system.

4.3 Describe principles involved in creating file names.
4.4 Explain and use [DIR], [FORMAT], [COPY], [DISKCOPY], [ERASE], [TYPE], [CHKDSK], [SHIFT-PRINTSCREEN] commands.
4.5 Describe purpose of write protection.

5. Word Processing (Recommended minimum of 6 hrs.)

5.1 Define word processing.
5.2 List examples of word processing programs.
5.3 Load a word processing program.
5.4 Enter text in a document.
5.5 Edit document using the [DELETE], [INSERT], [CENTRE], [MOVE], [BOLD], [UNDERLINE], and [CHANGE MARGIN] commands.
5.6 Print a document.
5.7 Save a document.
5.8 Retrieve a file.
5.9 List a directory.
5.10   Exit from word processing program.

6. Spreadsheets (Recommended minimum of 6 hrs.)

6.1 Define spreadsheet.
6.2 List examples of spreadsheet programs.
6.3 Load a spreadsheet program.
6.4 Explain meaning of cell address, labels, values, formulas, and functions.
6.5 Create a simple spreadsheet.
6.6 Edit spreadsheet.
6.7 Print spreadsheet.
6.8 Save spreadsheet.
6.9 Retrieve a spreadsheet.
6.10   Erase a work sheet from screen.
6.11   Exit spreadsheet.

7. Databases (Recommended minimum of 6 hrs.) Optional section, depending on time

available.

7.1 Define a database.
7.2 List examples of database programs.
7.3 Load a database program.
7.4 Create a database.
7.5 Create a filename.
7.6 Define field attributes for database.
7.7 Enter records in database.

7.8 Sort records in database.
7.9 Edit records in database.
7.10   Add records to database.
7.11   Print database.
7.12   Save database.
7.13   Retrieve a database.
7.14   Exit database.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Computer Concepts with Microcomputer Applications, Lotus Version. Shelley, Cashman, & Waggoner. *Boyd & Fraser Publishing Company*, *Nelson Canada* College Division.

Computer Literacy (Second Edition). Helen G. Kershner. (1992). *D.C. Heath and Company*. ISBN: 0-669-27998-6

Hands-0n: MS-DOS, Wordperfect, dBASE, LOTUS 123. Lawrence C. Metzelaar & Marianne B. Fox. *The Benjamin Cummings Publishing Company*, Don Mills, Ontario.

Introducing Computers: Concepts, Systems, and Applications (1989-90 edition). Robert H. Blissmer. *John Wiley & Sons.*

Quick Reference Guides: dBase, DOS, Lotus 1-2-3, WordPerfect. *Dictation Disc Company*, carried by *Monarch Books of Canada*.

Computer software:

The Print Shop [Current Version]
The Instructor [Current Version]
WordPerfect [Current Version]
Lotus 123 [Current Version]
Dbase [Current Version]
Computer Demonstration Disks
Public Domain Software

Videos:

The New literacy (An Introduction to Computers). A series of 26 half-hour lessons. *Magic Lantern Distributers.*

ACCESS Network videos
Instructional Materials Centre has a large selection of videos available on computers.

IE 3213
Career Awareness

Recommendation: *As employment is such a crucial concern to adult learners, this course should not be offered as a paper-and-pencil activity alone. The skills listed should be applied to real-life situations as often as possible.*

1. Workplace

1.1 Describe how work world has changed over course of time.
1.2 Identify needs met by work, including financial and social needs.
1.3 Relate work needs, worker needs, and worker dissatisfaction to a real-life situation using a case study.
1.4 List employer/employee expectations.

2. Process of Career Exploration

2.1 Discuss importance of exploring an occupation prior to career selection.
2.2 Describe types of occupational information and where to find it.
2.3 List advantages of work-study to a job seeker.
2.4 List advantages of cooperative education.

3. Self-Knowledge

3.1 List aptitude categories commonly considered (eg. mechanical, verbal, clerical speed, accuracy), as related to occupations.
3.2 Explain commonly considered interest categories (eg. outdoor, computational, scientific), as related to occupations.
3.3 Identify different spans of training required for different types of occupations.
3.4 Explain how temperaments can affect your performance on the job.
3.5 Relate environmental factors to job preferences.
3.6 Compare levels of physical activity required for different jobs.
3.7 Compare preferences for working with data, people or things, and implications for job selection.
3.8 List personal work values.
3.9 List personal skills and abilities.
3.10 Compile a personal profile from information categories contained in objectives 3.1 to 3.9.

4. Career Selection

4.1 List steps in making decisions.
4.2 Apply steps in making a career decision to a given case study.
4.3 Identify limitations in making career decisions.
4.4 Apply decision-making process in own career selection process.
4.5 Justify career decision.
4.6 Develop career path.
4.7 Develop action plan.
4.8 Apply a format to studying occupations (eg. name, educational requirements, physical demands, mental demands, etc.).
4.9 Research a career in the National Occupation Classification.

5. Job Search Strategies

5.1 Identify sources of job openings (eg, retirement, new industry, sickness, etc.).
5.2 Explain how vacancies can be located (eg. classified ads, employment centres, actual locations).
5.3 Develop prospect lists.
5.4 Organize personal referral networks.
5.5 Apply methods of responding to a job vacancy, including formal application forms, letters of application,etc.
5.6 Explain need, purpose, function and types of resumés.
5.7 Identify parts and format of a resumé.
5.8 Write a resumé with cover letter.
5.9 Prepare for employment tests.
5.10   Evaluate personal readiness to apply job search skills.

6. Job Interviews

6.1 Identify purpose of job interviews.
6.2 Describe different types of job interviews.
6.3 Outline strategies for preparing for interviews.
6.4 Describe stages of an interview.
6.5 Identify errors commonly made during interviews.

7. Follow-up to an Application

7.1 State rationale for writing follow-up letters after interview.
7.2 List considerations for acceptance, rejection, and negotiation of offers of employment.
7.3 Write letters of acceptance and rejection.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Career Skills. Joan Kelly & Ruth Volz-Patton. (1991). *Glencoe Publishing*, carried by *McGraw-Hill-Ryerson.* The ISBN is 0026756803

The Complete Job Search Book. Richard H. Beatty. (1988). *John Wiley & Sons*.

Expanding Your Horizons: A Career Guide. Judi Misener and Susan Kearns. (1993). *Mcgraw-Hill Ryerson Limited*. ISBN: 0-07-551392-7

Job Futures: An Occupational Outlook to 1995. The Handbook. (1988). Ministry of Supply and Services.

Job Seeker's Handbook. (1986). Alberta Education. Learning Resources Distributing Centre.

National Occupation Classification. *Canada Communication Group Publishing*, Government of Canada.

Occupational Profile Packages. (1986-1989). Alberta Education. Learning Resources Distributing Centre.

Resumés that Work: How to Sell Yourself on Paper. Loretta D. Foxman. (1984). *John Wiley & Sons.*

Scholastic Real Life Employment (First Canadian Edition). Ruth D. Handel and Eleanor S. Angeles. (1991). *Scholastic Canada Ltd.* ISBN: 0-590-73812-7

Self-Directed Career Planning Guide. (1989). Alberta Education. Learning Resources Distributing Centre.

Skills are your Passport. (1988). Alberta Education. Learning Resources Distributing Centre.

Transitions: A Practical Guide to the Workplace. Linda Winder, Sonya Stih, & Jim O'Connor. (1989). *Maxwell MacMillan*, carried by *McGraw-Hill Ryerson*.

Work and Employability Skills Program. (1982). Publications Ontario. Price $4.00 per copy. "Prepayment is required".

Films and videos:

Career Support Services and Instructional Materials Centre both have an extensive collection of films and videos on careers, career selection, job search skills, interviews, etc.

ACCESS Network videos

Software:

Choices CT. Careerware, *STM Corporation*.

Insight. *Scholastic, Inc.*

Hotline:

Career Information Hotline: Toll free telephone (800) 563-6600, or 729-6600 in St. John's.

IE 3214
Personal Development

Recommendation: Because personal development is essentially an internal and private process of change and growth, this course should be regarded from the perspective of the facilitation of the development of life skills, rather than the provision of specific knowledge. The development of critical thinking processes cannot be measured quantitatively, nor can the ability to cope with stress. Hence, the following objectives belong more to the affective domain than to the cognitive, and achievement of those objectives may not be measurable in terms of concomitant change in behaviour. The focal point of this course lies in the raising of consciousness, rather than in the measurability of the objectives.

1. Self-Concept

1.1 Explain self-concept.
1.2 Identify factors which influence formation of self-concept.
1.3 Recognize personal strengths.
1.4 List personal successes.
1.5 Recognize personal limitations.
1.6 Identify strategies to overcome limitations.
1.7 Explore personal attitudes.

2. Problem-Solving Strategies

2.1 Identify methods of problem solving.
2.2 Describe critical thinking process.
2.3 Apply critical thinking process to problem solving.
2.4 Describe creative thinking.
2.5 Apply creative thinking to problem solving.

3. Interpersonal Communication Skills

3.1 Identify listening skills.
3.2 Identify ineffective listening habits.
3.3 Assess own listening skill level.

3.4 Apply listening skills (eg. follow directions).
3.5 Define verbal communications.
3.6 Define non-verbal communications.
3.7 Identify effective questioning techniques.
3.8 Identify persuasive communication techniques.
3.9 Recognize assumptions and how they influence the communication process.
3.10 Recognize influence of self-concept upon communication skills.
3.11 Apply verbal and non-verbal communication skills in delivering an oral presentation.

4. Group Skills

4.1 Identify roles, functions, and responsibilities of group members.
4.2 Identify elements of group communication (eg. consensus, cooperation, mutual respect, teamwork).
4.3 Apply problem-solving skills in a group setting.
4.4 Participate in group discussions.
4.5 State rules for conducting meetings.

5. Stress Management

5.1 Compare positive and negative stress.
5.2 Identify personal stress factors (eg. death of a family member).
5.3 Identify coping strategies for dealing with personal stress.
5.4 Identify employment stress factors (eg. harassment).
5.5 Identify coping strategies for dealing with employment stress.
5.6 Identify limitations in making career decisions.

6. Time Management

6.1 Identify personal priorities with regard to time allotment.
6.2 Differentiate between short-term and long-term goal planning.
6.3 Identify organizational strategies for the home.
6.4 Identify organizational strategies for the workplace.

7. Assertiveness

7.1 Compare passive, aggressive and assertive behaviour.
7.2 Analyze passive, aggressive, and assertive aspects of personal behaviour.
7.3 Identify strategies for dealing with authority figures.
7.4 Recognize situations where a sense of humour is important.
7.5 Identify strategies for dealing with confrontation.
7.6 List mechanisms for protecting your rights, including community resources.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Aha! Insight. Martin Gardner. 1990. W.H. Freeman & Co., carried by *Irwin Publishing.*

Becoming a Master Student. (5th edition). David B. Ellis. *College Survival, Inc.*

Creating your Future: A Guide to Personal Goal Setting. George A Ford & Gordon Lippitt. *University Associates of Canada, Inc.*

Develop Thinking Skills. *Scholastic.*

The Encyclopedia of Group Activities. William J. Pfeiffer (editor). *University Associates of Canada, Inc.*

The Encyclopedia of Icebreakers. Sue Forbess-Greene. *University Associates of Canada, Inc.*

Expanding Your Horizons: A Career Guide. Judi Misener and Susan Kearns. (1993). *Mcgraw-Hill Ryerson Limited*. ISBN: 0-07-551392-7

Looking Out/Looking In. Ron Adler & Neil Towne. (1990). *Holt, Rinehart & Winston*, carried by *Harcourt-Brace & Company*.

Lost at Sea. *University Associates of Canada, Inc.*

Person to Person: An Introduction to Speech Communication. Kathleen Galvin & Cassandra Book. (1985). *National Textbook Company*.

Perspectives On Health. Leroy H. Getchell, Grover D. Pippin and Jill W. Varnes. (1994). *D.C. Heath and Company*. ISBN: 0-669-30407-7

Resources Management. [NMM3G-J]. Independent Learning Centre. *Kwik-Kopy Printing.*

Skill Building for Interpersonal Competence. Sharon Ratcliffe & David Hudson. (1988). Toronto: *Holt, Rinehart, and Winston, Inc,* carried by *Harcourt-Brace & Company.*

Understanding and Managing Stress. John D. Adams. *University Associates of Canada, Inc.*

Wilderness Survival. *University Associates of Canada, Inc.*

Films and Videos:

Instructional Materials Centre has a large selection of films and videos on listening, communicating, self-concept, and personal development.

ACCESS Network videos

<u>You're Eating For Two</u>
Pregnant women and nutrition.
VHS and 16 mm   117 036

<u>A Moveable Feast: A Film About Breastfeeding</u>
VHS and 16 mm   181 096

<u>The Recovery Series</u>
4 short films about women recovering from drug and alcohol dependency.
VHS   185 130

Level III Employability Skills & General Options
Annotated Bibliography

> **Note:** A plethora of employability skills and general options textbooks exists so this annotated bibliography and the potential resources list should not be construed as exhaustive. Most of the textbooks which you have been using will be equally relevant for this version of the program. You are encouraged to continually seek new or better references.
>
> Books listed may not be currently in print. ISBN numbers are listed where available.

Aha! Insight. Martin Gardner. 1990. *W.H. Freeman & Co.*, carried by *Irwin Publishing*.
  A collection of brain-twisters in six categories--combinatorial, geometric, numerical, logical, procedural, and verbal--designed to challenge reasoning power and intuition, while encouraging creative problem-solving. The ISBN is 71671017X.

Ask Me No Questions. (1990). Linda Philips, Peter Ringrose, Michael Winter. *Public Legal Information.*
  A locally written novel about child sexual abuse. Contains law content as well. Teacher's guide included. Published by Prentice-Hall, but is available free from Public Legal Information, St. John's.

Becoming a Master Student. (5th edition). David B. Ellis. *College Survival, Inc.*
  Covers personal development and management of personal resources, including time management, study skills, budgeting, etc.

Business Today: An Introduction. John Kwekkeboom. (1987). *McGraw-Hill Ryerson.*
ISBN: 07549183-4
  Used in the high schools. Covers most of the objectives for consumer studies. Available an activity book (ISBN: 07549185-0) and teacher's edition (ISBN: 07549184-2).

Canada Today (2nd. edition). Angus Scully, Carl Smith, and Daniel McDevitt. (1988). *Prentice-Hall.*
  Used in the school system.. Covers most of the objectives listed in the canadian issues course.

Canada: History in the Making. Gillian Bartlett and Janice Galivan. (1986). *John Wiley & Sons.*
  Usable as resource text because of chapters on relationship of Canada with the United States and global issues. Also has chapters on law, government, and politics in Canada.

Career Skills. Joan Kelly & Ruth Volz-Patton. (1991). *Glencoe Publishing*, carried by *McGraw-Hill-Ryerson*. ISBN: 0026756803
  Used in the high school system Provides very good coverage of the objectives for our career awareness course, and is accompanied by a good workbook, and an extensive

teacher's guide as follows: Career Skills: Student Activity Workbook [ISBN: 0026757109] and Career Skills: Instructor's Guide and Resource Book [ISBN: 0026757001].

Challenge of Democracy: Ideals and Realities in Canada. Larry Glassford, Robert Clark, and Larry Chud. 1984). *Nelson Canada*.
    A high school text which covers the objectives for democracy well.

The Complete Job Search Book. Richard H. Beatty. (1988). *John Wiley & Sons.*
    Written for adults about to enter the workforce. Includes resumés, cover letters, employment sources, networking, negotiating, etc.

Computer Literacy (Second Edition). Helen G. Kershner. (1992). *D.C. Heath and Company*. ISBN: 0-669-27998-6
    Covers all of the objectives for the IE 3212 Computer Studies course. Provides a good coverage of disk operating systems, word processing, spreadsheets and databases. Also deals with the role of computers in society, along with the components and functions of computer systems.

Computer Concepts with Microcomputer Applications, Lotus Version. Shelley, Cashman, & Waggoner. *Boyd & Fraser Publishing Company*, *Nelson Canada* College Division.
    A wide-ranging and extensive guide to computers, programs and software. Covers history, development, and applications of large and small data-processing systems, as well as providing reference to popular applications and packages including MS-DOS, Wordperfect, Lotus, dBASE, and others.

Consumer Studies. [BCS2G-M and BCS2G-P]. Independent Learning Centre. *Kwik-Kopy Printing.*
    A distance education package used in Ontario which allows individual study of most of the consumer studies objectives.

Creating your Future: A Guide to Personal Goal Setting. George A Ford & Gordon Lippitt. *University Associates of Canada, Inc.*
    A step-by-step guide to designing your future through personal goal-setting. Can be used individually or in a group setting.

Develop Thinking Skills. *Scholastic.*
    Inexpensive text and teacher's guide. Contains mental exercises for conditioning and sharpening thinking skills and improving study skills.

The Encyclopedia of Group Activities. William J. Pfeiffer (editor). *University Associates of Canada, Inc.*
    Collection of activities to help group participants become better acquainted, increase self- and group-awareness, clarify values, communicate openly, practice skill development, work through problems, etc.

The Encyclopedia of Icebreakers. Sue Forbess-Greene. *University Associates of Canada, Inc. Handbook of designs to help begin sessions with impact, get participants acquainted, re-energize group members, enhance receptivity, and foster greater investment in the group.*

Expanding Your Horizons: A Career Guide. Judi Misener and Susan Kearns. (1993).
Mcgraw-Hill Ryerson Limited. ISBN: 0-07-551392-7
   *A useful resource for IE 3213 Career Awareness and IE 3214 Personal Development.
   Topics include personal discovery (self-assessment, self-concept, etc.), career
   planning, communication, finding employment, resumes, application forms, interviews,
   etc. This resource may also be used in IG 3119 Canadian Law to cover such topics as
   human rights and negotiation\labour legislation.*

Exploring Your World: The Adventure of Geography. Special Publications Division,
National Geographic Society.
   Encyclopedia-type reference book on geography and geology.

Family Studies. [NFS2G-A]. Independent Learning Centre. *Kwik-Kopy Printing.*
   *A distance education package used in Ontario which provides good coverage of the
   objectives in the family studies course, for students to use in an individualized fashion.*

Food and Nutrition. Caleb E. Crowell. *Educational Designs, Inc*. carried by *Monarch
Books of Canada*. ISBN 0-87694-214-1.
   *Covers choosing food for best nutrition and best economy, and planning meals to
   maximize both nutrition and economy. Reading level 3-6. Includes exercises, review
   tests, and teacher's guide.*

Hands-On: MS-DOS, Wordperfect, dBASE III PLUS, LOTUS 123. Lawrence C. Metzelaar
& Marianne B. Fox. *The Benjamin Cummings Publishing Company*, Don Mills, Ontario,
carried by *Addison-Wesley.*
   *Provides an introduction to applied microcomputer skills suitable for continuing studies
   programs. Provides practical, hands-on, step-by-step instructions in four major
   software application areas.*

Human Geography: Landscapes of Activities (2nd edition). Jerome Fellman, Arthur Getis,
& Judith Getis. (1990). *Wm. C. Brown Publishers.*
   *A good auxiliary text for the geography course. Covers basic concepts, populations,
   land use, and political ordering.*

Introducing Computers: Concepts, Systems, and Applications (1989-90 edition). Robert H.
Blissmer. *John Wiley & Sons.*
   *Good as a teacher's resource. Annually updated. Contains information on computer
   literacy, computers and society, information systems, data processing, programming,
   software, hardware, shopping for computers, etc.*

Introduction to Canadian Law. Sherrie Barnhorst, Joan Mather, Judith Keene, & Malcolm
Davidson. (1985). *Prentice-Hall.*
   *Used in the high school system. Covers the objectives for the canadian law course
   also.*

Job Seeker's Handbook. (1986). Alberta Education. Learning Resources Distributing
Centre.

Small inexpensive booklet prepared by Alberta Education.

Job Futures: An Occupational Outlook to 1995. The Handbook. (1988). Ministry of Supply and Services.
   Describes fields of study and occupational outlooks.
Knowing The Law. (1993). *Public Legal Information.*
   Designed and written in Newfoundland for teachers and helping professionals in remote communities. Available through Public Legal Information. A single copy may be obtained free of charge. Multiple copies can be purchased at a cost.

Law. [BLW4G-T, BLW4G-U]. Independent Learning Centre. *Kwik-Kopy Printing.*
   A distance education package used in Ontario. Covers the objectives of canadian law.

Life Skills: Personal and Home Management. Connie Sasse, Anne Hagg, Tyne Kahn, and Jeanne Brinkley. (1987). *Glencoe Publishing, *, carried by *McGraw-Hill Ryerson*.
ISBN: 0026684608
   Although written for a high school target audience, this text is usable for adults and covers all the objectives for the family studies course.

Looking Out/Looking In. Ron Adler & Neil Towne. (1978). *Holt, Rinehart & Winston*, carried by *Harcourt-Brace & Company.*
   Covers self-concept, perception, listening, communicating, and conflict.

Lost at Sea. *University Associates of Canada, Inc.*
   Activity package designed to help a team practice and understand the decision-making-by-consensus process and demonstrate the reliability of group vs. individual decisions. Leader's manual available.

National Occupation Classification (1993). Canada Communication Group Publishing, Government of Canada. ISBN: 0-660-14814-5. CAT: MP53-25-1993-E.
   Useful teacher's resource for career exploration. The ISBN is given for the most current resource at the time of printing. The most current edition of this resource should be requested.

Nutriscore (2nd edition). Ruth Fremes & Dr. Zak Sabry. (1989). *Stoddart Publishing Co.*
   Used in the high schools. A good resource text for the nutrition aspects of family studies or physical education.

Nutrition. [NMN3G-J]. Independent Learning Centre. *Kwik-Kopy Printing.*
   A distance education package which covers nutrition and health, choosing food, meal patterns and nutrition, food shopping, storage, and preparation.

Occupational Profile Packages. (1986-1989). Alberta Education. Learning Resources Distributing Centre.
   Career profile packages available at a very reasonable price.

Our Newfoundland and Labrador Cultural Heritage. Keith Matthews, Rex Kearley, and Paul Dwyer. (1984). *Prentice-Hall*.
   Presently used for the high school course and covers most of the objectives.

Parenting. [NMP3G-J]. Independent Learning Centre. *Kwik-Kopy Printing.*
   A distance education package which covers preparation for parenthood, early

childhood development, the role of the parent, and the rights of children.

Person to Person: An Introduction to Speech Communication. Kathleen Galvin & Cassandra Book. (1985). *National Textbook Company.*
   Focuses on oral communication skills.

Perspectives On Health. Leroy H. Getchell, Grover D. Pippin and Jill W. Varnes. (1994). *D.C. Heath and Company*. ISBN: 0-669-30407-7
   A large book which covers a variety of issues pertaining to physical and mental well-being. Can be used to deal with such items as "stress management" in IE 3214 Personal Development; "family issues" and "nutrition" in IG 3215 Family Studies; and "fitness" in IG 3112 Physical Education.

Physical Fitness: A Way of Life. Bud Getchell. (1981). *John Wiley & Sons Canada Ltd*. Toronto.
   Used in the high schools.

Practical Parenting Series. *Educational Design, Inc.* carried by *Monarch Books of Canada*. AV610.
   Six video series covering early childhood, single parenting, child management, communication, school days, and adolescence.

Quick Reference Guides. *Dictation Disc Company (DDC)*, carried by *Monarch Books of Canada.*
   Step-by-step illustrated instructions which tell what keys to depress in order to perform the functions of various software versions. At time of printing, the most current versions are dBase IV [ISBN: 0-936862-83-1], DOS 5 [ISBN: 1-56243-012-2], Lotus 1-2-3 (Ver. 3.1) [ISBN: 1-56243-031-9], and WordPerfect 5.1 [ISBN: 0-936862-87-4]. Many other software are also available.

Resources Management. [NMM3G-J]. Independent Learning Centre. *Kwik-Kopy Printing.*
   A *distance education package which covers handling personal resources, managing time and money, and discovering your hidden talents.*

Resumés that Work: How to Sell Yourself on Paper. Loretta D. Foxman. (1984). *John Wiley & Sons.*
   Workbook type approach to writing resumés, targeted at adults.

Scholastic Real Life Consumer Economics (Canadian Edition). Sylvia Hill. (1991). *Scholastic Canada Ltd.* ISBN: 0-590-73467-9
   Although written for low-level readers, it provides pre-tests, post-tests, activity masters and teacher's guide that may be used as a resource for some objectives covered in IE 3211 Consumer Studies.

Scholastic Real Life Reading (Canadian Edition). Robert S. Mellott. (1990). *Scholastic Canada Ltd.* ISBN: 0-590-73470-9
   Provides a section entitled "Consumer Education" that may be useful for the IE 3211 Consumer Studies course.

Self-Directed Career Planning Guide. (1989). Alberta Education. *Learning Resources*

Distributing Centre.
   Small inexpensive booklet prepared by Alberta Education.

Skill Building for Interpersonal Competence. Sharon Ratcliffe & David Hudson. (1988).
Toronto: *Holt, Rinehart, and Winston, Inc*, carried by *Harcourt-Brace & Company*.
ISBN 0-03-012602-9.
   Contains readings and exercises on: initiating relationships, expressing self, checking
   perception, expressing emotions, using descriptive language, using non-verbal
   communications, listening, responding, maintaining relationships, building supportive
   climates, and managing interpersonal conflicts.

Skills Are Your Passport. (1988). Alberta Education. Learning Resources Distributing
Centre.
   Inexpensive package prepared by Alberta Education.

Transitions: A Practical Guide to the Workplace. Linda Winder, Sonya Stih, & Jim
O'Connor. (1989). *Maxwell MacMillan*, carried by *McGraw-Hill Ryerson*. [ISBN:
002953220]
   Covers the nature of work, self-assessment, job search, workplace survival, and the
   changing world of work.

Understanding and Managing Stress. John D. Adams. *University Associates of Canada,*
Inc.
   A three-piece kit including a facilitator's guide for designing and delivering a stress-
   management workshop, a workbook to help participants understand and manage their
   own sources of stress, and a book of readings on stress management approaches.

Well-being. [NMW3G-J]. Independent Learning Centre. *Kwik-Kopy Printing.*
   A distance education package which concentrates on the importance of attaining and
   achieving well-being.

What People Believe (Vols. 1 and 2). Evans, Moynes and Martinello. (1983). *McGraw-Hill*
Ryerson. ISBN: 07-548667-9 [Vol. 1]; ISBN: 07-548668-7 [Vol. 2]
   Used in the high school system, and covers the objectives in the world religions
   course. It has been discontinued by the publisher, but is still available through school
   supplies.

Wilderness Survival. *University Associates of Canada, Inc.*
   Activity package designed to help a team practice and understand the decision-
   making-by-consensus process and demonstrate the reliability of group vs. individual
   decisions. Leader's manual available.

Work and Employability Skills Program   ISBN: 774362979
   A skills-oriented book available from Publications Ontario. Cost: $4.00 per copy
   (prepayment is required). Has 26 units divided thematically into four sections:
   meaning and realities of work, sources of career information. applying for a job,
   progressing on the job. Also lists other resources and sources of free information.

The Workplace and You: A Woman's Guide to Employment Law. (1988),

World Geography. (senior edition). R. James Crewe and Larry Cave. (1984). *D.C. Heath*

Canada Ltd.
  Used in the high school system. Covers most of the objectives of the geography course.

World History: Patterns of Civilization. Burton F. Beers. (1984). *Prentice-Hall.*
  Used in the high school system. Covers the objectives in the contemporary history course.

World Issues in the Global Community. Robert Harshman & Christine Hannell. (1989). *John Wiley & Sons.* ISBN: 0471796921
  Useful as a teacher's resource on pollution, resources, and global issues.

Software:

Choices. Careerware, *STM Corporation*.
  Designed for adults in career transition.

Insight. *Scholastic, Inc.*

On-Line Resources: Westviking Gopher

General Options

Level III General Options
Introduction

Several of the courses outlined for the General Options component did not lend themselves easily to expression in terms of measurable objectives. The committee members who developed these courses expressed concern that affective domain objectives, such as <u>appreciation</u>, became lost in the attempt to phrase objectives in <u>measurable terms</u>. The following objectives are intended to suggest minimum content, and the instructors who use them should not feel bound to cover the material at only that level. Newfoundland and Labrador Culture, Family Studies, Personal Development, and Women's Studies are such examples. Students in these courses can benefit immeasurably on many levels while covering the minimum content listed. Group discussions, shared feelings, personal reflection, and critical thought processes may not fit into evaluation standards, and yet may represent the ultimate objectives of the courses. It is with this caveat that objectives are stated for the following courses in general options.

No content changes occurred in this area. The former GO 3212 Consumer Studies, GO 3113 Computer Studies, GO/CS 3216 Career Awareness, and GO/CS 3217 Personal Development were transferred to the newly developed Employability Skills section. *Course numbers have been changed to accommodate their removal.*

General Options now include:

    IG 3211 Newfoundland and Labrador Culture
    IG 3112 Physical Education
    IG 3113 Religions of the World
    IG 3114 Canadian Issues
    IG 3215 Family Studies
    IG 3116 Women's Studies
    IG 3217 Contemporary History (20th Century World)
    IG 3118 Individual Study Project
    IG 3119 Canadian Law
    IG 3120 Democracy
    IG 3221 Human Geography

Note: Any courses done concurrent with or subsequent to ABE will be eligible for credit if the course includes prescribed objectives and an evaluation component leading to successful completion.

IG 3211
Newfoundland and Labrador Culture

1. Ethnic Origins of Communities

1.1 Identify indigenous groups of Newfoundland and Labrador.
1.2 Identify European origins of early settlers.
1.3 Explain reasons for settling in various communities.

2. Newfoundland and Labrador Folklore

2.1 List examples of oral expressions, dialect, place names, and family names.
2.2 Relate these examples to specific activities and regions.
2.3 Describe unique features of Newfoundland and Labrador songs, music, dance, and games.
2.4 Identify major Newfoundland and Labrador authors and artists.
2.5 Describe characteristics of Newfoundland and Labrador literature and art.
2.6 Describe characteristics of local customs and traditions.

