ADVANCED EDUCATION FOR ENVIRONMENT AND SUSTAINABILITY (EAS/EDUC 581)

Winter 2020

LECTURE:	Tuesday & Thursday	10:00-11:30am, 3556 Dana
DISCUSSION:	Wednesday	3:00-4:00pm, 1046 Dana

INSTRUCTOR: Dr. Michaela Zint, zintmich@umich.edu, 2032 Dana
GSI: Jennifer Carman, jpcarman@umich.edu, 2032 Dana

OFFICE HOURS

Jennifer – Thursdays 1-2pm, 2032 Dana or by appointment
Michaela – By appointment only, contact zintmich@umich.edu or clightne@umich.edu

If these days/times do not work for you or you find that available times have been filled, contact us for an alternative appointment. Our office hours are subject to change and such changes will be announced. Aside from attending office hours, email is typically the best way to reach us.

COURSE GOALS

The goal of this course is to provide graduate students from a variety of backgrounds (e.g., education, environmental science/studies, natural resource management, other) with the knowledge and skills to lead and manage environmental education (EE) and education for sustainability (EfS) programs in both K-12 and higher education settings. To achieve this goal, students will learn about relevant theories/models, "best practices," and instructional resources, in part by applying class concepts to writing a competitive grant proposal and reviewing a program evaluation.

After completion of this course, students will be able to:

- develop, implement, and evaluate environmental/sustainability education programs.
- use a variety of instructional methods appropriate for environmental/sustainability education.
- write competitive grant proposals, and
- identify leading environmental/sustainability education organizations and resources.

As part of this course, students also have the option to become certified in Project Learning Tree, Project Wet or Project WILD, three of the most frequently used environmental education curricula in the country.

LOGISTICS

- **Our classroom is an electronics-free zone.** Please put away all electronic devices before class. If you require computers or other electronics, please contact the instructor outside of class.
- Check out our **Canvas** site for announcements, resources and be sure to post your assignments on Canvas. Instructions for where and how to upload your assignment files will be provided.
- **Assigned readings** are listed on the Reading List (pp. 4-8 of syllabus), and should be completed BEFORE lecture on the date that is listed. All course readings are accessible on our course's Canvas site under "Syllabus" (in order of lecture) in "Files>Assigned Readings" (by lecture date), and on the course calendar with (links specific to each lecture).
- OPTIONAL: As suggested above, **students can choose to obtain certification in Project Learning Tree (Michigan SAF $25), Project WET (GVSU-AWRI $35), or Project WILD (MAEOE $35).** The fees are set by these organizations and cover the cost of these instructional materials. The instructor may also have older copies of some of these materials that can be provided at no cost. If you choose this option, however, you cannot be "officially" certified. Regardless of what option you choose, your actual class experience will not differ.
- It is important to us to create an inclusive classroom. If you run into any difficulties with the course

materials or have any non-academic obligations that might require additional learning support, please contact the instructor or GSI anytime.

- Students who have religious or cultural observances that coincide with this class should let the us know in writing (by e-mail for example) by 1/28 (the drop/add deadline). We are happy to honor your cultural and religious holidays! However, if I do not hear from you by 1/28, I will assume that you plan to attend all class meetings.
- University of Michigan is committed to advancing the mental health and wellbeing of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact Counseling and Psychological Services (CAPS) at (734) 764-8312 and https://caps.umich.edu/ during and after hours, on weekends and holidays, or through its counselors physically located in schools on both North and Central Campus. For a listing of other mental health resources available on and off campus, visit: http://umich.edu/~mhealth/

COURSE REQUIREMENTS

Attending each class, preparing for class (by reading and reflecting on assigned readings/questions), and constructive participation in class are essential to your individual learning and the success of the class. In addition, you are expected to complete assignments and final exam by/on the date listed below.

Assignments/Exam	Points/Weight	(Due) Date
1. Attendance/Participation (will be recorded)	**50/10%**	N.A.
2. Deliver a "Project" activity in class (*group of 2-4 students*)	**25/5%**	TBD
3. Review of an "Education for Sustainability" lesson based on the NAAEE *Guidelines (individual)*	**50/10%**	Th 2/27
4. Grant proposal (*group of 4-5 students)****)	**275/55%**	
Problem/need statement	*25/5%*	T 2/18
Pre-proposal	*75/15%*	T 3/17
Evaluation plan	*75/15%*	T 3/31
Full proposal and presentation	*100/20%*	Th 4/14
Optional revised version of full proposal	Bonus Points	W 4/29
5. Final Exam (4/29 10:30-12:30pm)	100/20%	W 4/29
TOTAL	**500/100%**	

****If you have successful grant writing experience, you may be able to complete an alternative to the grant writing assignment (most likely a publishable research paper), to be negotiated with the instructor.*

Instructions for assignments will be provided. The final exam is cumulative and will cover all lectures, discussions, presentations, required readings, etc. The exam may consist of long or short answer questions and may include multiple choice and/or true/false questions.

