Calendar Description:

FRST 100 (3.0) Sustainable Forests. An overview of forests and forestry. Survey of the disciplines, areas of study, and values that frame sustainable management of forests in BC and the world. Assignments focus on critical thinking and written communication skills.

Lectures:
Monday, Wednesday, Friday 14:00 to 15:00 FSC 1005

Instructor:
Dr. Peter Marshall FSC 2022 604-822-4918 (peter.marshall@ubc.ca)

Office Hours: Friday, 13:00 – 13:50, 15:00 – 16:30 or by appointment.

Senior Teaching Assistant:
Juliana Magalhães FSC 2227 (juliana.magalhaes@ubc.ca)

Office Hours: Monday, 13:00 – 14:00
Wednesday, 15:00 – 17:00

Graduate Teaching Assistants:
Ignacio San-Miguel – Blog Master: ignacio.sanmiguel@alumni.ubc.ca
Galen Maennicke – Marker gmaennic@mail.ubc.ca
Yemi Adeyeye: - Marker yemi.adeyeye@alumni.ubc.ca

Required Text:
None.

Evaluation:

Participation (Blog) 10%
Essay Draft 10%
Essay Final 20%
Midterm Exam 20%
Final Exam 40%
NOTE: A reduction in grade of 1 mark per day will be assigned to late submissions of the essay draft and essay final, unless prior instructor permission is granted. The policy on late blog submissions will be covered in the blog instructions.

Goals:

- Explore the intersection of forests, forestry, and sustainability
- Orientation to the Faculty of Forestry

Learning Objectives:

Following completion of this course, you will be able to:

1. Describe roles of forests and forestry in global sustainability
2. Write a basic essay in natural sciences
3. Discuss basic issues in the sustainability of forest management

Lecture Schedule

FRST 100, Sustainable Forests, has three units. In Unit 1 we discuss the role of natural disturbances in forested ecosystems, which create an inherently unstable system and frames the context of the consideration of sustainability. The following series of class sessions are devoted to investigating the different forest biomes of the world, beginning with the boreal and ending up in the tropics. In each biome there is a consideration of the species composition, the impact on ecological processes (such as forest floor decomposition and nutrient cycling) of the inherently different climates, and the resultant rates of growth and productivity.

The second unit considers the science of managing forests. This unit includes subjects such as silviculture (applied forest ecology) and the domestication of trees (forest genetics and tree breeding). There is a detailed discussion of what constitutes science based forestry and examples of the different scientific disciplines used in making forest management decisions.

The third unit brings together all the ideas of the two foundation units and tries to apply these concepts to considerations of what is sustainability in the forests we manage. These ideas are put to the test as we explore current issues in the world and Canada (such as climate change, increased fire frequency, and deforestation). We end the course with a general discussion of how ethics and professionalism frame scientific forest management.
## TENTATIVE LECTURE SEQUENCE

### UNIT I – FORESTS AND FOREST ECOSYSTEMS

#### WEEK 1
- **Lecture 1**  Introduction and course mechanics  
  (Marshall)  
  Sept. 6
- **Lecture 2**  Sustainability in an unstable system  
  (Marshall)  
  Sept. 8

#### WEEK 2
- **Lecture 3**  Forests of the world (I)  
  Boreal  
  (Marshall)  
  Sept. 11
- **Lecture 4**  Forests of the world (II)  
  Boreal (cont’d)  
  (Marshall)  
  Sept. 13
- **Lecture 5**  Forests of the world (III)  
  Temperate  
  (Magalhães)  
  Sept. 15

#### WEEK 3
- **Lecture 6**  Forests of the world (IV)  
  Tropical (wet and dry)  
  (Magalhães)  
  Sept. 18
- **Lecture 7**  Forests of Canada  
  (Magalhães)  
  Sept. 20
- **Lecture 8**  Finding your way around Forestry  
  (Forestry Student Services)  
  Sept. 22
| WEEK 4 | Lecture 9 | How do trees grow?  | Sept. 25 |
|        |          | General tree physiology and anatomy | (Marshall) |
| Lecture 10 | What is an ecosystem?  | Sept. 27 | (Marshall) |
| Lecture 11 | Video “Green Fire”  | Sept. 29 | (Magalhães) |

| WEEK 5 | Lecture 12 | General themes - Review of topics to date  | Oct. 2 | (Magalhães) |

