

APEC 8601 - Natural Resource Economics

Syllabus – Spring 2018

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Course web site: <https://canvas.umn.edu/courses/38590>

Course Description

Official: Economic analysis of resource use and management. Capital theory, dynamic resource allocation. Applications to renewable and nonrenewable resources. Empirical studies, policy issues.

Translation:

We will cover both theoretical modeling and empirical evaluation of questions pertaining to the management of natural resources, including both renewable (e.g., fisheries, forests, and water) and non-renewable (e.g. oil, gas, minerals). We'll discuss how to use these resources efficiently through time, making extensive use of dynamic optimization and games. Our focus will be on economic issues such as the role of property rights and/or institutions for managing the resources, as well as the consequences of market power, uncertainty, resource characteristics, and discounting.

Prerequisites

APEC 8001-8004 or equivalent, APEC 8206. If you haven't taken the relevant courses but still want to enroll, please come talk to me.

Objectives

You should leave this course having gained the following:

- A familiarity with seminal papers in natural resource economics, the key questions they address, and outstanding questions in the field.
- The ability to formulate and analyze a theoretical model to address a natural resource economic question of interest. You will gain experience with both analytical and numerical modes of analysis.
- The ability to formulate and analyze an empirical model to address a natural resource economic question of interest. Our focus will be on the research design rather than implementation, as econometric details are not the focus of the course.

Grading

Problem Sets	20%
Midterm	15%
Paper Presentation	10%
Weekly Research Ideas	10%
Research Paper:	
- Proposal	5%
- First Draft	10%
- Referee Report	10%
- Final Draft	20%

- The three problem sets in the course will be designed to increase your facility with formulating and analyzing dynamic models that address a question in natural resource economics. You will be evaluated based on the correctness of the final answer as well as the completeness of your justification (e.g. derivation). You're free to work together on these, but please write up your answers on your own.
- The take-home midterm exam will cover the more technical and foundational first part of the course, with similar goals and evaluation criteria to the problem sets.
- You will be asked to choose one paper from the reading list (or you can select another if we discuss first) and give a 10 to 15-minute presentation summarizing that paper and offering some suggestions for extensions and/or improvement. This is to give you experience as a paper discussant, which is a common task at workshops and conferences.
- Each week you will write up a research question or idea you have that is related to the class; it need not coincide with that week's topic. Your write-up need be no more than a few sentences. This is not meant to take much time – it is designed to get you generating questions.
- A central part of the course is a research paper that you will draft by the end of the semester. One of my key goals is for you to leave having a strong head start on (at least) one dissertation chapter and/or paper that you can pursue during your graduate program. Given that we only have a semester in class, I do not expect you to have a publishable paper by the end of the course, but you will be able to formulate a question, conduct a literature review, and do at least some preliminary analysis. You will submit two drafts of your paper, and will also be asked provide feedback on one other student's first draft in the form of a referee report.

If you think that any grading was done incorrectly or unfairly, please come to my office hours. I am happy to revisit the grading, but will re-grade the entire assignment. The purpose of that policy is to be as fair as possible: if one problem needs re-grading, they probably all should have a second look.

Please see the UMN policy below on make-up work and policies concerning legitimate absences. In short, if a legitimate reason prohibits you from finishing an assignment on time, please let me know and I will make accommodations for you. If you're simply late turning in an assignment for some other (illegitimate) reason, you'll receive a zero for that assignment.

Textbook and Course Materials

Textbook: *Natural Resource Economics: Notes and Problems*
Jon Conrad and Colin Clark

All other materials (e.g. papers, problem sets) will be posted on the course site.

Approximate Course Schedule

Readings are from Conrad and Clark unless otherwise noted. We'll take more or less time on the topics as needed and based on your interest.

