

**University of Massachusetts at Boston**  
**College of Education and Human Development, Critical & Creative**  
**Thinking Program**  
**University Honors Program**

# **Environment, Science & Society: Critical Thinking**

**CrCrTh640/Honors 380-01**

**Fall 2010**

**Syllabus**

Instructor: Peter Taylor, Critical & Creative Thinking Program

Email: [peter.taylor@umb.edu](mailto:peter.taylor@umb.edu)

Phone: 617-287-7636

Office: Wheatley 2nd floor, room 157

Class meetings: Mondays September 13 -December 13 (exc. Oct. 11)

Honors 380 in W-2-209, 4-6.30pm; CrCrTh640 in McC 2-628C, 6.45-9.15pm, except 4-6.30pm in W-2-209 on 9/13 & 10/4 (and TBA, also 11/1 & 12/6)

Office/phone call hours: Monday 2.40-3.40; Tuesday 3.20-4, 5.30-6.30pm by [sign up](#)  
([ptaylor.wikispaces.umb.edu/PTOfficeHours](http://ptaylor.wikispaces.umb.edu/PTOfficeHours)) or by arrangement

Websites: [www.faculty.umb.edu/pjt/640-10.html](http://www.faculty.umb.edu/pjt/640-10.html) and links

Private wikispaces for assignment submission: CCT-xx.wikispaces.umb.edu (where xx is your last name; username & password as for your @umb.edu email)

Course wiki page for additional info & for sharing work for peer commentary: [crrth640.wikispaces.umb.edu](http://crrth640.wikispaces.umb.edu)

Listserv/discussion forum: Emails sent to [cct640@googlegroups.com](mailto:cct640@googlegroups.com) will go to everyone in the course

Annotated bibliography and WWW bookmarks: [groups.diigo.com/group/envscisociety](http://groups.diigo.com/group/envscisociety)

## **CATALOG DESCRIPTION**

Through current and historical cases, this course explores the diverse influences that shape environmental science and politics and their pedagogical, professional, social, and moral implications for educators, environmental professionals, and concerned citizens.

## **Overview for 2010**

Current and historical cases are used to examine the diverse influences that shape environmental science and politics. This exploration, in turn, leads to new questions and alternative approaches for students and concerned citizens. Such critical thinking is applied to topics such as ideas of nature, conservation and colonialism, systems thinking, population growth, climate modeling, the tragedy of the commons, socioenvironmental analysis, local knowledge & participatory planning, transnational economics, and

dystopian futures.

Students are, at the same time, introduced to a range of perspectives and tools for developing research questions, writing, and collaborations that support inquiry and action. Each 2.5 hour, once-per-week course session includes time for students to practice applying the new perspectives and tools to an environmental topic of their own interest. These tools and perspectives include guided freewriting, personal/professional development workbooks, problem-based learning (PBL), annotating and sharing bibliography entries online, diagramming and mapping complex connections, the dialogue process, strategic participatory/ stakeholder planning process, peer commentary and cooperative group work, historical analysis of key terms (e.g., nature, science, environment, society, critical), dialogue around written work (revision in response to comments), and more.

Regular, small writing assignments and revisions are required and a modest amount of reading. Students can expect to spend 5-7 hours/week preparing for the course outside class meetings. An [extended overview](#) and [details about sessions](#) are given on the course wiki.

## **PREREQUISITES and preparation assumed for this course**

Graduate standing or permission of instructor. In lieu of other formal prerequisites, your previous studies and other experience should have prepared you to consider a range of perspectives and tools for developing research questions, writing, and collaborations that support inquiry and action. Additional preparation valuable for the course is the ability to formulate and pursue library and internet research and to write, seek feedback, and revise in systematic and efficient ways with minimal supervision (see [research and study competencies](#)).

**ACCOMMODATIONS:** Sections 504 and the Americans with Disabilities Act of 1990 offer guidelines for curriculum modifications and adaptations for students with documented disabilities. If applicable, students may obtain adaptation recommendations from the Ross Center (287-7430). The student must present these recommendations to each professor within a reasonable period, preferably by the end of the Drop/Add period.

**Students are advised to retain a copy of this syllabus in personal files for use when applying for certification, licensure, or transfer credit.**

**This syllabus is subject to change, but workload expectations will not be increased after the semester starts. (Version 16 January 2012; changes after the start of the semester are [marked in blue](#))**

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### **Sections To Follow In Syllabus**

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Links to specific Sessions on the web version of the syllabus: Session [9/13](#), [9/20](#), [9/27](#), [10/4](#), [10/18](#), [10/25](#), [11/1](#), [11/8](#), [11/15](#), [11/22](#), [11/29](#), [12/6](#), [12/13](#)

Bibliography

## TEXTS and MATERIALS

Required: Taylor, P. (2005). Unruly Complexity: Ecology, Interpretation, Engagement. Chicago: University of Chicago Press.