Piazza: We will be using Piazza for answering your questions about the class/lectures and to help prepare for the exam. The system is catered to getting you help fast and efficiently from classmates, the GSI, and instructor. Rather than emailing questions to the GSI and instructor, please post your questions on Piazza.

Course Evaluations: Thank you in advance for completing course evaluations for the instructor and GSI toward the end of the semester. Please forward the emails confirming that you completed the evaluations to our GSI, in return for bonus points!

GRADING

Final letter grades will be determined as follows:

Grade	Minimum %
A+	100.0
A	93.0
A-	90.0
B+	87.0
B	83.0
B-	80.0
C+	77.0
C	73.0
C-	70.0
D+	67.0
D	63.0
D-	60.0
F	40.0

- *Grade Records:* Scores will be made available periodically. Please be sure to check your scores. If we have recorded a score in error, *please* inform us as quickly as possible, *before the last day of classes*. All scores (except for scores on the final) will be considered final at the start of the final exam. **No** changes will be made, except for the final, after that time.
- *Grading Criteria:* Assignments will be graded for both content and exposition. All written work is expected to be clear, concise, and coherent. The Sweetland Writing Center in Angell Hall (764-0429) and the English Language Institute are recommended for students with writing difficulties or those with English as a second language.
- *Late Policy:* Late assignments will automatically have 10% of the total possible score deducted, plus 10% per day additional loss for each day the assignment is late (with a new day beginning at 5 PM). "Late" means the assignment was NOT submitted before the beginning of the class on Canvas and/or NOT turned in before the instructor walked out of the class session in which it was due. Assignments can be turned in early with no penalty.
- *Exam Attendance/Grading Policy:* Attendance during the final exam is *required*. No early or make-up exam will be given. A missed final exam will receive a zero, unless an emergency is involved and documented. In case of the latter, your "make up" will likely consist of an oral exam with the course instructor.
- *Cheating/Plagiarism Policy:* Cheating on exams, plagiarizing papers or other forms of academic dishonesty will not be tolerated, and will be handled according to University policy. Separate assignments that are identical will receive a grade of zero. Those that appear very similar will receive a reduced grade, with the reduction reflecting the degree of similarity. The U-M Plagiarism Policy is designed to be painful to you. Please don't make me use it! For more information on plagiarism and academic integrity, please visit www.lib.umich.edu/shapiro-undergraduate-library/understanding-plagiarism-and-academic-integrity

CLASS OVERVIEW (Changes may occur and will be announced in advance.)
Lec=Lecture, Dis=Discussion, T=Tues, Th=Thursday, W = Wednesday, *=Deliverable