1. Week 1 (Jan 16): Introduction – overall issues in natural resource economics
 - i. Class intro
 - ii. Big picture

2. Weeks 2-5 (Jan 23-Feb 15): Mathematical foundations

- a. Week 2: Review: optimal control, dynamic programming
 - i. Optimal control
 - ii. Dynamic programming

- b. Week 3: Foundational Resource Models: Sole owner
 - i. Simple extraction (fishery, forest, oil reserve)
 - ii. Exploration & Investment

Problem Set 1 handed out

- c. Week 4: Foundational Resource Models: Many Users
 - i. Open access
 - ii. Dynamic games

Problem Set 2 handed out, Problem Set 1 due

- d. Week 5: Foundational Resource Models: Uncertainty
 - i. Stochasticity
 - ii. Learning & option value

Problem Set 3 handed out, Problem Set 2 due

3. Weeks 6-8 (Feb 20-Mar 8): Users & Institutions

- a. Week 6: Imperfect Competition
 - i. Theory
 - ii. Empirical Evidence

Midterm (take home), Problem Set 3 due

- b. Week 7: Regulation
 - i. Direct Regulation
 - ii. Market Instruments

- c. Week 8: Cooperation & Contracting
 - i. Cooperation
 - ii. Contracting

Paper Proposal Due

4. Weeks 9-11 (Mar 20-Apr 5): Resource Characteristics
 - a. Week 9: Uncertainty, revisited
 - i. Applications
 - ii. Regime Shift
 - b. Week 10: Heterogeneity & age structure
 - i. Age structure
 - ii. Other types of heterogeneity
 - c. Week 11: Multiple resources
 - i. Multiple species
 - ii. Multiple locations: Spatial Considerations

First Draft Due
5. Weeks 12-13 (Apr 10-Apr 19): Development, Growth, & Equity
 - a. Week 12: Resources & Development
 - i. Resource curse
 - ii. Conflict, expropriation, property rights security
 - b. Week 13: Discounting/Sustainability/Equity
 - i. Discounting
 - ii. Intergenerational Equity

Referee Report Due
6. Weeks 14-15 (Apr 24-May 3): Other “resources”
 - a. Week 14 Ecosystem Services
 - i. Ecosystem Services
 - ii. Non-market Valuation
 - b. Week 15 Invasive Species & Recap
 - i. Biodiversity
 - ii. Invasive Species

Final Paper Draft Due by May 12.

Tentative Reading List

We won't have time to cover all of these papers in detail – we just don't have time. All textbook readings are required; I will let you know ahead of time which papers to read for the next class. I included others for reference and in hopes they spark your interest.

Week 1

Class 1

N/A

Class 2

- Wilen, James E. 2000. "Renewable Resource Economists and Policy: What Differences Have We Made?" *Journal of Environmental Economics and Management* 39(3): 306-327.
- Johnson, D.G. 2000. "Population, food and knowledge." *American Economic Review* 90: 1-14.
- Erik Gómez-Baggethun, Rudolf de Groot, Pedro L. Lomas, and Carlos Montes. 2010. "The history of ecosystem services in economic theory and practice: From early notions to markets and payment schemes." *Ecological Economics* 69(6): 1209-1218.
- Kolstad, C.D. 2000. "Energy and Depletable Resources: Economics and Policy, 1973-1998." *Journal of Environmental Economics and Management* 39(3): 282-305.

Week 2

Class 1

Conrad & Clark 1.1, 1.2, 1.4, 1.5

Dorfman, R. 1969. "An Economic Interpretation of Optimal Control Theory." *The American Economic Review* 59(5): 817-831.

Class 2

Conrad & Clark 1.3

A Child's Guide to Dynamic Programming

Week 3

Class 1

Conrad & Clark 2.1-2.5, 2.9, 3.1-3.3

Hotelling, H. 1931. "The economics of exhaustible resources." *Journal of Political Economy* 39: 137-175.

Scott, A. 1955. "The fishery: The objective of sole ownership." *Journal of Political Economy* 63: 116-124.

Newman, David H. 2002. "Forestry's golden rule and the development of the optimal forest rotation literature." *Journal of Forest Economics* 8(1): 5-27.