3. Relationship of the Fishery to Newfoundland and Labrador Cultural Development

3.1 Trace chronologically the influence of migratory fishery on settlement.
3.2 Describe development of early sedentary fishery.
3.3 Describe inshore fishery, including family involvement and hierarchy of the cutting table.
3.4 Describe offshore and Labrador fisheries.
3.5 Describe auxiliary fisheries of sealing and whaling.
3.6 Give examples of modern trends in fishery, for example aquaculture.

4. Relationship of Other Resources to Newfoundland and Labrador Cultural Development

4.1 Describe influence of mining upon establishment of communities.
4.2 Describe forestry in Newfoundland and Labrador.
4.3 Describe agriculture in Newfoundland and Labrador.
4.4 Describe influence of hydroelectric development upon establishment of communities.
4.5 Evaluate potential impact of offshore oil development.

5. Development of the Political System

5.1 Describe pre-Confederation political development, from colonialism to Commission of Government.
5.2 Identify Confederation issues.
5.3 Compare pro-confederate and anti-confederate positions.
5.4 Describe post-Confederation politics.

6. Influence of the Economy

6.1 Describe influence of the merchant upon Newfoundland society.
6.2 Describe rise of cooperatives.
6.3 Describe crown corporations as employers.
6.4 Describe government as an employer.
6.5 Describe influence of trade unionism.
6.6 Give reasons for unemployment.
6.7 Explain impact of unemployment.

7. Influence of Social Institutions

7.1 Describe role of church in community life and education.
7.2 Describe role of family.
7.3 Identify secular organizations.
7.4 Explain role of government as a provider from "the cradle to the grave".
7.5 Describe changing structure and role of societal institutions.

8. Changes In/Influences upon Modern Newfoundland and Labrador Culture

8.1 Define multiculturalism.
8.2 Give examples of influences of multiculturalism.
8.3 Outline impact of technology upon transportation, communications, fishery, and resource management.
8.4 Give examples of changes in general lifestyle, daily living, food and clothing.

9. Local Issues (optional section).

9.1 Complete a project relating to local study in order to demonstrate your understanding of Newfoundland and Labrador culture.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Our Newfoundland and Labrador Cultural Heritage. Keith Matthews, Rex Kearley, and Paul Dwyer. (1984). *Prentice-Hall.*

Other Resources:

Decks Awash (periodical)

Newfoundland Quarterly (periodical)

Them Days (periodical)

Department of Municipal & Provincial Affairs, Historic Resources Division

Heritage Foundation of Newfoundland & Labrador

Films and Videos: *National Film Board*

10 Days ... 48 Hours
The life of trawlermen and their families.
VHS and 16 mm   186 063

Grenfell of Labrador: The Great Adventure
About Sir Wilfred Grenfell.
VHS and 16 mm   177 184

The Last Days of Okak
The Inuit settlement destroyed by the Spanish Influenza.
VHS and 16 mm   183 077

Unitas Fratum: The Moravians in Labrador
VHS and 16 mm   183 077

The Children of Fogo Island
VHS and 16 mm   167 168

Hunters and Bombers
The Innu struggle to maintain their lifestyles in Labrador.
VHS and 16 mm   190 130

Riding the Tornado
Boom and bust economic cycles in areas dependent on resource exports.
VHS and 16 mm   186 053

Instructional Materials Centre also has a large selection of films and videos on the fisheries, resources, heritage, history, and culture of Newfoundland.

IG 3112
Physical Education

1. Theory

1.1 State purpose of a fitness class.
1.2 Define cardiovascular endurance, muscular strength, muscular endurance, and flexibility.
1.3 Distinguish between aerobic and anaerobic exercise.
1.4 Outline benefits of aerobic exercise, muscular strength, and endurance.
1.5 Define steady state.
1.6 Describe FITT principles (frequency, intensity, time, and type of exercise).
1.7 Explain exercise precautions (warm-up, cool-down, dangerous exercises).
1.8 Demonstrate first-aid for exercise-related injuries.
1.9 Describe food groups necessary for a balanced diet.
1.10   Describe factors influencing weight control.
1.11   Evaluate own diet.

2. Activity

2.1 Observe correct techniques of exercise and/or sports.
2.2 Participate in physical activity (aerobic exercise, sports, etc.).

Potential References

Please refer to the annotated bibliography at the end of this section for a brief description of each reference.

Nutriscore (2nd edition). Ruth Fremes & Dr. Zak Sabry. (1989). *Stoddart Publishing Co.*

Perspectives On Health. Leroy H. Getchell, Grover D. Pippin and Jill W. Varnes. (1994). *D.C. Heath and Company*. ISBN: 0-669-30407-7

Physical Fitness: A Way of Life. Bud Getchell. (1981). *John Wiley & Sons Canada Ltd*. Toronto.

Well-being. [NMW3G-J]. Independent Learning Centre. *Kwik-Kopy Printing.*

Films and Videos:

Instructional Materials Centre has a variety of films and videos on nutrition, health, exercise, sports, and safety.

ACCESS Network videos

Other Resources:

Departement of Health
Canadian Heart Foundation

IG 3113
Religions of the World

1. Concept of Religion

1.1 Identify origins of peoples need for religion.
1.2 Evaluate how well many types of religions fulfil those needs.
1.3 Explain role of religion in different societies.

2. Major Western Religions

2.1 Explain origins of Judaism.
2.2 Describe beliefs and festivals of Judaism.
2.3 Explain origins of Christianity.
2.4 Describe beliefs and festivals of Christianity.
2.5 Explain origins of Islam.
2.6 Describe beliefs and festivals of Islam.
2.7 Compare and contrast these religions.

3. Selected Eastern Religions

3.1 Outline principals and practices of Hinduism.
3.2 Outline principals and practices of Buddhism.
3.3 Outline development and teachings of Confucianism.
3.4 Outline development and teachings of Taoism.
3.5 Identify inter-relationships and mutual dependence of the Eastern religions.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

What People Believe (Vol. 1 and 2) Evans, Moynes and Martinello. (1983). *McGraw-Hill Ryerson.*

Films and Videos:

National Film Board

Great Religions
A compilation tape about Buddhism, Hinduism and Islam.
VHS   162 129

Instructional Materials Centre has a variety of films and videos on religions.

IG 3114
Canadian Issues

Recommendation: **This course is meant to focus on <u>contemporary</u> Canadian issues. The objectives included were relevant at the time of development, but will soon be outdated. They are included as samples; however, it is intended that the instructor involved with this course have the flexibility to add and delete objectives as appropriate to the time.**

1. Social Issues

1.1 Identify current issues which affect status of women in Canada.
1.2 Compare rights granted under Bill of Rights with those guaranteed under Charter of Rights.
1.3 Evaluate rights of Aboriginal Peoples with regard to hunting and land claims.

2. Political Issues

2.1 Assess effects of Anglo-Franco relationships upon Canadians.
2.2 Outline controversy that exists between federal and provincial jurisdiction.
2.3 Describe national significance of Meech Lake Accord.
2.4 State pros and cons of Meech Lake Accord in relation to Newfoundland.
2.5 Explain role played by municipal bodies in community development.

3. Economic Issues

3.1 Identify negative overtones of regional disparity.
3.2 Describe unemployment as a national and regional issue.
3.3 Assess positive and negative features of Free Trade Agreement.

4. Global Issues

4.1 Describe effects of pollution problems in Canada and the world (eg. acid rain, ozone layer, PCB's).
4.2 Summarize role played by Canadian interest groups throughout the world (eg. Red Cross, CUSO, Oxfam, UNICEF).
4.3 State Canada's position as related to international boundaries and foreign influence.
4.4 Identify effects of American influence upon Canadian society.

5. New and Developing Issues

5.1 Report upon a contemporary issue of your choice.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Canada Today (2nd. edition). Angus Scully, Carl Smith, and Daniel McDevitt. (1988). *Prentice-Hall.*

Canada: History in the Making. Gillian Bartlett and Janice Galivan. (1986). *John Wiley & Sons.*

World Issues in the Global Community. Robert Harshman & Christine Hannell. (1989). *John Wiley & Sons.*

Films and Videos:

A wide selection of films and videos are available from:

ACCESS Network videos

Instructional Materials Centre

National Film Board

Other Resources:

Environment Canada
Human Rights Commission
Provincial Advisory Council on the Status of Women
Woman's Policy Office

IG 3215
Family Studies

1. Family Relationships

1.1 Identify personal needs.
1.2 Identify needs of other family members.
1.3 Identify different types of families, for example, extended, single-parent, etc.
1.4 Identify outside influences on the family, for example, teachers, peers, etc.

2. Planning a Family

2.1 Identify implications of parenthood on lifestyle.
2.2 Assess ability to provide for well-being of a child.
2.3 Outline methods of birth control.

3. Effective Parenting

3.1 Outline childhood development--physical, intellectual, and emotional.
3.2 State physical needs of children, including food, clothing, shelter, health care, education, etc.
3.3 State emotional needs of children, including self-esteem, acceptance, sense of accomplishment.
3.4 Describe effective discipline of children.

4. Family-Related Problems

4.1 Identify types of family violence, for example, wife abuse, child abuse.
4.2 Identify other forms of abuse, for example neglect, mental abuse.
4.3 Identify methods of creative problem solving within the family.
4.4 Identify implications of separation and/or divorce.
4.5 Identify effects of substance abuse on family unit.
4.6 Identify local community resources.

5. Nutrition

5.1 Identify nutritional components of foods and their contribution to body functions.
5.2 List effects of good/poor nutrition.
5.3 Plan well-balanced daily menus using Canada's Food Guide.
5.4 Describe food preparation methods.

5.5 Describe use of new and unusual foods.

5.6 Identify methods of food storage and preservation.

5.7 Explain importance of being a wise and informed consumer, i.e. getting the most nutrition for your money, comparison shopping, etc.

6. Planning a Budget

6.1 Determine net income based on gross income (from all sources) minus deductions.

6.2 Identify expenses related to basic needs (food, clothing, shelter, utilities, etc.).

6.3 Calculate disposable income for optional expenditures.

6.4 State advantages and disadvantages of using credit.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Ask Me No Questions. (1990). Linda Philips, Peter Ringrose, Michael Winter. *Public Legal Information.*

Family Studies. [NFS2G-A]. Independent Learning Centre. *Kwik-Kopy Printing.*

Food and Nutrition. Caleb E. Crowell. *Educational Designs*, Inc. carried by *Monarch Books of Canada*. ISBN 0-87694-214-1.

Knowing the Law. (1993). *Public Legal Information.*

Life Skills: Personal and Home Management. Connie Sasse, Anne Hagg, Tyne Kahn, and Jeanne Brinkley. (1987). *Glencoe Publishing*, carried by *McGraw-Hill Ryerson*.

Nutriscore (2nd edition). Ruth Fremes & Dr. Zak Sabry. (1989). *Stoddart Publishing Co*.

Nutrition. [NMN3G-J]. Independent Learning Centre. *Kwik-Kopy Printing*.

Parenting. [NMP3G-J]. Independent Learning Centre. *Kwik-Kopy Printing*.

Perspectives On Health. Leroy H. Getchell, Grover D. Pippin and Jill W. Varnes. (1994). *D.C. Heath and Company*. ISBN: 0-669-30407-7

Practical Parenting Series. *Educational Design, Inc.* carried by *Monarch Books of Canada*. AV610.

Resources Management. [NMM3G-J]. Independent Learning Centre. *Kwik-Kopy Printing*.

Films and Videos:

A large selection of films and videos on family relationships, family planning, parenting, nutrition, developmental psychology, child abuse, substance abuse, family violence, etc. is available from:

ACCESS Network videos

National Film Board

You're Eating For Two
Pregnant women and nutrition.
VHS and 16 mm   117 036

A Moveable Feast: A Film About Breastfeeding
VHS and 16 mm   181 096

The Recovery Series

4 short films about women recovering from drug and alcohol dependency.
VHS   185 130

Parents in Crisis
Problems faced by parents of troubled teenagers.
VHS and 16 mm   188 018

Without Work Series
Dramas of people who find themselves under or unemployed.
VHS and 16 mm   189 133, 189 134, 189 135

Instructional Materials Centre.

Other Resources:

Consumer & Corporate Affairs Canada
Department of Health, Literature Depot
Provincial Association Against Family Violence

Even small communities generally have various resources available through agencies such as the departments of Health or Social Services which instructors can access and incorporate into courses.

IG 3116
Women's Studies

Recommendation: *Some of the most profound social changes of today have their roots in the resurgence of the feminist movement over the past two or three decades. Because the discovery of the "personal as political" came about, initially, through women's conversations with each other, opportunities for continuing those conversations must be an essential part of this program. For that very reason the seven "classes" outlined below are, for the most part, topical in nature, resource based, and discussion oriented. The teacher's role should be that of facilitator.*

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1. "Women's Movement"--Historical and Modern Context

1.1 Discuss interpretations of the term "feminism".
1.2 Outline historical development of women's movement.
1.3 Identify issues related to women's movement today.

2. Sex-Role Stereotyping

2.1 Define sex-role stereotyping.
2.2 Identify early socialization practices which contribute to formation of sex-role stereotypes.
2.3 Identify school influences which contribute to formation of sex-role stereotypes.
2.4 Identify media influences which contribute to formation of sex-role stereotypes.
2.5 Describe negative impact of sex-roles stereotypes upon our society.
2.6 Identify ways of breaking down stereotypes.

3. Consciousness-Raising and Lobbying Efforts of Women Organizing for Change

3.1 Identify national, provincial, and local women's groups.
3.2 Describe mandates of these groups.

4. Women in the Workforce

4.1 Describe status of women in the workforce.
4.2 Distinguish between male-dominated and female-dominated occupations.
4.3 Explain issues surrounding phrase "equal pay for work of equal value".
4.4 Explain rationale behind employment equity/affirmative action programs.
4.5 Identify what constitutes sexual harassment and mechanisms for dealing with it.
4.6 Describe barriers which have kept women from entering non-traditional careers in greater numbers.
4.7 Compare barriers to female entrance to barriers to male entrance into non-traditional careers.

5. Day Care

5.1 Discuss need for day care.
5.2 Outline federal and provincial positions on provision of daycare.
5.3 Compare day care provision in Canada to that offered in other countries.

6. Feminization of Poverty

6.1 Examine statistics regarding women's status in workplace, average income, divorce and separation rates, and percentage of women who are sole support of their families.
6.2 Describe changes in standard of living which occur after marriages break up.
6.3 Describe inadequacies in pensions provided to elderly women.
6.4 Discuss implications of these factors in contributing to feminization of poverty.

7. Personal Experiences

7.1 Describe personal experiences as related to the above issues.

Recommended sources of information, audio-visual resources, and speakers:

1. The Provincial Advisory Council on the Status of Women.
2. ACCESS Network videos
3. Canadian Congress of Learning Opportunities for Women.
4. The course participants.
5. Labour Canada, Women's Program. (Publications Distribution Centre).
6. Secretary of State, Women's Program.
7. <u>Women in the Workplace</u>. Learning Resources Distributing Centre.
8. <u>Canadian Woman Studies</u>. (Periodical).
9. Instructional Materials Centre.
10. CEIC, Employment Equity Consultants.
11. Women's Policy Office
12. *The National Film Board*, Studio "D"

<u>Canada's First Woman MP</u>
Short film on Agnes MacPhail.
VHS and 16 mm   186 005

<u>Prairie Women</u>
The politically active prairie women of the '20s and '30s.
VHS and 16 mm   187 009

<u>Some American Feminists</u>
A historical perspective on the second wave of feminism.
VHS and 16 mm   177 226

<u>Still Killing Us Softly</u>
Advertising's assault on the self-images of women, men and children.
VHS   187 145

<u>Non-Traditional Jobs For Women</u>
Compilation video about 3 women who successfully explore non-traditional professions.
VHS   180 249

<u>Too Dirty For A Woman</u>
Women in Labrador City working for the Iron Ore Company.
16 mm   183 027

<u>The Glass Ceiling</u>
Strategies of women to attain an equitable place at work.
VHS   192 095

<u>A Balancing Act: Families and Work in the '90s</u>
A look at the positive impact of structural changes in the workplace.
VHS   192 098

<u>A Web Not A Ladder</u>
Profile of 5 business women and the barriers to the successes of their businesses.

VHS   193 013

Working Mothers Series
Compilation VHS of 11 films on a variety of issues affecting working mothers.
VHS   175 286

For Richer For Poorer
Part II of a series entitled **Feminization of Poverty** series, about the impoverishment
of women after divorce.
VHS and 16 mm   188 050

Welfare Mother
Part III of a series entitled **Feminization of Poverty** series. The state of poverty
among women and children in Canada.
VHS and 16 mm

Toward Intimacy
Women with disabilities, and self-esteem and sexuality.
VHS and 16 mm   192 015

The Ticket Back
A drama about spousal abuse by an ex-husband.
VHS and 16 mm   190 064

Sandra's Garden
A woman's healing journey from sexual abuse.
VHS and 16 mm   190 059

IG 3217
Contemporary History (20th Century World)

1. Underlying Causes of World War I

1.1 Define "nationalism".
1.2 Explain role played by nationalism.
1.3 Define "imperialism".
1.4 Explain role played by imperialism.
1.5 Identify regions experiencing revolution during pre-war era.
1.6 Identify regions which achieved independence during pre-war era.
1.7 Explain role played by revolution and independence as underlying causes of World War I.

2. World War I and its Consequences

2.1 Identify sources of tension.
2.2 Outline immediate causes of the war.
2.3 Trace chronologically sequence of events during the war.
2.4 Describe events leading to the end of the war.
2.5 Summarize components of peace settlement.

3. Post-War Era (1919-1939)

3.1 Describe world trends during early 1920's.
3.2 Explain how Great Depression led to world tensions.
3.3 Define "totalitarian state".
3.4 Describe Soviet Union as a totalitarian state.
3.5 Describe Italy as a totalitarian state.
3.6 Describe Japan as a totalitarian state.
3.7 Describe Nazi Germany as a totalitarian state.

4. World War II and its Consequences

4.1 Outline immediate causes of World War II.
4.2 Trace chronologically sequence of events during the war.
4.3 Describe events leading up to end of the war.
4.4 Summarize components of peace settlement.

5. Post-War Years

5.1 Summarize plan for recovery following World War II.
5.2 Define "cold war".
5.3 Outline consequences of the cold war.
5.4 Describe Korean conflict.
5.5 Summarize world events during 1960's and 1970's.

6. Contemporary World Events

6.1 Identify important political issues.
6.2 Identify important economic issues.
6.3 Identify important social issues.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

World History: Patterns of Civilization. Burton F. Beers. (1984). *Prentice-Hall.*

Films and Videos:

Instructional Materials Centre

National Film Board

> And We Know How to Dance
> Women working in World War I.
> VHS and 16 mm

> War Series
> Gwynne Dyer hosts 7 one-hour films on the nature, evolution and consequences of modern warfare.
> VHS and 16 mm

IG 3118
Individual Study Project

Recommendation: *This project may be used for credit only once, and may not be a duplicate of a project done for another credit course.*

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1. Write a Proposal Describing Project

1.1 Describe objectives for project.
1.2 Plan format for project implementation and presentation.
1.3 Describe resources intended for use.
1.4 State time frame for completion.

2. Negotiate Acceptance of Proposal with Instructor

2.1 Make changes to proposal where mutually agreed.
2.2 Submit proposal/contract.

3. Complete Project as Described

3.1 Verify progress periodically with instructor.
3.2 Present completed project.

IG 3119
Canadian Law

1. Meaning, Functions, and Classes of Law

1.1 Define what we mean by law.
1.2 Explain functions of law.
1.3 Outline different classes of law.

2. Development of Law in Canada

2.1 Describe major sources of Canadian law.
2.2 Distinguish between common law and civil law systems.
2.3 Describe law-making process.

3. Criminal Law

3.1 Identify basic elements of a crime and different parties to an offence.
3.2 Describe criminal law process.
3.3 Analyze different offenses in criminal law.
3.4 Analyze different defences in criminal law.

4. Civil Law

4.1 Describe civil law process.
4.2 Explain term "torts" as it applies to an individual in society.
4.3 Describe nature and process of contracts.
4.4 Outline marital rights and child support legislation.

5. Charter of Rights and Human Rights Legislation

5.1 Identify major components of the Charter of Rights and Human Rights legislation.
5.2 Compare rights of an adult with those of a juvenile.
5.3 Explain course of action one may take in defense of one's rights.

6. Law and the Workplace

6.1 Analyze employer-employee relationships.
6.2 Describe collective bargaining process.

7. Law and the Marketplace

7.1 Explain how law protects consumer.

7.2 Explain law as it relates to landlord-tenant relationship.

7.3 Summarize different aspects of property ownership as it relates to law.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Ask Me No Questions. (1990). Linda Philips, Peter Ringrose, Michael Winter. *Public Legal Information.*

Canada: History in the Making. Gillian Bartlett and Janice Galivan. (1986). *John Wiley & Sons.*

Expanding Your Horizons: A Career Guide. Judi Misener and Susan Kearns. (1993). *Mcgraw-Hill Ryerson Limited*. ISBN: 0-07-551392-7

Introduction to Canadian Law. Sherrie Barnhorst, Joan Mather, Judith Keene, & Malcolm Davidson. (1985). *Prentice-Hall.*

Knowing the Law. (1990). *Public Legal Information.*

Law. [BLW4G-T, BLW4G-U]. Independent Learning Centre. *Kwik-Kopy Printing*.

The Workplace and You: A Woman's Guide to Employment Law. (1988),

Films and Videos:

ACCESS Network videos

Other Resources:

Department of Justice, Law Library
    Canadian Criminal Code
    Charter of Human Rights

IG 3120
Democracy

1. Basic Concepts of Democracy

1.1 Explain term "democracy".
1.2 Describe major principles and characteristics of a democracy.
1.3 Explain role of the citizen as related to a democratic political system.

2. Structure of Political System

2.1 Describe effects that pressure groups have upon a political system.
2.2 List pros and cons of a competitive party system versus a non-competitive party system.
2.3 Outline rights of the voter in democratic process.

3. Parliamentary Process in Canada

3.1 Describe how a bill becomes a law.
3.2 Identify steps followed in leadership selection.

4. Structure and Operation of Federal, Provincial, and Municipal Governments

4.1 Diagram structure of the federal and provincial governments.
4.2 State functions of various government bodies at federal and provincial level.
4.3 Outline structure and operation of municipal government.
4.4 Compare and contrast municipal, federal, and provincial governments.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Canada: History in the Making. Gillian Bartlett and Janice Galivan. (1986). *John Wiley & Sons.*

Challenge of Democracy: Ideals and Realities in Canada. Larry Glassford, Robert Clark, and Larry Chud. (1984). *Nelson Canada.*

Films and Videos:

ACCESS Network videos

IG 3221
Human Geography

1. Basic Geography Concepts

1.1 Define human geography.
1.2 Explain role of maps as tools of geographers.
1.3 Identify different types of maps.
1.4 Explain how maps show data.
1.5 Determine location, direction, and distance on a map.
1.6 Distinguish between size and scale using several maps.
1.7 Describe interrelationship between physical and cultural components of an area.

2. Effects of Climate on Human Activities

2.1 Define climate.
2.2 Define ecosystem.
2.3 Identify climates and ecosystems of the world on a map.
2.4 Analyze world climates in relation to latitude, precipitation, prevailing wind systems, ocean currents, and elevation.
2.5 Analyze ecosystems in relation to type of vegetation.

3. Management of World Resources

3.1 Define resource.
3.2 Distinguish between inorganic and organic resources.
3.3 Categorize resources as permanent, renewable, non-renewable, and recyclable.
3.4 Justify management of resources using examples.

4. World Populations

4.1 Distinguish between population distribution and population density.
4.2 Identify population distribution on a world map.
4.3 Relate population density to climate, ecosystems, and resources.
4.4 Describe factors which influence population growth and decline.
4.5 Describe selected methods for calculating population change.
4.6 Relate population change to economic development.
4.7 Distinguish between rural and urban population centres according to function.
4.8 Describe factors that account for location of cities.
4.9 Describe problems faced by local and world population centres.

5. Land Use

5.1 Define primary, secondary, and tertiary activities.
5.2 Give examples of primary, secondary, and tertiary activities.
5.3 Relate primary, secondary, and tertiary activities to culture.
5.4 Relate primary, secondary, and tertiary activities to politics.
5.5 Relate primary, secondary, and tertiary activities to population density.
5.6 Relate primary, secondary, and tertiary activities to economic development.
5.7 Evaluate land use by people.

6. Linkages

6.1 Define linkages.
6.2 Describe types of linkages that operate in today's society.
6.3 Explain role of linkages in and between rural and urban areas.
6.4 Analyze relationship between economic development and growth/decline of linkages.

7. Spatial Organization of Political Activities

7.1 Identify countries of the world on a map.
7.2 Identify kinds of boundaries that separate people.
7.3 Describe changes and disputes in political boundaries.

8. Apply Objectives 1.1 to 7.3 in Presenting a Report on Two Major Geographical Regions

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Exploring Your World: The Adventure of Geography. Special Publications Division, *National Geographic Society.*

Human Geography: Landscapes of Activities (2nd edition). Jerome Fellman, Arthur Getis, & Judith Getis. (1990). *Wm. C. Brown Publishers*.

World Geography. (senior edition). R. James Crewe and Larry Cave. (1984). *D.C. Heath Canada Ltd.*

Films and Videos:

Instructional Materials Centre has a large selection of videos and films on geography.

ACCESS Network videos

National Film Board

Fragile Harvest
Effects of biotechnology on modern agriculture.

Level III Employability Skills & General Options
Annotated Bibliography

> *Note:* *A plethora of employability skills and general options textbooks exists so this annotated bibliography and the potential resources list should not be construed as exhaustive. Most of the textbooks which you have been using will be equally relevant for this version of the program. You are encouraged to continually seek new or better references.*
>
> **Books listed may not be currently in print. ISBN numbers are listed where available.**

Aha! Insight. Martin Gardner. 1990. *W.H. Freeman & Co.*, carried by *Irwin Publishing.*
   A collection of brain-twisters in six categories--combinatorial, geometric, numerical, logical, procedural, and verbal--designed to challenge reasoning power and intuition, while encouraging creative problem-solving. The ISBN is 71671017X.

Ask Me No Questions. (1990). Linda Philips, Peter Ringrose, Michael Winter. *Public Legal Information.*
   A locally written novel about child sexual abuse. Contains law content as well. Teacher's guide included. Published by Prentice-Hall, but is available free from Public Legal Information, St. John's.

Becoming a Master Student. (5th edition). David B. Ellis. *College Survival, Inc.*
   Covers personal development and management of personal resources, including time management, study skills, budgeting, etc.

Business Today: An Introduction. John Kwekkeboom. (1987). *McGraw-Hill Ryerson.*
ISBN: 07549183-4
   Used in the high schools. Covers most of the objectives for consumer studies. Available an activity book (ISBN: 07549185-0) and teacher's edition (ISBN: 07549184-2).

Canada Today (2nd. edition). Angus Scully, Carl Smith, and Daniel McDevitt. (1988). *Prentice-Hall.*
   Used in the school system.. Covers most of the objectives listed in the canadian issues course.

Canada: History in the Making. Gillian Bartlett and Janice Galivan. (1986). *John Wiley & Sons.*
   Usable as resource text because of chapters on relationship of Canada with the United States and global issues. Also has chapters on law, government, and politics in Canada.

Career Skills. Joan Kelly & Ruth Volz-Patton. (1991). *Glencoe Publishing*, carried by *McGraw-Hill-Ryerson*. ISBN: 0026756803
   Used in the high school system   Provides very good coverage of the objectives for our career awareness course, and is accompanied by a good workbook, and an extensive

teacher's guide as follows: Career Skills: Student Activity Workbook [ISBN: 0026757109] and Career Skills: Instructor's Guide and Resource Book [ISBN: 0026757001].

Challenge of Democracy: Ideals and Realities in Canada. Larry Glassford, Robert Clark, and Larry Chud. 1984). *Nelson Canada*.
   A high school text which covers the objectives for democracy well.

The Complete Job Search Book. Richard H. Beatty. (1988). *John Wiley & Sons.*
   Written for adults about to enter the workforce. Includes resumés, cover letters, employment sources, networking, negotiating, etc.

Computer Literacy (Second Edition). Helen G. Kershner. (1992). *D.C. Heath and Company*. ISBN: 0-669-27998-6
   Covers all of the objectives for the IE 3212 Computer Studies course. Provides a good coverage of disk operating systems, word processing, spreadsheets and databases. Also deals with the role of computers in society, along with the components and functions of computer systems.

Computer Concepts with Microcomputer Applications, Lotus Version. Shelley, Cashman, & Waggoner. *Boyd & Fraser Publishing Company*, *Nelson Canada* College Division.
   A wide-ranging and extensive guide to computers, programs and software. Covers history, development, and applications of large and small data-processing systems, as well as providing reference to popular applications and packages including MS-DOS, Wordperfect, Lotus, dBASE, and others.

Consumer Studies. [BCS2G-M and BCS2G-P]. Independent Learning Centre. *Kwik-Kopy Printing.*
   A distance education package used in Ontario which allows individual study of most of the consumer studies objectives.

Creating your Future: A Guide to Personal Goal Setting. George A Ford & Gordon Lippitt. *University Associates of Canada, Inc.*
   A step-by-step guide to designing your future through personal goal-setting. Can be used individually or in a group setting.

Develop Thinking Skills. *Scholastic.*
   Inexpensive text and teacher's guide. Contains mental exercises for conditioning and sharpening thinking skills and improving study skills.

The Encyclopedia of Group Activities. William J. Pfeiffer (editor). *University Associates of Canada, Inc.*
   Collection of activities to help group participants become better acquainted, increase self- and group-awareness, clarify values, communicate openly, practice skill development, work through problems, etc.

The Encyclopedia of Icebreakers. Sue Forbess-Greene. *University Associates of Canada, Inc. Handbook of designs to help begin sessions with impact, get participants acquainted, re-energize group members, enhance receptivity, and foster greater investment in the group.*

Expanding Your Horizons: A Career Guide. Judi Misener and Susan Kearns. (1993).
Mcgraw-Hill Ryerson Limited. ISBN: 0-07-551392-7
*A useful resource for IE 3213 Career Awareness and IE 3214 Personal Development.
Topics include personal discovery (self-assessment, self-concept, etc.), career
planning, communication, finding employment, resumes, application forms, interviews,
etc. This resource may also be used in IG 3119 Canadian Law to cover such topics as
human rights and negotiation\labour legislation.*

Exploring Your World: The Adventure of Geography. Special Publications Division,
National Geographic Society.
Encyclopedia-type reference book on geography and geology.

