1-2003

BIOL 250.01: Rocky Mountain Flora

Bradley J. Cook

The University of Montana

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Biology 250: Rocky Mountain Flora

Lectures: T, Th 10-11 am, Natural Sciences (NS; aka Botany) Bldg. room 307
Lab: W 1-3 or W 3-5, or F 1-3 Natural Sciences Bldg. 208
Walkabouts: weekly—TBA

Instructor: Dr. Brad Cook, bjcook@selway.umt.edu, 243-5382
Office hours: Natural Sciences, room 115; M and T from 11am-noon or by appointment

Teaching assistant: Jedediah Brodie, jedediah_brodie@yahoo.com
Office hours: TBA

Required texts and equipment:
Plant dissection kit ($5.50)

Optional texts and equipment:
10x or 15x loupe

Course Objectives.
1. Learn skills to identify plants
   a. Learn basic terminology used in plant identification
   b. Become proficient with plant identification “keys”
2. Sight recognition of common plants of the Rocky Mountains
   a. Learn to recognize 35 plant families
   b. Learn to recognize approximately 60 dominant plant species
3. Learn techniques of collecting and preserving plants for future identification and study.
4. Introduce topics relevant to plant systematics including adaptive evolution, the history of plant taxonomy, pollination biology, and species diversity
5. Introduce relevant topics in plant community ecology and phytogeography of Rocky Mountain Flora

Grading:
- Lecture Exam 1: 100
- Lecture Exam 2: 100
- Final Exam: 150
- Final Lab Exam: 75
- Lab Quizzes (15pts each): 75
- Plant Collection: 50

Total points possible: 550

A=100-90%, B=89-80%, C=79-70%, D=69-60%, F=<59%
For Pass/non-pass: Pass >70% and Non-pass <70%
**How to succeed in this course.** Do not miss lecture or lab. There is A LOT of terminology and you must keep up as it is presented or you will soon become overwhelmed. Spend a few hours each week reviewing lab and lecture notes, pay special attention to the core terminology handout, and **begin reading/studying Chapter 7 in Woodland right away**. You will basically be learning a new language, and if you fail to learn the important terms it will be exceedingly difficult to keep up with learning the plant families and relating them to each other. **PLEASE come to office hours or make an appointment if you need help.**

**BIO 250 Schedule**

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture/Lab</th>
<th>Topic</th>
<th>Readings in Woodland</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td>January 28</td>
<td>Lecture</td>
<td>Introduction, course objectives and requirements</td>
<td>pp. 1-4</td>
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<td></td>
<td>29</td>
<td>Wednesday Labs</td>
<td>Collecting plants and dichotomous keying</td>
<td>pp. 13-28</td>
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<td></td>
<td>30</td>
<td>Lecture</td>
<td>Plant classifications</td>
<td>pp. 361-82</td>
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<td>31</td>
<td>Friday Lab</td>
<td>Collecting plants and dichotomous keying</td>
<td>pp. 13-28</td>
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<tr>
<td><strong>Week 2</strong></td>
<td>February 4</td>
<td>Lecture</td>
<td>Botanical nomenclature</td>
<td>pp. 5-12</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>Wednesday Labs</td>
<td>Quiz 1-terminology and nomenclature</td>
<td></td>
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<tr>
<td></td>
<td>6</td>
<td>Lecture</td>
<td>Bryophytes and Lichens</td>
<td>handout</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>Friday Lab</td>
<td>Quiz 1-terminology and nomenclature</td>
<td></td>
</tr>
<tr>
<td><strong>Week 3</strong></td>
<td>February 11</td>
<td>Lecture</td>
<td>Pteridophytes: <em>Polypodiaceae, Equisetaceae,</em> and <em>Lycopodiaceae</em></td>
<td>pp. 29, 31-33, 35, 38</td>
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<td></td>
<td>12</td>
<td>Wednesday Labs</td>
<td>Bryophytes and Pteridophytes</td>
<td></td>
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<tr>
<td></td>
<td>13</td>
<td>Lecture</td>
<td>Vegetative and floral morphology</td>
<td>pp. 80-100, 105-8</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>Friday Lab</td>
<td>Bryophytes and Pteridophytes</td>
<td></td>
</tr>
<tr>
<td><strong>Week 4</strong></td>
<td>February 18</td>
<td>Lecture</td>
<td>Vegetative and floral morphology</td>
<td>pp. 80-100, 105-8</td>
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<tr>
<td></td>
<td>19</td>
<td>Wednesday Labs</td>
<td>Quiz 2- recognition and identification; Veg/floral morph</td>
<td></td>
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<tr>
<td></td>
<td>20</td>
<td>Lecture</td>
<td>Gymnosperms: <em>Pinaceae, Taxaceae</em> and <em>Cupressaceae</em>; +9 genera</td>
<td>pp. 58-59, 62, 66, 69-70, 72-73, 76</td>
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<td>21</td>
<td>Friday Lab</td>
<td>Quiz 2- recognition and identification; Veg/floral morph</td>
<td></td>
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<tr>
<td><strong>Week 5</strong></td>
<td>February 25</td>
<td>Lecture</td>
<td>Plant Sex!</td>
<td>pp. 100-5</td>
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<td>26</td>
<td>Wednesday Labs</td>
<td>Gymnosperms; Keying</td>
<td></td>
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<td>27</td>
<td>Lecture</td>
<td>Angiosperms: Magnoliidae-<em>Ranunculaceae</em> and <em>Berberidaceae</em></td>
<td>pp. 109-10, 112, 126</td>
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<td></td>
<td>28</td>
<td>Friday Lab</td>
<td>Gymnosperms; Keying</td>
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<tr>
<td><strong>Week 6</strong></td>
<td>March 4</td>
<td>Lecture</td>
<td><strong>Exam 1</strong></td>
<td>pp. 100-5</td>
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<td></td>
<td>5</td>
<td>Wednesday Labs</td>
<td>Quiz 3-Keying; <em>Ranunculaceae</em> and <em>Berberidaceae</em></td>
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<td>6</td>
<td>Lecture</td>
<td>Rosidae: <em>Rosaceae, Saxifragaceae, Apiaceae,</em> and <em>Aceraceae</em></td>
<td>pp. 206, 215-6, 26</td>
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<td></td>
<td>7</td>
<td>Friday Lab</td>
<td>Quiz 3-Keying; <em>Ranunculaceae</em> and <em>Berberidaceae</em></td>
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<tr>
<td><strong>Week 7</strong></td>
<td>March 11</td>
<td>Lecture</td>
<td>More Rosidae: <em>Fabaceae, Grossulariaceae,</em> and <em>Onagraceae</em></td>
<td>pp. 213, 221, 230</td>
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<td></td>
<td>12</td>
<td>Wednesday Labs</td>
<td>Rosidae: FROGS AA</td>
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<tr>
<td></td>
<td>13</td>
<td>Lecture</td>
<td>Asteridae: <em>Asteraceae</em> and <em>Boraginaceae</em></td>
<td>pp. 276, 287, 306</td>
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<td></td>
<td>14</td>
<td>Friday Lab</td>
<td>Rosidae: FROGS AA</td>
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<tr>
<td><strong>Week 8</strong></td>
<td>March 18</td>
<td>Lecture</td>
<td>More Asteridae: <em>Caprifoliaceae, Lamiaceae,</em> and <em>Schrophulariaceae</em></td>
<td>pp. 289, 294, 306</td>
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<tr>
<td></td>
<td>19</td>
<td>Wednesday Labs</td>
<td>Asteridae; Recognition and Keying</td>
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<tr>
<td></td>
<td>20</td>
<td>Lecture</td>
<td>Still more Asteridae: <em>Hydrophyllaceae</em> and <em>Polemoniaceae</em></td>
<td>pp. 285, 286</td>
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<td></td>
<td>21</td>
<td>Friday Lab</td>
<td>Asteridae; Recognition and Keying</td>
<td></td>
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<tr>
<td><strong>Week 9</strong></td>
<td>March 24-28</td>
<td>Spring Break</td>
<td>Spring Break</td>
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</tbody>
</table>
## Week 10