Class 2

Conrad & Clark 2.6, 3.4

Week 4

Class 1

Conrad & Clark 2.7-2.8

Gordon, H.S. 1954. "The economic theory of a common property resource: The fishery." *Journal of Political Economy* 62: 124-142.

Smith, V. 1969. "On Models of Commercial Fishing." *Journal of Political Economy* 77(2): 181-198.

Gisser, M. and D. Sanchez. 1980. "Competition versus optimal control in groundwater pumping." *Water Resources Research* 16: 638-642.

Class 2

Levhari, D and L. Mirman 1980. "The great fish war: An example using a dynamic Cournot-Nash solution." *Bell Journal of Economics* 11: 322-334.

Week 5

Class 1

Conrad & Clark, 5.1-5.4

Loury, G. 1978. "The optimal exploitation of an unknown reserve." *Review of Economic Studies* 45: 621-636.

Class 2

Conrad & Clark 5.5-5.7

Arrow, K. and A. Fisher. 1974. "Environmental preservation, uncertainty, and Irreversibility." *Quarterly Journal of Economics* 88: 312-319.

Week 6

Class 1

Salant, S. 1976. "Exhaustible resource and industrial structure: A Nash-Cournot approach to the world oil market." *Journal of Political Economy* 84: 1079-1093.

Stiglitz, J. 1976. "Monopoly and the rate of extraction of exhaustible resources." *American Economic Review* 66: 655-661.

Pindyck, R. 1978. "Gains to producers from the cartelization of exhaustible resources." *Review of Economics and Statistics* 60: 238-251.

Reinganum, J. F., and Stokey, N.L. 1985. "Oligopoly extraction of a common property natural resource: The importance of the period of commitment in dynamic games." *International Economic Review* 26(1): 161-173.

Provencher, B., and Burt, O. 1993. "The externalities associated with the common property exploitation of groundwater." *Journal of Environmental Economics and Management* 24(2): 139-158.

Mason, C. F., and Polasky, S. 1994. "Entry deterrence in the commons." *International Economic Review* 35(2): 507-525.

Class 2

Polasky, S. 1992. "Do oil producers act as 'oil'igopolists?" *Journal of Environmental Economics and Management* 23: 216-247.

Huang, L., and Smith, M. D. 2014. "The Dynamic Efficiency Costs of Common-Pool Resource Exploitation." *American Economic Review* 104(12): 4071-4103.

Week 7

Class 1

Homans, F. and J. Wilen. 1997. "A model of regulated open access resource use." *Journal of Environmental Economics and Management* 32: 1-21.

Deacon, R. T., Finnoff, D., and Tschirhart, J. 2011. "Restricted capacity and rent dissipation in a regulated open access fishery." *Resource and Energy Economics* 33(2): 366-380.

Class 2

Heaps, T. 1985. "The Taxation of Nonreplenishable Natural Resources Revisited." *Journal of Environmental Economics and Management* 12(1): 14-27.

Copes, P. 1986. "A Critical Review of the Individual Quota as a Device in Fisheries Management." *Land Economics* 62(3): 278-291.

Provencher, B., and O. Burt. 1994. "A Private Property Rights Regime for the Commons: The Case for Groundwater," *American Journal of Agricultural Economics* 76(4): 875-888.

Weitzman, Martin. 2002. "Landing fees vs. harvest quotas with uncertain fish stocks," *Journal of Environmental Economics and Management* 43(2): 325-348.

Newell, Richard G., James N. Sanchirico and Suzi Kerr. 2005. "Fishing Quota Markets." *Journal of Environmental Economics and Management* 49(3): 437-462.

Grafton, R. Quentin, Dale Squires and Kevin J. Fox. 2000. "Private Property and Economic Efficiency: A Study of a Common-Pool Resource." *Journal of Law and Economics* 43(2): 679-713.

Costello, Christopher J., and Daniel Kaffine. 2008. "Natural resource use with limited-tenure property rights." *Journal of Environmental Economics and Management* 55(1): 20-36.

Costello, C., S. Gaines and J. Lynham. 2008. "Can catch shares prevent fisheries collapse?" *Science* 321: 1678-1681.