Family Studies. [NFS2G-A]. Independent Learning Centre. *Kwik-Kopy Printing.*
*A distance education package used in Ontario which provides good coverage of the
objectives in the family studies course, for students to use in an individualized fashion.*

Food and Nutrition. Caleb E. Crowell. *Educational Designs, Inc*. carried by *Monarch
Books of Canada*. ISBN 0-87694-214-1.
*Covers choosing food for best nutrition and best economy, and planning meals to
maximize both nutrition and economy. Reading level 3-6. Includes exercises, review
tests, and teacher's guide.*

Hands-On: MS-DOS, Wordperfect, dBASE III PLUS, LOTUS 123. Lawrence C. Metzelaar
& Marianne B. Fox. *The Benjamin Cummings Publishing Company*, Don Mills, Ontario,
carried by *Addison-Wesley.*
*Provides an introduction to applied microcomputer skills suitable for continuing studies
programs. Provides practical, hands-on, step-by-step instructions in four major
software application areas.*

Human Geography: Landscapes of Activities (2nd edition). Jerome Fellman, Arthur Getis,
& Judith Getis. (1990). *Wm. C. Brown Publishers.*
*A good auxiliary text for the geography course. Covers basic concepts, populations,
land use, and political ordering.*

Introducing Computers: Concepts, Systems, and Applications (1989-90 edition). Robert H.
Blissmer. *John Wiley & Sons.*
*Good as a teacher's resource. Annually updated. Contains information on computer
literacy, computers and society, information systems, data processing, programming,
software, hardware, shopping for computers, etc.*

Introduction to Canadian Law. Sherrie Barnhorst, Joan Mather, Judith Keene, & Malcolm
Davidson. (1985). *Prentice-Hall.*
*Used in the high school system. Covers the objectives for the canadian law course
also.*

Job Seeker's Handbook. (1986). Alberta Education. Learning Resources Distributing
Centre.

Small inexpensive booklet prepared by Alberta Education.

Job Futures: An Occupational Outlook to 1995. The Handbook. (1988). Ministry of Supply and Services.
Describes fields of study and occupational outlooks.

Knowing The Law. (1993). *Public Legal Information.*
Designed and written in Newfoundland for teachers and helping professionals in remote communities. Available through Public Legal Information. A single copy may be obtained free of charge. Multiple copies can be purchased at a cost.

Law. [BLW4G-T, BLW4G-U]. Independent Learning Centre. *Kwik-Kopy Printing.*
A distance education package used in Ontario. Covers the objectives of canadian law.

Life Skills: Personal and Home Management. Connie Sasse, Anne Hagg, Tyne Kahn, and Jeanne Brinkley. (1987). *Glencoe Publishing,* , carried by *McGraw-Hill Ryerson*.
ISBN: 0026684608
Although written for a high school target audience, this text is usable for adults and covers all the objectives for the family studies course.

Looking Out/Looking In. Ron Adler & Neil Towne. (1978). *Holt, Rinehart & Winston*, carried by *Harcourt-Brace & Company.*
Covers self-concept, perception, listening, communicating, and conflict.

Lost at Sea. *University Associates of Canada, Inc.*
Activity package designed to help a team practice and understand the decision-making-by-consensus process and demonstrate the reliability of group vs. individual decisions. Leader's manual available.

National Occupation Classification (1993). Canada Communication Group Publishing, Government of Canada. ISBN: 0-660-14814-5. CAT: MP53-25-1993-E.
Useful teacher's resource for career exploration. The ISBN is given for the most current resource at the time of printing. The most current edition of this resource should be requested.

Nutriscore (2nd edition). Ruth Fremes & Dr. Zak Sabry. (1989). *Stoddart Publishing Co.*
Used in the high schools. A good resource text for the nutrition aspects of family studies or physical education.

Nutrition. [NMN3G-J]. Independent Learning Centre. *Kwik-Kopy Printing.*
A distance education package which covers nutrition and health, choosing food, meal patterns and nutrition, food shopping, storage, and preparation.

Occupational Profile Packages. (1986-1989). Alberta Education. Learning Resources Distributing Centre.
Career profile packages available at a very reasonable price.

Our Newfoundland and Labrador Cultural Heritage. Keith Matthews, Rex Kearley, and Paul Dwyer. (1984). *Prentice-Hall*.
Presently used for the high school course and covers most of the objectives.

Parenting. [NMP3G-J]. Independent Learning Centre. *Kwik-Kopy Printing.*
A distance education package which covers preparation for parenthood, early

childhood development, the role of the parent, and the rights of children.

Person to Person: An Introduction to Speech Communication. Kathleen Galvin &
Cassandra Book. (1985). *National Textbook Company.*
>   *Focuses on oral communication skills.*

Perspectives On Health. Leroy H. Getchell, Grover D. Pippin and Jill W. Varnes. (1994).
D.C. Heath and Company. ISBN: 0-669-30407-7
>   *A large book which covers a variety of issues pertaining to physical and mental well-
>   being. Can be used to deal with such items as "stress management" in IE 3214
>   Personal Development; "family issues" and "nutrition" in IG 3215 Family Studies; and
>   "fitness" in IG 3112 Physical Education.*

Physical Fitness: A Way of Life. Bud Getchell. (1981). *John Wiley & Sons Canada Ltd*.
Toronto.
>   *Used in the high schools.*

Practical Parenting Series. *Educational Design, Inc.* carried by *Monarch Books of
Canada*. AV610.
>   *Six video series covering early childhood, single parenting, child management,
>   communication, school days, and adolescence.*

Quick Reference Guides. *Dictation Disc Company (DDC)*, carried by *Monarch Books of
Canada.*
>   *Step-by-step illustrated instructions which tell what keys to depress in order to perform
>   the functions of various software versions. At time of printing, the most current
>   versions are dBase IV [ISBN: 0-936862-83-1], DOS 5 [ISBN: 1-56243-012-2], Lotus 1-
>   2-3 (Ver. 3.1) [ISBN: 1-56243-031-9], and WordPerfect 5.1 [ISBN: 0-936862-87-4].
>   Many other software are also available.*

Resources Management. [NMM3G-J]. Independent Learning Centre. *Kwik-Kopy Printing.*
>   A *distance education package which covers handling personal resources, managing
>   time and money, and discovering your hidden talents.*

Resumés that Work: How to Sell Yourself on Paper. Loretta D. Foxman. (1984). *John
Wiley & Sons.*
>   *Workbook type approach to writing resumés, targeted at adults.*

Scholastic Real Life Consumer Economics (Canadian Edition). Sylvia Hill. (1991).
Scholastic Canada Ltd. ISBN: 0-590-73467-9
>   *Although written for low-level readers, it provides pre-tests, post-tests, activity masters
>   and teacher's guide that may be used as a resource for some objectives covered in IE
>   3211 Consumer Studies.*

Scholastic Real Life Reading (Canadian Edition). Robert S. Mellott. (1990). *Scholastic
Canada Ltd.* ISBN: 0-590-73470-9
>   *Provides a section entitled "Consumer Education" that may be useful for the IE
>   3211 Consumer Studies course.*

Self-Directed Career Planning Guide. (1989). Alberta Education. *Learning Resources*

Distributing Centre.
    Small inexpensive booklet prepared by Alberta Education.

Skill Building for Interpersonal Competence. Sharon Ratcliffe & David Hudson. (1988).
Toronto: *Holt, Rinehart, and Winston, Inc*, carried by *Harcourt-Brace & Company*.
ISBN 0-03-012602-9.
    Contains readings and exercises on: initiating relationships, expressing self, checking
    perception, expressing emotions, using descriptive language, using non-verbal
    communications, listening, responding, maintaining relationships, building supportive
    climates, and managing interpersonal conflicts.

Skills Are Your Passport. (1988). Alberta Education. Learning Resources Distributing
Centre.
    Inexpensive package prepared by Alberta Education.

Transitions: A Practical Guide to the Workplace. Linda Winder, Sonya Stih, & Jim
O'Connor. (1989). *Maxwell MacMillan*, carried by *McGraw-Hill Ryerson*. [ISBN:
002953220]
    Covers the nature of work, self-assessment, job search, workplace survival, and the
    changing world of work.

Understanding and Managing Stress. John D. Adams. *University Associates of Canada,*
Inc.
    A three-piece kit including a facilitator's guide for designing and delivering a stress-
    management workshop, a workbook to help participants understand and manage their
    own sources of stress, and a book of readings on stress management approaches.

Well-being. [NMW3G-J]. Independent Learning Centre. *Kwik-Kopy Printing.*
    A distance education package which concentrates on the importance of attaining and
    achieving well-being.

What People Believe (Vols. 1 and 2). Evans, Moynes and Martinello. (1983). *McGraw-Hill*
Ryerson. ISBN: 07-548667-9 [Vol. 1]; ISBN: 07-548668-7 [Vol. 2]
    Used in the high school system, and covers the objectives in the world religions
    course. It has been discontinued by the publisher, but is still available through school
    supplies.

Wilderness Survival. *University Associates of Canada, Inc.*
    Activity package designed to help a team practice and understand the decision-
    making-by-consensus process and demonstrate the reliability of group vs. individual
    decisions. Leader's manual available.

Work and Employability Skills Program   ISBN: 774362979
    A skills-oriented book available from Publications Ontario. Cost: $4.00 per copy
    (prepayment is required). Has 26 units divided thematically into four sections:
    meaning and realities of work, sources of career information. applying for a job,
    progressing on the job. Also lists other resources and sources of free information.

The Workplace and You: A Woman's Guide to Employment Law. (1988),

World Geography. (senior edition). R. James Crewe and Larry Cave. (1984). *D.C. Heath*

Canada Ltd.
 Used in the high school system. Covers most of the objectives of the geography course.

World History: Patterns of Civilization. Burton F. Beers. (1984). *Prentice-Hall.*
 Used in the high school system. Covers the objectives in the contemporary history course.

World Issues in the Global Community. Robert Harshman & Christine Hannell. (1989).
John Wiley & Sons. ISBN: 0471796921
 Useful as a teacher's resource on pollution, resources, and global issues.

Software:

Choices. Careerware, *STM Corporation*.
 Designed for adults in career transition.

Insight. *Scholastic, Inc.*

On-Line Resources: Westviking Gopher

Mathematics

Level III Mathematics
Introduction

Level III Mathematics has been substantially revised and now offers General, Academic and Advanced streams. The rationale for the revised focus may be traced to a combination of issues. First, the review process revealed that the existing Algebra component presented content in an improper sequence, resulting in confusion for students and instructors. Second, the rate of attrition in Technology programs largely resulted from inadequate pre-requisite Mathematic skills. It must be noted that ABE students were not alone in this respect; secondary graduates also experienced difficulty.

Recognizing this problem, inadequate mathematic skills, the secondary system reviewed the Mathematics program and implemented substantial changes to high school courses. Subsequently, the ABE Instructor Validation Team felt that it was necessary to examine the new secondary courses and agreed that the revised ABE program should incorporate the revised content. Hence, the new ABE courses are largely consistent with the high school courses.

It must be noted that the objectives for the Advanced stream appear at, first glance, to be less specific than those of the Academic stream. The key distinction between the two streams is the depth to which the objectives should be addressed, with the Advanced courses requiring a much more rigorous exploration of concepts.

Practically every post-secondary program is, or will be, specifying increasingly rigorous prerequisite Mathematics skills as a reflection of encroaching technologies. It is incumbent upon all ABE instructors to counsel students into the Academic or Advanced streams in most instances. The General stream has its place, but it may not provide most students with the skills they will require in subsequent post-secondary programs. Students who insist upon completing only the General component, should be strongly cautioned.

Reference Materials

Most delivery institutions have invested quite heavily in textbooks and other resources so the reference list includes these titles where possible. However, it should be noted that the Academic and Advanced streams include texts used in the secondary system and instructors are strongly encouraged to acquire sufficient quantities of these texts.

It should be noted that the reference to the Westviking College Gopher is accessible under the Stem~Net Post Secondary and Professional Development directory. This

Gopher features an On-Line Educational Resources directory which features access to materials designed for each ABE course. Additionally, links are established with excellent sites which feature extensive collections of instructional software for downloading. The key advantage of this Gopher is the extent to which it provides access to resources regardless of the location of the delivery site.

Course Numbering

The revised format of Level III courses necessitates the following:

IM 3101 Algebra Readiness
IM 3102 Geometry Readiness
IM 3203 Consumer Mathematics
IM 3204 Practical Mathematics I
IM 3205 A/B Practical Mathematics II
IM 3106 Business Mathematics I
IM 3207 Business Mathematics II
IM 3208 Statistics
IM 3109 Algebra I
IM 3210 Algebra II
IM 3211 Algebra III
IM 3212 Algebra IV
IM 3213 Algebra V
IM 3114 Geometry I
IM 3115 Geometry II
IM 3216 Trigonometry
IM 3217 Advanced Algebra I
IM 3218 Advanced Algebra II
IM 3219 Advanced Algebra III
IM 3220 Advanced Geometry I
IM 3221 Advanced Geometry II
IM 3222 Calculus Readiness

* *Please note changes to the course credit values in addition to changes in numbers*.

Mathematics Prerequisites

All students entering the Academic or Advanced stream or planning on taking Practical Mathematics I must complete Algebra Readiness and Geometry Readiness.

1. Academic Stream

Algebra courses are presented sequentially. Hence, Algebra I is prerequisite to Algebra II, Algebra II is prerequisite to Algebra III, and so on. The same holds true for the Geometry courses.

2. Advanced Stream

The Advanced courses follow a similar format. Advanced Algebra I is prerequisite to Advanced Algebra II, Advanced Algebra II is prerequisite to Advanced Algebra III, and so on.

3. Calculus Readiness

IM 3222 Calculus Readiness may be attempted by students who have completed either of the Academic or Advanced streams.

4. General Stream

Only Practical Mathematics I has a prerequisite course.

COURSE AND CREDIT ALLOCATION
Academic Mathematics

Course	No. of Credits	High School Course Equivalent
Algebra I	1	1300
Algebra II	2	1300
Algebra III	2	2200
Algebra IV	2	3200
Algebra V	2	3200
Geometry I	1	1300
Geometry II	1	2200
Trigonometry	2	3200
Total Credits	**13**	

Course	No. of Credits	High School Course Equivalent
Advanced Algebra I	2	1201
Advanced Algebra II	2	2201
Advanced Algebra III	2	3201
Advanced Geometry I	2	1201
Advanced Geometry II	2	2201
Calculus Readiness	2	3105
Total Credits	**12**	

Students who are planning on entering a technology program or who are planning on attending Memorial University or any other university **MUST** take **ALL** the course work in Academic or Advanced Mathematics.

Instead of Mathematics 3105, Calculus Readiness, more and more secondary schools are offering Mathematics 4225, Calculus, in cooperation with Memorial University. This course is an equivalent to Mathematics 1000 at Memorial.

This is another direction that we could take with our Mathematics program. In fact, if a student went through the revised advanced program and completed an introductory calculus course also, he/she would be more likely to pass the placement tests in technology programs and be more successful in completing the program.

This will be a motivational factor to get more **ABE** students into the academic and advanced streams.

IM 3101
Algebra Readiness

Recommendation: **This is an introductory course only. Material should be covered at the grade 9 level. All students who plan to continue with Practical Math I, or any of the Algebra, Geometry or Trigonometry courses in Level III, <u>must</u> take this course.**

1. Linear Equations in One Variable

1.1 Define equation.
1.2 Solve linear equations using addition and subtraction axioms.
1.3 Solve linear equations using multiplication and division axioms.
1.4 Solve linear equations using combinations.
1.5 Translate word phrases and statements to mathematical phrases and statements.
1.6 Solve word problems using equations.
1.7 Apply linear equations to solving formulas.
1.8 Solve inequalities.

2. Exponents

2.1 Define exponent, power and base.
2.2 Apply properties of exponents.
2.3 Express numbers in scientific notation.
2.4 Define and calculate square roots.

3. Pythagorean Theorem

3.1 Define a right triangle.
3.2 State the Pythagorean theorem.
3.3 Solve problems using the Pythagorean theorem.

4. Polynomials

4.1 Define monomial, binomial, trinomial and polynomial.
4.2 Determine degree of a polynomial.
4.3 Add and subtract polynomials.
4.4 Multiply and divide polynomials.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Math Is /3. Ebos and Tuck, (1984). Nelson. ISBN: 01760211921.

Stein's Refresher Mathematics. Edwin I. Stein. (1989). Allyn and Bacon. ISBN 0-13-771130

Essential Mathematics with Applications. Lawrence A. Trivieri. (1995). Random House. ISBN 0-07-065229-5

Basic Mathematics. Marvin L. Bittinger, Mervin L. Keedy. (1995). Addison Wesley.

Fundamentals of Mathematics. Jack Barker, James Rogers and James Van Dyke. (1991). ISBN 0-03-032222-7

On-Line Resources: Westviking Gopher

IM 3102
Geometry Readiness

Recommendation: Material should be covered at a grade 9 level. All students who wish to take further Geometry courses in Level III <u>must</u> take this course.

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1. Coordinate Geometry

1.1 Define x and y axes, ordered pair and Cartesian plane.
1.2 Plot points on Cartesian plane.
1.3 Define slope.
1.4 Calculate slope using two ordered pairs.

2. Deductive Geometry

2.1 Define inductive and deductive reasoning.
2.2 Define axiom, postulate, deduction, theorem, definition and undefined terms.
2.3 Define congruence.
2.4 Identify congruence symbol.
2.5 Identify congruent relations among angles and triangles.
2.6 Define the SSS, SAS and ASA postulates.
2.7 Prove triangles congruent using SSS, SAS and ASA.
2.8 State isosceles triangle theorem.
2.9 Define AAS and HS postulates.
2.10   Translate word problems into diagrams.
2.11   Prove triangles congruent using ITT, AAS and HS.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

<u>Math Is /3</u>. Ebos and Tuck, (1984). Nelson. ISBN: 01760211921.

IM 3203
Consumer Mathematics

1. Personal Banking Procedures

1.1 Identify and describe types of bank accounts.
1.2 Reconcile bank statements.
1.3 Identify and use types of banking forms.
1.4 Define and calculate simple and compound interest.
1.5 Describe and calculate returns on RRSPs and other personal investments.
1.6 Identify, describe and calculate mortgages and loans.

2. Instalment Buying

2.1 List advantages and disadvantages of credit card usage.
2.2 Calculate carrying charges.
2.3 Calculate monthly payments.

3. Taxes and Insurance

3.1 Calculate property tax.
3.2 Calculate sales tax.
3.3 Calculate personal income tax.
3.4 Identify types of insurance.
3.5 Calculate insurance costs.

4. Family Budgets

4.1 Discuss factors considered in preparing a family budget.
4.2 Define unit price and apply it to comparative shopping.
4.3 Calculate cost of owning and operating a house.
4.4 Calculate cost of owning and operating a car.
4.5 Prepare budget.

ABE Level III Curriculum

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Consumer Mathematics. Walter Lange, Robert Mason, and Temoleon Rousos. (1985). Houghton Mifflin.

Mathematics Plus! Consumer, Business, and Technical Applications. Bruce R. Shaw, Richard A. Denholm, * Gwendolyn H. Shelton. (1980). Houghton-Mifflin.

Mathematics for Work and Home [MTW2B-M]. Independent Learning Centre. Kwik-Kopy Printing.

Mathematics for Daily Living. Harry Lewis. (1975). McCormick-Mathers Publishing Col. (also through Van Nostrand Reinhold Ltd.).

Consumer & Corporate Affairs Canada.

On-Line Resources: Westviking Gopher

IM 3204
Practical Mathematics I

1. Measurement

1.1 Make precise measurements of lengths.
1.2 Make precise measurements of mass.
1.3 Make precise measurements of capacity.
1.4 Determine number of significant digits in a measurement.

2. Equations

2.1 Simplify expressions.
2.2 Define equation.
2.3 Solve equations by addition and subtraction.
2.4 Solve equations by multiplication and division.
2.5 Find solutions to problems by simplifying expressions and solving equations.

3. Formulas

3.1 Define formula.
3.2 Translate word statements into formulas.
3.3 Solve formulas.
3.4 Solve word problems with formulas.
3.5 Use electrical formulas.
3.6 Use perimeter formulas.
3.7 Use area formulas for plane figures.

4. Solid Geometry

4.1 Identify prism, pyramid, cylinder, cone, and sphere.
4.2 Define surface area.
4.3 Calculate surface area of prisms, pyramids, cylinders, cones, and spheres.
4.4 Define volume.
4.5 Calculate volume of prisms, pyramids, cylinders, cones, and spheres.
4.6 Solve practical problems related to surface area and volume.

5. Ratio, Proportion, Rate and Variation

5.1 Define ratio.
5.2 Simplify ratios.
5.3 Define rate.
5.4 Define proportion.
5.5 Distinguish between direct, inverse, and joint variation.
5.6 Solve problems using proportions.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Applied Mathematics. Mervin Lyng, L.J. Meconi, Douglas Owens, and Walter Szetela, and Earl Zwick. (1990). Houghton Mifflin.

Stein's Refresher Mathematics. Edwin I. Stein. (1980). Allyn & Bacon.

Intermediate Technical Mathematics. A. Heywood. Copp Clark Pitman.

Essential Mathematics with Applications. Lawrence A. Trivieri. (1995). Random House. ISBN 0-07-065229-5

Practical Math (7th edition). Claude Irwin Palmer & Leonard A. Mrachek. (1986). Gregg Division, McGraw-Hill.

Mathematics for Technical and Vocational Students. John G. Boyce, Louis Margolis & Samuel Slade. (1989). John Wiley & Sons.

On-Line Resources: Westviking Gopher

M 3205 A/B
Practical Mathematics II

Recommendation: *This course is divided into Parts A and B. Learners may complete either Part A or Part B for <u>one</u> credit, or both A and B may be done to receive two credits. If only Part B is done, Section I must be still be covered.*

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1. Scale Drawings

  1.1 Define scale.
  1.2 Determine dimensions (metric and imperial) from scale drawings.
  1.3 Construct scale drawings.

<u>AND EITHER</u>

PART A

2. Building a House

  2.1 Read house floor plans.
  2.2 Draw house floor plans on grid paper.
  2.3 Determine quantities of materials needed for various house construction projects.
  2.4 Estimate costs involved in house construction.

<u>AND/OR</u>

PART B

3. Graphic Arts

  3.1 Define terminology associated with preparing copy, including point, pica, and em.
  3.2 Use points, picas, and ems in the measurement of type area.
  3.3 Calculate dimensions of reduced or enlarged photographs and illustrations.
  3.4 Describe the more important kinds of printing methods.
  3.5 Estimate costs involved in the production of a book.
  3.6 Outline procedures and costs involved in finishing a publication.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Applied Mathematics. Mervin Lyng, L.J. Meconi, Douglas Owens, and Walter Szetela, and Earl Zwick. (1990). Houghton Mifflin.

Stein's Refresher Mathematics. Edwin I. Stein. (1980). Allyn & Bacon.

Intermediate Technical Mathematics. A. Heywood. Copp Clark Pitman.

Essential Mathematics with Applications. Lawrence A. Trivieri. (1995). Random House. ISBN 0-07-065229-5.

Practical Math (7th edition). Claude Irwin Palmer & Leonard A. Mrachek. (1986). Gregg Division, McGraw-Hill.

Mathematics for Technical and Vocational Students. John G. Boyce, Louis Margolis & Samuel Slade. (1989). John Wiley & Sons.

On-Line Resources: Westviking Gopher

IM 3106
Business Mathematics I

1. Fundamental Operations

1.1 Solve three types of percentage problems:
    1.1.1 Find a percent of a number.
    1.1.2 Find what percent one number is of another.
    1.1.3 Find a number when a percent of it is known.

2. Business Discounts and Mark-up

2.1 Define and calculate cash and trade discounts.
2.2 Define and calculate list and net prices.
2.3 Define and calculate mark-up.
2.4 Define and calculate profit and loss.
2.5 Change discount series to single discount.

3. Depreciation

3.1 Calculate straight line depreciation.
3.2 Calculate decreasing value depreciation.

4. Payroll Calculations

4.1 Calculate hours worked.
4.2 Calculate gross pay.
4.3 Calculate payroll deductions.
4.4 Calculate net pay.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Business Mathematics (3rd Canadian edition). R. Robert Rosenburg & Trevor H. Baker. (1979). McGraw-Hill Ryerson.

Business Mathematics. Walter Lange, Robert Mason, and Temolean Rousos. (1983). Houghton Mifflin.

Mathematics Plus! Consumer, Business and Technical Applications. Bruce R. Shaw, Richard A. Denholm, & Gwendolyn H. Shelton. (1980). Houghton Mifflin.

On-Line Resources: Westviking Gopher

IM 3207
Business Mathematics II

1. Establishing a Business

1.1 Calculate costs of hiring employees.
1.2 Calculate travel expenses.
1.3 Calculate costs of employee training.
1.4 Calculate storage space requirements.
1.5 Complete an inventory record.
1.6 Calculate value of inventory.
1.7 Calculate annual costs of carrying inventory.
1.8 Calculate transportation costs.

2. Operating a Business

2.1 Conduct an opinion survey.
2.2 Determine sales potential and market share.
2.3 Determine projected sales.
2.4 Calculate advertising costs.
2.5 Determine optimum price based on volume.
2.6 Calculate overhead.
2.7 Calculate professional fees.
2.8 Calculate manufacturing costs.
2.9 Determine break-even point.
2.10   Perform quality control calculations.
2.11   Solve time study problems.

3. Accounting

3.1 Complete a payroll register.
3.2 Calculate business expenses.
3.3 Calculate owner's equity.
3.4 Prepare a balance sheet.
3.5 Prepare income statements.
3.6 Calculate corporate income tax.
3.7 Calculate proceeds of stock and bond issues.
3.8 Calculate costs of borrowing.
3.9 Calculate growth expenses.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Business Mathematics. Walter Lange, Robert Mason, and Temolean Rousos. (1983). Houghton Mifflin.

On-Line Resources: Westviking Gopher

IM 3208
Statistics

1. Initial Concepts

1.1 Describe statistics as a branch of mathematics.
1.2 Define two types of statistics: descriptive and inferential.
1.3 Trace historical development of statistics.
1.4 Describe uses of statistics in our society.

2. Collecting Data

2.1 Define population, sample, survey, and poll.
2.2 Describe types of sampling.
2.3 Explain generation and use of random samples.
2.4 Describe applications of data collection--census data, Gallup poll, surveys.

3. Organizing Data

3.1 Describe frequency distribution tables.
3.2 Group data into classes.
3.3 Draw histograms.
3.4 Plot frequency polygons.
3.5 Interpret tables, charts, and graphs.
3.6 Describe use and misuse of statistics.
3.7 Examine selected statistics for Newfoundland and Labrador.

4. The Normal Distribution

4.1 Define measures of central tendency (mean, median mode) and describe practical applications.
4.2 Define measures of dispersion (range, mean deviation, standard deviation).
4.3 Describe properties of the normal distribution (population mean, standard deviation, bell curve symmetry, skewness, and kurtosis).
4.4 Describe applications of the normal distribution.

5. Probability

5.1 Define probability and related terminology.
5.2 Describe theoretical and experimental probabilities.
5.3 Distinguish between dependent and independent events.
5.4 Relate probability to normal distribution (area under the curve, confidence intervals, and standard deviation).
5.5 Apply standard normal distribution (calculating z-scores, converting raw scores to z-scores, using normal curve table-area from z-scores) to practical problems.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Math is/Statistics: Frank Ebos, Bob Tuck, and Graham Blundon. (1984). Nelson Canada.

Films and Videos:

Integrated Math Video Series: Probability & Statistics. Educational Designs, Inc. carried by Monarch Books of Canada.

On-Line Resources: Westviking Gopher

IM 3109
Algebra I

1. Real Number System

1.1 Give examples that require use of different number systems.
1.2 Define rational numbers, real numbers and irrational numbers.
1.3 By use of Venn Diagrams, show relation between natural, whole, rational, irrational and real number systems.
1.4 Identify to which number system a particular number belongs.
1.5 Define radicals.
1.6 Simplify radicals and radical expressions.
1.7 Add, subtract, multiply, and divide radicals.
1.8 Give conjugate of a binomial radical expression.
1.9 Rationalize the denominator of a radical expression.
1.10 Simplify expressions by using the radical sign or by using fractional exponents.

2. Polynomials

2.1 Use laws of exponents to simplify expressions.
2.2 Multiply a binomial by a binomial and a binomial by a polynomial.
2.3 Use the FOIL in multiplying binomials.
2.4 Divide a polynomial by a monomial and a polynomial by a binomial with and without a remainder.
2.5 Express quotient, divisor and remainder of a polynomial in expanded form.

3. Factoring

3.1 Factor trinomials of the form $x^2 + bx + c$ and $ax^2 + bx + c$.
3.2 Factor difference of squares.
3.3 Factor perfect square trinomials.
3.4 Factor a sum and a difference of cubes.
3.5 Factor completely a combination of all factoring methods.
3.6 Simplify variable expressions and evaluate.
3.7 Solve division by factoring.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Mathematics 10. Kelly, B. et al. (1993). Addison-Wesley Publishers Ltd.

Mathematics 10: Principles and Processes. Ebos, F. et al. (1992). Nelson Canada.

Essential Mathematics with Applications. Lawrence A. Trivieri. (1995). Random House. ISBN: 0-07-065229-5.

Using Advanced Algebra. Kenneth Travers, LeRoy Dalton, Vincent Brunner, Edward Somerton, and Alan Taylor. (1985). Doubleday Canada, Ltd.

ABE Advanced Level Mathematics [Math 0241. (1989). Open Learning Agency.
Advanced Mathematics [Math 024]. Brendan Kelly, Paul Atkinson, and Bob Alexander. (1987). Addison-Wesley.

Contemporary's Number Power #3: Algebra. Robert Mitchell. (1983). Contemporary Books, Inc.

Practical Math (7th edition). Claude Irwin Palmer & Leonard A. Mrachek. (1986). Gregg Division, McGraw-Hill.

Essentials of Math (5th edition). Russell V. Person & Vernon J. Person. (1989). John Wiley & Sons.

