

# BA FORESTRY & ENVIRONMENTAL STUDIES - 11A

**District Name:** Kamloops/Thompson  
**District Number:** School District #73  
**Developed by:** Susan Bondar  
**Date Developed:** January 10, 2007  
**Current School Name:** Norkam Secondary School  
**Principal's Name:** Norkam Secondary School – Susan Bondar  
S.D. #73 – Transitions Advisor - Greg Howard

**Board/Authority Approval Date:**

**Board/Authority Signature:**

**Course Name:** **FORESTS AND FOREST ECOLOGY - 11A**

**Grade Level of Course:** 11

**Number of Course Credits:** 4

**Number of Hours of Instruction:** 110 hours

## ➤ **COURSE SYNOPSIS – 11A**

### **FORESTS AND FOREST ECOLOGY**

The 11A – Forests and Forest Ecology course is an introductory course for students to develop an understanding of forests from various perspectives. The course introduces students to ecosystem components, soil types and also woody and herbaceous plants and trees.

#### ▪ **Rational – 11A**

Students will brainstorm the pros and cons of the forest industry from their perspective and include how the industry affects society. Students will develop a basic understanding and identification of plants, trees and soils. The focus will be on indicator plants, trees and the classification of soils. An emphasis will be on field note taking as it pertains to forest practices. Students will then apply the knowledge through class and field experiences with tree and plant collections.

#### ▪ **Organizational Structure – 11A**

<b>Unit</b>	<b>Title: Forests and Forest Ecology</b>	<b>Time</b>
1	Forests and Society	10 hours
2	Forest Ecology	20 hours
3	Plants, Trees and Soil Identification	50 hours
4	Inventories	10 hours
	a. Site Plan – Data collection for plants, trees and soils	20 hours

**Total Hours**

**110 hours**

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## 11A – Unit 1: Forests and Society

10 hours

The Forests and Society course introduces students to the importance of forests and forest-use decisions from various perspectives. Students develop an understanding of who uses the forests and what the forests are used for.

### Learning Resources

- Computer lab for research
- Library for research
- Media articles
- Journal

### Learning Outcomes

It is expected the student will be able to:

- Define 'resource' and 'forest'
- Describe factors affecting forest-use decisions
- Demonstrate awareness of a variety of perspectives and values related to forests and forest use
- Demonstrate awareness of and appreciation for Aboriginal peoples relationship with the forests in British Columbia
- Compare historical and current forest practices
- Assess the importance of forests to British Columbians
- Describe a variety of forest-related careers

### Assessment Procedure

<b>Formative</b>	<b>%</b>	<b>Summative</b>	<b>%</b>
Assignments and homework	20	Tests and Quizzes	20
Projects – Research, written and oral report	20	Journal	10
Performance (demonstration of skills and participation level)	10	Final Project	10
Self Rating Rubrics	10		
<b>Total</b>	<b>60%</b>	<b>Total</b>	<b>40%</b>

### Methods of Assessment:

- Teacher observation
- Written assignments
- Research projects
- Presentations
- Group work
- Test and/or quizzes
- Homework
- Self evaluation
- Use of terminology
- Journal

## 11A – Unit 2: Forest Ecology

20 hours

The Forest Ecology course introduces students to forest ecology. Students investigate the links in a forest ecosystem through various class and field activities.

### Learning Resources

- Plants of Southern Interior British Columbia
- Trees, Shrubs and Flowers of British Columbia
- Computer for research
- Journal

### Learning Outcomes

It is expected the student will be able to:

- Define ecology, environment and ecosystems
- Describe processes in and components of ecosystems
- Demonstrate awareness of forests as complex ecosystems
- Describe the roles that fungi, microbes and lichens play in a forest ecosystem
- Define structural diversity and biological diversity
- Assess the effects of natural and human forces on the forest
- Describe a variety of food chains and food webs

### Assessment Procedure

<b>Formative</b>	<b>%</b>	<b>Summative</b>	<b>%</b>
Assignments and homework	20	Tests and Quizzes	20
Projects – Small group work, oral report using proper terminology	20	Journal	10
Performance (demonstration of skills and participation level)	10	Final Project (case study – in lieu of traditional final exam)	10
Self Rating Rubrics	10		
<b>Total</b>	<b>60%</b>	<b>Total</b>	<b>40%</b>

### Methods of Assessment:

- Teacher observation
- Written assignments
- Research projects
- Presentations
- Test and/or quizzes
- Homework collection or checks
- Self evaluation
- Use of terminology
- Journal

## 11A – Unit 3: Plants, Trees and Soil Identification

50 hours

The Plants, Trees and Soil Identification course provides students the opportunity to identify, describe and name herbaceous, woody plants, trees and soils. Students gain understanding of plants and the processes essential for life. They will develop plant portfolio through class and field activities. The portfolios will be used throughout the Forestry and Environmental Studies Program.

