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Introduction
In the management of the environment and natural resources, policy makers are increasingly turning to market-based policies, creating new markets that operate alongside traditional markets for goods and services. Most of the environmental economics literature has focused on the benefits of such approaches from a social perspective – i.e., markets create an opportunity to achieve a socially efficient outcome. But such policies also create new and unfamiliar markets in which firms must operate. The focus of this class will be to develop a body of knowledge that would be useful for firms that interact with these markets.

Specific course goals
By the end of this class students should have a strong understanding of the economic theory of transferable-rights instruments, the conceptual challenges associated with their use, and knowledge of how these instruments have been used to address a variety of environmental and natural resource problems. You should develop a strong sense of how market-based policies affect firms and the acquire knowledge and skills that would be useful to firms that interact with these markets. Finally, a goal of the course is for each student to leave with the first draft of two papers that will eventually be published.

Grading:
The grades in this half of the class will receive equal weight with the half taught by Ron Griffin in determining your final grade in AGEC 677.

For this half of the class, your grade will be calculated as follows:
30% Team scores and participation
10% Anonymous peer assessments of your participation in the teams
10% Contribution to class research project (to be discussed)
50% Final paper and presentation (see discussion below).

Organization of the class
Most of the classes will use a Team Based Learning approach in which (1) all students must do readings outside of class, (2) teams of will work through exercises to synthesize the material and come up with solutions, and (3) the class as a whole comes up with answers to critical questions about how environmental markets affect business decisions.

In each class we will attempt to answer questions about environmental markets and come up with a consensus answers to these questions.
**What is Team Based Learning?**
The central idea behind TBL is that learning occurs best when one is working with ideas, not simply absorbing them. Hence, in a TBL class students prepare individually before class and then contribute to team efforts in the classroom to answer questions. All exercises will be designed so that each team must engage a significant question and simultaneously report their conclusions. The performance on these exercises will be evaluated by the instructor for a daily team score. Two anonymous peer evaluations will be carried out and these the quantitative scores will count for 10% of your final grade.

**Class Research Project**
This will be discussed on the first day of class. The idea is to carry out a review of existing EMs to quantify the global size of these markets with the intention of developing a class paper that would be submitted to a leading journal. We will develop a mutually agreeable protocol for establishing the authorship of this paper.

**Class paper**
See separate handout.

**Tentative Schedule**
The schedule is *very preliminary* and will almost certainly change a lot.

<table>
<thead>
<tr>
<th>Class #</th>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>3/6</td>
<td>Historical overview?</td>
<td>Tietenberg ch. 1, Boyd et al.</td>
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<tr>
<td>2</td>
<td>3/8</td>
<td>Basic theory?</td>
<td>Tietenberg ch. 2</td>
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<tr>
<td>4</td>
<td>3/22</td>
<td>Prices formation/EU ETS</td>
<td>Creti et al. 2012</td>
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<tr>
<td>5</td>
<td>3/27</td>
<td>Banking</td>
<td>Kruger et al.( 2007)</td>
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<tr>
<td>6</td>
<td>3/29</td>
<td>Investment</td>
<td>Innes 2003</td>
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<tr>
<td>7</td>
<td>4/3</td>
<td>Market power</td>
<td>Zhao 2003, Jaffe et al. 2002</td>
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<tr>
<td>8</td>
<td>4/5</td>
<td>How can EMs affect related markets.</td>
<td>Hahn 1984</td>
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<td>9</td>
<td>4/10</td>
<td>The REC market</td>
<td>Kolstad &amp; Wolak 2003</td>
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<td>10</td>
<td>4/12</td>
<td>IFQ &amp; ITQs</td>
<td>Parts of Schmalansee, 2012, Berry 2002</td>
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<tr>
<td></td>
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<td>Wetland mitigation banking &amp; TDRs – what determines demand</td>
<td>Newell et al. 2005</td>
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<tr>
<td>no class</td>
<td>4/17</td>
<td><em>we need to make up 1 or 2 classes</em></td>
<td>Kopits et al. 2008</td>
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<tr>
<td>11</td>
<td>4/24</td>
<td>Presentations</td>
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<tr>
<td>12</td>
<td>4/26</td>
<td>Presentations</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>5/1</td>
<td>Presentations (tentative + possibly 1 more)</td>
<td></td>
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**Reading list**
*All papers will be made available via the class home page*