Recommended to help with writing: Daniel, D., C. Fauske, P. Galeno and D. Mael (2001). Take Charge of Your Writing: Discovering Writing Through Self-Assessment. Boston: Houghton Mifflin ("[new" copies available](#) well below list price on amazon.com)

Elbow, P. (1981). Writing with Power. New York: Oxford Univ. Press. (old editions are OK)  
(See also Conlin; Kanar; Perelman, et al.; Turabian)

Other than Unruly Complexity, most [readings for the course](#) are individual articles and book chapters that can be downloaded through [password protected site](#).

## ELECTRONIC ORGANIZATION and COMPETENCIES

All course materials can be accessed via the online version of this syllabus together with your personal CCT-xx.wikispaces.umb.edu/640checklist wikipage for assignment submission (where xx = your last name). You should create a bookmark to: 1. [the table of contents](#) for this syllabus (<http://www.faculty.umb.edu/pjt/640-10.html#TOC>); and 2. your CCT-xx 640checklist wikipage, then use these as your portals to any other course materials. (It might also help to bookmark [password protected site](#) for readings and additional information to prepare for sessions and follow-up afterward that will be posted during the semester on the course wiki, [crcrth640.wikispaces.umb.edu/640sessions](http://crcrth640.wikispaces.umb.edu/640sessions))

The specific technological competencies you will need for this course are described at [crcrth640.wikispaces.umb.edu/640Tech](http://crcrth640.wikispaces.umb.edu/640Tech).)

## ASSESSMENT & REQUIREMENTS:

More detail about the assignments and expectations is provided in the [Notes section](#) of the course wiki, and will be supplemented when needed by emails to course listserv. (The same details can also be viewed via links to your CCT-xx 640checklist page and <http://crcrth640.wikispaces.umb.edu/640checklist>.)

### A. Written assignments(2/3 of grade)

The course project is a plan for your future research and engagement on a topic that involves environment, science, and their relation to social context. Engagement might range from teaching, to activism, to personal/professional development, and it also means you are engaged--the topic is one you want to learn more about.

The plan should include the topic, review of relevant publications, and steps in the process of research and engagement (1500-2500 words).

Your topic and research plan are developed through a sequence of assignments:

A1. Presentation in session 4 on PBL case, A2. Briefing from PBL case, A3-A8. Thoughtpieces (350-600 words) that contrast your previous view of your topic with new thinking and questions that arise from the session, for sessions 5-10, A9. complete draft research plan, and A10. revised final report on research plan.

Initial submissions of [all assignments](#) due on the dates given in the Schedule of sessions below (as well

as in your assignment checklist).

At least seven should be revised and resubmitted in responses to comments until OK/RNR (=OK/ Reflection-revision-resubmission Not Requested).

If the complete report is not OK/RNR by the date for submission of grades an incomplete may be submitted (see link on assignment check-list for policies about incompletes).

For CCT students this plan should be suitable for inclusion in the required [Reflective Practitioner's Portfolio](#) because the plan is on a topic that has evolved during the course of the semester as you integrate the perspectives from each session and look ahead to future research and engagement on a topic that involves environment, science, and their relation to social context.

### **Participation and contribution to the class process (1/3 of grade)**

B. Building learning community through prepared participation and attendance at class meetings(=13 items) and B2. "syllabus quiz" submitted in session 2 and B3. Weekly buddy check-ins (see C1, below) (=3 items for 12 check-ins).

C. Personal/Professional Development (PD) Workbook compiled throughout the semester (9 items), including:

C1. Weekly entries, perused at first conference or before mid-semester break, on a. thoughts and questions about the tools and perspectives introduced in readings, sessions, and other discussions, especially as they relate to your evolving research topic, and b. weekly buddy check-ins (4 items)(see also C3)

C2. [worksheet](#) on PD workbook submitted in session 6

C3. Whole PD workbook ready for perusal (in hard copy or on wiki) at the end of the semester (session 13)

C4. Annotated bookmarks to relevant items on the internet, posted on [diigo](#) (2 items for 6 postings before session 13)

C5. Process review on the development of your work (due session 13)

D. Minimum of two in-office or phone conferences on your assignments, PD workbook, personal wikipage, and project -- one before session 6; the other by session 10 (=2 items)

E. Peer commentary on your buddy's work in each 4-week period and on another student's draft report (with copy posted on [peer share wiki](#)) (=4 items)

The grading system is simple, but unusual, so ask questions to make sure you have it clear: Students should aim for all writing and presentation assignments submitted on the due date and seven, including the complete report, OK/RNR (=OK/ Reflection-revision-resubmission Not Requested) as well as 26 participation items fulfilled.