Week 8

Class 1

Ostrom, E. 2009. "A general framework for analyzing sustainability of social-ecological systems." *Science* 325(5939): 419-422.

Pretty, J. 2003. "Social capital and the collective management of resources." *Science* 302(5652): 1912-1914.

Sethi, R. and E. Somanathan. 1996. "The evolution of social norms in common property resource use." *American Economic Review* 86(4): 766-788.

Polasky, S., N. Tarui, G. Ellis and C. Mason. 2006. "Cooperation in the commons." *Economic Theory* 29: 71-89.

Class 2

Cheung, S. N. 1970. "The structure of a contract and the theory of a non-exclusive resource." *The Journal of Law and Economics* 13(1): 49-70.

Johnson, R.N. and G.D. Libecap. 1982. "Contracting problems and regulation: The case of the fishery." *American Economic Review* 72(5): 1005-1022.

Coase, R. H. 1960. "The problem of social cost." *Journal of Law and Economics* 3(1): 1-44.

Week 9

Class 1

- Tsur, Y. and T. Graham-Tomasi. 1991. "The buffer value of groundwater with stochastic surface water supplies." *Journal of Environmental Economics and Management* 21: 210-224.
- Sethi, G., Costello, C., Fisher, A., Hanemann, M., and Karp, L. 2005. "Fishery management under multiple uncertainty." *Journal of Environmental Economics and Management* 50(2): 300-318.
- Zhang, J., and Smith, M. D. 2011. "Estimation of a generalized fishery model: A two-stage approach." *Review of Economics and Statistics* 93(2): 690-699.

Class 2

- Cropper, M. 1976. "Regulating activities with catastrophic environmental effects." *Journal of Environmental Economics and Management* 3: 1-15.
- Scheffer, M., S. R. Carpenter, J. A. Foley, C. Folke and B. Walker. 2001. "Catastrophic shifts in ecosystems." *Nature* 413: 591-596.
- Polasky, S., A. de Zeeuw, and F. Wagener. 2011. "Optimal management with potential regime shifts." *Journal of Environmental Economics and Management* 62: 229-240.

Week 10

Class 1

- Conrad, J.M. 1982. "Management of a Multiple Cohort Fishery: The Hard Clam in Great South Bay." *American Journal of Agricultural Economics* 64(3): 463-474.
- Reed, W. 1986. "Optimal harvesting models in forestry management - A survey." *Natural Resource Modeling* 1: 55-79.
- Deacon, R. T. 1989. "An empirical model of fishery dynamics." *Journal of Environmental Economics and Management* 16(2): 167-183.
- Tahvonen, O. 2009. "Economics of harvesting age-structured fish populations." *Journal of Environmental Economics and Management* 58(3): 281-299.
- Anderson, S. T., Kellogg, R., and Salant, S. W. (forthcoming). Hotelling under pressure. *Journal of Political Economy*.

Class 2

- Tahvonen, O. 2015. "Economics of naturally regenerating, heterogeneous forests." *Journal of the Association of Environmental and Resource Economists* 2(2): 309-337.
- Krautkraemer, J. A. 1990. "Taxation, Ore Quality Selection, and the Depletion of a Heterogeneous Deposit of a Nonrenewable Resource." *Journal of Environmental Economics and Management* 18(2): 120-135.

Week 11

Class 1

- Flaaten, O. 1991. "Bioeconomics of sustainable harvest of competing species." *Journal of Environmental Economics and Management* 20(2): 163-180.
- Sanchirico, J. N., Holland, D., Quigley, K., and Fina, M. 2006. "Catch-quota balancing in multispecies individual fishing quotas." *Marine Policy* 30(6): 767-785.

Turner, M. A. 1997. "Quota-induced discarding in heterogeneous fisheries." *Journal of Environmental Economics and Management* 33(2): 186-195.

Class 2

Costello, C. and S. Polasky. 2008. "Optimal harvesting of stochastic spatial resources." *Journal of Environmental Economics and Management* 56(1): 1-18.