Films and Videos:

Integrated Math Video Series: Algebra. Educational Design, Inc. carried by Monarch Books of Canada.

On-Line Resources: Westviking Gopher

IM 3210
Algebra II

1. Linear Sentences

1.1 Determine distance between two points and apply distance formula to solve problems.
1.2 Determine midpoint of a line segment and use midpoint formula to solve problems.
1.3 Determine slope of a line including parallel and perpendicular lines and apply slope formula in solving problems.
1.4 Find absolute value of a number.
1.5 Given a line, find steepness and direction of slope.
1.6 Graph a line given:
      (a) its slope and y - intercept
      (b) its slope and any point
      (c) any two points on the line
1.7 Write equation of a line from standard form to slope-intercept form and vice versa.
1.8 Solve any linear equation for an unknown variable.
1.9 Graph a linear equation given:
      (a) slope and y - intercept method
      (b) two intercept methods
      (c) a point on the equation and the equation of a parallel and perpendicular line
1.10   Find the equation of a line given:
      (a) slope and y - intercept
      (b) slope and a point on the line
      (c) two points on the line
      (d) a point and either the equation of perpendicular line or a parallel line
      (e) the graph of a line
1.11   Solve and graph linear inequalities.
1.12   Graph $y = x$.
1.13   Translate forms of $y = x$, such as $y = x + a$, $y + b = x$, and $y + b = x + a$.
1.14   Write equations when given a translated graph.

2. Systems of Linear Equations

2.1 Determine, algebraically and by graphing, whether a system of equations in two variables has one solution, no solutions, and infinitely many solutions.
2.2 Solve a system of equations in two variables by:
      (a) graphing
      (b) multiplication or addition method
      (c) substitution method
2.3 Solve a system of linear inequalities in two variables by graphing.
2.4 Apply methods of solving systems of equations and inequalities in two variables to solving real word problems.

3. Rational Expressions

3.1 Determine values that must be excluded from the replacement set for an algebraic expression.

3.2 Simplify algebraic expressions.

3.3 Multiply and divide algebraic rational expressions.

3.4 Add and subtract complex algebraic rational expressions.

3.5 Simplify complex algebraic rational expressions.

3.6 Find lowest common denominator when adding and subtracting algebraic rational expressions.

3.7 Apply rational expressions and equations to word problems.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Mathematics 10. Kelly, B. et al. (1993). Addison-Wesley Publishers Ltd.

Mathematics 10: Principles and Processes. Ebos, F. et al. (1992). Nelson Canada.

Essential Mathematics with Applications. Lawrence A. Trivieri. (1995). Random House. ISBN: 0-07-065229-5.

Using Advanced Algebra. Kenneth Travers, LeRoy Dalton, Vincent Brunner, Edward Somerton, and Alan Taylor. (1985). Doubleday Canada, Ltd.

ABE Advanced Level Mathematics [Math 0241. (1989). Open Learning Agency.

Advanced Mathematics [Math 024]. Brendan Kelly, Paul Atkinson, and Bob Alexander. (1987). Addison-Wesley.

Contemporary's Number Power #3: Algebra. Robert Mitchell. (1983). Contemporary Books, Inc.

Practical Math (7th edition). Claude Irwin Palmer & Leonard A. Mrachek. (1986). Gregg Division, McGraw-Hill.

Essentials of Math (5th edition). Russell V. Person & Vernon J. Person. (1989). John Wiley & Sons.

Films and Videos:

Integrated Math Video Series: Algebra. Educational Design, Inc. carried by Monarch Books of Canada.

On-Line Resources: Westviking Gopher

IM 3211
Algebra III

1. Functions

1.1 Define relations.
1.2 Represent relations as a set of ordered pairs, as a table of values, as a graph, as an equation, and from word problems.
1.3 Determine domain and range of given relations.
1.4 Define functions.
1.5 Determine if a particular relation is a function.
1.6 Change a function that has been written in one representation to any other representation. (eg. given a graph, determine the relation and tell if it is a function).
1.7 Identify symbols to represent functions such as "f(x)" notation.
1.8 Determine f(a) for any function "a" is in the domain of the function.
1.9 Describe and sketch graphs of the following functions:

    (a) $y = x^2$
    (b) $y = ax^2$
    (c) $y = a(x - h)^2$
    (d) $y = a(x - h)^2 + k$

1.10 Given equation $y = a(x - h)^2 + k$, determine:

    (a)   the coordinates of its vertex
    (b)   the equation of the axis of symmetry
    (c)   direction of opening
    (d)   its maximum and minimum point
    (e)   its domain and range

1.11 Change $y = ax^2 + bx + c$ to $y = a(x - h)^2 + k$ form and sketch graph showing all critical points mentioned in 1.10.
1.12 Apply concepts of parabola to maximum and minimum word problems.

2. Quadratic Equations

2.1 Determine x - intercepts of quadratic equation $y = ax^2 + bx + c$ and intercept them as the roots of the equation.
2.2 Solve $x^2 - k = 0$ by inverse operations.
2.3 Solve $ax^2 + bx = 0$ and $ax^2 + bx + c = 0$ by factoring.
2.4 Solve $ax^2 + bx + c = 0$ by completing square.
2.5 Solve $ax^2 + bx + c = 0$ by using quadratic formula.
2.6 Define complex numbers.
2.7 Compute sums, differences, products, and quotients of complex numbers.
2.8 Define discriminant for a given equation.

2.9 Use discriminant to determine if a quadratic equation has two equal real roots, two unequal real roots, or no real roots.

2.10 Use discriminant to determine the x - intercept of the graph of y =ax^2+bx + c.

2.11 Solve word problems involving quadratic equations.

2.12 Solve radical equations using concept of universe operation.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Mathematics 10. Kelly, B. et al. Addison-Wesley Publishers Ltd.

Mathematics 10: Principles and Processes. Ebos, F. et al. (1992) Nelson Canada.

Mathematics 11. Kelly, B. et al. (1993). Addison-Wesley Publishers Ltd.

Mathematics 11: Principles and Processes. Ebos, F. et al. (1992). Nelson Canada.

Essential Mathematics with Applications. Lawrence A. Trivieri. (1995). Random House. ISBN: 0-07-065229-5.

Using Advanced Algebra. Kenneth Travers, LeRoy Dalton, Vincent Brunner, Edward Somerton, and Alan Taylor. (1985). Doubleday Canada, Ltd.

ABE Advanced Level Mathematics [Math 024]. (1989). Open Learning Agency.

Advanced Mathematics. Brendan Kelly, Paul Atkinson, and Bob Alexander. (1987). Addison-Wesley.

Practical Math (7th edition). Claude Irwin Palmer & Leonard A. Mrachek. (1986). Gregg Division, McGraw-Hill.

Essentials of Math (5th edition). Russell V. Person & Vernon J. Person. (1989). John Wiley & Sons.

On-Line Resources: Westviking Gopher

IM 3212
Algebra IV

1. Conic Sections

1.1 Circle
    1.1.1 Identify circle as it relates to the cone and a plane. Give geometric definition of a circle.
    1.1.2 Derive equation of a circle with center at origin and with center not at origin.
    1.1.3 Identify three equations of circles.
    1.1.4 Rearrange circle equations from general to standard form and vice versa.
    1.1.5 Given radius and center of a circle, find equation and sketch graph.
    1.1.6 Given equation of a circle in general and standard form find radius and center and sketch graph.
    1.1.7 Find equation of a circle given sufficient information about its graph.
1.2 Parabola
    1.2.1 Identify parabola as it relates to intersection of the cone and a plane.
    1.2.2 Give geometric definition of a parabola.
    1.2.3 State equations for graphs of parabolas.
    1.2.4 Find focus and directrix when given an equation.
    1.2.5 Sketch graph of a parabola with vertex at the origin, showing vertex, focus, and directrix.
    1.2.6 Find equation of a parabola with vertex at the origin given sufficient information.
1.3 Ellipse
    1.3.1 Identify ellipse as it relates to intersection of a cone and a plane.
    1.3.2 State geometric definition of an ellipse.
    1.3.3 State standard equation of an ellipse and use it to sketch its graph showing all intercepts and one other point for accuracy.
1.4 Hyperbola
    1.4.1 Identify hyperbola as it relates to intersection of a cone and a plane.
    1.4.2 State geometric definition of a hyperbola.
    1.4.3 State standard equation for a hyperbola and sketch its graph showing all intercepts and one other point for accuracy.

2. Exponential Functions

2.1 Sketch graph of exponential functions identifying intercepts, shape of curve and asymptotes.
2.2 Find domain and range of an exponential function.
2.3 Determine existence of an inverse function using horizontal line test.
2.4 Find domain and range of an inverse function.

3. Logarithms

3.1 Convert from logarithmic form to exponential form and vice versa.
3.2 Solve logarithmic equations.
3.3 State laws of logarithms.
3.4 Apply laws of logarithms and exponents in solving problems.
3.5 Solve problems using irrational number equation.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Mathematics 11. Kelly, B. et al. (1993). Addison-Wesley Publishers Ltd.

Mathematics 11: Principles and Processes. Ebos, F. et al. (1992). Nelson Canada.

Mathematics 12. Kelly, B et al. (1993). Addison-Wesley Publishers Ltd.

Mathematics 12: Principles and Processes. Ebos, F. et al. (1992). Nelson Canada.

Using Advanced Algebra. Kenneth Travers, LeRoy Dalton, Vincent Brunner, Edward Somerton, and Alan Taylor. (1985). Doubleday Canada, Ltd.

ABE Advanced Level Mathematics [Math 024]. (1989). Open Learning Agency.

Advanced Mathematics. Brendan Kelly, Paul Atkinson, and Bob Alexander. (1987). Addison-Wesley.

Practical Math (7th edition). Claude Irwin Palmer & Leonard A. Mrachek. (1986). Gregg Division, McGraw-Hill.

Essential Mathematics with Applications. Lawrence A. Trivieri. (1995). Random House. ISBN 0-07-065229-5.

Essentials of Math (5th edition). Russell V. Person & Vernon J. Person. (1989). John Wiley & Sons.

On-Line Resources: Westviking Gopher

IM 3213
Algebra V

1. Polynomial Functions

1.1 Sketch graphs of polynomial functions of degree three and four, determining basic shape, and critical points of intersection such as x and y - intercepts.
1.2 State Integral Root Theorem.
1.3 Solve polynomial equations of degree three and four by a combination of factoring and quadratic formula.
1.4 Use Integral Root Theorem to solve polynomial equations of degree three and four along with a combination of factoring and quadratic formula.

2. Sequences

2.1 Define sequence.
2.2 Define arithmetic sequence and write a formula for the general term of an arithmetic sequence.
2.3 Write "n" terms in a sequence given certain conditions.
2.4 Define geometric sequence and write the formula for the general term of a geometric sequence.
2.5 Find the "n^{th}" term of arithmetic and geometric sequences.
2.6 State Recursive Definition of a Sequence.
2.7 Write first "n" terms using Recursive Definition.

3. Series

3.1 Define series.
3.2 Define arithmetic and geometric series.
3.3 State formula for the first "n" terms of an arithmetic and a geometric series.
3.4 Calculate related problems involving arithmetic and geometric series.
3.5 State formula for sum of an infinite geometric series.
3.6 Find sum of an infinite series.

4. Permutations and Combinations

4.1 Define Fundamental Counting Principle.
4.2 Define permutations and combinations.
4.3 Define factorial notation.
4.4 Solve related problems involving permutations and combinations.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Mathematics 12. Kelly, B et al. (1993). Addison-Wesley Publishers Ltd.

Mathematics 12: Principles and Processes. Ebos, F. et al. (1992). Nelson Canada.

Using Advanced Algebra. Kenneth Travers, LeRoy Dalton, Vincent Brunner, Edward Somerton, and Alan Taylor. (1985). Doubleday Canada, Ltd.

ABE Advanced Level Mathematics [Math 024]. (1989). Open Learning Agency.

Advanced Mathematics. Brendan Kelly, Paul Atkinson, and Bob Alexander. (1987). Addison-Wesley.

Practical Math (7th edition). Claude Irwin Palmer & Leonard A. Mrachek. (1986). Gregg Division, McGraw-Hill.

Essential Mathematics with Applications. Lawrence A. Trivieri. (1995). Random House. ISBN 0-07-065229-5.

On-Line Resources: Westviking Gopher

IM 3114
Geometry I

1. Parallel Lines

1.1 State conditions which determine parallel lines.
1.2 Identify congruent angles when a transversal cuts two parallel lines.
1.3 Apply properties of parallel lines to determine measures of angles.
1.4 Apply properties of parallel lines to writing two column proofs.

2. Congruence

2.1 Identify corresponding parts of congruent triangles.
2.2 State SSS, SAS, and ASA postulates for congruent triangles.
2.3 Define reflexive, symmetric and transitive properties.
2.4 Write a two column proof proving two triangles congruent.
2.5 Use concept of congruent triangles to further prove:
      (a)   angles are congruent or right angles
      (b)   angles are complementary or supplementary
      (c)   segments are congruent
      (d)   triangles are isosceles or right triangles
2.6 Apply following to proofs involving congruent triangles:
      (a)   concepts of medians, altitudes, and bisectors
      (b)   properties of isosceles and equilateral triangles

3. 3-D Geometry

3.1 Develop and use formula for surface area of a cone.
3.2 Apply formula for surface area of a sphere.
3.3 Find surface areas of solids in problem solving situations.
3.4 Find volume of a sphere.
3.5 Investigate property of volume using the fact that if two solids have same Cross-sectional area at every level and same height, then they have same volume.
3.6 Find volume of various solids in problem solving situations.
3.7 Define solids of revolution.
3.8 Identify correct solid of revolution.
3.9 Sketch solid of revolution given coordinates of vertices.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Mathematics 10. Kelly, B. et al. Addison-Wesley Publishers Ltd.

Mathematics 10: Principles and Processes. Ebos, F. et al. (1992) Nelson Canada.

Stein's Refresher Mathematics. Edwin I. Stein. (1980). Allyn & Bacon.

Intermediate Technical Mathematics. A. Heywood. Copp Clark Pitman.

Math is/3. (2nd edition). Frank Ebos & Bob Tuck. (1984). Nelson Canada.

Geometry. Ray Jurgenson, Richard Brown, and John Jurgenson. Houghton Mifflin.

Mathematics for Technical and Vocational Students. John G. Boyce, Louis Margolis, & Samuel Slade. (1989). John Wiley & Sons.

Practical Math (7th edition). Claude Irwin Palmer & Leonard A. Mrachek. (1986). Gregg Division, McGraw-Hill.

Mathematics 3. (1989). Province of British Columbia, Ministry of Advanced Education and Job Training. Provincial Curriculum Publications/Open Learning Agency. ISBN 0-7726-0121-6.

Practical Mathematics. [Math 010]. Lana Chow and Earl Johns. (1988). Open Learning Agency. ISBN 0-86498-269-0.

Essential Mathematics with Applications. Lawrence A. Trivieri. (1995). Random House. ISBN 0-07-065229-5.

Essentials of Math (5th edition). Russell V. Person & Vernon J. Person. (1989). John Wiley & Sons.

Films and Videos:

ACCESS Network videos

Integrated Math Video Series:Geometry . Educational Designs, Inc. carried by Monarch Books of Canada.

On-Line Resources: Westviking Gopher

IM 3115
Geometry II

1. Similarity

1.1 Define similarity.
1.2 Determine whether two polygons are similar using definition of similarity.
1.3 Find missing sides of various polygons using proportions.
1.4 State AA, SSS and SAS theorems for similar triangles.
1.5 Apply AS, SSS and SAS theorems in writing proofs.
1.6 State Proportionality Theorem and its converse and apply it to determining proportions in similar triangles.
1.7 Apply Proportionality Theorem and its converse to writing proofs.
1.8 State Mean Proportion Theorem and corollaries and apply them to finding missing variables in a triangle.
1.9 Apply concepts of similar triangles to word problems.

2. Plane Geometry:

The Circle
2.1 Identify parts of a circle and the lines and segments associated with circle.
2.2 State properties of a circle and use them to solve the numerical problems stated below:
    2.2.1   the measure of an arc and its central angle.
    2.2.2   the diameter and a chord that is perpendicular to it
    2.2.3   two chords that are equidistant from the center
    2.2.4   an inscribed angle and its intercepted arc
    2.2.5   the opposite angles of an inscribed quadralateral
    2.2.6   a tangent and the radius at the point of tangency
    2.2.7   two tangents of a circle from same exterior point
    2.2.8   the measure of an angle formed by two secants intersecting in the interior of a circle and the measures of the intersecting arcs
    2.2.9   the measure of an angle intersecting in the exterior of a circle and the measures of the intersecting arc
    2.2.10 the measure of an angle formed by the intersection of a secant and a tangent at the point of tangency and the measure of the intersecting arcs
    2.2.11 the measures of the parts of two intersecting arcs

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Mathematics 11. Kelly, B. et al. (1993). Addison-Wesley Publishers Ltd.

Mathematics 11: Principles and Processes. Ebos, F. et al. (1992). Nelson Canada.

Mathematics 12. Kelly, B et al. (1993). Addison-Wesley Publishers Ltd.

Mathematics 12: Principles and Processes. Ebos, F. et al. (1992). Nelson Canada.

Math is/ Geometry and Trigonometry. Frank Ebos, Dale Drost, Bob Tuck, and Ben Gardner. (1984). Nelson Canada.

Geometry. Ray Jurgenson, Richard Brown, and John Jurgenson. Houghton Mifflin.

Films and Videos:

ACCESS Network videos

Integrated Math Video Series:Geometry. Educational Designs, Inc. carried by Monarch Books of Canada.

On-Line Resources: Westviking Gopher

IM 3216
Trigonometry

1. Trigonometric Functions

1.1 Define all six trigonometric functions.
1.2 Calculate all six trigonometric ratios.
1.3 Calculate angles of a right triangle, given two sides.
1.4 Calculate a side given a specific side and an angle of a right triangle.
1.5 Define and calculate angles of elevation and depression.
1.6 Solve word problems using individual trigonometric ratios or combinations of the rations.

2. Special Triangles and Applications

2.1 Calculate length of sides in a 45-45-90 degree triangle.
2.2 Calculate length of sides in a 30-60-90 degree triangle.

3. Trigonometry on the Cartesian Coordinate Plane

3.1 Define and sketch angles in standard position.
3.2 Define, sketch, and calculate coterminal and special angles.
3.3 Calculate radian measure.
3.4 Convert from degree to radian and vice versa.
3.5 Graph trigonometric functions.
3.6 Define sine and cosine using unit circle.

4. Trigonometric Identities and Laws

4.1 List and prove trigonometric identities.
4.2 State law of sines and cosines.
4.3 Solve problems using law of sines and cosines.
4.4 Solve triangles.
4.5 Simplify and evaluate expressions using sum and difference formulas.
4.6 Simplify and evaluate expressions using double and half angle formulas.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Mathematics 12: Principles and Process. Ebos et al. (1991) Nelson Canada.

Math is/ Geometry and Trigonometry. Frank Ebos, Dale Drost, Bob Tuck, and Ben Gardner. (1984). Nelson Canada.

ABE Advanced Level Mathematics [Math 024]. (1989). Open Learning Agency.

Applied Mathematics. Mervin Lyng, L.J. Meconi, Douglas Owens, and Walter Szetela, and Earl Zwick. (1990). Houghton Mifflin.

Trigonometry: An Introduction to Right Triangles and their Applications. Margaret Hayden Williams & Alan R. Taylor. (1982). Doubleday.

Essentials of Math (5th edition). Russell V. Person & Vernon J. Person. (1989). John Wiley & Sons.

Practical Math (7th edition). Claude Irwin Palmer & Leonard A. Mrachek. (1986). Gregg Division, McGraw-Hill

On-Line Resources: Westviking Gopher

IM 3217
Advanced Algebra I

1. Real Number System

1.1 Define natural numbers, integers, rational and irrational numbers and solve problems involving these types of numbers.
1.2 Define absolute value and solve related problems.
1.3 Define radicals.
1.4 Rationalize the denominator.
1.5 Add, subtract, multiply and divide radicals.
1.6 State Pythagorean Theorem.
1.7 Solve problems involving Pythagorean Theorem.

2. Exponents

2.1 Identify variables, coefficients and exponents.
2.2 Review laws of exponents.
2.3 Use laws of exponents to evaluate and simplify integral exponents.
2.4 Use laws of exponents to evaluate and simplify fractional exponents.
2.5 Calculate Scientific Notation.

3. Polynomials and Factoring

3.1 Add, subtract, multiply and divide monomials and polynomials.
3.2 Find common factors.
3.3 Factor perfect squares and difference of two squares.
3.4 Factor sum and difference of cubes.
3.5 Factor trinomials of the form $x^2 + bx + c$
3.6 Factor trinomials of the form $ax^2 + bx + c$

4. Rational Expressions

4.1 Simplify rational expressions.
4.2 Multiply and divide rational expressions.
4.3 Add and subtract rational expressions.
4.4 Develop formulas from related word problems using rational expressions.

5. Straight Line

5.1 Find slope of a line.
5.2 Find equation of a line.
5.3 Work with $Ax + B7 + C = 0$
5.4 Work with parallel and perpendicular lines.
5.5 Graph linear inequalities.

Potential Resources

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Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Advanced Mathematics. Kelly et al. (1987) Addison-Wesley

Geometry. Jurgenson, R. et al. (1987). Houghton-Mifflin

On-Line Resources: Westviking Gopher

IM 3218
Advanced Algebra II

1. Systems of Equations

1.1 Define linear equations.
1.2 Solve systems of linear equations in two variables by graphing.
1.3 Solve systems of linear equations in two variable algebraically.
1.4 Find equivalent linear systems in two variables.
1.5 Solve systems of linear systems in three variables.
1.6 Apply systems of linear equations in two and three variables to solving word problems.

2. Quadratic Equations

2.1 Define quadratic equations.
2.2 Solve quadratic equations for an unknown variable.
2.3 Solve quadratic equations by graphing.
2.4 Solve quadratic equations by factoring.
2.5 Solve quadratic equations by completing the square.
2.6 Derive quadratic formula.
2.7 Solve quadratic equations using quadratic formula.
2.8 Use quadratic formula to find roots of a quadratic equation.
2.9 Use discriminant to determine whether a quadratic equation has two different real roots, two equal real roots, or no real roots.
2.10   Define complex numbers.
2.11   Use quadratic formula to determine complex roots.
2.12   Simplify complex numbers.
2.13   Apply concepts for solving quadratic equations to problems.

3. Linear and Quadratic Functions

3.1 Define relation and state range and domain of various relations.
3.2 Define function and f of x notation for a function.
3.3 Determine if a relation is a function.
3.4 Sketch graphs of functions stating domain and range.
3.5 Define linear function and apply concepts of linear function to solve problems.
3.6 Define quadratic function.
3.7 Graph quadratic function using table of values and apply it to solving problems.
3.8 Graph quadratic functions of the form $y=x^2$, $y=ax^2$, $y=x^2 + k$, and $y=(x-h)^2$.
3.9 Graph quadratic equations of the form $y=a(a-h)^2 = k$
3.10   Convert $y=ax^2 + bx + c$ to $y=a(a-h)^2 + k$ form and graph showing maximum and minimum values, axis of symmetry, x-intercepts (if any), y-intercepts, and one other point for accuracy.
3.11   Solve maximum and minimum problems using quadratic functions.

ABE Level III Curriculum

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

<u>Advanced Mathematics</u>. Kelly et al. (1987). Addison-Wesley.

On-Line Resources: Westviking Gopher

IM 3219
Advanced Algebra III

1. Polynomials

1.1 State general expression of a polynomial and identify various terms relating to a polynomial.
1.2 Find zeros of a polynomial.
1.3 Find all roots, real and imaginary, of a polynomial equation.
1.4 State Remainder Theorem and Factor Theorem.
1.5 Apply Remainder Theorem to determine remainder of a polynomial.
1.6 Determine if a polynomial has a particular factor using Factor Theorem.
1.7 Use Synthetic Division to divide a polynomial by a monomial.
1.8 Graph the following polynomial functions: quadratic, cubic, quantic, quintic.
1.9 Solve higher order equations.
1.10 State Fundamental Theorem of Algebra and other general theorems and apply these theorems to obtain general results about polynomial equations.

2. Transcendental Functions

2.1 State laws of exponents, integral and rational.
2.2 Use laws of exponents to simplify expressions.
2.3 State laws of logarithms.
2.4 Use laws of logarithms to express logarithms as a single logarithm or a rational number.
2.5 Evaluate exponential functions of the form $f(x)=ab^x$.
2.6 Graph logarithms and exponential functions stating range and domain.
2.7 Solve exponential and logarithmic equations.
2.8 Solve exponential growth and decay problems.

3. Conic Sections

3.1 Define circle.
3.2 Sketch and graph a circle, given centre and radius.
3.3 Write the equation of a circle in standard and general form, and change between these forms.
3.4 Define parabola.
3.5 Determine intersection of circle/line and circle/circle.
3.6 Sketch graph of a parabola with center at origin showing directrix, focus, vertex, and one other point of accuracy.
3.7 Sketch graph of a parabola with center at (h,k) showing directrix, focus, vertex, and one other point for accuracy.
3.8 Define ellipse.

3.9 Sketch graph of an ellipse with center at origin and center at (h,k) not at center. Show center, major/minor axis, foci and electricity.
3.10   Find equation of ellipses given information about the ellipse.
3.11   Define hyperbola.
3.12   Sketch graph of hyperbolas with center at (0,0), the origin, and center at (h,k). Show vertex, asymptotes, eccentricity, and foci.
3.13   Write equation of a hyperbola given information about the hyperbola.
3.14   Solve systems of second-degree equations.

4. Trigonometric Functions

4.1 Define trigonometric functions: sine, cosine, tangent, cosecant, secant, and cotangent. Convert from degrees and radians and vice versa.
4.2 Define angles in terms of positive and negative rotations.
4.3 Evaluate trigonometric functions of angles using reference angles and special angles.
4.4 Determine inclination and slope of a line using trigonometric functions.
4.5 State laws of sines and cosines.
4.6 Solve problems using laws of sines and cosines.
4.7 Define inverse trigonometric functions.
4.8 Evaluate the three inverse trigonometric functions.
4.9 Graph trigonometric functions and determine
   (a) amplitude
   (b) period

5. Analytic Trigonometry

5.1 State fundamental trigonometric identities of
   (a) reciprocal relationships
   (b) cofunction relationships
   (c) pythagorean relationships
5.2 Simplify trigonometric expressions.
5.3 Prove trigonometric identities.
5.4 Solve trigonometric equations.
5.5 State sum and difference formulas.
5.6 Use sum and difference formulas to simplify and evaluate expressions and to prove identities and solve equations.
5.7 State double-angle and half-angle formulas.
5.8 Use double-angle and half-angle formulas to simplify and evaluate expressions and to prove identities and solve equations.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Advanced Mathematics: A Precalculus Course. Brown, R. et al. (1989) Houghton-Mifflin.

On-Line Resources: Westviking Gopher

IM 3220
Advanced Geometry I

1. Basic Concepts

1.1 Understand undefined terms: point, line, plane.
1.2 Use undefined terms to define basic terms in geometry.
1.3 Use geometric symbols to represent lines, segments, rays, angles.

2. Introduction to Proofs

2.1 Understand geometric postulates.
2.2 Use geometric postulates in solving problems.
2.3 Use properties of algebra, geometric postulates, and definitions in writing two column proofs.
2.4 Apply Midpoint Theorem, The Angle Bisector Theorem and the Vertical Angle Theorem in solving problems.
2.5 Use theorems about perpendicular lines, supplementary angles, and complementary angles in writing two column proofs.

3. Parallel Lines and Planes

3.1 Define geometric terms about parallel lines and planes.
3.2 Understand theorems and postulates and use them in writing two column proofs.
3.3 Identify properties of parallel lines.
3.4 State and apply the theorems of a parallel line and a perpendicular line to a given line through a point outside the line.

4. Congruence

4.1 Identify corresponding parts of congruent figures.
4.2 Use SSS, SAS, ASA postulates to prove triangles congruent.
4.3 Use congruency to prove other parts of a triangle congruent.
4.4 Use Isosceles Triangle Theorem and corollaries to prove triangles congruent.
4.5 Use AAS Theorem and Hypotenuse Leg Theorem to prove triangles congruent.
4.6 Apply definitions of a triangle such as median, alternating angles and perpendicular bisector of a segment in writing proofs.
4.7 State theorem about a point on the perpendicular bisector of a segment and the converse and apply them in writing proofs.
4.8 State theorem about a point on the bisector of an angle and converse and apply it to writing proofs.
4.9 Prove two triangles congruent by first proving two other triangles congruent.

5. Parallelograms and Trapezoids

5.1 State properties of parallelograms and trapezoids.
5.2 State and apply the theorems about properties of a parallelogram.
5.3 State special properties of rectangle, rhombus, and square and use them in writing proofs.
5.4 Use theorems to prove certain quadrilaterals are parallelograms.
5.5 State and apply theorem about medians of a trapezoid.
5.6 State and apply theorems about the segment that joins the midpoint of the two sides of a triangle.

6. Coordinate Geometry

6.1 Calculate distance using Distance Formula.
6.2 Calculate midpoint of a line using Midpoint Formula.
6.3 State Coordinate Geometry Theorem.
6.4 Use Coordinate Geometry Theorem in writing proofs.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Math is/3. (2nd edition). Frank Ebos & Bob Tuck. (1984). Nelson Canada.

Geometry. Ray Jurgenson, Richard Brown, and John Jurgenson. (1987) Houghton Mifflin.

On-Line Resources: Westviking Gopher

IM 3221
Advanced Geometry II

1. Ratio, Proportion, and Similarity

1.1 State ratios in simplest forms.
1.2 Apply properties of proportions to derive an equivalent proportion.
1.3 Apply properties of proportions to solve for an unknown in a proportion.
1.4 State properties of similar polygons.
1.5 State postulates and theorems for similar triangles.
1.6 Apply postulates and theorems to find unknown sides and angles in similar polygons.
1.7 Apply postulates and theorems to prove polygons similar.
1.8 State and prove Triangle Proportionality Theorem with its corollary and Triangle Angle-Bisector Theorem.
1.9 Use Triangle Proportionality Theorem, its corollary, and Triangle Angle-Bisector Theorem to determine unknown proportional line segments and unknown sides of triangles.