If you reach or exceed this amount, you get 80 points (which gives you an automatic B+) and the following rubric is used to add further points.

For each quality "fulfilled very well" you get 2 points or 1 point if you "did an OK job, but there was room for more development/attention." You get 0 points if "to be honest, this still needs serious attention."

1. A sequence of assignments paced more or less as in syllabus (and revisions timely),
2. often revised thoroughly and with new thinking in response to comments.
3. Project innovative, well planned and carried out with considerable initiative, and

4. indicates that you will be able to move to research and engagement on your topic.
5. Project report clear and well structured,
6. with supporting references and detail, and professionally presented.
7. Active contribution to and reflection on process of learning from session activities around semester-long projects
8. Active, prepared participation and building the class as learning community, and
9. supporting buddy partners and other class members.
10. PD workbook, thought-pieces, and process review show: Consistent work outside sessions,
11. deep reflection on your development through the semester and
12. map of the future directions in which you plan to develop.

If you don't reach the automatic B+ level, your points = 7 for each writing assignment (or presentation) that is marked OK/RNR + 3 for each other writing assignment initially submitted by the due date + 1 for each participation item fulfilled up to a maximum of 80.

Overall course points are converted to letter grades as follows: The minimum grade for A is 95 points, for A- is 87.5, for B+ is 80, for B is 72.5; for B- is 65; for C+ is 57.5; for C is 50; and for undergraduates only: for C- minimum is 47; for D+ is 44; for D is 41; for D- is 38.

(In theory it is possible for a student to earn 104 points, but this would still be awarded an A.)

The difference in expectations for graduate and undergraduate students lies in what will be accepted as OK/RNR for written assignments and what counts as "fulfilled very well," "did an OK job," "still needs serious attention" in the rubric above.

**Plagiarism:** Using another person's ideas or material you did not write without citing the source is plagiarism and is unacceptable (see [library guide](#) and [Academic Honesty policies](#)).

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## SCHEDULE OF CLASSES

To prepare for sessions and follow-up afterward consult the additional information that will be posted during the semester on the course wiki, [crcrth640.wikispaces.umb.edu/640sessions](http://crcrth640.wikispaces.umb.edu/640sessions).

### 9/13, 1. Introductions

*Preparation:*

Purchase [course texts](#)

Review instructor's [portfolio and past evaluations](#) for the course

Begin to [get set up technologically](#)

*Session:*

Typical components of class sessions--Ideas, activities, workshop on application to students' projects--and relation to course goals.

Activity: How do we know if we have a population-environment problem?

Workshop: Introduction to Problem-Based Learning (PBL) case, initial freewriting, student introductions and initial ideas.

*Follow-up:* B2. Syllabus quiz; Exploration on the internet to find an initial angle related to the PBL scenario that you want to investigate; Email the instructor a progress report on what you have been looking into

### 9/20, 2. PBL: "Moving beyond global environmental polarization" I

*Preparation and Follow-up:* [info](#)

*Session:* Questions about syllabus, requirements, wiki, etc.

Discussion of PBL approach and Workshop on PBL case

[Critical Incident Questionnaire](#)

*Work due this session:* B2. Syllabus quiz

### 9/27, **3. PBL: "Moving beyond global environmental polarization" II**

*Preparation and Follow-up:* [info](#)

*Session:* [Feedback from Critical Incident Questionnaire](#)

Work-in-progress presentations on PBL case

### 10/4, **4. PBL: "Moving beyond global environmental polarization" III-presentations**

*Preparation:* PBL Presentation & Briefing (see [info](#))

*Session:* Presentations to Panel

*Follow-up:* includes read Taylor, "How do we know.."

*Work due this session:* A1. Presentation & A2. Briefing

No class 10/11 (but see Columbus-day-relevant readings by Cronon, O'Hara, Stevens, Wolf)

### 10/18, **5. Historical changes and tensions in people's views of nature, including views of ecologists**

Read: Williams, "Ideas of Nature," Worster, "Scrambling for a place" (see [info](#))

*Session:* Mini-lecture: William's history of changing ideas of nature

Review of Worster to identify tensions evident in Darwin (which persist today)

Read and revise a [multi-person conversation](#) about contemporary ideas about nature.