**April 1**  
Lecture: XID software for plant identification  
Handout

**April 2**  
Wednesday Labs: Quiz 4-recognition and identification; Asteridae-CAPH BLS

**April 3**  
Lecture: Hamamelidae: *Betulaceae* and Dilleniidae: *Salicaceae*; +4 genera  
pp. 130, 142, 156, & 187

**April 4**  
Friday Lab: Quiz 4-recognition and identification; Asteridae-CAPH BLS

## Week 11

**April 8**  
Lecture: Review for Exam 2

**April 9**  
Wednesday Labs: *Betulaceae* and *Salicaceae*; Keying

**April 10**  
Lecture: Exam 2

**April 11**  
Friday Lab: *Betulaceae* and *Salicaceae*; Keying

## Week 12

**April 15**  
Lecture: Dilleniidae: *Brassicaceae* and *Ericaceae*  
pp. 189, 195

**April 16**  
Wednesday Labs: Quiz 5- Keying; *Brassicaceae* and *Ericaceae*

**April 17**  
Lecture: Caryophyllidae: *Cactaceae, Caryophyllaceae*, and *Polygonaceae*  
pp. 144, 148, 153-4

**April 18**  
Friday Lab: Quiz 5- Keying; *Brassicaceae* and *Ericaceae*

## Week 13

**April 22**  
Lecture: Liliopsida- Commelinidae: *Poaceae*  
pp. 330, 227

**April 23**  
Wednesday Labs: *Cactaceae, Caryophyllaceae*, and *Polygonaceae*; Keying

**April 24**  
Lecture: Commelinidae: *Cyperaceae* and *Juncaceae*  
pp. 335-6

**April 25**  
Friday Lab: *Cactaceae, Caryophyllaceae*, and *Polygonaceae*; Keying

## Week 14

**April 29**  
Lecture: Liliopsida- Liliidae: *Orchidaceae, Iridaceae* and *Liliaceae*  
pp. 349, 352-3, 360

**April 30**  
Wednesday Labs: Commelinidae; keying

**May 1**  
Lecture: Liliidae

**May 2**  
Friday Lab: Commelinidae; keying

## Week 15

**May 6**  
Lecture: Phytogeography

**May 8**  
Wednesday Labs: Lab Final; keying and recognition (same time, same room)

**May 9**  
Lecture: Review for Final Exam

**May 10**  
Friday Lab: Lab Final; keying and recognition (same time, same room)

## Week 16

**May 12-16**  
Finals Week

**May 15**  
Final Examination: Friday, 8-10am; Same room as lecture (Natural Sciences 307)