### Learning Resources

- Plants of Southern Interior British Columbia
- Tree Book – Learning to recognize trees of British Columbia
- Forest Practices Code Guidebook
- Soil texture triangle
- Shovel
- Tape measure
- Journal

#### **a. Plants**

### Learning Outcomes

It is expected the student will be able to:

- Use a key to identify a variety of local plants with their scientific and common names
- Describe the habitat requirements of a variety of local plants
- Differentiate between:
  - Vascular and non-vascular plants
  - Herbaceous and woody plants
  - Annuals and perennials
  - Trees and shrubs
  - Monocotyledons and dicotyledons
- Describe the processes of photosynthesis, respiration and transpiration
- Analyze factors affecting plant survival and growth

#### **b. Trees**

### Learning Outcomes

It is expected the student will be able to:

- Define silvics
- Use a key to identify a variety of local trees with their scientific and common names
- Describe the habitat requirements of a variety of local trees
- Compare characteristics of angiosperms and gymnosperms
- Describe functions of and relationship between parts of gymnosperms and angiosperms
- Identify the form and function of woody plant tissues

#### **c. Soils**

### Learning Outcomes

It is expected the student will be able to:

- Analyze the biotic and abiotic factors that influence forest soil development
- Use a soil profile to identify soil horizons
- Analyze the physical properties of soils
- Assess practices that protect soils and minimize degradation

Assessment Procedure

<b>Formative</b>	<b>%</b>	<b>Summative</b>	<b>%</b>
Assignments and homework	20	Tests and Quizzes	20
Field data collection	10	Log book	10
Performance (demonstration of skills and participation level)	10	Final Project – Plant and tree collections, soil samples	20
Self Rating Rubrics	10		
<b>Total</b>	<b>50 %</b>	<b>Total</b>	<b>50%</b>

Methods of Assessment:

- Teacher observation
- Written assignments
- Data collection
- Check lists
- Research projects
- Presentations
- Plant and tree collection
- Soil samples
- Test and/or quizzes
- Homework
- Self evaluation
- Use of terminology
- Journal

## **11A – Unit 4: Inventories**

**10 hours**

The Inventories course introduces various types of resource inventories conducted for forests, streams, visuals, wildlife and fish. Students gain understanding of the concept of inventory and the application of sampling as an inventory method. Measurement skills are also applied.

### Learning Resources

- Forest Practices Code Guidebook
- Computer for research
- Journal

### Learning Outcomes

It is expected the student will be able to:

- Define inventory
- Identify a variety of resource inventories
- Describe reasons for sampling
- Demonstrate awareness of the limitations of the application of sampling data

## **a. Site Plan – Soils and Plants**

**20 hours**

The Site Plan course is the practical application of the identification of plants and soils from Course 11A, Unit 3 – Plants, Trees and Soils. Students will collect data and formulate real life applications associated with a Forest Site Plan.

### **Learning Resources**

- Shovel
- Diameter tape
- Increment borer
- Compass
- Clinometers
- Soil sieve
- Tape measure
- Soil texture triangle
- Chain or 50 meter tape
- Journal

### Learning Outcomes

It is expected the student will be able to:

- Collect field data, record and describe resources
- Describe the applications of timber inventory
- Demonstrate an ability to calculate tree volume and estimate stand volume
- Describe plants and soils
- Describe on site resources such as wildlife, fish, visuals, terrain, organic material, soils, plant species and trees





## Assessment Procedure

<b>Formative</b>	<b>%</b>	<b>Summative</b>	<b>%</b>
Assignments and homework	20	Tests and Quizzes	20
Field data collection	10	Journal	10
Performance (demonstration of skills and participation level)	10	Final Project – Site Plan Report	20
Self Rating Rubrics	10		
<b>Total</b>	<b>50%</b>	<b>Total</b>	<b>50%</b>

### Methods of Assessment:

- Teacher observation
- Written assignments
- Data collection
- Check lists
- Presentations
- Test and/or quizzes
- Homework
- Self evaluation
- Use of terminology
- Journal