

CSUS 824
Sustainable Development: Measuring Socioeconomic Well-Being

Spring 2019
Monday, 3:00 – 5:50pm
306 Natural Resources Building

DAYS AND TIMES
LOCATION

Monday, 3:00 – 5:50pm
306 Natural Resources

INSTRUCTOR
E-MAIL ADDRESS
COURSE RESOURCES
TELEPHONE

Dr. Robert Richardson
rbr@msu.edu
<http://d2l.msu.edu>
Office: 355-9533 (or extension 5-9533)
Department: 353-5190
Fax: 353-8994

OFFICE
OFFICE HOURS

305 Natural Resources
Wednesdays, 10:00am – 12:00pm (or by appointment)

COURSE DESCRIPTION

The study of sustainable development reveals a tension between a concern for human needs and for the scale of the impacts of human demands on nature. This graduate course explores the challenges of environmental sustainability and social justice in the context of global economic development. We will review the principles of sustainable development in both theory and practice, with a focus on the measurement of social and economic welfare at national and local scales. The course will examine the extensive literature and policy frameworks associated with conventional notions of sustainable development along with divergent concepts and models that challenge mainstream thinking. Using theories of development, sustainability science, and economic growth, we will examine traditional and alternative indicators of sustainable development, including the social, economic, and environmental dimensions of human well-being. Students will apply their understanding of sustainability indicators in a specific developmental and environmental context related to their interests. The course will include theoretical and empirical readings, reflective discussions and essays, and planning for data sourcing and analysis for the calculation of sustainability indicators.

COURSE OBJECTIVES

Students will understand the challenges of environmental sustainability in the context of social and economic development and be able to describe the role of natural resources and the environment in human welfare. Specifically, students in this course will:

- Understand the origins of thinking about sustainability and sustainable development;
- Distinguish between ideas associated with mainstream sustainable development and alternative ideologies that challenge conventional thinking and commonly-held assumptions about progress;
- Examine the range of commonly-used social welfare indicators, and understand the shortcomings of consumption and economic growth as measures of socioeconomic well-being;
- Examine alternative indicators of well-being that consider the effects of social capital, natural capital, and the equitable distribution of income, and be able to describe their advantages and the challenges in their implementation; and
- Apply their knowledge about sustainable development in a sustainability assessment of some system that depicts the reality of social, environmental, and economic conditions in some geographic or institutional context of their interests (such as a rural or urban area, region, country, policy, or organization). Students interested in international development may choose to develop an analysis of socioeconomic welfare in a developing country context.

REQUIRED TEXTS

Adams, W. M. 2009. *Green Development: Environment and Sustainability in a Developing World*, 3rd edition. New York: Routledge.

OTHER READINGS

Additional reading assignments will be placed on the course website on Desire2Learn, which can be accessed at <http://d2l.msu.edu>.

RESOURCES*Global development indicators:*

Millennium Development Goals Indicators Dashboard: <http://mdgs.un.org/unsd/mdg/>

Millennium Ecosystem Assessment: <http://www.millenniumassessment.org/>

Human Development Report: <http://hdr.undp.org>

Standardized World Income Inequality Database: <http://myweb.uiowa.edu/fsolt/swiid/swiid.html>

UN Sustainable Development Goals: <https://sustainabledevelopment.un.org/?menu=1300>

UN Sustainable Development Knowledge Platform: <http://sustainabledevelopment.un.org/>

UN Sustainable Development Solutions Network: <http://unsdsn.org/>

World Development Indicators (The World Bank): <http://data.worldbank.org/indicator>

Environmental sustainability:

Environmental Sustainability Index: <http://sedac.ciesin.columbia.edu/data/collection/esi/>

Happy Planet Index: <http://www.happyplanetindex.org/>

Living Planet Index: http://wwf.panda.org/about_our_earth/all_publications/living_planet_report

The Economics of Ecosystems and Biodiversity (TEEB): <http://www.teebweb.org/>

Ecological Footprint resources:

Center for Sustainable Economy – Ecological Footprint: <http://myfootprint.org/>

Earth Day Network Footprint Calculator: <http://www.earthday.org/footprint-calculator>

Global Footprint Network: <http://www.footprintnetwork.org/>

Social sustainability:

Gender Inequality Index: <http://hdr.undp.org/en/content/gender-inequality-index-gii>

Environment Gender Index: <http://genderandenvironment.org/resource/the-environment-gender-index/>