Sanchirico, J. and J. Wilen. 1999. "Bioeconomics of spatial exploitation in a patchy environment." *Journal of Environmental Economics and Management* 37: 129-150.

Smith, M.D. and J.E. Wilen. 2003. "Economic impacts of marine reserves: The importance of spatial behavior." *Journal of Environmental Economics and Management* 46(2): 183-206.

Swallow, S.K. and D.N. Wear. 1993. "Spatial interactions in multiple-use forestry and substitution and wealth effects for the single stand." *Journal of Environmental Economics and Management* 25(2):103-20.

Edwards, E.C., 2016. "What lies beneath? Aquifer heterogeneity and the economics of groundwater management." *Journal of the Association of Environmental and Resource Economists* 3(2): 453-491.

Brozović, N., D.L. Sunding, and D. Zilberman. 2010. "On the spatial nature of the groundwater pumping externality." *Resource and Energy Economics* 32(2): 154-64.

Week 12

Class 1

Sachs, J. D. and A. M. Warner. 2001. "The curse of natural resources" *European Economic Review* 45: 827-38.

Frankel, J. A. 2010. "The natural resource curse: a survey." National Bureau of Economic Research Working Paper 15836.

Class 2

Alston, L. J., Libecap, G. D., and Mueller, B. 2000. "Land reform policies, the sources of violent conflict, and implications for deforestation in the Brazilian Amazon." *Journal of Environmental Economics and Management* 39(2): 162-188.

Bohn, H., and Deacon, R. T. 2000. "Ownership risk, investment, and the use of natural resources." *American Economic Review* 90(3): 526-549.

Week 13:

Class 1

Frederick, S., G. Loewenstein and T. O'Donoghue. 2002. "Time discounting and preferences: A critical review." *Journal of Economic Literature* 4: 351-401.

Weitzman, M.L. 2001. "Gamma Discounting." *American Economic Review* 91(1): 260-71.

Class 2

Solow, R.M. 1974. "Intergenerational Equity and Exhaustible Resources." *Review of Economic Studies* 41: 29-45.

Hartwick, J. M. 1977. "Intergenerational equity and the investing of rents from exhaustible resources." *The American Economic Review* 67(5): 972-974.

Week 14:

Class 1

- Hartman, R. 1976. "The harvesting decision when a standing forest has value." *Economic Inquiry* 14(1): 52-58.
- Polasky, S., and Segerson, K. 2009. "Integrating ecology and economics in the study of ecosystem services: some lessons learned." *Annual Review of Resource Economics* 1: 409-434.
- Lubowski, R. N., Plantinga, A. J., and Stavins, R. N. 2006. "Land-use change and carbon sinks: econometric estimation of the carbon sequestration supply function." *Journal of Environmental Economics and Management* 51(2): 135-152.
- Fenichel, Eli P., and Joshua K. Abbott. 2014. "Natural capital: from metaphor to measurement." *Journal of the Association of Environmental and Resource Economists* 1(1): 1-27
- Newell, Richard G., and Robert N. Stavins. 2000. "Climate change and forest sinks: factors affecting the costs of carbon sequestration." *Journal of Environmental Economics and Management* 40(3): 211-235.

Class 2

- Boyer, T. and Polasky, S. 2004. "Valuing urban wetlands: a review of non-market valuation studies." *Wetlands* 24(4): 744-755.
- Cameron TA, Huppert DD. 1989. "OLS versus ML estimation of non-market resource values with payment card interval data." *Journal of Environmental Economics and Management* 17(3): 230-46.

Week 15:

Class 1

- Weitzman. M. 1992. "On diversity." *Quarterly Journal of Economics* 107(2): 363-405.
- Weitzman. M.L. 1998. "The Noah's Ark problem." *Econometrica* 66: 1279-1298.
- Brock. W. and A. Xepapadaes. 2003. "Valuing biodiversity from an economic perspective: A unified economic, ecological and genetic approach." *American Economic Review* 93(5): 1597-1614
- Polasky, S., et al. 2008. "Where to put things? Spatial land management to sustain biodiversity and economic returns." *Biological Conservation* 141(6): 1505-1524.
- Kremer, M., and Morcom, C. 2000. "Elephants." *American Economic Review* 90(1): 212-234.
- Solow, A., Polasky, S., and Broadus, J. 1993. "On the measurement of biological diversity." *Journal of Environmental Economics and Management* 24(1): 60-68.