2. Right Triangles and Trigonometry

2.1 Determine geometric means between two numbers.
2.2 State theorems and corollaries related to right triangles and apply them to determine length of various sides of right triangles.
2.3 State and prove Pythagorean Theorem.
2.4 Apply Pythagorean Theorem to determine various sides of right triangles.
2.5 State converse of the Pythagorean Theorem and other theorems related to right triangles.
2.6 State theorems related to special triangles of 45 - 45 - 90 and 30 - 60 - 90 and apply them to finding sides of various sides of right triangles.
2.7 Define sine, cosine, and tangent ratio of a right triangle.
2.8 Apply sine, cosine, and tangent to determine sides of triangles.
2.9 Apply sine, cosine, and tangent to solve distances in word problems.

3. Circles

3.1 Define terms related to circle and sphere.
3.2 Identify inscribed polygons and circumscribed circles.
3.3 State theorems related to tangents and radii and apply these theorems to writing proofs and determining lengths of tangents and radii.
3.4 Define terms related to arcs and central angles.
3.5 State and apply theorems about chords of a circle and apply them to writing

proofs and determining length of various segments in a circle.

3.6 State and apply arc postulate and theorem to writing proofs.

3.7 State and apply theorems and corollaries for inscribed angles and apply them to writing proofs and finding angles of inscribed polygons.

3.8 Solve problems involving length of chords, secant segments, and tangent segments.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Math is/Geometry and Trigonometry. Frank Ebos & Bob Tuck. (1984). Nelson Canada.

Geometry. Ray Jurgenson, Richard Brown, and John Jurgenson. (1987) Houghton Mifflin.

On-Line Resources: Westviking Gopher

IM 3222
Calculus Readiness

1. Functions

1.1 Develop functions from various types of problems.
1.2 Interpret graphs of functions.
1.3 Give geometric interpretations of functions in two variables.
1.4 Define composite functions.
1.5 Evaluate composite functions.
1.6 Define inverse functions.
1.7 Evaluate inverse functions.
1.8 Sketch graph of inverse functions.

2. Sequence and Series

2.1 Define an arithmetic and geometric sequence and find a formula for its "n^{th}" term.
2.2 Define and arithmetic and geometric series and find sum of first "n" terms.
2.3 Determine limit of an infinite sequence if it exists.
2.4 Determine sum of an infinite series.
2.5 Express given series in sigma notation.

3. Introduction to Calculus

3.1 Use techniques for evaluation limits of functions to evaluate various functions.
3.2 Graph rational functions showing horizontal or vertical asymptotes.
3.3 Use concept of limit to find slope of a curve at a point P.
3.4 Define derivative of F(x) to be f(x).
3.5 Determine derivative of various functions.
3.6 Use derivatives to sketch curves.
3.7 Apply concept of derivative to solve extreme value problems.
3.8 Apply concept of derivative to solve velocity and acceleration problems.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Advanced Mathematics: A Pre-Calculus Course. Richard Brown and David Robbins. (1984). Houghton Mifflin.

Algebra 1. Roland E. Larson, Timothy D. Kanold and Lee Stiff. (1993). D.C. Heath and Company. ISBN: 0-669-26750-3

Algebra 2. Roland E. Larson, Timothy D. Kanold and Lee Stiff. (1993). D.C. Heath and Company. ISBN: 0-669-26751-1

College Algebra and Trigonometry. Robert Ellis and Danny Gulick. (1984). Harcourt-Brace & Company.

Essentials of Math (5th Edition). Russell V. Person & Vernon J. Person (1989). Prentice Hall.

Mathematics 11: Principles and Processes. Frank Ebos, Dennis Hamaguchi, Barbara Morrison and John Klassen. (1991). Nelson Canada. ISBN: 0-17-602526-X

Mathematics 12: Principles and Processes. Frank Ebos, Dennis Hamaguchi, Barbara Morrison and John Klassen. (1991). Nelson canada. ISBN: 0-17-602527-8

Pre-Calculus Mathematics. [Math 100]. (1987). Open Learning Agency.

Precalculus (Third Edition). Roland E. Larson and Robert P. Hostetler. (1993). D.C. Heath and Company. ISBN: 0-669-28310-X

On-Line Resources: Westviking Gopher

Level III Mathematics
Annotated Bibliography

> **NOTE: A plethora of mathematics textbooks exists so this annotated bibliography and the potential resource list should not be construed as exhaustive. Most of the textbooks which you have been using will be equally relevant for this version of the program. You are encouraged to continually seek new or better references.**
>
> **Books listed may not be currently in print. ISBN numbers are listed where available.**

ABE Advanced Level Mathematics [Math 024]. (1989). Open Learning Agency.
A distance education package meant to be an equivalent to grade 11 mathematics in British Columbia, and could be used to meet the objectives in the algebra I-V and trigonometry I courses. Contains a course manual, assignments, and two texts:

Essential Mathematics (5th edition). Keedy, Bittinger, & Rudolph. (1988). Addison - Wesley.

Trigonometry. Keedy & Bittinger. (1988). Addison Wesley.

Advanced Mathematics. Brendan Kelly, Paul Atkinson, and Bob Alexander. (1987). Addison Wesley. ISBN 0-201-18638-1
Used in the school system and covers the objectives of all five algebra courses.

Advanced Mathematics: A Pre-Calculus Course. Richard Brown and David Robbins. (1989). Houghton Mifflin.
Good coverage of the objectives of the precalculus course. Teacher's manual available.

Applied Mathematics. Mervin Lyng, L.J. Meconi, Douglas Owens, and Walter Szetela, and Earl Zwick. (1990). Houghton Mifflin.
Used in the high school system. Teacher's manual and answer key available. Covers objectives for both options in the Practical Math II.

Business Mathematics (3rd Canadian edition). R. Robert Rosenburg & Trevor H. Baker. (1979). McGraw-Hill Ryerson. ISBN 0-07-082884-9
Good coverage of the Business Math I. Also available: teacher's key for exercises, problems and tests, and workbook with exercises, problems, and tests.

Business Mathematics. Walter Lange, Robert Mason, and Temolean Rousos. (1983). Houghton Mifflin.
Used in the high school system. Covers some of objectives of the Business Math I, and all of Business Math II.

Career Mathematics: Industry and the Trades. Merwin J. Lyng, L.J. Meconi, & Earl J. Zwick. (1982). Houghton Mifflin Canada.

Covers objectives for both options in Practical Math II.

College Algebra and Trigonometry. Robert Ellis and Danny Gulick. (1984). Harcourt Brace Jovanovich.
Used in the B.C. and covers the precalculus objectives.

Consumer Mathematics. Walter Lange, Robert Mason, and Temoleon Rousos. (1985). Houghton Mifflin.
Used in the school system. Covers objectives of the consumer math. Teacher's manual and solution key available.

Contemporary's Number Power #3: Algebra. Robert Mitchell. (1983). Contemporary Books Inc. ISBN 0-8092-5714-9.
Workbook practice.

Essential Mathematics with Applications. Lawrence A. Trivieri. (1988). Random House. ISBN 0-394-35454-0.
Covers all of Level II, all of the algebra courses, most of the geometry, but does not cover business math or trigonometry.

Essentials of Math (5th edition). Russell V. Person & Vernon J. Person. (1989). John Wiley & Sons. ISBN 0-471-05184-5
Usable for algebra, geometry, ratio, proportion, logarithms, trigonometry, and pre-calculus. Also available is a good study guide which provides lots of practice exercises.

Geometry. Ray Jurgenson, Richard Brown, and John Jurgenson. (1987). Houghton Mifflin.
Used in the school system. Covers objectives for all three geometry courses. Teacher's edition and solution key available.

Integrated Math Video Series. Educational Designs, Inc. carried by Monarch Books of Canada. AV500.
A series of nine videos which review math concepts in algebra, geometry, logic, probability, and statistics.

Intermediate Technical Mathematics. A. Heywood. Copp Clark Pitman.
Has been around technical programs for some time and contains plenty of exercises with a practical, technical slant.

Math is/ Geometry and Trigonometry. Frank Ebos, Dale Drost, Bob Tuck, and Ben Gardner. (1984). Nelson Canada.
Used in high school system. Teacher's edition available.

Math is/ Geometry. Frank Ebos, Dale Drost, Bob Tuck, & Ben Gardner. (1984). Nelson.
Used in school system. Teacher's guide available.

Math is/3. (2nd edition). Frank Ebos & Bob Tuck. (1984). Nelson Canada.
Used in grade 9 in school system.

Math is/ Statistics. Frank Ebos, Bob Tuck, and Graham Blundon. (1984). Nelson Canada.
Used in the school system. Covers objectives of the statistics course. Teacher's edition available.

Mathematics for Technical and Vocational Students. John G. Boyce, Louis Margolis, & Samuel Slade. (1989). John Wiley & Sons.
Good coverage of all of Level II, Practical Math I, Geometry I, and Trigonometry I.

Mathematics in Life: Skills, Consumer, and Career Applications. L. Carey Bolster & H. Douglas Woodburn. (1978). Gage Educational Publishing Co.
Usable for all of Level II, Practical Math I, and Trigonometry I.

Mathematics for Daily Living. Harry Lewis. (1975). McCormick-Mathers Publishing Co. (also through Van Nostrand Reinhold Ltd).
Covers the consumer math objectives.

Mathematics Plus! Consumer, Business, and Technical Applications. Bruce R. Shaw, Richard A. Denholm, & Gwendolyn H. Shelton. (1980). Houghton-Mifflin.
Covers all of Level II, plus consumer and business math.

Mathematics for Work and Home [MTW2B-M]. Independent Learning Centre. Kwik-Kopy Printing.
A distance education package designed. Covers most of the objectives of the consumer math course.

Mathematics 3. (1989). Province of British Columbia, Ministry of Advanced Education and Job Training. Provincial Curriculum Publications/Open Learning Agency. ISBN 0-7726-0121-6.
A distance education package which contains a workbook, student test pad, instructor's guide, and answer key. Covers whole numbers, fractions, decimals, percent, rounding, problem solving, the metric system, probability, ratio, statistics, basic algebra and geometry.

Practical Mathematics. [Math 010]. Lana Chow and Earl Johns. (1988). Open Learning Agency. ISBN 0-86498-269-0.
A distance education package designed to provide a grade 10 equivalency for adults who do not intend to take further mathematics courses. Uses practical situations to illustrate the math in everyday life, and covers whole numbers, fractions, decimals, percent, measurement, basic algebra, and basic geometry.

Practical Math. (7th edition). Claude Irwin Palmer & Leonard A. Mrachek. (1986). Gregg Division, McGraw-Hill. ISBN 0-07-048254-3
Suitable for all of Level II, Practical Math I, Algebra I-V, Geometry I, Trigonometry I & II.

Precalculus. Educational Designs, Inc. carried by Monarch Books of Canada. ISBN 0-87694-362-8.
Series of five videos plus workbook which include: the number system; inequalities and intervals; exponents and radicals; graphs; linear functions; algebra of functions and composition; quadratic and polynomial functions; and graphing rational functions.

Pre-Calculus Mathematics. [Math 100]. (1987). Open Learning Agency.
A distance education package which could be used to cover the objectives in our pre-calculus course. Contains learning units, answer keys, assignment files, and the

following text: <u>College Algebra and Trigonometry.</u> Robert Ellis and Danny Gulick. (1984). Harcourt Brace Jovanovich.

<u>Stein's Refresher Mathematics.</u> Edwin I. Stein. (1989). Allyn & Bacon.
An excellent text for all of Level II, as well as topics in Level III (squares, measurement, geometry, algebra, graphs, statistics, consumer and business math). Two workbooks are also available, as follows:

<u>Practical Applications in Mathematics.</u> Edwin I. Stein. (1981). Allyn & Bacon. ISBN 0-20507-161-9.
Contains practical, consumer-related applications in calculations and problems.

<u>Refresher Mathematics Workbook.</u> Edwin I. Stein. (1986). Allyn & Bacon. ISBN 0-20505-161-3.
Contains skills worksheets as additional practice to accompany the text.

<u>Student Course Manuals for Distance Education.</u> Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

<u>Trigonometry: An Introduction to Right Triangles and their Applications.</u> Margaret Hayden Williams & Alan R. Taylor. (1982). Doubleday.
Thin, concise booklet on right-angle triangle trigonometry.

<u>Using Advanced Algebra.</u> Kenneth Travers, LeRoy Dalton, Vincent Brunner, Edward Somerton, and Alan Taylor. (1985). Doubleday Canada, Ltd. ISBN 0-385-25009-6.
Used in the school system. Usable for Algebra I-V. Teacher's edition available.

Other potential texts for use throughout math program:

<u>Elementary Algebra.</u> Angel. Prentice Hall.

<u>Basic Math for Trades and Technologies.</u> Cleaves, Hobbs, & Didenhefer. Prentice Hall.

<u>Basic Algebra.</u> Lewis & Smith. Prentice Hall.

<u>Introductory Algebra 1.</u> Jacobs. Harcourt Brace Jovanovich.

<u>Introductory Algebra 2.</u> Jacobs. Harcourt Brace Jovanovich.

<u>HBJ Geometry.</u> Ulrich. Harcourt Brace Jovanovich.

<u>HBJ Algebra 1.</u> Cocford & Payne. Harcourt Brace Jovanovich.

<u>HBJ Algebra 2.</u> Cocford & Payne. Harcourt Brace Jovanovich.

<u>Pre-Algebra Skills Problem-Solving Applications.</u> (Part 1 & Part 2). Brumfiel, Golden, & Heims. Harcourt Brace Jovanovich.

On-Line Resources: Westviking Gopher

Films and Videos:

Photon Educational Programming Inc.
327 Silverbrook Way N.W.
Calgary, Alberta T3B 3G9
Telephone (403) 288-1926

This company has produced a complete Mathematics 30 (Alberta curriculum) course on tape. There are 85 videocassette lessons which cover most of the objectives in our Algebra I-V, Trigonometry, and Statistics courses. There is an accompanying workbook. A VHS demo is available.

Instructional Materials Centre
Department of Education and Training
951 East White Hills Road
Pleasantville
St. John's, Newfoundland A1A 1R2

The Department has a large number of films and videos on various topics in mathematics. They are often directed toward a child audience, but many are usable for adults also.

Science

Level III Science
Introduction

Although practical, hands-on experiments are not always specified in the learning objectives, the recommended science texts offer a variety of practical laboratory work which should be used. The experimental work which is done will vary, of course, with the facilities available at the institution offering the program. However, students should appreciate that science is based on experimentation. They should be offered, to the extent possible, a full program of practical work designed to emphasize the important process of problem-solving through experimental science in the laboratory. At the same time, they should learn some important techniques, develop essential skills and abilities, become aware of the need for accuracy and precision, and adopt good working habits in terms of health and safety in the laboratory.

Field work studies and investigations play a vital role in science, and should be undertaken with relevance to the subject content. The use of the local environment for field studies and hypothesis testing is recommended. Through their own practical work students should acquire a good, first-hand knowledge of the materials and methods of science. Students should tackle a wide range of qualitative and quantitative laboratory and field work that should be related to the important scientific concepts specified.

Science has undergone some general revisions, in addition, there have been some new courses added.

Biology
IB 3211 Cytology
IB 3212 A/B Living Things
IB 3113 Ecology
IB 3214 Genetics
IB 3115 Evolution
IB 3316 Human Systems

Chemistry
IH 3111 Introductory Chemistry
IH 3112 Chemical Language
IH 3113 Reactions and Equations
IH 3114 The Mole and Stoichiometry
IH 3215 Chemical Bonding
IH 3116 Solution Chemistry
IH 3117 Rates, Reaction and Equilibrium
IH 3118 Acids and Bases
IH 3119 Organic Chemistry

IH 3120 Electrochemistry

Physics
IP 3111 Electricity I
IP 3112 Electricity II
IP 3213 Waves
IP 3214 Fluids and Heat
IP 3215 Mechanics I
IP 3216 Mechanics II

Science (General)
IS 3211 Oceanography
IS 3212 Geology
IS 3213 Physical Science
IS 3214 Environmental Science
IS 3215 Life Science

* Please note new course numbers and values.

IB 3211
Cytology

1. Microscope

1.1 Identify parts of a microscope.
1.2 Describe proper handling and use of microscope using prepared slides.
1.3 Demonstrate technique used to prepare a wet mount slide.
1.4 Determine magnification of a microscope.

2. Structure of Cell

2.1 Define organelle.
2.2 Describe and give function(s) of typical organelles of a cell, including protoplasm, cell membrane, nucleus, nuclear membrane, nucleolus, chromatin, chromosome, mitochondria, endoplasmic reticulum, ribosomes, lysosomes, Golgi apparatus, vacuoles, cell wall, chloroplasts, microtubule, and centrioles.
2.3 Differentiate between structures that are specific to plant cells and those that are specific to animal cells.
2.4 Diagram typical animal and plant cells from microscope observation.

3. Biological Compounds

3.1 Differentiate between organic and inorganic compounds.
3.2 Describe carbohydrates and their functions.
3.3 Describe proteins, including enzymes, and their functions.
3.4 Describe lipids and their functions.
3.5 Describe nucleic acids and their functions.

4. Life Processes in Cell

4.1 Explain transport mechanisms at cellular level, including diffusion, osmosis, active transport, passive transport, phagocytosis, and pinocytosis.
4.2 Describe cellular digestion.
4.3 Describe cellular respiration including glycolysis and fermentation.
4.4 Define homeostatic and metabolic processes.

5. Cellular Reproduction

5.1 Define mitosis.
5.2 Describe stages of mitosis.

6. Biological Organization of Living Things

6.1 Describe cell as basic building block.
6.2 Describe relationship between cells and tissues.
6.3 Describe relationship between tissues and organs.
6.4 Describe relationship between organs and organ systems.
6.5 Describe relationship between organ systems and organisms.
6.6 List major taxonomic divisions of organisms.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Modern Biology. Otto and Towle (1991). Holt, Rinehart and Wilson. ISBN: 0-03-047029-3.

Biology. Miller and Levine (1991). Prentice Hall. ISBN: 0-13-081241-2.

Biology: Living Systems.   Oram, Hummer, and Smoot (1989). Merrill Publishing Company. ISBN: 0-675-06484-8.

Biology. Kormondy and Essenfeld, (1984). Addison-Wesley Publishers. ISBN: 0-201-16816-2

Adult Basic Education (Intermediate Science): The Cell Workbook. Open Learning Institute. VA0060A.

Focus on Life Science. Heimler and Daniel (1989). Merrill Publishing Co. ISBN: 0-675-07426-6.

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

Westviking College Science Video Series, vol. 6 - *Diffusion and Osmosis* (31:06min.) vol. 18 - *A Frog Dissection* (54:00min)

On-Line Resources: Westviking Gopher

IB 3212 A/B
Living Things

1. Taxonomy

1.1 List the <u>five</u> kingdoms of organisms.
1.2 List levels of classification from largest group downward (i.e., kingdom, phylum, etc.).

2. Microbiology

2.1 Identify major divisions (monera, protists, fungi).
2.2 List distinguishing features of each major division.
2.3 Differentiate between prokaryotic and eukaryotic.
2.4 Describe reproduction, food getting, movement, and habitat in each division.
2.5 Examine specimens of each division.
2.6 Differentiate between asexual and sexual reproduction.
2.7 Describe structure and reproduction of a virus.

Part A - Zoology

3. Animal Characteristics

3.1 List characteristics of animals.
3.2 Differentiate between invertebrate and vertebrate.
3.3 List characteristics of the two major divisions (invertebrate and vertebrate).

4. Invertebrates

4.1 Identify major phyla of invertebrates.
4.2 Describe major distinguishing characteristics of each phylum of invertebrates.
4.3 Describe locomotion, reproduction, habitat, food getting and type of transport (circulatory) system for one example of each phylum.
4.4 Examine several specimens of invertebrates.

5. Vertebrates

5.1 Identify characteristics of phylum chordata.
5.2 List major classes of vertebrates.
5.3 Describe major characteristics which distinguish each class of vertebrates.
5.4 Describe locomotion, reproduction, habitat, food getting and type of transport

(circulatory) system for one example of each class.
5.5 Examine several specimens of vertebrates.

Part B - Botany

6. Plant Characteristics

6.1 Define plant and give characteristics of plants.
6.2 Identify functions of the parts of the cell specific to plants.
6.3 Explain process of photosynthesis.
6.4 Differentiate between spores and seeds.
6.5 Differentiate between vascular and non-vascular plants.
6.7 Describe structures of vascular tissue and give their functions.
6.8 Observe movement of substances through vascular tissue (e.g., celery).
6.9 Identify major divisions of plants.

7. Lower Plants

7.1 Identify major groups of algae.
7.2 Describe major characteristics which distinguish each group within algae.
7.3 Describe reproduction, habitat, and presence or absence of vascular tissue in algae.
7.4 Identify major groups of mosses and ferns.
7.5 Describe major characteristics which distinguish mosses and ferns.
7.6 Describe reproduction, habitat, and presence or absence of vascular tissue in mosses and ferns.
7.7 Examine several specimens of algae, mosses, and ferns.

8. Higher Plants

8.1 Differentiate between angiosperms and gymnosperms.
8.2 Describe characteristics of the types of seed plants (angiosperms and gymnosperms).
8.3 Distinguish between two types of angiosperms (monocotyledons and dicotyledons).
8.4 Describe reproduction in seed plants (i.e., the flower).
8.5 Describe parts of a seed and observe development of a seed.
8.6 Describe, through observation, stems and/or leaves and/or seeds of angiosperms (monocots and dicots) and gymnosperms.
8.7 List methods of seed dispersal.

Potential Resources

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Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Biology, Living Systems (Sixth Edition). Oram, Raymond, F. et al. (1989). Merrill. ISBN: 0-675-06484-8.

Biology. Miller, K.R. and J. Levine (1991). Prentice Hall. ISBN: 0-13-081241-2.

Modern Biology. Otto, J.H. et al. (1989). Holt, Rinehart and Winston. ISBN: 0-03-047029-3.

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

Westviking College Science Video Series, vol. 7 - *Photosynthesis* (36:00 min.)

On-Line Resources: Westviking Gopher

IB 3113
Ecology

1. Biosphere

1.1 Define biosphere.
1.2 Describe the <u>three</u> physical zones of the environment (atmosphere, hydrosphere, and lithosphere).
1.3 Determine where life exists in these three physical zones.
1.4 Briefly explain how physical factors limit life in each zone.

2. Biome

2.1 Define biome.
2.2 List biomes of the world.
2.3 Identify the following features of each biome: geography, climate, characteristic plants present, and characteristic animals present.
2.4 Describe local biomes (terrestrial and aquatic).

3. Community

3.1 Define community, producer, consumer, herbivore, carnivore, omnivore, saprophyte, scavenger, and decomposer.
3.2 Distinguish between abiotic and biotic factors.
3.3 List examples of abiotic and biotic factors.
3.4 Describe energy levels in a food chain.
3.5 Relate biomass to energy.
3.6 Describe and give examples of living relationships such as commensalism, mutualism, and parasitism.
3.7 Outline oxygen/carbon dioxide cycle, nitrogen cycle, and recycling of matter.
3.8 With respect to abiotic and biotic factors, analyze one of the following communities: forest, meadow, or pond.
3.9 Study a community by collecting, identifying, and determining, through sampling, the quantitative distribution of organisms. (Optional Project)
3.10 Construct a food web and classify each member with regard to its ecological role (producer, herbivore, etc.).
3.11 Describe at least <u>one</u> predator/prey relationship in the food web of objective 3.10.

4. Population

4.1 Define population.
4.2 Identify population size, population growth, population growth rate, population density, and biotic potential.
4.3 Graph population growth and population growth rate.
4.4 Describe characteristics of exponential and s-growth curves.
4.5 Identify limiting factors for populations (space, predation, parasitism, disease, temperature, light, interspecific and intraspecific competition).
4.6 Describe human influence on population size.

5. Succession

5.1 Define succession.
5.2 Distinguish between primary and secondary succession.
5.3 Outline primary succession.
5.4 Describe <u>two</u> successions (Primary - pond to forest, and Secondary - burned over area to forest).
5.5 Describe human influence on succession.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Modern Biology. Towle (1989). Holt, Rinehart, and Wilson. ISBN: 0-03-047029-3.

Biology, Living Systems. Oram, Hummer, and Smoot (1989). Merrill Pub. Co. ISBN: 0-675-06484-8.

Biology. Miller and Levine (1991). Prentice Hall. ISBN: 0-13-081241-2.

Finding the Balance: For Earth's Sake. Minty, Griffin and Murphy (1993). Breakwater Books. ISBN: 1-55081-065-0

Biological Science: An Ecological Approach. (7th Ed.) BSCS Innovative Science Education, (1992). Kendall / Hunt Publishing Co., Iowa. ISBN: 0-8403-5865-2

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

On-Line Resources: Westviking Gopher

IB 3214
Genetics

1. Meiosis

1.1 Outline structure of a chromosome.
1.2 Define meiosis.
1.3 Describe stages of meiosis.
1.4 Explain significance of meiosis.

2. Basic Genetic Concepts

2.1 Define genetics.
2.2 Distinguish between genotype and phenotype.
2.3 Distinguish between homozygous and heterozygous.
2.4 Distinguish between allele, gene, and chromosome.

3. Mendelian Genetics

3.1 Describe Mendel's work with garden pea plants.
3.2 Explain Mendel's principle of dominance.
3.3 Explain Mendel's concept of unit characters (genes).
3.4 Explain Mendel's law of segregation.
3.5 Explain Mendel's law of independent assortment.

4. Genetic Crosses

4.1 Predict genotype and phenotype of monohybrid and dihybrid crosses using Punnet squares.
4.2 Describe examples of multiple alleles.
4.3 Describe examples of incomplete dominance and codominance.
4.4 Explain sex determination and sex-linked characteristics.
4.5 Predict results of a sex-linked characteristic.

5. Genetic Diseases

5.1 Describe chromosomal conditions (non-disjunction, polyploidy) and related diseases.
5.2 Describe some causes and effects of gene mutations.

6. The Genetic Code

6.1 Outline composition of DNA and RNA.

6.2 Diagram a segment of DNA.

6.3 Diagram replication of DNA.

6.4 Relate DNA to RNA in transferring the genetic code.

6.5 Summarize how genetic code controls protein synthesis.

6.6 Relate protein synthesis to inherited traits.

6.7 Define genetic engineering.

6.8 Discuss economic, social, and ethical issues concerning recent developments in genetic engineering. (Optional Project)

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Biology, Living Systems (Sixth Edition). Oram, Raymond, F. et al. (1989). Merrill. ISBN: 0-675-06484-8.

Biology. Miller, K.R. and J. Levine (1991). Prentice Hall. ISBN: 0-13-081241-2.

Modern Biology. Otto, J.H. et al. (1989). Holt, Rinehart and Winston. ISBN: 0-03-047029-3.

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

On-Line Resources: Westviking Gopher

IB 3115
Evolution

1. Darwin-Wallace Theory of Natural Selection

1.1 Define evolution.
1.2 Outline major principles of Darwin's theory.
1.3 Explain natural selection.
1.4 Explain an example of evolutionary change in terms of Darwin's theory.
1.5 Explain Lamarck's theory regarding law of use and disuse and inheritance of acquired traits.

2. Evidence of Evolution

2.1 Define fossils.
2.2 Describe conditions under which fossils are formed.
2.3 Explain determination of fossil age through rock dating.
2.4 Explain how fossils are used to place the history of living things on geological timetable.
2.5 List and define fields of science which lend support to theories of evolution (e.g., paleontology, genetics, etc.)
2.6 Give evidence from comparative anatomy, comparative embryology, comparative physiology, and comparative biochemistry to support theories of evolution.

3. Adaptation and Evolution

3.1 Define species
3.2 Define population genetics.
3.3 Define speciation.
3.4 Compare morphological, physiological, and behavioral adaptations.
3.5 Explain relationship between adaptations and the ability to survive.
3.6 Explain mutations as a source of variation and a mechanism for selection.
3.7 Differentiate between convergent evolution and divergent evolution (adaptive radiation).
3.8 Describe examples of recent evolution.
3.9 Discuss role of genetic engineering in modern society.
3.10   Outline human evolution. (Optional project)

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Biology, Living Systems (Sixth Edition). Oram, Raymond, F. et al. (1989). Merrill. ISBN: 0-675-06484-8.

Biology. Miller, K.R. and J. Levine (1991). Prentice Hall. ISBN: 0-13-081241-2.

Modern Biology. Otto, J.H. et al. (1989). Holt, Rinehart and Winston. ISBN: 0-03-047029-3.

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

On-Line Resources: Westviking Gopher

IB 3316
Human Systems

1. Skeleto-muscular System

1.1 List <u>three</u> functions of the skeletal system.
1.2 Describe composition of bones.
1.3 List and describe types of joints.
1.4 Differentiate between voluntary and involuntary muscles.
1.5 Compare structure and function of the <u>three</u> types of muscle tissue.
1.6 Explain how skeleto-muscular system functions to produce movement.
1.7 Examine bone and muscle cells under microscope.

2. Digestive System

2.1 Identify structures of digestive system and outline their importance.
2.2 Describe physical and chemical processes which occur as food passes through digestive system.
2.3 List nutrients and end-products of digestion.
2.4 Describe absorption of the end-products of digestion into circulatory system.
2.5 Use a laboratory experiment to investigate digestion.

3. Circulatory System

3.1 Describe circulatory system as a transport system.
3.2 Identify components of blood and state function(s) of each.
3.3 Examine blood cells under microscope.
3.4 Diagram structure of heart.
3.5 Trace path of blood through structures of the body, including pulmonary and systemic circulation.
3.6 Describe, briefly, lymphatic system and its function.

4. Respiratory System

4.1 List structures that make up respiratory system.
4.2 Explain gas exchange that takes place at alveoli.
4.3 Describe mechanics of breathing.
4.4 Construct a model of the lungs.
4.5 Describe function of hemoglobin in carrying oxygen and carbon dioxide.

5. Excretory System

5.1 List waste products removed by excretory system.
5.2 Differentiate between metabolic waste and solid waste.
5.3 Describe structures of excretory system.
5.4 Diagram parts of urinary system.
5.5 Explain operation of human kidney, including nephron.
5.6 Explain function of skin and lungs in excretion.