UN HDR Gender empowerment measure: <https://www.rrojasdatabank.info/hdr20072008tab29.pdf>

Organizations and institutes:

International Institute for Sustainable Development: <https://www.iisd.org/>

Schumacher Center for a New Economics: <https://centerforneweconomics.org/>

The Next System Project: <https://thenextsystem.org/>

Government resources:

Australia – Sustainable Communities: <http://www.environment.gov.au/sustainable-communities>

Bhutan – Gross National Happiness: <http://www.grossnationalhappiness.com/>

Canadian Environmental Sustainability Indicators: <http://www.ec.gc.ca/indicateurs-indicators/>

Michigan Dashboard: <https://www.michigan.gov/dashboard>

U.K. Indicators: <https://www.gov.uk/government/collections/sustainable-development-indicators>

U.S. Environmental Protection Agency – Sustainability: <http://www.epa.gov/sustainability/>

Index of Sustainable Economic Welfare and Genuine Progress Indicator resources:

Genuine Economic Progress in the United States: <https://www.uvm.edu/gund/gpi>

Business, institutions, and sustainable development:

AASHE Sustainability Tracking, Assessment & Rating System <https://stars.aashe.org/>

Dow Jones Sustainability Indices: <https://www.sustainability-indices.com/about-us/>

The Natural Step: <http://www.naturalstep.org>

World Business Council for Sustainable Development (WBCSD): <http://www.wbcsd.org>

ACADEMIC INTEGRITY

Academic integrity is a fundamental value of higher education at any institution of higher education; therefore, acts of cheating, plagiarism, falsification or attempts to cheat, plagiarize or falsify will not be tolerated. Please see [MSU Regulations, Ordinances and Policies Regarding Academic Honesty and Integrity](#), which includes the University policy on [Plagiarism](#). The Graduate School has assembled a guide to resources for responsible conduct of research, scholarship, and creative activities, which is available at [Research Integrity](#). The University policy on academic dishonesty is provided in the [Student Handbook and Resource Guide](#), which also provides a summary of [Graduate Student Rights and Responsibilities](#).

[Article 2.III.B.2](#) of *Student Rights and Responsibilities* states: “The student shares with the faculty the responsibility for maintaining the integrity of scholarship, grades, and professional standards.” In addition, the Department of Community Sustainability adheres to the policies on academic honesty specified in General Student Regulation 1.0, [Protection of Scholarship and Grades](#); the all-University Policy on [Integrity of Scholarship and Grades](#); and [Ordinance 17.00](#), Examinations. Students are expected to develop original work for this course; therefore, you may not submit course work you completed for another course to satisfy the requirements for this course. Students who violate MSU regulations on Protection of Scholarship and Grades will receive a failing grade in the course or on the assignment.

Michigan State University is committed to ensuring that the bereavement process of a student who loses a family member during a semester does not put the student at an academic disadvantage in their classes. If you require a grief absence, you should complete the [Grief Absence Request Form](#) no later than one week after knowledge of the circumstance. Appropriate accommodations will be taken in the case of a verified grief absence, so that students that you are not penalized due to a verified grief absence.

ASSESSMENT AND EVALUATION

Course Preparation and Participation

The framework of the course is based on the assumption that learning takes place best in an interactive and critical atmosphere. Accordingly, the course relies heavily on reflection, critical thinking, discussion, and active student participation. The format emphasizes structured opportunities for students to share and reflect upon their individual experiences. All students are expected to regularly attend class, arrive on time, complete the assigned readings prior to each class meeting, and actively participate in class discussions. Participation can also be demonstrated through responses to Weekly Reflections (see below). Assessment of student participation will be based on the quality of contributions to class discussions and the quality of interactions with each other—both in class and online.

Topical Presentation (1)

Each student will give a brief topical presentation on key issues related to a particular week’s readings and course topic. The subject matter of the presentation can draw upon the student’s own research interests, but should be related to the week’s course topic. Presentations should be approximately five (5) minutes in length, but no more than seven (7) minutes, allowing 2-3 minutes for questions and discussion. Good presentations will introduce questions or arguments that stimulate discussion. Presentations should be well organized, and discussion points should be clearly presented.