*Follow-up:* includes items for reflection and possible integration into thought-piece based on additional readings:

Begon, "The influence of predation and disturbance."

Botkin, Chapters 1 & 12 from [Discordant Harmonies](#)

Worster, "Science in Arcadia & The empire of reason"

### 10/25, **6. Diagramming Systems of Humans and Nature**

Read Taylor, [Unruly Complexity](#), chap. 3 (see [info](#))

*Session:* Interactive lecture on interpretation of diagrams, esp. of systems ecologist, H.T. Odum

Examination of diagrams related to students' topics

*Follow-up:* includes read Odum from [Environment, Power & Society](#)

*Work due this session:* A3. Thought-piece based on session 5; C2. worksheet on PD workbook and research organization; D. First in-office or phone conference before now

### 11/1, **7. Hidden Complexity of Simple Models**

Read: Hardin, "Tragedy of the commons" (see [info](#))

*Session:* Simulation of Tragedy of the commons

Identification of causal models related to students' projects and their hidden complexities.

[Critical Incident Questionnaire 2](#)

*Follow-up:* includes read Taylor, [Unruly Complexity](#), chap. 6, part A

*Work due this session:* A4. Thought-piece based on session 6

### 11/8, **8. What does it take to make "nature" in some time and place?**

Read: Haraway, "Teddy bear patriarchy" (see [info](#))

*Session:* View and comment on Paper Tiger TV, "Donna Haraway reads national geographic"

Identifying historical research needed to interpret what lies behind students' topics

[Work due this session](#): A5. Thought-piece based on session 7

### 11/15, **9. Mapping the resources mobilized in research**

Read Taylor, Unruly Complexity, chap. 5, part B (see [info](#))

*Session*: Mini-lecture

Mapping the resources mobilized in students' planned research

[Work due this session](#): A6. Thought-piece based on session 8

### 11/22, **10. Intersecting Ecological and Social Processes**

Read: Pearce, "Inventing Africa" (see [info](#))

*Session*: Case of soil erosion in Oaxaca, Mexico

Tracing the intersecting ecological and social processes in Pearce, then in students' topics

*Follow-up*: Read Taylor, Unruly Complexity, chap. 5, part C & chap. 6

[Work due this session](#): A7. Thought-piece based on session 9; D. Second in-office or phone conference before now

### 11/29, **11. Intersecting Processes II**

*Preparation*: Read and trace the intersecting ecological and social processes in Butler's fiction (see [info](#))

*Session*: [Dialogue Process](#) on the intersecting ecological and social processes in Butler's fiction

[Work due this session](#): A8. Thought-piece based on session 10

### 12/6, **12. Locally centered positioning in tension with translocal**

Read Taylor, Unruly Complexity, Epilogue (see [info](#))

*Session*: [Strategic Personal Planning](#) in relation to student's research plan

Mini-lecture on Strategic Participatory Planning

[Work due this session](#): A9. Complete draft plan for research

### 12/13, **13. Taking stock of where we have come and where we could go**

*Session*: [Historical scan](#)

CCT course evaluation, followed by official evaluations

[Work due this session](#): C4. Whole PD workbook ready for perusal; C5. Process Review; E. Peer commentary on another student's draft report

[Work due 12/20](#): A10. Plan for research, revised in response to peer and instructor comments

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## **BIBLIOGRAPHY**

(Readings used in preparation or follow-up to sessions)

(Other than Unruly Complexity, most [readings for the course](#) are individual articles and book chapters that can be downloaded through [password protected site](#).)

Begon, M., J. Harper and C. Townsend (1990). "The influence of predation and disturbance on community structure," in Ecology: Individuals, Populations and Communities. Boston, Blackwell, 739-741, 793, 795.

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- Haraway, D. J. (1984/1985). "Teddy bear patriarchy: Taxidermy in the garden of Eden, New York City, 1908-1936." Social Text 11: 20-64.
- Hardin, G. (1968). "The Tragedy of the Commons." Science 162: 1243-1248.
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## Supplementary Bibliography

(These and other additional readings may be recommended for deeper consideration of the issues raised in both environmental sciences and in interpretation and critical thinking).

- Berger, J. (1980). "Why Look at Animals?," in About Looking. New York, Pantheon Books, 1-26.
- CEDAC(Community Economic Development Advisory Committee) (1995). Our Economy: Our Future, Final Report. York, Ontario: City of York.
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- Toledo, V. (1990). "The ecological rationality of peasant production," in M. Altieri and S. Hecht (Eds.), Agroecology and small farm development. Boca Raton: CRC Press, 53-60.
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