6. Nervous System

6.1 List main structures of nervous system (central and peripheral).
6.2 Outline function of these structures.
6.3 Diagram a typical nerve cell (neuron).
6.4 Examine nerve tissue under microscope.
6.5 Describe function of the parts of a typical nerve cell in transmission of a nerve impulse.
6.6 Explain sequence of events in a nervous response (reflex arc).
6.7 Distinguish between reflex, innate, and intelligent behaviour.
6.8 Describe sense organs.

7. Endocrine System

7.1 Distinguish between nervous and chemical control.
7.2 List endocrine glands.
7.3 Give one hormone produced by each along with its effect on the body.
7.4 Outline function of pituitary gland.

8. Reproductive System

8.1 List structures of male reproductive system.
8.2 List structures of female reproductive system.
8.3 Outline steps from fertilization to birth.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Modern Biology. Otto and Towle (1989). Holt, Rinehart and Wilson. ISBN: 0-03-047029-3.

Biology, Living Systems. Oram, Hummer and Smoot (1989). Merrill Pub. Co. ISBN: 0-675-06484-8.

Biology. Edward Kormandy and Bernice Essarfield (1984). Addison-Wesley Publications. ISBN: 0-201-16816-2

Biology. Miller and Levine (1991). Prentice Hall. ISBN: 0-13-081-241-2

Intermediate Science: Human Biology. Open Learning Agency. VA0103A

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

Westviking College Science Video Series, Vol. 1 - *The Respiratory System : An Overview* (18:00 min.) vol. 3 - *The Digestive System : Starch* (30:00 min.) vol. 4 - *The Digestive System: Protein* (27:45 min.) vol. 5 - *Mechanics of Breathing* (16:30 min)

On-Line Resources: Westviking Gopher

IH 3111
Introductory Chemistry

1. Chemistry - A Branch of Science

1.1 Define chemistry.
1.2 Give examples of chemistry as a natural occurrence in the environment and home.
1.3 Describe significance of symbols in chemical language.
1.4 Define element.
1.5 Match names and symbols of first twenty elements.
1.6 Identify rules of safety for chemistry lab.

2. Structure of Matter

2.1 Describe Dalton's atomic model.
2.2 Describe evolution of theories regarding structure of atom from Dalton's model, through Thomson's, Rutherford's, and Bohr's models to modern quantum theory.
2.3 Distinguish between electrons, protons, and neutrons in terms of charge, mass, and placement in the structure of "modern" atom.
2.4 Define isotopes, atomic number, mass number, and atomic mass.
2.5 Calculate mass numbers, number of electrons, protons, and neutrons given appropriate information.

3. Periodicity

3.1 Describe contribution of Mendeleev to development of modern periodic table.
3.2 Describe periodicity of properties of elements using several examples (e.g. melting points, atomic radius, ionization energy, etc.).
3.3 Distinguish between families and periods of elements.
3.4 Define physical properties.
3.5 Distinguish between physical properties of metals and non-metals.
3.6 Identify position of metals, non-metals, noble gases, halogens, alkali metals, alkaline earths, transition elements, hydrogen, and lanthanide/actinide series on periodic table.
3.7 Explain concept of valence electrons.
3.8 Distinguish between metals and non-metals in terms of types of ions they form.
3.9 Describe formation of ions (cations and anions) in terms of a gain or loss of electrons.

3.10   Draw Bohr energy level diagrams for atoms and ions of first twenty elements, where applicable.

3.11   Describe how Bohr model of atom and periodic table are matched.

3.12   Predict ionic charge for ions of the main group elements from the group number.

3.13   Explain why hydrogen has a unique position in periodic table.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

ALCHEM 10. (1987) J.M. LeBel Enterprises Ltd. Available from school supplies.

Modern Chemistry. (1990) Tzimopoulos, N.D., et al. Holt, Rinehart and Winston. ISBN: 0-03-014502-3.

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Chemistry: A Modern Course. (1987) Smoot, Price & Smith. Merrill Pub. Co. ISBN: 0-02-954021-6

ALCHEM Chemistry. (1990). J.M. LeBel Enterprises Ltd. ISBN: 920008-31-3

Chemistry, A First Course, (1988). Rayner-Canham, G., et al., Addison-Wesley Publishers. ISBN: 0-201-17880-X

Chemicals In Action, (1987). Donovan, T.R., Holt, Rinehart, and Winston of Canada, Limited. ISBN: 0-03-921975-5

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

On-Line Resources: Westviking Gopher

IH 3112
Chemical Language

Prerequisite ➡ IH 3111

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1. Names, Formulas, and Properties of Molecular Substances

1.1 Distinguish between elements and compounds.
1.2 Define molecular substances.
1.3 Distinguish between molecular elements from molecular compounds.
1.4 Define covalent bonding.
1.5 Illustrate covalent bonding in simple substances such as molecular hydrogen (H_2).
1.6 Define molecule.
1.7 Distinguish between molecular and structural formulas.
1.8 Examine rules for naming molecular compounds.
1.9 Given names, write formulas for binary molecular compounds.
1.10　Given formulas, write names for binary molecular compounds.
1.11　Match formulas with names of common molecular elements and compounds such as water, ozone, ammonia, molecular hydrogen, etc.

2. Names, Formulas, and Properties of Ionic Substances

2.1 Define ionic compounds in terms of types of atoms involved.
2.2 Describe ionic bonding as caused by transfer of electrons.
2.3 Distinguish between molecular and empirical formulas.
2.4 Examine rules used in naming binary ionic compounds.
2.5 Given names, write formulas for binary ionic compounds.
2.6 Given formulas, write names for binary ionic compounds.
2.7 Distinguish between simple, complex, and polyatomic ions.
2.8 Match names of common complex ions to their formulas and recognize their associated charges.
2.9 Using a table of prefixes, write names or formulas for hydrated compounds.
2.10　Write formulas and names for compounds containing complex ions.
2.11　Define solubility.
2.12　Determine whether ionic compounds have low or high solubility using solubility table.

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3. Names, Formulas, and Properties of Acids and Bases

3.1 Define acids in terms of hydrogen ions.
3.2   Examine rules for naming acids.
3.3 Distinguish between binary acids and oxo acids.
3.4 Define bases in terms of hydroxides.
3.5 Examine rules for naming bases.
3.6 Write formulas for bases given names of bases.
3.7 Compare properties of acids and bases.
3.8 Compare physical properties of molecular compounds, ionic compounds, acids, and bases.
3.9 Distinguish between molecular compounds, ionic compounds, acids, and bases using chemical lab tests.

Potential Resources

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On-Line Resources: Westviking Gopher

IH 3113
Reactions and Equations

Prerequisites ➡ IH 3111 and IH 3112

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1. Chemical Reactions and Equations

1.1 Recognize evidence that chemical reactions have taken place (energy change, colour change, precipitate, and/or gas formation).
1.2 Define reaction, reactant, product, and chemical equation.
1.3 Distinguish between exothermic and endothermic reactions.
1.4 Write word equations from statements describing the reaction.
1.5 Define terms: solution, solvent, solute, aqueous solution, soluble, and insoluble.
1.6 Write chemical equations including symbols for states of matter [(s), (l), (g), (aq)].
1.7 Explain law of conservation of mass and atoms.
1.8 Recognize conservation of mass and atoms in chemical reaction.
1.9 Examine a method for balancing chemical equations.
1.10 Balance chemical equations.

2. Predicting Chemical Reactions

2.1 Recognize the following types of reactions: composition, decomposition, single and double displacement (replacement), hydrocarbon combustion, and others.
2.2 Observe examples of each of the above reaction types.
2.3 Use element's group number to predict ratios between atoms to form a neutral molecule.
2.4 For the following composition reactions predict products:
metal + oxygen
metal + non-metal
2.5 For the following decomposition reactions predict products:
heating carbonates
heating hydrates
electrolysis of water
2.6 Use element's group number to predict ratios between atoms and common complex ions to form a neutral molecule.
2.7 Define precipitate.
2.8 Use general rules of solubility to predict products in double displacement reactions.
2.9 Predict products in reactions between acids and bases.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

ALCHEM 10. (1987) J.M. LeBel Enterprises Ltd. Available from school supplies.

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Chemicals In Action, (1987). Donovan, T.R., Holt, Rinehart, and Winston of Canada, Limited. ISBN: 0-03-921975-5

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

Westviking College Science Video Series, vol. 8 - *Chemical Reactions* (18:14min.)

On-Line Resources: Westviking Gopher

IH 3114
The Mole and Stoichiometry

Prerequisites ➭ IH 3111, IH 3112, and IH 3113

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1. Mathematical Skills

1.1 Demonstrate proper use of SI units and symbols.
1.2 Demonstrate use of rules for simple mathematical operations involving scientific notation.
1.3 Define and distinguish between accuracy and precision as they relate to measurement.
1.4 Explain what is meant by significant digits.
1.5 Review and apply rules governing significant digits when adding, subtracting, multiplying, and dividing measured values.
1.6 Compute percent error given appropriate data.
1.7 Demonstrate use of ratio and proportion.

2. Mole Concept

2.1 Define mole in terms of an Avogadro number of particles.
2.2 Define atomic masses in terms of atomic units.
2.3 Define molar mass.
2.4 Calculate molar masses of elements and compounds using atomic molar masses.
2.5 Demonstrate correct care and use of a balance.
2.6 Weigh one mole of selected substances for comparison.
2.9 Define STP.
2.10   Define molar volume of gases.

3. Mole Concept in Calculations

3.1 Compute number of moles of a substance, given mass, number of particles, or volume at STP.
3.2 Compute mass, number of particles, or volume (STP) of a substance given number of moles.

4. Stoichiometric Calculations and Reactions

4.1 Explain stoichiometry in terms of practical applications [e.g. cooking and in industrial processes].

4.2 Calculate moles, mass, or volume (STP) of a reactant or product given moles, mass, or volume (STP) of another substance in a reaction.

4.3 Explain concept of a limiting reagent in a chemical reaction.

4.4 Perform a stoichiometric reaction to illustrate the accuracy of stoichiometric predictions and calculate percentage error.

Potential Resources

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On-Line Resources: Westviking Gopher

IH 3215
Chemical Bonding

Prerequisites ➡ IH 3111, IH 3112, IH 3113, and IH 3114

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1. Basic Bonding Concepts

1.1 Recognize that variations in properties (e.g. melting point, hardness, viscosity, ductility, conductivity, etc.) can be attributed to type of bonding.
1.2 Define chemical bonds in terms of simultaneous attraction between particles of neighbouring atoms.
1.3 Review Bohr energy level diagrams for first <u>twenty</u> elements.
1.4 Explain importance of valence electrons in bonding.
1.5 Explain how to draw Lewis electron-dot diagrams.
1.6 Draw Lewis electron-dot diagrams for first <u>twenty</u> elements.

2. Covalent Bonding Concepts

2.1 Explain covalent bonding between hydrogen atoms as they approach to form a hydrogen molecule.
2.2 Draw Lewis diagrams to represent covalent bonding in simple molecules containing single and multiple bonds.
2.3 Construct models from Lewis diagrams of simple molecules with single and multiple bonds using molecular model kits.
2.4 Predict shape of simple molecules about central atom or atoms using VESPR theory (linear, bent, tetrahedral, trigonal planar, trigonal pyramidal).
2.5 Draw structural formulas from Lewis diagrams of simple molecules with single and multiple bonds.
2.6 Define electronegativity.
2.7 Explain formation of bond dipoles due to differences in electronegativity of atoms.
2.8 Distinguish between polar and non-polar bonds with respect to electronegativity of atoms.
2.9 Predict polarity of simple molecules based on molecular shape and polarity of individual bonds within the molecule.
2.10 Explain formation of polyatomic ions using concept of polar coordinate bonding.

3. Property Differences of Matter in Terms of Intermolecular Forces

3.1 Distinguish between intermolecular forces and intramolecular forces.
3.2 Identify the two types of Van der Walls forces.
3.3 Explain dipole-dipole forces between polar molecules.
3.4 Explain London dispersion forces between molecules.
3.5 Identify two factors which affect size of London dispersion forces between molecules.
3.6 Explain hydrogen bonding between molecules.
3.7 Explain differences in boiling points or melting points between molecular substances based on types of intermolecular forces.

4. Ionic Bonding

4.1 Explain ionic bonding in terms of electronegativity and types of particles involved.
4.2 Explain arrangement of ions within ionic crystals.
4.3 Describe characteristics of compounds with ionic bonding.
4.4 Compare non-polar covalent bonds, polar covalent bonds, and ionic bonds in terms of electronegativity and the sharing/transfer of electrons.

5. Metallic Bonding

5.1 Compare properties of metals with those of ionic and molecular solids.
5.2 Explain concept of metallic bonding.
5.3 Explain some properties of metals in terms of metallic bonding (e.g. conductivity, reflection of light, etc).

6. Network Covalent Bonding

6.1 Explain concept of network covalent bonding.
6.2 Apply concept of network covalent bonding to explain differences in properties (e.g. hardness, melting point, etc.) between substances such as diamond, silicon dioxide, and silicon carbide and molecular substances such as graphite.

7. Comparing Types of Forces

7.1 Compare relative attractive strength of covalent bonds, ionic bonds, metallic bonds, dispersion forces, hydrogen bonds, and dipole-dipole forces.

Potential Resources

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Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

On-Line Resources: Westviking Gopher

IH 3116
Solution Chemistry

Prerequisites ➡ IH 3111, IH 3112, IH 3113, and IH 3114

1. Basic Concepts Related to Solutions

1.1 Define solution, solvent, solute, dilute, concentrated, saturated, unsaturated, and supersaturated.
1.2 Describe types of solutions (solid, liquid, gases, and aqueous).
1.3 Define molar concentration (molarity).

2. Solution Preparation

2.1 Perform calculations involving the following: mass, moles, volume, and molar concentration.
2.2 Describe procedure for preparing a solution of given concentration and volume.
2.3 Demonstrate correct use of a pipette and a volumetric flask
2.4 Prepare solution given molar concentration and volume.
2.5 Perform calculations required for diluting solutions.
2.6 Prepare dilute solution from one of higher concentration.

3. Property Differences of Matter in Terms of Intermolecular Forces

3.1 Explain dynamic equilibrium in saturated solutions
3.2 Define molar solubility.
3.3 Calculate molar solubilities of substances given mass and volume at a given temperature.
3.4 Explain how the nature of the solvent, the solute, temperature, and pressure affect the solubility of solids, liquids, and gases in liquid solvents.
3.5 Define electrolytes and non-electrolytes.
3.6 Experimentally distinguish between electrolytes and non-electrolytes.
3.7 Write dissociation equations for electrolytic solutions.
3.8 Calculate concentration of specific ions in solutions of electrolytes.
3.9 Calculate concentration, moles, volume, or mass of a given reactant or product, given concentration, moles, volume, or mass of one other reactant or product.

Potential Resources

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Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

Westviking College Science Video Series, vol. 16 - *Solutions* (46:25 min.)

On-Line Resources: Westviking Gopher

IH 3117
Rates, Reaction, and Equilibrium

Prerequisites ➠ IH 3111, IH 3112, IH 3113, and IH 3114

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1. Rates of Chemical Reactions

1.1 Describe kinetic molecular theory and collision theory.
1.2 Define rate of reaction.
1.3 List factors that affect rate of reaction (concentration, temperature, pressure, catalyst, surface area, and nature of reactants).
1.4 Measure rate of reaction while varying concentration, temperature and use of catalyst.
1.5 Define activation energy, activated complex, and heat of reaction.
1.6 Draw potential energy diagrams for fast and slow endo/exothermic reactions.
1.7 Using kinetic molecular theory and collision theory, explain effects of concentration, temperature, pressure, surface area, use of catalyst, and nature of reactant on reaction rate.
1.8 Define reaction mechanisms, rate determining step, and reaction intermediates.

2. Chemical Equilibrium

2.1 Define chemical equilibrium.
2.2 List factors affecting equilibrium (concentration, temperature, pressure, and volume).
2.3 Demonstrate changes in equilibrium with varying concentration and temperature.
2.4 State LeChatelier's principle.
2.5 Using LeChatelier's principle, explain effects of concentration, temperature and pressure on equilibrium.
2.6 Apply LeChatelier's principle to analyze the effects of concentration, temperature and pressure on equilibrium in an industrial process (e.g. the Haber process).
2.7 Explain why catalysts and changes in surface area have no effect on equilibrium.
2.8 Write equilibrium constant expressions given equilibrium equations.

Potential Resources

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On-Line Resources: Westviking Gopher

IH 3118
Acids and Bases

Prerequisites ➡ IH 3215, IH 3116, and IH 3117

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1. Definitions of Acids and Bases

1.1 Define an operational definition.
1.2 Determine operational definitions of acids and bases by comparing properties of samples of each.
1.3 Define a conceptual definition.
1.4 Describe evolution of conceptual definitions of acids and bases from Arrhenius definition to Bronsted-Lowry theory.
1.5 Determine limitations of theories discussed in objective 1.4.

2. Chemical Equilibrium

2.1 Define strong acids and bases in terms of hydronium ions (H_3O^+) and hydroxide ions (OH^-).
2.2 Define weak acids and bases in terms of percent reaction
2.3 Distinguish between strong and concentrated acids and bases.
2.4 Distinguish between weak and dilute acids and bases.
2.5 Using Bronsted-Lowry theory and a table of relative strengths of acids and bases, predict products for acid/base reactions given reactants.
2.6 Describe dissociation of water using Bronsted-Lowry definition.
2.7 State equilibrium constant expression for water at 25 degrees Celsius.
2.8 Use concentration constant expression for water to calculate concentrations of hydrogen and hydroxide ions in solutions.
2.9 Explain pH scale in terms of hydronium ions.
2.10 Perform calculations relating pH and ion concentration.

3. Determining Concentration of Acids and Bases

3.1 Define titration and indicator.
3.2 Explain how indicators work.
3.3 Perform stoichiometric calculations related to acid-base titrations by using mole method.
3.4 Demonstrate use of titration techniques in determining concentration of acids or bases.

Potential Resources

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Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

Westviking College Science Video Series, vol. 17 - *Acids and Bases* (41:50min.)

On-Line Resources: Westviking Gopher

IH 3119
Organic Chemistry (Optional)

1. Organic Compounds

1.1 Define organic compounds.
1.2 Distinguish between organic and inorganic compounds.
1.3 Name some common organic compounds.
1.4 Define hydrocarbon.
1.5 Classify organic substances as hydrocarbons and hydrocarbon derivatives.
1.6 List common organic and inorganic substances found in the home.

2. Hydrocarbons

2.1 Define terms aliphatic, aromatic, saturated, unsaturated, alkane, alkene, and alkyne.
2.2 Distinguish between aliphatic and aromatic hydrocarbons.
2.3 Distinguish between saturated and unsaturated hydrocarbons.
2.4 Divide aliphatic hydrocarbons into alkanes and cycloalkanes.
2.5 Analyze structural formulas for alkanes with branches (isomerism).
2.6 Predict name and structural formula for members of alkane series (straight chains with ten carbons or less).
2.7 Predict name and structural formula for members of alkene family, with one multiple bond only.
2.8 Predict name and structural formula for members of alkyne family, with one multiple bond only.
2.9 Describe some physical and chemical properties of aliphatic hydrocarbons.
2.10   Analyze types of reactions which alkanes, alkenes, and aklynes undergo.
2.11   Analyze processes of fractional distillation, catalytic cracking and polymerization.

3. Aromatic Hydrocarbons

3.1 Describe bond type found in aromatics.
3.2 Describe physical and chemical properties of benzene.
3.3 Name derivatives of mono-substituted alkyl benzene.
3.4 Analyze types of reactions which aromatics undergo.
3.5 Compare reaction types of aromatic, hydrocarbons, to reaction types of aliphatic hydrocarbons.
3.6 Describe kinds of hydrocarbons used as fuels.
3.7 Compare hydrocarbon fuels to other energy sources.
3.8 Discuss effects of hydrocarbon use on environment.

ABE Level III Curriculum

Potential Resources

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Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

On-Line Resources: Westviking Gopher

IH 3120
Electrochemistry (Optional)

> ### Prerequisites ➡ IH 3215, IH 3116, IH 3117, IH 3118, and IH 3119

1. Oxidation-Reduction Equations

1.1 Define reduction and oxidation in terms of oxidation states.
1.2 Define oxidizing agent, reducing agent, and redox reaction.
1.3 Identify oxidizing and reducing agents, given examples.
1.4 Write half-reactions for redox reactions.
1.5 Use half-reactions to produce net ionic equations for redox reactions.
1.6 Predict redox reactions in a given chemical system using reduction potential tables.
1.7 Determine whether or not reactions will be spontaneous.

2. Electrochemical Cell

2.1 Define electrochemical cell.
2.2 Define anode and cathode.
2.3 Examine anode and cathode reactions for an electrochemical cell.
2.4 Explain electron and ion movement in electrochemical cells.
2.5 Determine voltages of electrochemical cells, using examples.
2.6 Construct an electrochemical cell.
2.7 Discuss problem of recharging electrochemical cells.
2.8 Analyze chemical composition of commercial cells.
2.9 Describe safe method of boosting lead storage battery.

3. Electrolytic Cells

3.1 Define electrolysis and electrolysis reactions.
3.2 Examine several examples of useful electrolysis reactions.
3.3 Write anode and cathode reactions for an electrolytic cell.
3.4 Determine minimum cell voltage for given electrolysis reactions.
3.5 Analyze some common electrolytic cells (eg. electrolysis of water, electroplating).
3.6 Analyze industrial electrolytic process used in aluminum production.

Potential Resources

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Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

On-Line Resources: Westviking Gopher

IP 3111
Electricity I

1. Static Electricity

1.1 Explain structure of atom.
1.2 Distinguish between electrical conductors and electrical insulators using atomic theory.
1.3 State law of electric charge.
1.4 Demonstrate properties of static charge.
1.5 Identify several applications of static electricity.
1.6 Describe processes of charging by conduction and by induction.
1.7 Describe distribution of charge on a conductor.
1.8 Describe construction and operation of a simple electroscope.
1.9 Diagram electrostatic fields which exist in the region surrounding a positive point charge, a negative point charge, and combinations of static charges.
1.10 State Coulomb's Law.
1.11 Use Coulomb's Law to calculate electrical force.

2. Circuits

2.1 Define electricity terms (current, voltage, resistance) giving representative symbols and units.
2.2 State Ohm's Law.
2.3 Perform calculations involving Ohm's Law.
2.4 Compare characteristics of series and parallel circuits.
2.5 Draw schematic diagrams of series and parallel circuits.
2.6 State Kirchhoff's Current Law and Kirchhoff's Voltage Law.
2.7 Solve for unknowns [current(s), voltage(s), etc.] in series, parallel, and simple combination circuits.
2.8 Describe factors affecting resistance in a conductor.
2.9 Demonstrate use of electrical meters.
2.10 Use electrical meters to measure voltage, current, and resistance.
2.11 Identify functions of fuses, circuit breakers, and ground wires.
2.12 Distinguish between alternating current and direct current.
2.13 Differentiate between electron current flow and conventional current flow.

ABE Level III Curriculum

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Fundamentals of Physics: An Introductory Course. (Second Edition) Martindale, David G., et al. (1987). D.C. Heath Canada Ltd. ISBN: 0-669-95113-7.

Physics: Principles and Problems. Zitzewitz, Paul W. and Neff, Robert F. (1992). Glencoe/McGraw-Hill. ISBN: 0-675-17264-0.

Conceptual Physics. Hewitt, Paul G. (1987). Addison-Wesley. ISBN: 0-201-28651-3.

Physics for a Modern World. Hirsch, Alan J. (1986). John Wiley and Sons. ISBN: 0-471-79742-2.

Physics Today 1. Wolfe, T.J. Elgin, et al. (1989). Prentice-Hall Canada Inc., Scarborough, Ontario. ISBN: 0-13-669391-1.

Technical College Physics (3rd Ed.) J. D. Wilson, Saunders College Publishing (1992), ISBN 0-03-03898-9
  Also, Student Solution Manual ISBN 0-03-074586-1 , and
    Instructor's Resource Manual ISBN 0-03-07459-8

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

Conceptual Physics Alive! , Hewitt, Paul G.,
  This is a collection of 34 tapes (available individually or as a complete set) which features Professor Hewitt lecturing a class of high school students on various physics topics. Each tape is approximately 40 to 50 minutes long and costs approximately $45.

        Available from: Arbor Scientific
                P.O. Box 2750
                Ann Arbor, MI 48106-2750
                1-(800)-367-6695
                (313) 973-6200

On-Line Resources: Westviking Gopher

IP 3112
Electricity II

Prerequisite ➡ IP 3111

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1. Electrical Energy

1.1 Describe six sources of electricity.
1.2 Define power.
1.3 Calculate power.
1.4 Define electrical energy.
1.5 Calculate electrical energy.
1.6 Calculate costs of electrical energy used (given utility rate).
1.7 Describe typical electrical energy distribution network.
1.8 Describe factors affecting power loss in distribution of electricity.

2. Magnetism and Electromagnetism

2.1 Describe magnetic fields and forces.
2.2 Sketch magnetic fields around a bar magnet, a horseshoe magnet, two like poles, and two unlike poles.
2.3 Describe magnetic effects of electricity.
2.4 Describe factors that affect strength of an electromagnet.
2.5 Construct an electromagnet.
2.6 Determine orientation of a magnetic field around a current carrying conductor.
2.7 Determine orientation of a magnetic field around a current carrying coil.
2.8 Describe magnetic forces on moving charges.
2.9 Describe operation of a common d.c. electric door bell.
2.10 Explain principles of electromagnetic induction.
2.11 State Lenz's Law.
2.12 Describe an application of Lenz's Law.
2.13 Explain principles of converting mechanical energy to electrical energy as they apply to AC/DC generators.
2.14 Apply principle of induction to transformers.
2.15 Solve problems involving transformers.

Potential Resources

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Physics: Principles and Problems. Zitzewitz, Paul W. and Neff, Robert F. (1992). Glencoe/McGraw-Hill. ISBN: 0-675-17264-0.

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                        (313) 973-6200

On-Line Resources: Westviking Gopher

IP 3213
Waves

1. Properties of Waves

    1.1 Describe nature of waves.
    1.2 Define wavelength, frequency, period, amplitude and phase.
    1.3 Describe transverse and longitudinal waves.
    1.4 Solve problems using wave formula.
    1.5 Describe principle of reflection.
    1.6 Describe principle of refraction.
    1.7 Apply principle of wave interference.
    1.8 Define polarization.
    1.9 Describe electromagnetic spectrum.

2. Sound

    2.1 Define sound.
    2.2 Describe characteristics of sound.
    2.3 Calculate effect of temperature on speed of sound.
    2.4 Solve problems involving distance, time, and speed of sound.
    2.5 Describe mechanics of hearing.
    2.6 Describe principles involved in sonar.
    2.7 Define and describe superposition theory.
    2.8 Describe resonance.
    2.9 Describe Doppler Effect.
    2.10   Perform calculations involving Doppler Effect.

3. Nature of Light

    3.1 Describe wave particle duality of light.
    3.2 List sources of light.
    3.3 Describe transmission of light.
    3.4 Relate speed of light to frequency and wavelength.
    3.5 State inverse-squared law of light intensity.
    3.6 Give a numerical example which demonstrates the inverse-squared relationship between light intensity and distance to the source.

4. Colour

4.1 Describe colour, or visible light spectrum.
4.2 Demonstrate refraction of white light into the colour spectrum.
4.3 Compare wavelengths of the various colours.
4.4 Describe primary colours and primary pigments.
4.5 Compare mixing of colours to mixing of pigments.

5. Reflection

5.1 Describe <u>three</u> types of reflection.
5.2 Apply laws of reflection to plane, concave, and convex mirrors.
5.3 Draw ray diagrams to show images produced by plane, concave, and convex mirrors.
5.4 Solve reflection problems.

6. Refraction

6.1 Review refraction.
6.2 Define index of refraction.
6.3 State Snell's Law.
6.4 Solve refraction problems using Snell's Law.
6.5 Illustrate total internal reflection.
6.6 Draw ray diagrams to show image of objects produced by concave and convex lenses.
6.7 Solve problems using lens and magnification formulas.

7. Optical Instruments

7.1 List the four functions of optical instruments.
7.2 Give examples of optical instruments.
7.3 Apply principles of light to pinhole camera.
7.4 Describe mechanics of sight.
7.5 Compare function of eye with that of pinhole camera.
7.6 Describe vision problems and how to correct them.
7.7 Apply principles of light to telescope and microscope.
7.8 Describe how polarization is used in optical instruments.

Potential Resources

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Physics: Principles and Problems. Zitzewitz, Paul W. and Neff, Robert F. (1992). Glencoe/McGraw-Hill. ISBN: 0-675-17264-0.

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Physics for a Modern World. Hirsch, Alan J. (1986). John Wiley and Sons. ISBN: 0-471-79742-2.

Physics Today 1. Wolfe, T.J. Elgin, et al. (1989). Prentice-Hall Canada Inc., Scarborough, Ontario. ISBN: 0-13-669391-1.

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                               (313) 973-6200

On-Line Resources: Westviking Gopher

IP 3214
Fluids and Heat

1. Fluids

1.1 Identify properties of fluids.
1.2 Define density of fluids.
1.3 Perform calculations using density formula.
1.4 Define pressure.
1.5 Perform calculations using pressure formula(s).
1.6 State Archimedes' Principle.
1.7 Apply Archimedes' Principle to objects immersed in a fluid.
1.8 Define surface tension in terms of adhesion and cohesion.
1.9 Define capillarity.
1.10 State Bernoulli's Principle.
1.11 Describe applications of Bernoulli's Principle.
1.12 State Pascal's Principle.
1.13 Apply Pascal's Principle to hydraulic devices.

2. Thermometry and the Nature of Heat

2.1 Describe kinetic molecular theory of heat.
2.2 Explain superconductivity using kinetic molecular theory of heat.
2.3 Distinguish between heat and temperature.
2.4 Compare Fahrenheit, Celsius, and Kelvin scales.
2.5 Measure temperature of given substances.

3. Heat Transfer

3.1 Define heat transfer.
3.2 Describe conduction.
3.3 Describe convection.
3.4 Describe radiation.
3.5 Give examples of each type of heat transfer.