Weekly Reflections (8)

In preparation for weekly in-class discussions and exercises, each student is expected to prepare a thoughtful and critically reflective statement related to the week’s reading assignments (at least eight (8) weekly reflections over the course of the semester). In addition, each student is expected to comment on the reflections of other classmates (at least eight (8) responses over the course of the semester). Reflections should be approximately 600-1000 words in length, and should clearly demonstrate that you have read all the required readings. Statements will be posted on the course web page at Desire2Learn (<https://d2l.msu.edu>) by 5:00pm on the day before class (i.e., Sundays). All students are expected to read

the statements from classmates prior to class, and respond with your own observations or comments on what you find interesting, controversial or useful in the readings and in other reflections. These statements should be used to help stimulate questions and issues, and to set the agenda for in-class discussions.

Reaction Papers (3)

Students will write three essays with their own reflections about particular course topics, as directed in the (forthcoming) assignments. Papers should be analytical and reflective, drawing upon relevant theory and course concepts as appropriate, and addressing the topic from multiple perspectives. Remember that a reflective essay is a form of writing that examines and observes the progress of the writer's individual experience. Reflective essays are based upon your own experiences, so it is expected that you write about yourself, your ideas, reactions, and opinions, as well as about your own understanding of course concepts. You might consider providing examples of quotations from an article (or other sources) that demonstrate a point, such a comparison with another written argument or commonly-held notion, or to highlight points with which you may agree or disagree. These papers must follow an accepted academic writing style, with all ideas from the literature cited properly. The papers should be free of spelling and grammatical mistakes.

Sustainability Assessment

Each student will prepare a sustainability assessment of some problem or issue in your domain that is of interest to you and which will likely confront you as a scholar-practitioner. This assignment is structured to help guide a process of inquiry and action for applying the concept of sustainability to complex resource problems in a region. The assessment will involve the definition and characterization of the system and its drivers, the identification of key stakeholders, and an understanding of the scale at which governance processes are manifested. A full description of the assignment is provided on D2L.

ASSESSMENT

Course preparation and participation	10%
Topical presentation (1)	10%
Weekly reflections (at least 8)	30%
Reaction papers (3 @ 10%)	30%
Sustainability assessment	20%

Final course grades will be assessed according to the following scale:

<i>Grade</i>	4.0	3.5	3.0	2.5	2.0	1.5	1.0	0.0
<i>Average</i>	94-100%	88-93%	83-87%	78-82%	73-77%	68-72%	63-67%	< 63%

COURSE SCHEDULE AND TOPICS

Week 1 January 7, 2019 Course introduction

Required:

Schumacher, E. F. (1973). *Small Is Beautiful: Economics as if People Mattered*. London: Blond & Briggs Ltd. Chapters 3 ("The Role of Economics") and 4 ("Buddhist Economics").

Recommended:

Olopade, Dayo. (2014). The end of the 'Developing World'. *New York Times* (www.nytimes.com), March 1, 2014.

Silver, Marc. (2015). If you shouldn't call it the Third World, what should you call it? *National Public Radio* (www.npr.org), January 04, 2015.

Week 2 January 14, 2019 Sustainability

Required:

Adams, W. M. (2009). *Green Development*, Ch. 1: The dilemma of sustainability

Adams, W. M. (2009). *Green Development*, Ch. 2: The origins of sustainable development

Costanza, Robert & Bernard C. Patten. (1995). Defining and predicting sustainability. *Ecological Economics* 15: 193-196.

Daly, H. E. (1990). Toward some operational principles of sustainable development. *Ecological Economics* 2: 1-6.

Recommended:

Orr, David W. (2002.) Four challenges of sustainability. *Conservation Biology* 16(6): 1457-1460.

Week 3 January 21, 2019 University holiday

Holiday * no class session *

Week 4 January 28, 2019 Sustainable development

Required:

Adams, W. M. (2009). *Green Development*, Ch. 3: The development of sustainable development

Adams, W. M. (2009). *Green Development*, Ch. 4: Sustainable development: Making the mainstream

Dietz, T., E. A. Rosa, and R. York. (2009). Efficient Well-Being: Rethinking Sustainability as the Relationship between Human Well-being and Environmental Impacts. *Human Ecology Review* 16(1): 114-123.

Heal, Geoffrey. (2012). Reflections—Defining and measuring sustainability. *Review of Environmental Economics and Policy* 6(1): 147-163.

Recommended:

Parris, Thomas W. and Robert W. Kates. (2003). Characterizing and measuring sustainable development. *Annual Review of Environment and Resources* 28: 559-586.

Pearce, D. W., Atkinson, G. D., & Dubourg, W. R. (1994). The economics of sustainable development. *Annual Review of Energy and the Environment* 19(1): 457-474.

