



Building skills for Canada's bio-economy

Making Sense of Biotechnology **Course Syllabus**

- 1 Workshop Objectives
- 2 Basic Principles of Chemistry and Biology
 - 2.1 Introduction - What is Biotechnology?
 - 2.2 Basic Principles of Cell Biology
 - 2.3 Cell Fusion
 - 2.4 Species and Clones
 - 2.5 Cell Culture
 - 2.6 Bioreactors and Fermentation Technology
- 3 The Science of Biotechnology: Examples and Explanations
 - 3.1 Introduction
 - 3.2 Mining
 - 3.3 Bioenergy
 - 3.4 Environment
 - 3.5 Chemicals
 - 3.6 The Molecular Basis of Biotechnology
 - 3.7 Fundamentals of Genetic Engineering
 - 3.8 Food
 - 3.9 Marine Biotechnologies (Aquaculture)
 - 3.10 Forestry
 - 3.11 Agriculture
 - 3.12 Health and Pharmaceuticals
- 4 Biotechnological Mega-Projects and Systems Biology
 - 4.1 New Tools and Approaches
 - 4.2 Human Genome Sequencing
 - 4.3 Proteomics: The Second Genome
 - 4.4 Bioinformatics
 - 4.5 Combinatorial Libraries and High-Throughput Screening
 - 4.6 Nanotechnology and Nanobiotechnology