Class 2

- Albers, H. J., Fischer, C., and Sanchirico, J. N. 2010. "Invasive species management in a spatially heterogeneous world: Effects of uniform policies." *Resource and Energy Economics* 32(4): 483-499.
- Epanchin-Niell, R. S., and Wilen, J. E. 2012. "Optimal spatial control of biological invasions." *Journal of Environmental Economics and Management* 63(2): 260-270.

Course Policies

1. Class attendance is expected. You will not be graded on attendance, but I expect you to come: any material covered in class is fair game on assignments and exams. Equally importantly, the questions you and your peers ask and the comments you make during class will make for a better experience for everyone, so please make every effort to attend. That said, unexpected conflicts come up for all of us, so any lecture notes and slides used during class will be available online.
2. You may discuss and work on assignments with other students, but you must write up and turn in your own assignment. You all have different strengths and can learn from one another by working together, so I encourage you to do so. The point of this policy is so that you can learn more, not less, so please don't abuse the privilege and let someone else do the work and you simply copy their answer. That won't help you learn the material.
3. Do not violate the Student Conduct Code. The assignments you turn in and your answers on exams should reflect your own work. Simply copying someone else's work, or otherwise violating the Student Conduct Code (http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf) may result in a failing grade and/or additional University action. That may sound scary, and it's supposed to be, but know that if you turn in work that is your own, you have nothing to worry about. If you have any questions or concerns about this policy, please don't hesitate to ask.
4. Treat your classmates with respect. Everyone in the class is here to learn and has an equal right to be treated with respect. This means many things, but in summary, I will not tolerate any form of discrimination or sexual harassment. The University has official policies that you can read if you aren't sure what constitutes either of those things, but your common sense will take you a long way.

Other notes:

- If you require disability accommodations, please let me know at your earliest convenience and we will work together to arrange accommodations. If you have or think you may have a disability and have not yet contacted Disability Services (DS), please do so at 612-626-1333 to arrange for a confidential consultation.

University of Minnesota Policies

Student Conduct Code:

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected adhere to Board of Regents Policy: *Student Conduct Code*. To review the Student Conduct Code, please see: http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf.

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

Use of Personal Electronic Devices in the Classroom:

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how personal electronic devices are allowed to be used in the classroom. For complete information, please reference: <http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html>.

Scholastic Dishonesty:

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf) If it is determined that a student has cheated, he or she may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: <http://policy.umn.edu/Policies/Education/Education/INSTRUCTORRESP.html>. The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: <http://www1.umn.edu/oscai/integrity/student/index.html>. If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class-e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

Makeup Work for Legitimate Absences:

Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see: <http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html>.

Appropriate Student Use of Class Notes and Course Materials:

Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: <http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html>.

Grading and Transcripts:

The University utilizes plus and minus grading on a 4.000 cumulative grade point scale. Please see <http://policy.umn.edu/education/gradingtranscripts> for details..

Sexual Harassment

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: <http://regents.umn.edu/sites/default/files/policies/SexHarassment.pdf>

Equity, Diversity, Equal Opportunity, and Affirmative Action:

The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: http://regents.umn.edu/sites/default/files/policies/Equity_Diversity_EO_AA.pdf.

Disability Accommodations:

The University of Minnesota is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact DS at 612-626-1333 to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with DS and have a current letter requesting reasonable accommodations, please contact your instructor as early in the semester as possible to discuss how the accommodations will be applied in the course.

For more information, please see the DS website, <https://diversity.umn.edu/disability/>.

Mental Health and Stress Management:

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: <http://www.mentalhealth.umn.edu>.

Academic Freedom and Responsibility

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

** Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".*