Week 5 February 4, 2019 Mainstream sustainable development

Required:

Adams, W. M. (2009). *Green Development*, Ch. 5: Mainstream sustainable development

Arrow et al., (1995). Economic growth, carrying capacity, and the environment. *Science* 268(5210): 520-521.

Lawn, Philip A. (2003). A theoretical foundation to support the Index of Sustainable Economic Welfare (ISEW), Genuine Progress Indicator (GPI), and other related indexes. *Ecological Economics* 44: 105-118.

Stern, David I. (2004). The rise and fall of the Environmental Kuznets Curve. *World Development* 32(8): 1419–1439.

Recommended:

Munasinghe, Mohan. (1999). Is environmental degradation an inevitable consequence of economic growth: Tunneling through the Environmental Kuznets Curve. *Ecological Economics* 29: 89–109.

Pearce, David, Kirk Hamilton, and Giles Atkinson. (1996). Measuring sustainable development: Progress on indicators. *Environment and Development Economics* 1: 85-101.

Week 6 February 11, 2019 Sustainability and natural capital

Note: Reaction Paper 1 due today

Required:

Adams, W. M. (2009). *Green Development*, Ch. 6: Delivering mainstream sustainable development

Ayres, Robert, Jeroen van den Berrgh, & John Gowdy. (2001). Strong versus weak sustainability: Economics, natural sciences, and consilience. *Environmental Ethics* 23(2): 155-168.

Costanza, R., d'Arge, R., De Groot, R., Faber, S., Grasso, M., Hannon, B., Limburg, K., Naeem, S., O'Neill, R.V., Paruelo, J., Raskin, R.G., Sutton, P., and van den Belt, M. (1997). The value of the world's ecosystem services and natural capital. *Nature* 387: 253-260.

Dietz, Thomas, Eugene A. Rosa, & Richard York. (2007). Driving the human ecological footprint. *Frontiers in Ecology and the Environment* 5: 13–18.

Fiala, Nathan. (2008). Measuring sustainability: Why the ecological footprint is bad economics and bad environmental science. *Ecological Economics* 67(4): 519-525.

Recommended:

Millennium Ecosystem Assessment. (2005). *Ecosystems and Human Well-being: Synthesis*. Island Press, Washington, DC. Preface and Summary for Decision Makers (pp. v – 24).

Week 7 February 18, 2019 Sustainable development and its discontents

Required:

Adams, W. M. (2009). *Green Development*, Ch. 7: Countercurrents in sustainable development

Guha, Ramachandra. (1989). Radical American environmentalism and wilderness preservation: A third world critique. *Environmental Ethics* 11(1): 71-83.

Hickel, Jason. (2018). Why growth can't be green. *Foreign Policy*, September 12, 2018.
<https://foreignpolicy.com/2018/09/12/why-growth-cant-be-green/>.

Rockström, Johan et al. (2009). A safe operating space for humanity. *Nature* 461: 472-475.

Recommended:

Beckerman, W. (1994). Sustainable development: Is it a useful concept? *Environmental Values* 3: 191-209.

Hiss, Tony. (2014). Can the world really set aside half of the planet for wildlife? *Smithsonian Magazine*, September 2014. <http://www.smithsonianmag.com/science-nature/can-world-really-set-aside-half-planet-wildlife-180952379F>

Robinson, John. (2004). Squaring the circle? Some thoughts on the idea of sustainable development. *Ecological Economics* 48: 369-384.

Week 8 February 25, 2019 Happiness and subjective well-being

Required:

Deci, Edward L. & Richard M. Ryan. (2008). Hedonia, eudaimonia, and well-being: an introduction. *Journal of Happiness Studies* 9(1): 1–11.

Di Tella, Rafael & Robert MacCulloch. (2008). Gross national happiness as an answer to the Easterlin Paradox? *Journal of Development Economics* 86: 22-42.

Easterlin, Richard A., Laura Angelescu McVey, Malgorzata Switek, Onnicha Sawangfa, and Jacqueline Smith Zweig. (2010). The happiness–income paradox revisited. *Proceedings of the National Academy of Sciences* 107(52): 22463–22468.

Max-Neef, Manfred. (1995). Economic growth and quality of life: a threshold hypothesis. *Ecological Economics* 15: 115-118.

Recommended:

Frey, Bruno S. & Alois Stutzer. (2002). What can economists learn from happiness research? *Journal of Economic Literature* 40(2): 402-435.