4. Heat Measurement

4.1 Identify units used to measure heat.
4.2 Define specific heat.
4.3 Calculate quantity of heat lost or gained with a given change in temperature.
4.4 Define latent heat of fusion.
4.5 Define latent heat of vaporization.

4.6 Draw graph of temperature versus heat for water as its temperature is increased from below the freezing point to above the boiling point showing changes of state.

4.7 Calculate latent heat.

4.8 Perform calculations using the relationship, heat loss = heat gain.

4.9 Calculate, experimentally, latent heat of fusion of water.

5. Expansion

5.1 Explain expansion in terms of kinetic molecular theory.

5.2 Define coefficient of linear expansion.

5.3 Calculate change in length during expansion.

5.4 List practical examples of provisions made to accommodate expansion.

5.5 Describe irregular expansion of water [include a graph].

Potential Resources

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Physics: Principles and Problems. Zitzewitz, Paul W. and Neff, Robert F. (1992). Glencoe/McGraw-Hill. ISBN: 0-675-17264-0.

Conceptual Physics. Hewitt, Paul G. (1987). Addison-Wesley. ISBN: 0-201-28651-3.

Physics for a Modern World. Hirsch, Alan J. (1986). John Wiley and Sons. ISBN: 0-471-79742-2.

Physics Today 1. Wolfe, T.J. Elgin, et al. (1989). Prentice-Hall Canada Inc., Scarborough, Ontario. ISBN: 0-13-669391-1.

Technical College Physics (3rd Ed.) J. D. Wilson, Saunders College Publishing (1992), ISBN 0-03-03898-9
   Also, Student Solution Manual ISBN 0-03-074586-1 , and
       Instructor's Resource Manual ISBN 0-03-07459-8

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Available from:	Arbor Scientific
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Westviking College Science Video Series, vol. 2 - *Surface Tension* (20.22 min.) vol. 10 - *Density and Specific Gravity* (30.00 min.) vol. 12 - *Fluid Pressure* (32.00 min.) vol. 15 - *Heat and Temperature* (41.30min.)

On-Line Resources: Westviking Gopher

IP 3215
Mechanics I

1. Motion

1.1 Differentiate between distance, position and displacement.
1.2 Differentiate between speed and velocity.
1.3 Solve problems relating speed, distance and time.
1.4 Define uniform acceleration.
1.5 Calculate average velocity of a uniformly accelerated body.
1.6 Define relative motion.
1.7 Solve problems relating acceleration, velocity and distance
1.8 Apply acceleration concept to free-fall problems.
1.9 Define projectile motion.
1.10 Solve projectile motion problems.

2. Forces

2.1 Define force.
2.2 Describe the four types of forces (strong, weak, etc.)
2.3 Contrast parallel with angular forces.
2.4 State Newton's Second Law of Motion.
2.5 Solve problems using Newton's Second Law.
2.6 Define torque.
2.7 Calculate torques.
2.8 State the two conditions required for equilibrium.
2.9 Solve equilibrium problems.

3. Vectors

3.1 Distinguish between vector and scalar quantities.
3.2 Represent vectors graphically.
3.3 Add vectors graphically.
3.4 Define resultant.
3.5 Define equilibrant.
3.6 Resolve vectors into components using graphical methods.
3.7 Add vectors using mathematical method.
3.8 Resolve a vector into its components using mathematical method.

Potential Resources

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Fundamentals of Physics: An Introductory Course. (Second Edition) Martindale, David G., et al. (1987). D.C. Heath Canada Ltd. ISBN: 0-669-95113-7.

Physics: Principles and Problems. Zitzewitz, Paul W. and Neff, Robert F. (1992). Glencoe/McGraw-Hill. ISBN: 0-675-17264-0.

Conceptual Physics. Hewitt, Paul G. (1987). Addison-Wesley. ISBN: 0-201-28651-3.

Physics for a Modern World. Hirsch, Alan J. (1986). John Wiley and Sons. ISBN: 0-471-79742-2.

Physics Today 1. Wolfe, T.J. Elgin, et al. (1989). Prentice-Hall Canada Inc., Scarborough, Ontario. ISBN: 0-13-669391-1.

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                                (313) 973-6200

On-Line Resources: Westviking Gopher

IP 3216
Mechanics II

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1. Newton's Laws

1.1 State Newton's First Law of Motion.
1.2 List examples of Newton's First Law.
1.3 Review Newton's Second Law of Motion.
1.4 Define the metric unit of force.
1.5 State Newton's Third Law of Motion.
1.6 List examples of Newton's Third Law.

2. Force and Friction

2.1 Distinguish between mass and weight.
2.2 Calculate force given mass.
2.3 Define normal force.
2.4 Define friction.
2.5 Define coefficient of friction.
2.6 Differentiate between static friction and kinetic friction.
2.7 Calculate force of friction.
2.8 Summarize advantages and disadvantages of friction.

3. Impulse and Momentum

3.1 Define linear momentum.
3.2 Solve problems relating mass, velocity, and momentum.
3.3 Restate Newton's Second Law in terms of net force, change in momentum, and time.
3.4 Solve problems involving changes in linear momentum.
3.5 Define impulse.
3.6 Solve problems relating impulse, force, and change in time.
3.7 Solve problems relating impulse and change in linear momentum.
3.8 State Law of Conservation of Linear Momentum.
3.9 Solve problems involving the Law of Conservation of Linear Momentum.

4. Energy

4.1 Distinguish between work and energy.
4.2 Distinguish between potential and kinetic energy.
4.3 List sources of energy.
4.4 Calculate work. [$W = Fd \cos \theta$]
4.5 State Law of Conservation of Energy.
4.6 Calculate potential and kinetic energy.
4.7 Define power.
4.8 Solve problems involving energy, work, and power.

5. Machines

5.1 List some general purposes of machines.
5.2 List six simple machines.
5.3 Define mechanical advantage.
5.4 Distinguish between ideal mechanical advantage and actual mechanical advantage.
5.5 Calculate ideal and actual advantage for the various simple machines.
5.6 Define work input and work output.
5.7 Calculate work input and work output.
5.8 Define efficiency.
5.9 Calculate efficiency.
5.10   Solve simple machine problems.
5.11   Define compound machines.
5.12   Solve compound machine problems.

Potential Resources

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On-Line Resources: Westviking Gopher

IS 3211
Oceanography

1. Properties of Fresh and Salt Water

1.1 Compare composition of fresh and salt water.
1.2 List reasons for salinity of ocean water.
1.3 Define density.
1.4 State relative densities of fresh and salt water.
1.5 Describe factors which contribute to ice in the sea.
1.6 Outline problems caused by ice in the sea.

2. Physical Features of Ocean Floor

2.1 Describe physical features of the ocean, including continental shelf, abyssal plains, ocean trenches, mid-ocean ridges, sea mounts, etc.
2.2 Diagram a cross section of physical features of the ocean.

3. Waves

3.1 Diagram structure of a wave.
3.2 Explain effect of wind on wave formation.
3.3 Distinguish between deep water waves and shallow water waves.
3.4 Describe effects of wave action on coastal environments.
3.5 Relate causes and effects of large waves.
3.6 Research origin and effects of the 1929 tidal wave on the south coast of Newfoundland (Optional).

4. Ocean Currents

4.1 Identify major ocean currents.
4.2 Describe several types of currents.
4.3 Describe direction of currents in northern and southern hemispheres.
4.4 Discuss causes and effects of upwelling and settling with respect to world's currents.

ABE Level III Curriculum

5. Relationship Between Oceans and Climates

5.1 Compare coastal climates to continental climates.
5.2 Apply concepts of ocean currents and climate to Newfoundland and Labrador regions.

6. Ocean Resources

6.1 List major ocean resources.
6.2 List factors which determine an organism's habitat in the ocean (e.g. temperature, topography, salinity, and currents).
6.3 Describe importance of management of commercial fisheries.
6.4 Describe fish farming in Newfoundland and elsewhere.
6.5 Describe utilization of physical resources from the ocean such as tidal power, mineral resources, and desalination.

7. Pollution and Waterways

7.1 Describe problems related to extractions of fossil fuels from the ocean.
7.2 Describe effects of chemical wastes (industrial and domestic) and thermal wastes on marine and coastal environments.
7.3 Describe sources of oil pollution and effects it has on marine and coastal environments (e.g. tanker accidents, bilge cleaning, etc.).
7.4 Describe effects of sewage pollution on coastal environments.
7.5 Describe effects of nuclear waste on marine environments.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Elements of Oceanography. (Second Edition). McCormick and Thiruvathukal (1981). CBS College Pub. (Holt, Rinehard and Winston). ISBN: 0-03-057806-X

Introductory Oceanography. (Sixth Edition). Thurman (1985). Charles E. Merrill Pub. ISBN: 0-675-21317-7.

Oceanography: An Introduction. (Fourth Edition). Ingmanson and Wallace (1985). Wadsworth Pub. Co. ISBN: 0-534-09552-6. Instructor's Manual → ISBN: 0-534-09554-2

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Earth Science. (Canadian Edition). Namowitz and Spaulding (1987). D.C. Heath Ltd. ISBN: 0-669-95294-X

Focus on Earth Science. Hasser and Leach (1989). Merrill Pub. Co. ISBN: 0-675-02671-7.

Modern Physical Geology. Thompson and Turk (1991). Saunders College Publishing. Golden Sunburst Series. ISBN: 0-03-025398-5

Contemporary Physical Geology. (Third Edition). Levin (1990). Saunders College Pub.

Investigating the Earth. (Third Edition). Matthews et al. (1981). Houghton Mifflin. ISBN: (student) 0-395-30167-X, (teacher) 0-395-30168-8.

Physical Geology. Skinner and Porter (1987). John Wiley and Sons.

Human Geography: Landscapes of Human Activities. (Second Edition). Fellman et al. (1990). Wm. C. Brown Pub. ISBN: 0-697-05330-X

World Issues in the Global Community. Harshman and Hannell (1989). John Wiley and Sons. ISBN: 0-471-79692-1

Finding the Balance., D. Minty, H. Griffin, and D. Murphy (1993), Breakwater. ISBN: 1-55081-065-0

Finding the Balance. Teacher's Resource, D. Minty, H. Griffin, and D. Murphy (1993), Breakwater. ISBN: 1-55081-081-2

Oceanography: Fact Book. Boyer (1974). Hubbard Press. ISBN: 0-8331-1707-6.

Global Science. (Third Edition) Christensen, J.W., (1991) Kendall/Hunt Publishing Company. ISBN: 0-8403-4657-3

On-Line Resources: Westviking Gopher

IS 3212
Geology

1. Rocks and Minerals

1.1 Define mineral.
1.2 Determine physical properties of minerals such as colour, streak, hardness, lustre, cleavage, specific gravity, fracture, and crystal form.
1.3 Classify mineral samples as belonging to silicates, oxides, sulfides, carbonates, sulfates, or phosphates.
1.4 List at least ten minerals and describe use of each mineral.
1.5 Describe how sedimentary, metamorphic, and igneous rocks are formed.
1.6 Explain how rocks are continuously being recycled.
1.7 Describe rock samples considering rock fabric (size, shape, and distribution of mineral grains), hardness, texture, rock structures (e.g., foliations, bedding), and field occurrences.
1.8 Explain the following methods of mineral exploration: geological, geophysical, geochemical, remote sensing, and diamond drilling.

2. Weathering and Erosion

2.1 Distinguish between weathering and erosion.
2.2 Distinguish between physical and chemical weathering.
2.3 Describe effects of weathering on buildings and landscapes.
2.4 Describe sources of acid rain pollution, including industrial, domestic, and natural sources.
2.5 Explain formation of different soils through weathering action.
2.6 Describe effects of human development and mismanagement on the surface of the earth.

3. Plate Tectonics

3.1 Describe plate tectonics theory.
3.2 Explain effects of divergent plate margins.
3.3 Describe landforms, rock types, and a divergent plate margins.
3.4 Describe landforms, rock types, and a convergent plate margins.
3.5 Explain the following as they relate to plate tectonics: mountain belts, ocean trenches, ocean ridges, island arcs, hot spots, and subduction zones.
3.6 Outline evidence supporting movement of plates.
3.7 Describe cause of geologic plate movement.
3.8 Explain how earthquakes and volcanoes are associated with development of landforms.

4. Earth History

4.1 Outline geologic time scale.

4.2 List divisions of geologic time (i.e., eras, periods, and epochs).

4.3 Distinguish between relative time scale and absolute time scale.

4.4 Distinguish between principles of superposition and uniformitarianism.

4.5 Explain how superposition and uniformitarianism help to date events that shaped Earth's surface.

4.6 Explain how fossils are formed.

4.7 Explain how index fossils are used to date rock formations.

4.8 Describe other methods of rock dating such as radioactive decay, magnetic pole reversals, etc.

5. Newfoundland and Labrador Geology

5.1 List five geological regions of Newfoundland and Labrador.

5.2 Describe how the five regions were formed.

5.3 List fossil sites in Newfoundland and Labrador.

5.4 List minerals and their many locations in Newfoundland and Labrador.

Potential Resources

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Modern Physical Geology. Thompson and Turk (1991). Saunders College Pub. ISBN: 0-03-025398-5.

Contemporary Physical Geology. (Third Edition). Levin (1990). Saunders College Pub. ISBN: 0-03-031139-X.

Earth Science. (Canadian Edition). Namowitz and Spaulding (1987). D.C. Health Ltd. ISBN: 0-669-95294-X.

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Investigating the Earth. (Third Edition). Matthews et al. (1981). Houghton Mifflin. ISBN: (student) 0-395-30167-X, (teacher) 0-395-30168-8.

Geology of Newfoundland and Labrador. Hodych and King (Editors). Special issue of Newfoundland Journal of Geological Education. Volume 10, March, 1989.

Essentials of Physical Geography. (Fourth Edition). Gabler et al. (1990). Saunders College Pub. ISBN: 0-03-035304-1 and Guide 0-03-054958-2.

Physical Geology. Skinner and Porter (1987). John Wiley and Sons.

Human Geography: Landscapes of Human Activities. (Second Edition). Fellman et al. (1990). Wm. C. Brown Pub.

World Issues in the Global Community. Harchman and Hannell (1989). John Wiley and Sons. ISBN: 0-471-79692-1

The Audubon Society Field Guide to North American Rocks and Minerals. (1987). Alfred A. Knof, Inc.

Global Science. (Third Edition) Christensen, J.W., (1991) Kendall/Hunt Publishing Company. ISBN: 0-8403-4657-3

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

Westviking College Science Video Series,vol. 9 - *The Chemical and Physical Properties of Minerals* (23:30min.) vol. 13 - *Mineral Exploration* (23:30min.)

On-Line Resources: Westviking Gopher

IS 3213
Physical Science

1. Measurement

1.1 Name base units of Metric System (SI) for mass, length, capacity, time, and temperature.
1.2 Name derived units of Metric System (SI) for area, volume, speed, and acceleration.
1.3 Conduct measurements.
1.4 Differentiate between situations requiring estimation and accuracy in measurement.
1.5 Read and write measurements in scientific notation.

2. Matter

2.1 Define matter.
2.2 Differentiate among the four states of matter.
2.3 Explain, using a model, kinetic molecular theory.
2.4 Explain change of phase of matter in terms of kinetic molecular theory.
2.5 Apply kinetic molecular theory to change of phase in water and other materials.
2.6 Differentiate between physical and chemical properties and give examples of each.
2.7 Define element.
2.8 Define atom.
2.9 Diagram and describe parts of an atom.
2.10 Briefly describe periodic table as an arrangement of elements.
2.11 Name and give symbols for first twenty elements of periodic table.
2.12 Define and distinguish between physical and chemical change and give examples.
2.13 Define and distinguish between compound and mixture and give examples.
2.14 Define and distinguish between homogeneous and heterogeneous mixtures and give examples.
2.15 Define solution, solute, and solvent.
2.16 Describe and give examples of the following solutions:
   2.16.1 solids in liquids, gases, and solids.
   2.16.2 liquids in liquids, gases, and solids.
   2.16.3 gases in liquids, gases, and solids.
2.17 Explain the following terms: soluble, solubility, insoluble, concentration, dilute, concentrated, saturated, and supersaturated.
2.18 Prepare mixtures and solutions.

3. Compounds and Chemical Reactions

3.1 Define chemical reaction.
3.2 Give examples of how to write chemical reactions in words.
3.3 Give examples of how to write chemical reactions using symbols.
3.4 Define and describe composition of common acids.
3.5 Define and describe composition of common bases.
3.6 Define and describe neutralization.
3.7 Measure pH of some common household substances.
3.8 Define and describe oxidation and combustion in terms of oxygen reactions.
3.9 Identify steps which can protect metals from oxidation.
3.10 Write in words and symbols examples of the following reactions: neutralization, rusting of iron, and combustion.
3.11 Conduct experiments which demonstrate neutralization, rusting of iron, and combustion.

4. Force and Energy

4.1 Define energy.
4.2 List various forms of energy.
4.3 Define force and give examples.
4.4 List Newton's Laws.
4.5 Define friction and give examples.
4.6 Define work and power.
4.7 Describe simple machines.
4.8 Explain mechanical advantage.
4.9 State Law of Conservation of Energy.
4.10 Give examples of the transforming of energy through it's various forms.
4.11 Describe energy transfer which happens in a common device, such as an automobile.
4.12 Demonstrate transformation of energy from one form to another.

5. Energy in the Home and Workplace

5.1 Distinguish between heat and temperature.
5.2 Describe heat transfer and give examples.
5.3 Demonstrate heat transfer.
5.4 Describe thermal expansion and give examples.
5.5 Apply theories of heat energy to home or workplace. (Optional Project)
5.6 Define electricity.
5.7 Define current, voltage, and resistance and give symbols and SI units of each.
5.8 Describe how Ohm's Law relates current, voltage, and resistance.
5.9 Describe some common uses of electricity.
5.10 Read a household electrical energy meter.
5.11 Compare amounts of electrical energy used by common household appliances and suggest ways of reducing energy consumption.
5.12 Given power rating of various household appliances, calculate cost of electrical energy consumption.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Modern Chemistry. Tzimopoulos, Metcalfe, Williams, and Caska (1990). Holt, Rinehart, and Winston, Inc. ISBN: 0-03-014502-3 {Chapter 2}

Physics Principles and Problems. Zitzewitz and Neff (1992). Glenco Division of Macmillan/McGraw-Hill. ISBN: 0-675-17264-0 {Chapter 2}

Chemistry, A Modern Course. Smoot, Price, and Smith (1987). Maxwell Macmillan Canada. ISBN: 02-954021-6 {Chapter 2}

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

Westviking College Level II Science Video Series, vol. 5 - *Heat Transfer* (29:57 min) vol. 6 - *Expansion* (34:57min) vol. 7 - *Friction* (18:00min) vol. 8 - *Magnetism and Electromagnetism* (28:04min)

Westviking College Science Video Series, vol. 8 - *Chemical Reactions* (18:14min.) vol. 16 - *Solutions* (46:25min.) vol. 17 - *Acids and Bases* (41:50min.) vol. 19 - *SI Measurement : Area* (15:00min.) vol. 20 - *SI Measurement : Capacity and Volume* (26:25min.) vol. 21 - *SI Measurement : Length* (26:30min.) vol. 22 - *SI Measurement : Mass* (14:00min.)

On-Line Resources: Westviking Gopher

IS 3214
Environmental Science

1. Basic Ecological Concepts

1.1 Define environment, biosphere, and biome.
1.2 Briefly describe three physical zones of the environment (atmosphere, hydrosphere, and lithosphere).
1.3 Define consumer, producer, decomposer, omnivore, carnivore, and herbivore.
1.4 Define food chain and food web.
1.5 Diagram an energy pyramid and explain.
1.6 Describe oxygen/carbon dioxide cycle, nitrogen cycle, carbon cycle, and water cycle.
1.7 Define population, community, and ecosystem.

2. Management and Conservation

2.1 Define and give examples of non-renewable resources.
2.2 Define and give examples of renewable resources.
2.3 Define and give examples of sustainable development.
2.4 Explain at least 3 R's of responsible consumerism.
2.5 Define and give examples of biodegradable and non-biodegradable waste products.

3. Environmental Issues

3.1 Define environmental stress.
3.2 Describe how human population has grown in this century.
3.3 Describe some factors that restrict human population growth.

NOTE :   Students must complete either 3.4 or 3.5.

3.4 Write a research paper describing an environmental issue of local concern. Reference materials must be gathered from a number of sources which may include local publications.

3.5 Choose <u>five</u> issues which may include the following:
- ▸ Northern Cod Stock
- ▸ Municipal Waste Management
- ▸ Low Level Flying in Labrador
- ▸ Moose/Caribou Management
- ▸ Wilderness Areas
- ▸ Pine Martin Conservation
- ▸ Forest Management
- ▸ Pulp and Paper Management
- ▸ Mineral Exploration and Development
- ▸ Artificial Environments
- ▸ **OR** any appropriate issue of local concern which must be chosen in consultation with your teacher.

Then :
- ☐ Describe how each of these is an environmental issue of local concern.
- ☐ Describe any controversy surrounding each of these issues and suggest possible solutions.

4. Global Environmental Issues

4.1 Explain what is meant by a global environmental issue.
4.2 Choose four issues from the following list of seven (or from a supplementary list composed in consultation with your instructor):
- ▸ Tropical Rain Forest Depletion
- ▸ Acid Precipitation
- ▸ Ozone Depletion
- ▸ Global Warming (The Greenhouse Effect)
- ▸ Ocean Pollution
- ▸ The Search For and Use of Energy
- ▸ Hazardous Wastes

Then:
- ☐ Describe how each of these is an environmental issue of global concern.
- ☐ Describe any controversy surrounding each of these issues and suggest possible solutions.

ABE Level III Curriculum

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Finding the Balance. For Earth's Sake, D. Minty, H. Griffin, and D. Murphy (1993), Breakwater. ISBN 1-55081-065-0

Finding the Balance. Teacher's Resource, D. Minty, H. Griffin, and D. Murphy (1993), Breakwater. ISBN 1-55081-081-2

Biology, K.R. Miller & J. Levine (1991), Prentice-Hall. ISBN 0-13-0811241-2

World Issues in the Global Community, R. Harshman & C. Hannell (1989), John Wiley and Sons Canada Limited. ISBN 0-471-79692-1

Global Science. (Third Edition) Christensen, J.W., (1991) Kendall/Hunt Publishing Company. ISBN: 0-8403-4657-3

The Human Element : Issues of the Global Environment, M. Tooke. Teacher's Press (Ottawa) Ltd. ISBN 0-920766-09-9

Human-Environment Impact, O.J. Mardall & O. Chmyliwsky (1983) Globe/Modern Curriculum Press. ISBN 0-88996-074-7

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

On-Line Resources: Westviking Gopher

IS 3215
Life Science

Learners may complete either Part A or Part B for <u>one</u> credit or complete both parts to receive <u>two</u> credits. Credit cannot be given for this course if the student has credits for Cytology, Human Systems, or their high school equivalents.

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1. Microscope

1.1 Describe function of microscope.
1.2 Identify parts of microscope and their functions.
1.3 Explain proper handling of microscope.
1.4 Calculate magnification of light microscope.

Part A - The Characteristics of Life

2. Characteristics of Organisms

2.1 Define organism.
2.2 Explain characteristics of living organisms which distinguish them from non-living things.
2.3 List examples of organisms' responses to their environment.
2.4 Define adaptation.
2.5 Explain how an organism's adaptation to environment aids in the organism's survival and give examples.
2.6 Identify elements or substances of which living organisms are composed.

3. Energy of Life

3.1 Define energy.
3.2 Explain, with examples, the necessity of energy to living organisms.
3.3 Describe forms of energy which relate to living organisms.
3.4 State importance of energy to living organisms.
3.5 Explain process that begins with the sun as the main source of energy.

4. Building Blocks of Life

4.1 Define cell.
4.2 State cell theory.
4.3 Diagram, define, and give functions of the following parts of a cell: cell membrane, cell wall, nucleus, cytoplasm, chromosomes, chloroplasts, and vacuole.
4.4 Distinguish three differences between plant and animal cells.
4.5 Explain why reproduction of cells is important.
4.6 Distinguish between asexual and sexual reproduction.
4.7 Describe relationship among cells, tissues, organs, organ systems, and organisms.

5. Life Processes

5.1 State purpose and meaning of chemical symbols.
5.2 List five examples of elements in living organisms and their symbols.
5.3 Define mixture and list examples.
5.4 Describe chemical change in living organisms.
5.5 Describe and give examples of organic compounds
5.6 Describe process of transpiration within cells (i.e., diffusion, active transport, and osmosis).
5.7 Describe role of enzymes in metabolic process. (Include a description of metabolism.)
5.8 Describe cell respiration.
5.9 Describe homeostasis
5.10   Define and explain importance of mitosis to life of an organism.

Part B - Human Life and Health

6. Nutrition and Digestion

6.1 Define nutrients.
6.2 List six classifications of nutrients.
6.3 Explain how the body uses each of the nutrients listed above.
6.4 Name the four basic food groups, nutrients they supply, and for what they are used.
6.5 Record, analyze, and evaluate nutrient intake for one week.
6.6 Define digestion.
6.7 List the parts of the digestive tract and the two organs that aid in digestion.
6.8 Trace changes of food through digestive system.

7. Diseases

7.1 Define disease.

7.2 Define communicable disease.

7.3 List examples of communicable diseases stating their cause and symptoms.

7.4 Name <u>three</u> disorders that are not communicable.

7.5 List several sexually transmitted diseases, their causes, symptoms, treatment, and prevention.

7.6 State methods by which sexually transmitted diseases (STDs) are passed from person to person.

8. Immunity

8.1 Describe the <u>three</u> main natural defences of the body.

8.2 Define and list examples of antibody, immunity, passive immunity, active immunity, and vaccination.

8.3 Explain how a disease is prevented by defining and describing how a vaccine works.

8.4 Define and give examples of epidemic, disinfectant, antiseptic, and quarantine.

8.5 Describe several methods of treatment for health problems.

9. Human Reproduction and Contraception

9.1 Diagram and describe the male and female human reproductive system.

9.2 Describe menstrual cycle.

9.3 Explain how conception occurs.

9.4 Outline the stages of development from conception to birth.

9.5 Describe childbirth.

9.6 Name and explain various methods of birth control.

Potential Resources

Please refer to the annotated bibliography at the end of this section for a brief description of each resource.

Focus on Life Science. Heimler and Daniel (1989). Merrill Publishing Co. ISBN: 0-675-07426-6.

Modern Biology. Otto and Towle (1991). Holt, Rinehart and Wilson. ISBN: 0-03-047029-3.

Biology. Miller and Levine (1991). Prentice Hall. ISBN: 0-13-081241-2.

Biology: Living Systems.   Oram, Hummer, and Smoot (1989). Merrill Publishing Company. ISBN: 0-675-06484-8.

Biology. Kormondy and Essenfeld, (1984). Addison-Wesley Publishers. ISBN: 0-201-16816-2

Adult Basic Education (Intermediate Science): The Cell Workbook. Open Learning Institute. VA0060A.

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Audio Visual Materials:

Westviking College Science Video Series, vol. 3 - *The Digestive System: Starch* (30:00 min.) vol. 4 - *The Digestive System: Protein* (27:45 min.) vol. 6 - *Diffusion and Osmosis* (31:06min.) vol. 11 - *Vitamin C* (22:38min) vol. 14 - *Nutrition* (16:00min.)

On-Line Resources: Westviking Gopher

Level III Science
Annotated Bibliography

> **NOTE: A plethora of science textbooks exists so this annotated bibliography and the potential resource list should not be construed as exhaustive. Most of the textbooks which you have been using will be equally relevant for this version of the program. You are encouraged to continually seek new or better references.**
>
> **Books listed may not be currently in print. ISBN numbers are listed where available.**

Air. E.N. Ramsden. (1990) *Copp Clark Pitman*. ISBN 0-7487-0449-3.
   Part of a series, Extending Science, which emphasizes the environmental and social aspects of science.

Alchem. (1987). *J.M. LeBel Enterprises Ltd.*
   Used in the high school. Does not provide as good coverage as the other chemistry texts listed.

Applied Biology: A Human Experience. Bob Hartley & Jan Thoe. (1989). *Copp Clark Pitman.* ISBN: 0773047298
   Concentrates on human biology and includes many good lab activities. A good teacher's resource.

Basic Electrical Circuits. *Educational Designs, Inc.* carried by *Monarch Books of Canada.* AV201G.
   Video of experiments on series and parallel circuits, voltage, current, voltage, resistance, Ohm's law, polarity, and elementary measuring techniques.

Basic Science for Living: Physical Science. *Steck-Vaughn*, carried by *Pippin Publishing*. ISBN 0-8114-4062-1.
   Focuses on current concepts, was written for adults, and includes ten exercise questions after each lesson. Answer keys and mastery tests included.

Biology. Edward Kormondy & Bernice Essenfeld. (1988). *Addison-Wesley Publishers*.
   Covers the objectives for all of the Level III biology courses with the exception of those concerning the microscope. A lab manual, teacher's edition, tests, and teacher's resource book are available. Covers the human systems along with those of other animals and has beautiful, clear diagrams..

Biology. Miller & Levine. (1991). *Prentice Hall*. ISBN 0-13-081242-2.
   Can be used to cover the objectives of all Level III biology courses.

Biology: A Canadian Laboratory Manual. R. Ritter, B. Drysdale, D. Coombs. (1987). *GLC.* Silver Burdett.

