

CURRICULUM GUIDE: OFFICIAL COURSE OUTLINE

Course Code	BIOL 106	Course Title	Introduction to Environmental Science			
Credit Value	4	Department	Mathematics and Science			
No. of weeks	14	Hrs. per week	<i>Lecture</i>	<i>Tutorial</i>	<i>Laboratory</i>	<i>Total</i>
			3	0	3	6
Course Description	This will introduce students to the study of environmental science – an investigation of ecological issues and how these problems impact ecosystems. It will also explore the importance of assessing impacts of human activities on ecosystem and potential solutions. The focus will be on understanding marine, freshwater and terrestrial ecosystems, and their dynamic biological, physical and chemical interactions. Strategies for developing and promoting a more sustainable environment will also be discussed.					
Prerequisite(s)	ENGL 099					
Initial Articulation Targets	<i>UBC</i>	<i>SFU</i>	<i>UVic</i>	<i>UNBC</i>	<i>TRU</i>	
	ENVR 1st (3)	EVSC 100 (3) & EVSC 1XX (1), B-Sci for both	ES 1XX (1.5)	BIOL 1XX (4), Can substitute for UNBC BIOL 110-3 + BIOL 111-1 as a breadth requirement	BIOL 1040 (3)	
	For updated information on the transferability of this course, please consult the BC Transfer Guide, www.bctransferguide.ca					
Learning Outcomes	<p>Upon successful completion of this course, the student will be able to:</p> <ul style="list-style-type: none"> • Describe key Earth systems, cycles, properties and processes • Identify human activities that alter Earth systems, and processes • Describe the environmental problems that stem from human activities • Assess solutions to environmental problems • Solve problems using basic data, scientific, and environmental literacy skills 					
Content	<p>Core topics – all of the following will be covered:</p> <ul style="list-style-type: none"> • Introduction – The Environment • Ecosystems Overview – Freshwater/Marine/Terrestrial • Diversity of ecosystems on Earth • Water Resources • Land Resources • Food Resources • Environmental problems from atmospheric ozone depletion to loss of biodiversity, water pollution and climate change 					



	<ul style="list-style-type: none"> • Conventional Energy: Fossil Fuels • Air Pollution: Consequences of Using Fossil Fuels • Natural Resources – Renewable / non renewable • Earth systems • Cycles • Energy flow • Mineral resources • Human Populations and Environmental Health • Environmental hazards, risk management • Managing Resources: Environmental Economics and Policy • Waste (solid/liquid and toxic/hazardous waste and management) • Sustainability strategies <p>Additional topics may also be covered, at the discretion of the instructor.</p> <p>Labs:</p> <ul style="list-style-type: none"> • Effect on Salt on Seed Germination • Microorganism Count and Identification in Water and Soil, Biological Drawing • Rocks, Minerals, Forest Management Strategy • Oil Spill and Ecological Consequences • Effect of Detergents on Seed Germination • Water Monitor: pH, Hardness, Heavy Metals, Alkalinity • Environmental Actions • Ocean Acidification 						
Methods of Instruction	Lectures, demonstrations, small group discussions, case study analysis, concept mapping, internet research, and field trips.						
Required Textbook(s)	<p>The following textbook(s) is/are required, or approved equivalent(s).</p> <p>Branfireun, M., Karr, S., , Interlandi, J. & Houtman, A. (2014). Environmental Science for a Changing World. (Canadian Edition). New York, NY: W.H. Freeman and Company.</p> <p>Withgott, J.H., Laposata, M. & Murck, B. (2016). Environment: The Science Behind the Stories. (3rd Canadian Edition). Don Mills, Ontario: Pearson Canada.</p>						
Required Equipment and Technology	<p>Students are required to have a computer with internet access.</p> <p>The following resources are provided by the College:</p> <ul style="list-style-type: none"> • Office 365 • Student email 						
Homework Hours	At minimum, students can expect one hour of homework for every hour of instructional time.						
Evaluation	<table border="1"> <thead> <tr> <th><i>Component</i></th> <th><i>% Value</i></th> </tr> </thead> <tbody> <tr> <td>Quizzes and assignments</td> <td>10-15%</td> </tr> <tr> <td>Laboratory experiments and activities</td> <td>15-20%</td> </tr> </tbody> </table>	<i>Component</i>	<i>% Value</i>	Quizzes and assignments	10-15%	Laboratory experiments and activities	15-20%
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Laboratory experiments and activities	15-20%						



	<ul style="list-style-type: none"> Weight divided over 8 labs 		
	Comprehensive laboratory exam		15-20%
	Midterm exam		15-20%
	Comprehensive final exam		30-35%
Completion Requirements	The minimum grade to pass this course is D (50%). Unless otherwise stated, a minimum grade of C- (55%) is required for this course to fulfil a prerequisite.		
Course Designer(s)	Mitra Panahi, Ph.D. Biology Instructor, Alexander College	Consultant(s), <i>if applicable</i>	Lauren David, Ph.D., MET, Department of Social Science, Alexander College Carol Pollock, Ph.D., Professor Emerita, University of British Columbia Barbara Moon, Ph.D. Dean of Arts and Sciences, Alexander College
Dean's Approval	Barbara Moon, Ph.D. Dean of Arts and Sciences, Alexander College	Dean's Approval Date	June 4, 2020
Curriculum Committee Approval Date	June 4, 2020	First Term Offered	Fall 2020
Last Review Date	September 1, 2024	Next Review Date	September 1, 2029
Revision History	September 1, 2024 – Laboratory assessments revised by Kelly Cheung.		