Kelly, Annie. "Gross national happiness in Bhutan: the big idea from a tiny state that could change the world." *The Guardian*, December 1, 2012.

Kristof, Nicholas D. "The happiest people." *The New York Times*, January 7, 2010.

Revkin, Andrew C. "A new measure of well-being from a happy little kingdom." *The New York Times*, October 4, 2005.

Week 9 March 4, 2019 Spring break

Holiday * no class session *

Week 10 March 11, 2019 Sustainability, distribution, and inequality

Note: Reaction Paper 2 due today

Required:

Steffen, Will & Mark Stafford Smith. (2013). Planetary boundaries, equity and global sustainability: why wealthy countries could benefit from more equity. *Current Opinion in Environmental Sustainability* 5(3-4): 403–408.

UNDP. (2011). Why sustainability and equity? Chapter 1 from *Sustainability and Equity: A Better Future for All*, Human Development Report 2011, pp. 13–21. New York: United Nations Development Programme.

Wilkinson, Richard G. & Kate E. Pickett. (2009). Income inequality and social dysfunction. *Annual Review of Sociology* 35:493–511.

Recommended:

Bourguignon, François & Christian Morrisson. (2002). Inequality among world citizens: 1820-1992. *The American Economic Review* 92(4): 727-744.

Pasquali, Valentina. (2012). Wealth distribution and income inequality by country. *Global Finance Magazine*: <http://www.gfmag.com/tools/global-database/economic-data/11944-wealth-distribution-income-inequality.html>

Week 11 March 18, 2019 Gender, sustainability, and well-being

Required:

Charmes, Jacques & Saskia Wieringa. (2003). Measuring women's empowerment: An assessment of the Gender-related Development Index and the Gender Empowerment Measure. *Journal of Human Development* 4(3): 419-435.

Griggs, David, Mark Stafford-Smith, Owen Gaffney, Johan Rockström, Marcus C. Öhman, Priya Shyamsundar, Will Steffen, Gisbert Glaser, Norichika Kanie & Ian Noble. (2013). Policy: Sustainable development goals for people and planet. *Nature* 495(7441): 305-307.

Meinzen-Dick, Ruth, Chiara Kovarik, and Agnes R. Quisumbing. (2014). Gender and sustainability. *Annual Review of Environment and Resources* 39 (2014): 29-55.

Recommended:

Ewerling, F., Lynch, J. W., Victora, C. G., van Eerdewijk, A., Tyszler, M., & Barros, A. J. (2017). The SWPER index for women's empowerment in Africa: development and validation of an index based on survey data. *The Lancet Global Health*, 5(9), e916-e923.

Week 12 March 25, 2019 Sustainability and intergenerational equity

Required:

Anand, Sudhir & Amartya Sen. (2000). Human development and economic sustainability. *World Development* 28(12): 2029–2049.

Arrow, K., M. Cropper, C. Gollier, B. Groom, G. Heal, R. Newell, W. Nordhaus, R. Pindyck, W. Pizer, P. Portney, T. Sterner, R. S. J. Tol, and M. Weitzman. (2013.) Determining benefits and costs for future generations. *Science* 26 (July 2013): 349-350.

Broome, John. (2008). The ethics of climate change. *Scientific American* 298(6): 96-102.

Recommended:

Barry, Brian. (1997). Sustainability and intergenerational justice. *Theoria* (1997): 43-64.

Week 13 April 1, 2019 Tools and approaches for sustainable development

Required:

Nelson, E., Mendoza, G., Regetz, J., Polasky, S., Tallis, H., Cameron, D., ... & Lonsdorf, E. (2009). Modeling multiple ecosystem services, biodiversity conservation, commodity production, and tradeoffs at landscape scales. *Frontiers in Ecology and the Environment*, 7(1), 4-11.

Ness, Barry, Evelin Urbel-Piirsalu, Stefan Anderberg, & Lennart Olsson. (2007). Categorising tools for sustainability assessment. *Ecological Economics* 60(3): 498–508.

Reed, Mark S., Evan D.G. Fraser, & Andrew J. Dougill. (2006). An adaptive learning process for developing and applying sustainability indicators with local communities. *Ecological Economics* 59: 406-418.

Recommended:

Folke, Carl. (2006). Resilience: The emergence of a perspective for social–ecological systems analyses. *Global Environmental Change* 16 (2006) 253–267.