**UNIT II – MANAGING FORESTS**

| Lecture 13 | Writing Essays  | Oct. 4 | (Marshall) |
| Lecture 14 | Silviculture and forest management  | Oct. 6 | (Marshall) |

| WEEK 6 | Lecture 15 | Searching and citing the scholarly literature  | Oct. 9 | (Sally Taylor) |
| Lecture 16 | Domestication of trees  | Oct. 11 | (Prof. Yousry El-Kasaby) |

<p>| WEEK 7 | Lecture 17 | International forestry: Issues, institutions and prospects  | Oct. 16 | (Dr. Hosny El-Lakany) |</p>
<table>
<thead>
<tr>
<th>Lecture 18</th>
<th>What goods and services do forests provide?</th>
<th>Oct. 18</th>
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<td><em>(Magalhães)</em></td>
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<tr>
<th>Lecture 19</th>
<th>General themes</th>
<th>Oct. 20</th>
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<tr>
<td>Review of topics to date</td>
<td><em>(Magalhães)</em></td>
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**WEEK 8**

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<tr>
<th>Lecture 20</th>
<th>Wood products</th>
<th>Oct. 23</th>
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<td><em>(Prof. Simon Ellis)</em></td>
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**MIDTERM (In Class)** Oct. 25

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<tr>
<th>Lecture 21</th>
<th>Settler and Tŝilhqot’in: the story of two BC community forestry initiatives</th>
<th>Oct. 27</th>
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<td><em>(Rami Rothkop and Natalie Swift)</em></td>
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**WEEK 9**

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<tr>
<th>Lecture 22</th>
<th>Coffee and agroforestry in Peru</th>
<th>Oct. 30</th>
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<td><em>(David Aquino)</em></td>
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<tr>
<th>Lecture 23</th>
<th>Midterm and General Themes discussion</th>
<th>Nov. 1</th>
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<td><em>(Marshall)</em></td>
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**ESSAY DRAFT DUE** Nov. 2

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<tr>
<th>Lecture 24</th>
<th>Urban forestry</th>
<th>Nov. 3</th>
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<td><em>(Prof. Cecil Konijnendijk)</em></td>
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**WEEK 10**

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<tr>
<th>Lecture 25</th>
<th>Forest management and community forestry in Nepal</th>
<th>Nov. 6</th>
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<td><em>(Dr. Anil Shrestha)</em></td>
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<th>Lecture 26</th>
<th>Forest conservation issues in China</th>
<th>Nov. 8</th>
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<td><em>(Prof. Guangyu Wang)</em></td>
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Lecture 27  Renaissance of the Canadian Forestry Sector  Nov. 10
  (Dr. Chris Gaston)

UNIT III – ISSUES IN FOREST SUSTAINABILITY

WEEK 11

REMEMBRACE DAY HOLIDAY  Nov. 13

Lecture 28  Forest certification  Nov. 15
  (Dr. Anna Tikina)

Lecture 29  What is forest conservation?
  Pinchot and Leopold essays.  Nov. 17
  (Marshall)

WEEK 12

Lecture 30  Canadian forest issues  Nov. 20
  (Marshall)

Lecture 31  Sustainable forestry  Nov. 22
  (Dean John Innes)

Lecture 32  Forestry and Ethics  Nov. 24
  (Marshall)

WEEK 13

Lecture 33  The profession of forestry  Nov. 27
  (Marshall)

Lecture 34  Summary  Nov. 29
  (Marshall)

Lecture 35  Questions/Open Discussion  Dec. 1
  (Marshall)

ESSAY DUE  Dec. 1