The Biosphere. Thomas Stephen & David Wright. *Copp Clark Pitman.* ISBN 07487-0202-4.
> *Part of a series, Science Now!, of magazine-style books which incorporate recently-published information on various science subjects at various ability levels.*

Biology: Living Systems (Canadian Version). Oram, Hummer, & Smoot. (1990). *Merrill Publishing Company*, carried by M*cGraw-Hill Ryerson*. ISBN: 0029541522
> *Used in the high school. Gives adequate coverage of objectives in Level III biology courses. Covers the human systems along with those of other animals. An American version of this textbook available [ISBN: 0675064848]*

Canadian Green Consumer Guide: How You Can Help. Pollution Probe Foundation. Available through *Pippin Publishing.* ISBN MS 71620.
> *Covers the environment and actions which can be taken to improve it. Teacher's resource guide available.*

Chemical Industry, The. R.E. Lee. *Copp Clark Pitman*. ISBN 0-85950-821-8.
> *Part of a series, Extending Science, which emphasizes the environmental and social aspects of science.*

Chemicals on the Farm. Bob McDuell. (1990) *Copp Clark Pitman*. ISBN 07487-0212-1.
> *Part of a series, Science Now!, of magazine-style books which incorporate recently-published information on various science subjects at various ability levels.*

Chemistry. J.D. Herron, A. Kukla, C.L. Schrader, D. Morrison, M.A. DiSpezio, J.L. Erickson, D. Scodellaro. (1987). *D.C. Heath*.
> *Can be used for all the Level III chemistry courses.*

Chemistry. [SCH3A-A]. Independent Learning Centre. *Kwik-Kopy Publishing.*
> *A distance education package designed to provide an Ontario Grade 11 equivalency. Set in a context of chemistry and the environment, it covers physical and chemical properties, atomic theory, chemical bonding, gases, formulas and equations, stoichiometry, solutions, acids and bases. Lesson materials and workbooks are provided. They loan a chemistry lab kit to their distance students to accompany the course*.

Chemistry: A Modern Course. Smoot, Price & Smith. (1991). *Merrill Publishing Company*, carried by *McGraw-Hill Ryerson*. ISBN 0029540216
> *Can be used for all the Level III chemistry courses. Lab manual and teacher's edition [ISBN: 0-675-06402-3] available.*

Chemistry: A Human Venture. Stan Percival & Ross Wilson. (1988). *Irwin Publishing.* ISBN 7725-1690.
> *Covers all the objectives for the Level III hemistry courses and puts chemistry in a context of historical development. Uses many applications, case studies, and examples.*

Chemistry: A First Course. Rayner-Canham. (1986). *Addison Wesley.* ISBN 0-201-17880-X.
> *Can be used for all the Level III chemistry courses. Teacher's manual available. Can be accompanied by College Mini Labs (1988), Addison-Wesley, ISBN 0-201-18593-8.*

Chemistry at Work. Brenda Shapiroo & Stan Shapiro. (1989). *Copp Clark Pitman*. ISBN 0773047301
Doesn't cover all the objectives in our Level III chemistry courses at a high enough level to be used as the main text, but has a great "hands-on" approach with lots of activities and creative or practical examples. A good teacher's resource, or good text for students taking chemistry for general interest.

Chemistry Today 1. R.L. Whitman, E.E. Zinck, R.A. Nalepa. (1988). *Prentice Hall.*
Can be used for all Level III chemistry courses. Lab manual available.

Conceptual Physics. Paul G. Hewitt. (1992). Addison-Wesley.   ISBN 0-201-28651-3
Covers physics conceptually rather than mathematically, with equations often written in words as "guides to thinking" rather than "recipes for algebraic problem-solving". Does not quite cover all our objectives; however, it would be a good approach for someone who would like to do physics, but has trouble with math. Teacher's edition, teaching guide, tests, concept exercises, worksheets, lab manual, and video lessons are available.

Earth Science (Canadian Edition). Samuel N. Namowitz and Nancy E. Spaulding. (1987). *D.C. Heath and Company*. ISBN: 0-669-95294-X
Covers most of the objectives for S 3212 Earth Science, excluding the section on Newfoundland and Labrador Geology. Also deals with many concepts found in the IS 3211 Oceanography course.

Electricity. Edward Fogden. *Copp Clark Pitman*. ISBN 07487-0208-3.
Part of a series, Science Now!, of magazine-style books which incorporate recently published information in various scientific areas.

Elements of Oceanography (2nd edition). J. Michael McCormick & John V. Thiruvathukal. (1981). *CBS College Publishing*, carried by *Harcourt-Brace & Company* (Holt, Rinehart, & Winston).
Smaller text which does not cover our objectives as well as the recommended text and doesn't go into as much detail.

Energy. Edward Fogden. *Copp Clark Pitman*. ISBN 07487-0209-1.
Part of a series, Science Now!, of magazine-style books which incorporate recently-published information on various science subjects at various ability levels.

Energy. J.J. Wellington. (1992) *Copp Clark Pitman*. ISBN 0-748713441.
Part of a series, Extending Science, which emphasizes the environmental and social aspects of science.

Environmental Resource Directory. *Public Focus.*
Lists, describes and rates environmentally relevant books, periodicals, fact sheets, films, videocassettes, theatrical performances, and games.

Exploring Your World: The Adventure of Geography. Special Publications Division, *National Geographic Society.*
Encyclopedia-type reference book on geography and geology.

Focus on Earth Science. Dale T. Hesser & Susan Leach. (1989). *Merrill Publishing Company*, carried by *McGraw-Hill Ryerson*. ISBN: 0675026717
> *In addition to being useful for earth science sections of Level II, this text contains two chapters on oceanography dealing with ocean water, water in motion, shoreline, and sea bottom. Also covers the Level III earth science objectives, with the exception of those dealing with Newfoundland geology.*

Focus on Physical Science. Charles Heimler & Jack Price. (1988). *Merrill Publishing Company*, carried by *McGraw-Hill Ryerson*. ISBN: 0675031648
> *Used in the high school. Available through School Supplies. A lab manual entitled Focus on Physical Science: A Learning Strategy for the Laboratory [ISBN: 0675031680] is also available.*

Fundamentals of Physics: An Introductory Course (2nd edition). David G. Martindale, Robert W. Heath, William W. Konrad, & Robert MacNaughton. (1987). *D.C. Heath*.
> *Covers all the objectives of all the courses well, excluding machines.*

Human Geography: Landscapes of Human Activities (2nd edition). Jerome Fellman, Arthur Getis, & Judith Getis. (1990). *Wm. C. Brown Publishers.*
> *Good auxiliary geography text, Covers basic concepts, populations, land use, and political ordering. Also has a chapter on human impacts on natural systems, which is useful for the Oceanography course.*

Inquiries in Chemistry. A.M. Turner & C.T. Sears. (1977). *Allyn & Bacon.*
> *Can be used for all the Level III chemistry courses.*

Introductory Chemistry. Stephen S. Zumdahl. (1990). Toronto: *D.C. Heath & Co.*
ISBN 0-669-14466-5.
> *Can be used for all the Level III chemistry courses.*

Introductory Oceanography (6th edition). Harold V. Thurman. (1990). *Charles E. Merrill Publishing,* carried by *McGraw-Hill Ryerson.*
> *Provides good coverage of the objectives of our oceanography course, but at a fairly high reading level.*

Investigating the Earth (3rd. edition). William Matthews, Chalmer Roy, Robert Stevenson, Miles Harris, Dale Hesse, and William Dexter. (1981). *Houghton Mifflin*. Also available:

Investigating the Earth (3rd. ed.) Laboratory Supplement.
> *Useful for Level II earth science objectives, but perhaps at a better depth for Level III. Has several chapters on the sea, which would be useful for the Oceanography course (properties, waves, climate, and sediments). For the Level III earth science, it covers all the objectives except those on Newfoundland geology.*

Life Worldwide. T. Carrick. (1986) *Copp Clark Pitman.* ISBN 0-85950-553-7.
Part of a series, Extending Science, which emphasizes the environmental and social aspects of science.

Measuring Electricity. *Educational Designs*, *Inc.* carried by *Monarch Books of Canada*.
AV200G.
Video on how to set up meters, and experiments on voltage, resistance, amperage, and resistance.

Modern Biology. James H. Otto & Albert Towle. (1977). *Holt, Rinehart & Winston*, carried by *Harcourt-Brace & Company*.
Covers the objectives of most of the biology courses in Level III. Human systems are covered separately form those of other animals, which is more convenient for our course on human systems.

Modern Chemistry. (1990). Tzimopoulos, Metcalfe, Williams, Castka. *Holt, Rinehart, & Winston*, carried by *Harcourt-Brace & Company*.
Can be used for all the Level III chemistry courses.

Nuclear Power. R.E. Lee. (1986) *Copp Clark Pitman.* ISBN 0-85950-554-5.
Part of a series, Extending Science, which emphasizes the environmental and social aspects of science.

Oceanography: An Introduction (3rd edition). Dale E. Ingmanson & William J. Wallace.
(1985). *Wadsworth Publishing Company.*
Covers all of the objectives in our oceanography course reasonably well, at a good reading level, and with good diagrams and maps.

Physical Science: The Challenge of Discovery. Mark A. Carle, Mickey Sarquis & Louise Mary Nolan. (1991). *D.C. Heath And Company.* ISBN: 0-669-18060-2
Provides a thorough coverage of most objectives for the physical science course. Also provides an elementary treatment of many objectives found in the chemistry and physics courses.

Physical Science: Investigating Matter and Energy. Robert H. Marshall & Donald H. Jacobs. (1987). *Media Materials*. ISBN 0-86601-563-9.
Covers the objectives for IS 3213 in a fair amount of detail. Each of the chapters has a computer program at the end.

Physics for a Modern World. Alan J Hirsch. (1986). *John Wiley & Sons*.
Good coverage of all our physics objectives, excluding machines.

Physics Today 1. T.J. Elgin Wolfe, Eric Brown, Dale Parker, & Frank Mustoe. (1989).
Prentice-Hall.
Used in the high school. Covers all the objectives except for those on machines.

Physics: Principles and Problems. James T. Murphy, Paul W. Zitsewitz, & James Max Hollon. (1990). *Charles E. Merrill Publishing Company*, carried by *McGraw-Hill-Ryerson*.
ISBN: 0675074916
Provides good coverage of the objectives in all the Level III physics courses.

Physics: A Human Endeavour. (1976). *Holt, Rinehart & Winston*, carried by *Harcourt-*

Brace & Company.
  Used in school system now, but new physics program is being piloted. Not as good a resource as the textbooks listed.

Physics: A General Introduction (2nd edition). Alan van Heuvelen. (1986). *Little, Brown & Company.*
  Covers all the objectives of all the physics courses except those regarding machines.

Plastics a Plenty. Bob McDuell. (1990) *Copp Clark Pitman*. ISBN: 07487-0210-5
  Part of a series, Science Now!, of magazine-style books which incorporate recently-published information on various science subjects at various ability levels.

Pollution. George Snape & David Rowlands. (1992) *Copp Clark Pitman*. ISBN: 0582078288
  Part of a series, Science at Work, a modular approach to science and technology. Encourages problem-solving in either group or independent format. Teacher's guide available.

Structures and Machines. George Snape & David Rowlands.*(1992) Clark Pitman*. ISBN: 05820 7830X.
  Part of a series, Science at Work, a modular approach to science and technology. Encourages problem-solving in either group or independent format. Teacher's guide available.

Student Course Manuals for Distance Education. Labrador College of Applied Arts, Technology and Continuing Education. Happy Valley-Goose Bay.

Understanding Chemistry. Herman J. Bruckman & Allan Cruikshanks. (1988). *John Wiley & Sons.* ISBN: 0471-796-840
  While this text covers the objectives of first two Level III chemistry courses well, it may not have enough depth for the other courses for students going on in chemistry. Lab manual available.

Understanding Environmental Issues. Brian McGoldrick. (1991). *Pippin Publishing.*
  A two-book series concentrating on environmental issues and topics. Written at grade 9-12 level.

Water. E.N. Ramsden. (1983) *Copp Clark Pitman*. ISBN: 0-7487-0448-5
  Part of a series, Extending Science, which emphasizes the environmental and social aspects of science.

World Issues in the Global Community. Robert Harshman & Christine Hannell. (1989). *John Wiley & Sons.*
  Useful as a teacher's resource on pollution, resources, and global issues.

Films and Videos:

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117 Hwy. 815
Calhoun KY 42327-0009
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This company may carry a variety of films, cassettes and software on a variety of science concepts.

On-Line Resources: Westviking Gopher

Publishers and Suppliers

ACCESS Network
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Appendix A

APPENDIX A
Graduation Requirements

Graduation Requirements

While ABE graduates will still require 36 overall credits, with a minimum of 6 credits in each of Mathematics, Science and Communication Skills, we are now naming specific courses and/or course sequences that must be completed in order to receive the Level III certificate. In addition, a minimum of 4 credits are required to be completed from the Employability Skills section.

Mathematics

Academic Stream	or	Advanced Stream	or	General Mathematics
IM 3212 Algebra IV IM 3213 Algebra V IM 3216 Trigonometry IM 3115 Geometry II		IM 3219 Adv. Algebra III IM 3222 Calculus Readiness IM 3221 Adv. Geometry II		IM 3106 Bus. Math I IM 3207 Bus. Math II

Communication Skills

IC 3211 Basic Grammar IC 3112 Writing Skills	plus one of:	IC 3116 Business Communications IC 3215 Research Writing IC 3221 Optional Literature

Science

Biology	Chemistry	Physics	Science (General)
IB 3113 Ecology IB 3115 Evolution IB 3214 Genetics IB 3316 Human Systems	IH 3215 Chemical Bonding IH 3116 Solution Chemistry IH 3117 Rates, Reactions & Equilibrium	IP 3215 Mechanics I IP 3216 Mechanics II IP 3111 Electricity I IP 3112 Electricity II	IS 3212 Geology or IS 3214 Env. Science

Appendix B

APPENDIX B
Ongoing Changes

ABE to High School Transfers

The Department of Education and Training (K-12 Division) have a copy of the 1995 curriculum and the proposed matrix. They are in the process of validating the equivalencies and initiating a process that will enable a student to transfer credits earned through the ABE program back into the high school system (up to a maximum of 6). This way the student could still receive a high school graduation with transfer from ABE if they needed less than six credits to graduate.

ABE to Post Secondary Transfers

On a similar note, proceedings are currently underway to investigate the possibility of including first-year, college-level, employability courses into the newly developed Employability Skills section of the ABE program. The courses that we are considering, have been articulated by the province for the first year post-secondary students. If we can include some of them in the Employability Skills section, students could transfer credits from the ABE program into their first-year post secondary studies (if applicable).

* We will keep you posted on changes as they occur.

Appendix C

Student Waiver Form
(For students who have chosen general stream)

I _____ have been counselled by my

(name of student)

instructor/advisor and understand that my choice of pursuing courses

within the general stream may limit my accessibility to post-secondary

programs.

Sign:

_____

—

Student

_____

Advisor

_____

—

Date

Appendix D

ABE LEVEL III COURSE COMPARISON MATRICES

(Cover Sheet - for **Students**)

Please note the following:

1. There are **5** subject areas covered by the attached matrices.

2. These matrices are up-to-date to **October 1995.**

3. If there are courses listed under "current high school" which are outside the content areas and have no equivalent under "current ABE", then the student may qualify for general options credits. General options credits are not to exceed 10 - this includes maturity and equivalency credits.

4. Courses in the high school prior to 1982 (in Math, English, and Science) are worth 4 credits each, unless otherwise indicated. Courses in other subject areas (Geography, French, etc.) are worth 2 credits each.

   For BTSD courses, former ABE courses (including the 1990-1991 edition), and current high school courses, credits will be transferred on a "one-for-one" basis. This means that the credit value of each course taken has the same credit value transferred into the current ABE program. Examples: CS 3215 is worth 2 credits, Language 3101 is worth 1 credit, C9 + C12 are worth a total of 2 credits.

   For the International Correspondence School's High School Program (ICS High School) credits are indicated. Because there is some overlap in the equivalency between these and the current ABE program, the equivalencies are given in [square brackets].

ABE LEVEL III COURSE COMPARISON MATRICES

(Cover Sheet - for **Instructors**)

Please note the following:

1. There are **5** subject areas covered by the attached matrices.

2. These matrices are up-to-date to **October 1995.**

3. If there are courses listed under "current high school" which are outside content areas and have no equivalent under "current ABE", then the student may qualify for general options credits. General options credits are not to exceed 10 - this includes maturity and equivalency credits.

4. Courses in the high school prior to 1982 (in Math, English, and Science) are worth 4 credits each, unless otherwise indicated. Courses in other subject areas (Geography, French, etc.) are worth 2 credits each.

   For BTSD courses, former ABE courses (including 1990-1991 edition), and current high school courses, credits will be transferred on a "one-for-one" basis. This means that the credit value of each course taken has the same credit value transferred into the current ABE program. Examples: CS 3215 is worth 2 credits, Language 3101 is worth 1 credit, C9 + C12 are worth a total of 2 credits.

   For the International Correspondence School's High School Program (ICS High School) credits are indicated. Because there is some overlap in the equivalency between these and the current ABE program, the equivalencies are given in [square brackets].

5. Current high school courses with a third digit of "9" are transfers in from other provinces for which there are no exact equivalents.

6. Current high school courses with a third digit of "6" are modified courses.

7. Current high school courses with a third digit of "8" are enriched courses.

ABE LEVEL III GENERAL OPTIONS COURSE COMPARISON MATRIX

Currents ABE Course (revisions to be implemented in 1995)	Former ABE Course '90 - 94	Prior to 1990	BTSD Course	Current High School Course (not including recent MPEF revisions)	Old High School Course (Prior to '82)	ICS High School
IG 3211 NF & LB Culture	GO 3211 NF & LB Culture	---	---	1200 Cultural Heritage	---	---
IG 3114 Canadian Issues	GO 3114 Canadian Issues	---	---	1201 Canadian Issues	Canadian Issues 10 (2 credits)	---
IG 3215 Family Studies	GO 3215 Family Studies	---	---	2200 Family Living	---	---
IG 3118 Individual Study	GO 3118 Individual Study	4209		---	---	---
IG 3119 Canadian Law	GO 3119 Canadian Law	---	---	2104 Canadian Law	---	---
IG 3120 Democracy	GO 3120 Democracy	---	---	2102 Democracy	---	---
IG 3221 Human Geography	GO 3221 Human Geography	---	---	3202 World Geography	Geography 11 (2 credits)	---
IG 3217 Contemporary History	GO 3222 Contemporary History	---	---	3201 World History	History 11 (2 credits)	MH07 World History (2 credits)[G O 3222] or P51 Canadian History (2 credits)[GO 3222]
IG 3116 Women's Studies	GO 3123 Women's Studies	---	---	---	---	---

ABE courses are sequenced in accordance with the equivalent courses from the high school system to facilitate credit transfer.

ABE LEVEL III GENERAL OPTIONS COURSE COMPARISON MATRIX (Continued)

Current ABE Course (revisions to be implemented in 1995)	Former ABE Course '90 - 94	Prior to 1990	BTSD Course	Current High School Course (not including recent MPEF revisions)	Old High School Course (Prior to '82)	ICS High School
IG 3113 World Religions	GO 3124 World Religions	---	---	3100 Religious Studies	½ of Religious Education III 11 (Western Religions)(2 credits)	---
IG 3112 Physical Education	GO 3125 Physical Education	---	---	1100 Physical Education	Physical Education 10 (2 credits)	---
---	---	---	---	3204 World Problems	World Problems 11 (2 credits)	---
---	---	---	---	1290 Social Studies	Geography 10 (2 credits)	---
---	---	---	---	2103 Canadian Economy	⟩ Economics 11 (2 credits)	---
---	---	---	---	3190 Economics		---
---	---	---	---	2100 French	⟩ French 10 (2 credits)	---
---	---	---	---	2101 French		---
---	---	---	---	3200 French	French 11 (2 credits)	---
---	---	---	---	2200 Art & design	Art 10 (2 credits)	---
---	---	---	---	3200 Art & Design	Art 11 (2 credits)	---
---	---	---	---	1100 Foods	⟩ Home Economics 10 (2 credits)	---
---	---	---	---	1101 Clothing		---
---	---	---	---	3100 Nutrition	⟩ Home Economics 11 (2 credits)	---
---	---	---	---	3101 Textiles		---
---	---	---	---	---	---	MN00C Human Relations (1 credit)[no equiv.]

ABE LEVEL III COMMUNICATIONS SKILLS COURSE COMPARISON MATRIX

Current ABE Course (revisions to be implemented in 1995)	Former ABE Course '90 - 94	Prior to 1990	BTSD Course	Current High School Course (not including recent MPEF revisions)	Old High School Course (Prior to '82)	ICS High School
IC 3113 Evaluative Comprehension	CS 3113 Evaluative Comprehension	4101	C-13	1101 Language	⟩ English 10 (4 credits)	---
IC 3214 A/B Oral Communications	CS 3214 A/B Oral Communications	4204	C-9, C-12	---		---
IC 3218 A/B Introduction to Literature	---	4208	---	2201 Literacy Heritage or 1200 Thematic Literature		---
IC 3211 Basic Grammar	CS 3211 Basic Grammar	4100	C-16	---	---	M37HC Writing for Success (2 credits)[CS 3211] or 97A English (3 credits) [CS 3211 + CS 3116]
IC 3215 Research Writing	CS 3215 Research Writing	4203	C-18, C-21	2101 Language	---	---
IC 3116 Business Communications	CS 3116 Business Communications	4205	C-14, C-16, C-19	3102 Business English	---	97A English (3 credits) [CS 3116 + CS 3211]
IC 3117 Vocational English	CS 3117 Vocational English	4106	C-9, C-12, C-18	2102 Vocational English	---	---
IC 3219 Newfoundland Literature	CS 3219 Newfoundland Literature	4215	---	---	---	---
IC 3220 Canadian Literature	CS 3220 Canadian Literature	---	---	2204 Canadian Literature	---	---
IC 3112 Writing Skills	CS 3112 Writing Skills	4102	C-17, C-20	3101 Language	⟩ English 11 (4 credits)	---
IC 3321 Optional Literature	CS 3318 Introduction to Literature (formerly CS 3221)	---	---	3201 Thematic Literature or 3202 or 3203		---
---	---	---	---	3103 Advanced Writing	---	---
---	---	---	---	3104 Language Study	---	---

ABE LEVEL III SCIENCE COURSE COMPARISON MATRIX

Current ABE Course (revisions to be implemented in 1995)	Former ABE Course		BTSD Course	Current High School Course (not including recent MPEF revisions)	Old High School Course (Prior to '82)	ICS High School
	'90 - 94	Prior to 1990				
IB 3211 Cytology	B 3111 Cytology	6125	S-20	2201 Biology	⟩ Biology 10 (4 credits)	O75 General Science (4 credits) [B 3212 A/B + S 3213]
IB 3212 A/B Living Things	B 3212 A/B Living Things	6128	S-21, S-22	2201 Biology		
IB 3113 Ecology	B 3113 Ecology	6128	S-23	3201 Biology		M45HC Biology (2 credits) [B 3114 + B 3115]
IB 3115 Evolution	B 3114 Evolution	---	---	3201 Biology		
IB 3214 Genetics	B 3115 Genetics	---	S-24	3201 Biology	⟩ Biology 11 (4 credits)	
IB 3316 Human Systems	B 3316 Human Systems	6132	S-4, S-25	3201 Biology		
IS 3211 Oceanography	S 3211 Oceanography	---	---	---	---	---
IS 3212 Geology	S 3212 Earth Science	---	---	3203 Geology	Earth Science 11 (4 credits)	
IS 3213 Physical Science	S 3213 Physical Science	6122, 6005, 6130	S-10, S-12, S-18	2205 Physical Science	Physical Science 10 (4 credits)	O75 General Science (4 credits) [S 3213 + B 3212 A/B]
IS 3215 Life Science	---	---	---	---	---	---

ABE LEVEL III SCIENCE COURSE COMPARISON MATRIX (Continued)

Current ABE Course (revisions to be implemented in 1995)	Former ABE Course '90 - 94	Former ABE Course Prior to 1990	BTSD Course	Current High School Course (not including recent MPEF revisions)	Old High School Course (Prior to '82)	ICS High School
IS 3214 Environmental Science	S 3214 Environmental Science	---	---	3205 Environmental Science	---	---
IH 3111 Introduction to Chemistry	C 3111 Introduction to Chemistry	6122	S-10	2202 Chemistry	---	---
IH 3112 Chemical Language	---	6126	S-10, S-17	2202 Chemistry	---	---
IH 3113 Reactions & Equations	---	6126	---	2202 Chemistry	---	---
IH 3114 The Mole & Stoichiometry	C 3113 The Mole & Stoichiometry	6134	---	2202 Chemistry	---	---
IH 3215 Chemical Bonding	C 3114 Chemical Bonding	6126	---	3202 Chemistry		
IH 3116 Solution Chemistry	C 3115 Solution Chemistry	6126	S-8, S-11	3202 Chemistry	⟩ Chemistry 10 and 11 * (4 credits each)	
IH 3117 Rates, Reaction & Equilibrium	C 3116 Rates, Reaction & Equilibrium	---	S-17	3202 Chemistry		---
IH 3118 Acids and Bases	C 3117 Acids and Bases	6126	---	3202 Chemistry		

* Transfer Guide will show (4 credits) not (4 credits each).

ABE LEVEL III SCIENCE COURSE COMPARISON MATRIX (Continued)

Current ABE Course (revisions to be implemented in 1995)	Former ABE Course		BTSD Course	Current High School Course (not including recent MPEF revisions)	Old High School Course (Prior to '82)	ICS High School
	'90 - 94	Prior to 1990				
IH 3119 Organic Chemistry	---	---	---	*	---	---
IH 3120 Electrochemistry	---	---	---	*	---	---
IP 3215 Mechanics I	P 3111 Mechanics I	6124	S-15	3204 Physics	⟩ Physics 10 (4 credits)	---
IP 3216 Mechanics II	P 3212 Mechanics II	6005	S-12, S-15	3204 Physics		
IP 3213 Waves	P 3214 Waves	6130	S-18, S-19	2204 Physics	⟩ Physics 11 (4 credits)	---
IP 3111 Electricity I	P 3115 Electricity I	6123	S-19	3204 Physics		
IP 3112 Electricity II	P 3116 Electricity II	6129	S-16	3204 Physics		
---	---	---	---	2203 Earth Science	Earth Science 10 (2 cr. General Options)	---
---	---	---	---	3290 Physical Science	Physical Science 11 (2 cr. General Options)	---
IP 3214 Fluids and Heat	P 3113 Fluids and Heat	6121, 6127	S-9, S-14	---	Physical Science 10 (4 credits)	O75 General Science (4 credits) [S 3213 + B 3212 A/B]

(*) Students that complete the high school Chemistry 3202 must do one elective unit in carbon chemistry or electrochemistry or nuclear chemistry. Students that complete the first elective should be awarded credit in ABE for IH 3119; students that complete the second elective unit should be awarded credit for IH 3120.

ABE LEVEL III MATHEMATICS COURSE COMPARISON MATRIX

Current ABE Course (revisions to be implemented in 1995)	Former ABE Course '90 - 94	Former ABE Course Prior to 1990	BTSD Course	Current High School Course (not including recent MPEF revisions)	Old High School Course (Prior to '82)	ICS High School
IM 3109 Algebra I	M 3211 Algebra I	5142, 5183	M-13, M-14, M-15	1300 Mathematics or 1203 Academic Math	⟩ Matriculation Math 10 (4 credits)	---
IM 3210 Algebra II	M 3212, M 3213 Algebra II/III	5143, 5147	M-14, M-17	1300 Mathematics or 1203 Academic Math		
IM 3114 Geometry I	M 3116 Geometry I	5148	M-10	1300 Mathematics or 1203 Academic Math		
IM 3211 Algebra III	M 3215 Algebra V	5162, 5163	M-15, M-17	2200 Mathematics or 2203 Academic Math		
IM 3115 Geometry II	M 3117 Geometry II	---	---	2200 Mathematics or 2203 Academic Math		M98JC Geometry (1 credit) [M3118]
IM 3212 Algebra IV	M 3214 Algebra IV	5183	M-15	3200 Mathematics or 3203 Academic Math	⟩ Matriculation Math 11 (4 credits)	
IM 3213 Algebra V	---	5182	M-17	3200 Mathematics or 3203 Academic Math		
IM 3216 Trigonometry	M 3120 Trigonometry II	5161, 5181	M-16	3200 Mathematics or 3203 Academic Math		
IM 3219 Advanced Algebra III	---	---	---	3201 Advanced Math		
IM 3218 Advanced Algebra II	---	---	---	2201 Advanced Math	⟩ Honors Math 11 (4 credits)	---
IM 3221 Advanced Geometry II	---	---	---	2201 Advanced Math		

ABE LEVEL III MATHEMATICS COURSE COMPARISON MATRIX (Continued)

Current ABE Course (revisions to be implemented in 1995)	Former ABE Course		BTSD Course	Current High School Course (not including recent MPEF revisions)	Old High School Course (Prior to '82)	ICS High School
	'90 - 94	Prior to 1990				
IM 3217 Advanced Algebra I	---	---	---	1201 Advanced Math	Honors Math 10 (4 credits)	---
IM 3220 Advanced Geometry I	---	---	---	1201 Advanced Math	Honors Math 10 (4 credits)	---
IM 3203 Consumer Math	M 3222 Consumer Math	5141	---	1202 Consumer Math	Basic Math 10 (4 credits)	---
IM 3204 Practical Math I	M 3223 Practical Math I	5144, 5145, 5146	M-18, M-11, M-13, M-14	2202 Vocational Math	---	M99RC General Math II (2 credits)[M3223]
IM 3205 A/B Practical Math II	M 3224 A/B Practical Math II	---	---	2202 Vocational Math		
IM 3106 Business Math I	M 3225 Business Math	5164	M-18	3202 Business Math	---	---
IM 3207 Business Math II	M 3226 Business Math II	5164	---			
IM 3208 Statistics	M 3227 Statistics	---	---	3104 Statistics	---	---
IM 3222 Calculus Readiness	---	---	---	3105 Calculus Readiness	---	M40HC General Math I (2 credits)[no equiv.]

ABE LEVEL III EMPLOYABILITY SKILLS COURSE COMPARISON MATRIX

Current ABE Course (revisions to be implemented in 1995)	Former ABE Course		BTSD Course	Current High School Course (not including recent MPEF revisions)	Old High School Course (Prior to '82)	ICS High School
	'90 - 94	Prior to 1990				
IE 3212 * Computer Studies	GO 3113 Computer Studies	5165	---	2206 Computer Studies	---	---
IE 3213 Career Awareness	GO 3216 Career Awareness	---	---	3101 Career Education	---	---
IE 3214 Personal Development	GO 3217 Personal Development	---	---	---	---	---
IE 3211 Consumer Studies	GO 3212 Consumer Studies			1202 Consumer Studies		

* Note: Transfer Guide will show IE 3112 not IE 3212.