Hoogmartens, R., Van Passel, S., Van Acker, K., & Dubois, M. (2014). Bridging the gap between LCA, LCC and CBA as sustainability assessment tools. *Environmental Impact Assessment Review*, 48, 27-33.

Van de Kerk, Geurt & Arthur R. Manuel. (2008). A comprehensive index for a sustainable society: The SSI — the Sustainable Society Index. *Ecological Economics* 66: 228–242.

Week 14 April 8, 2019

Environmental degradation and well-being

Note: Reaction Paper 3 due today

Required:

Adams, W. M. 2009. *Green Development*, Ch. 8: Politics of dryland ecology

Foley, J.A., Navin Ramankutty, Kate A. Brauman, Emily S. Cassidy, James S. Gerber, Matt Johnston, Nathaniel D. Mueller, Christine O’Connell, Deepak K. Ray, Paul C. West, Christian Balzer, Elena M. Bennett, Stephen R. Carpenter, Jason Hill, Chad Monfreda, Stephen Polasky, Johan Rockström, John Sheehan, Stefan Siebert, David Tilman & David P. M. Zaks. (2011). Solutions for a cultivated planet. *Nature* 478(7369): 337.

Foley, J.A., DeFries, R., Asner, G.P., Barford, C., Bonan, G., Carpenter, S.R., Chapin, F.S., Coe, M.T., Daily, G.C., Gibbs, H.K. Helkowski, J.H., Holloway, T., Howard, E.A., Kucharik, C.J., Monfreda, C., Patz, J.A., Prentice, I. C., Ramankutty, N., and Snyder, P.K. (2005). Global consequences of land use. *Science* 309(5734): 570-574.

Ryan, R. L., Erickson, D. L., & De Young, R. (2003). Farmers' motivations for adopting conservation practices along riparian zones in a mid-western agricultural watershed. *Journal of Environmental Planning and Management*, 46(1), 19-37.

Recommended:

Richardson, R. B. (2010). Ecosystem services and food security: Economic perspectives on environmental sustainability. *Sustainability* 2(11): 3520-3548.

Roe, Dilys and Joanna Elliott. 2004. Poverty reduction and biodiversity conservation: rebuilding the bridges. *Oryx* 38(2): 137–139.

Week 15 April 15, 2019 Urban political ecology and sustainability

Required:

Adams, W. M. (2009). *Green Development*, Ch. 12: Industrial and urban hazard

Pacione, Michael. (2003). Urban environmental quality and human wellbeing—a social geographical perspective. *Landscape and Urban Planning* 65(1–2):19-30.

Wu, Jianguo. (2014). Urban ecology and sustainability: The state-of-the-science and future directions. *Landscape and Urban Planning* 125: 209-221.

Recommended:

Wolch, Jennifer R., Jason Byrne, & Joshua P. Newell. (2014). Urban green space, public health, and environmental justice: The challenge of making cities ‘just green enough’. *Landscape and Urban Planning* 125: 234-244.

Week 16 April 22, 2019 Consumption and sustainability

Required:

Adams, W. M. (2009). *Green Development*, Ch. 13: Green development: reformism or radicalism?

Gowdy, John. (2007). Avoiding self-organized extinction: Toward a co-evolutionary economics of sustainability. *International Journal of Sustainable Development and World Ecology* 14(1): 27-36.

Martínez-Alier, Joan, Unai Pascual, Franck-Dominique Vivien, & Edwin Zaccai. (2010). Sustainable de-growth: Mapping the context, criticisms and future prospects of an emergent paradigm. *Ecological Economics* 69(9): 1741–1747.

van den Bergh, Jeroen C.J.M. (2011). Environment versus growth—A criticism of “degrowth” and a plea for “a-growth”. *Ecological Economics* 70: 881-890.

Recommended:

Arrow, Kenneth, Partha Dasgupta, Lawrence Boulder, Gretchen Daily, Paul Ehrlich, Geoffrey Heal, Simon Levin, Karl-Göran Mäler, Stephen Schneider, David Starrett, & Brian Walker. (2004). Are we consuming too much? *Journal of Economic Perspectives* 18(3): 147-172.

Solnick, Sara J. & David Hemenway. (1998). Is more always better?: A survey on positional concerns. *Journal of Economic Behavior & Organization* 37: 373–383.

**Week 17 Wednesday, May 1, 2019 Final exam period, 5:45 – 7:45pm
Discussion of sustainability assessments**

NOTES: