## Course Outline: (subject to change)

<table>
<thead>
<tr>
<th>Date</th>
<th>Assignment due</th>
<th>Topic</th>
<th>Instructor</th>
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</thead>
<tbody>
<tr>
<td>Jan 18</td>
<td>Introduction to course, Tragedy of the Commons</td>
<td>All</td>
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<tr>
<td>20</td>
<td>Resource and land management</td>
<td>Nowak</td>
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<tr>
<td>25</td>
<td>• Resource management paradigms</td>
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<td>27</td>
<td>• Policy sciences</td>
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<tr>
<td>3</td>
<td>BN Quiz #1</td>
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<tr>
<td>8</td>
<td>Tragedy of the Commons</td>
<td>Miller</td>
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<tr>
<td>10*</td>
<td>BN #2 due</td>
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<tr>
<td>15</td>
<td>Mining: Gold mining in Nevada</td>
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<td>17</td>
<td>Acid Rain</td>
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<tr>
<td>22</td>
<td>Stormwater and urbanization</td>
<td>Garfield</td>
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<td>24</td>
<td>Urbanization</td>
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<td>Mar 1</td>
<td>Student Presentations</td>
<td>Garfield &amp; Miller</td>
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<tr>
<td>3</td>
<td>GM #1 Due, quiz</td>
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<td>8</td>
<td>Global change</td>
<td>Nowak</td>
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<td>10</td>
<td>• The precautionary principle</td>
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<tr>
<td>15</td>
<td>• Climate change</td>
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<td>17</td>
<td>• Increasing atmospheric CO(_2)</td>
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<td>22</td>
<td>• Global treaties</td>
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<td>24</td>
<td>Biodiversity</td>
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<td>29, 31</td>
<td>Spring break</td>
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<td>Apr 5</td>
<td>BN #3 due</td>
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<td>7</td>
<td>BN Quiz #2</td>
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<tr>
<td>12</td>
<td>Persistent organic pollutants: Long range transport</td>
<td>Miller</td>
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<td>14</td>
<td>Stratospheric Ozone Depletion (CFCs)</td>
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<td>19</td>
<td>Metals: Long range transport</td>
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<td>21</td>
<td>International pollution, socioeconomic constraints: Nepal</td>
<td>Garfield</td>
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<td>26</td>
<td>International pollution: artisanal mining and mercury, regulations</td>
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<td>28</td>
<td>Student presentations</td>
<td>Garfield &amp; Miller</td>
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<td>May 3</td>
<td>GM</td>
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<td>5</td>
<td>Final exam period: Noon – 2 PM</td>
<td>All</td>
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* Expert Speaker visiting on Feb 10: Mercury mining in Mongolia
Potential topics for student presentations:
1. What are the environmental implications of NAFTA
2. Arsenic in DW: are regulations appropriate?
3. Poverty vs. stormwater runoff and enforcement: what to do?
4. Corporate farms, pesticides and pollution
5. Genetically modified foods: Is this an environmental issue?
6. Mercury: Can it be regulated on the international scale
7. What are options for controlling air pollution in the Truckee Meadows?
8. Lake Tahoe: Will it be possible to stop the loss of clarity?
9. Radioactive waste in Nevada: Is the risk substantial?
10. Other topic also open, with consent of instructor

Course Objectives:
The overall goal of this capstone course is to provide a sound foundation on how to systematically integrate and use biological, physical, and social science principles in order to address environmental and natural resource problems and issues. The course will use specific examples of case studies as well as individual and group investigations to:
1. identify critical scientific and social issues that are related to the environmental and resource problems
2. develop reliable expert knowledge and data bases on those issues
3. integrate information and evaluate potential environmental and social impacts
4. communicate effectively the results of the problem analysis

Course Grading:
This course will have formal exams and quizzes, written assignments, and oral discussion assignments. Grading will also depend upon your verbal and written communication skills as assessed by your participation in discussions, presentations, individual reports, and group activities. All written assignments are due at the beginning of the class period indicated; late assignments will not be accepted for grading and will be scored as zero. All written assignments must be typed; handwritten assignments are unacceptable. Oral assignments will be made during the class period assigned by the instructor; missed oral assignments will not be rescheduled and will be scored as zero without a UNR-approved excuse.

Grading for a particular assignment will consider both content (80% of the assignment grade) and style (20%). Content includes items such as careful consideration of data and results, critical examination of problems and issues, creativity, and critical thinking. Style includes clarity of presentations and composed manner for oral assignments; spelling, punctuation, neatness, and rules of formal writing for written assignments.

Graduate student grading: Graduate students will be expected to give a better synthesis of information required in the exams and assignments and to use up-to-date, pertinent, peer-reviewed journal articles to substantiate their discussions.

Final grades for the course will be based on assignments and participation and assigned as follows
A = >90%
B = 80-90%
C = 70-80%
D = 60-70%
F = <60%

NOTE: This course uses the plus/minus system of grading.
Reference Materials:

Textbook:
This course does not have a required textbook for several reasons including: (1) new information about the issues that are discussed is continually being developed and published; (2) no single textbook is available that covers the topics that are discussed; and (3) as a capstone course, primary sources of information should be primarily used by the instructors and students.

Reference books:
The following are some good reference texts that provide supplemental readings on topics covered in class as well as serve as a starting point for assignments. Books with call numbers are in the Life and Health Sciences (LH) or DeLaMare (DLM) Library; the call number is at the end of the citation.

Reference journals:
Many journals have articles that relate to issues that are covered in class. These include (but are not restricted to) the following journals in ecology, environmental science, resource management, and agriculture. Most are found in the Health and Life Sciences Library

Agricultural and Forest Meteorology

Atmospheric Environment
Biogeochemistry
Ecological Applications
Ecological Modeling
Ecological Monographs
Ecology
Ecosystems
Ecotoxicology
Ecotoxicology and Environmental Safety
Environmental Geology
Environmental Management
Environmental Monitoring & Assessment
Environmental Pollution
Environmental Research
Environmental Science and Technology

Environmental Toxicology and Chemistry
Environ. Tox. & Risk Assessment
Forest Ecology and Management
Global Change Biology
International J. Biomeeteorology
Journal of Range Management
Microbial Ecology
Oecologia
Science of the Total Environment
Soil Biology and Biochemistry
Soil Science Soc. America Journal
Water Air & Soil Pollution

In addition to these discipline specific journals, journals for a general scientific audience such as *Science* or *Nature* often have articles of importance.

**Academic Dishonesty Policy:**
Students are expected to adhere to the ethical code as described in the UNR Student Handbook. This code specifies that with enrollment, an individual commits to the principles embodied in the code. Academic dishonesty in any form is unacceptable. In the event of an academic dishonesty issue, the procedures for addressing the issue are outlined in the University’s “Academic Dishonesty Procedures”, which can be obtained from the Director of Student Judicial Affairs in the Jones Visitor Center.