DATE	LECTURE TOPIC & DUE DATES	READINGS
Lec Th 1/9	Introduction to Course, EE/EfS	Elder, J.L. (2003). A field guide to environmental literacy: making strategic investments in environmental education. North American Association for Environmental Education, pp. 22 & 75. Briefly review definitions of environmental education related terms of your choice provided by "The Definitions Project" by the National Association for Interpretation, https://web.archive.org/web/20170603232410/http://www.definitionsproject.com:80/definitions/index.cfm (full list also available on Canvas) Barth, M. (2015). Higher education in the twenty-first century: old missions and new challenges. In *Implementing Sustainability in Higher Education: Learning in an age of transformation*. New York: Routledge Earthscan. 34-44. ***Carefully review Project Activity Assignment Instructions***
Lec T 1/14	Introduction Project Learning Tree, Project WET, Project WILD *WILD: Habitat Lap Sit, Oh Deer – Zint*	Winther, A. A., Sadler, K. C., & Saunders, G. (2010). Approaches to environmental education. In A. M. Bodzin, E. S. Klein & S. Weaver (Eds.), *The inclusion of environmental education in science teacher education* (pp. 35-37 ONLY): Springer. Easton, J., & Monroe, M.C. (2002). Project Learning Tree teacher assessment survey. *Applied Environmental Education and Communication* 1(4): 229-234. Briefly review either Project Learning Tree, Project WILD or Project WET web site: www.plt.org, www.projectwild.org, www.projectwet.org
Dis W 1/15*	Questions re course/assignments, share grant proposal interests **DUE: Submit initial grant proposal interests and Project Activity preferences online**	
Lec Th 1/16	Writing Grants (for EE)	U.S. Environmental Protection Agency. (2017). Tips for developing successful grant application at http://epa.gov/education/grants Briefly review grant writing resources provided through our library, see http://guides.lib.umich.edu/c.php?g=283405&p=1887269 ***Carefully review Grant Proposal Assignment Instructions***
Lec T 1/21	History of EE/EfS	**READ ALL:** Zint's Handout "Definitions (EE and related)" Simmons, B., Hart, P. and H. Hungerford. 2001. A tribute to William B. Stapp: 1930-2001. The Journal of Environmental Education 32(4): pg. 4 Holsman, B. 2002. What do educators think of us? *NAAEE Communicator*, Summer, p4. Zint's Handout comparing nature study, conservation education, outdoor education, EE Zint's Handout "How is sustainability education different from EE?" **SIGN UP TO READ ONE:** Agbedahin, A.V. (2019). Sustainable development, Education for Sustainable Development, and the 2030 Agenda for Sustainable Development: Emergence, efficacy, eminence, and future. *Sustainable Development* 27(4): 669-680. Barth, M. (2015). From policy to action: The maturation of education for sustainable development. In *Implementing Sustainability in Higher Education: Learning in an age of transformation.* New York: Routledge Earthscan. 24-33. Hug, J. (1977). Two hats. In Aldrich et al. (Eds.), *The report of the North American regional seminar on environmental education for the real world.* SMEAC Information Reference Center, Columbus, OH, p. 47. WITH: Rennie, S. (2008). Toward a 21st-Century Understanding of Humans' Relation to Nature: Two Hats? *Journal of Environmental Education* 40:1, 55-61. ***Carefully review EfS Lesson Review based on "Guidelines" Assignment Instructions***
Dis W 1/22	Work on finalizing grant proposal interests	
Lec Th 1/23	Learning Theories	**WATCH: Annenberg Lerner, A Private Universe. https://beta.learner.org/series/a-private-universe/1-a-private-universe/. (20 mins)** Jacobson et al. (2006). Conservation education and outreach techniques: Chapter 2 *Learning and teaching with adults and youth*, Oxford University Press, pp. 35-62. Handout "Descriptors of Constructivist Teaching" Stevenson, R. B., & C. Sterling. (2010). Environmental learning and agency in diverse educational and cultural contexts. In R. B. Stevenson & J. Dillon (Eds.), *Engaging environmental education: learning, culture and agency* (pp. 220-222 ONLY). The Netherlands: Sense Publishers. Krasny, M. E., & Roth, W. M. (2010). Environmental education for social-ecological

		system resilience: a perspective from activity theory. *Environmental Education Research, 16*(5-6), 548-550 ONLY.
Lec T 1/28*	Learning Cycle & Preparing Problem/Need Statement **Due: Submit EfS lesson to review based on the "Guidelines"**	Luera's Handout "One method of effective teaching and learning … The Learning Circle" Brown, F. 2003. Inquiry learning: teaching for conceptual change in EE. *Green Teacher* (71): 31-33. Handouts "Stating behavioral objectives for classroom instruction," "Bloom's taxonomy, kid style" and "Taxonomy of educational objectives", 3pp. Handouts "Science Learning Experiences using the 5-E Learning Cycle" and "Applying 5Es to inquiry" Barth, M. (2015). What are we striving for? Learning goals and objectives. In *Implementing Sustainability in Higher Education: Learning in an age of transformation*. New York: Routledge Earthscan. 57-69. UNESCO (2017). Educational for Sustainable Development Goals: Learning Objectives. Paris: United Nations Educational, Scientific and Cultural Organization. Read pp. 6-11 ONLY, SCAN remainder
Dis W 1/29		
Lec Th 1/30	Whole School Approaches to Environmental/Sustainability Education, Guest: Emily Canosa & Alex Bryan, UM Sustainable Living Experience	Savanick, S., Strong, R., and Manning, C. (2008). Explicitly linking pedagogy and facilities to campus sustainability: lessons from Carleton College and the University of Minnesota. *Environmental Education Research* 14(6): 667–679. Skibins, J. C., Powell, R.B. & Stern, M.J. (2012). Exploring empirical support for interpretation's best practices. *Journal of Interpretation Research* 17(1): 24-44.
Lec T 2/4	EE for Environmental Affect *PLT: Values on the Line – Zint*	**READ ALL:** Zint's Handout "Place-based and environmental sensitivity activities" 1p. Handout "Definitions for use with Environmental Education Needs Assessment" Review top table entitled "Teaching Methods for Affective Outcomes." Unknown. Two approaches to ethics education. 1p. Zint's Handout "Value statements" 1p. Unknown. The flying foxes of Samoa. 1p. Earth Charter Initiative (2000). *The Earth Charter*. https://earthcharter.org/discover/the-earth-charter/ (SCAN only) **SIGN UP TO READ ONE:** Shephard, K. (2015). The Challenges of Education for Critical Action. In *Higher Education for Sustainable Development*. New York: Palgrave Macmillan. 59-87 (pp. 59-72 ONLY) Sobel, D. (1995). Beyond ecophobia: reclaiming the heart in nature education. *Orion* Autumn 14(4): 11-17. WITH: Louv, R. (2006). The nature-child reunion. *National Wildlife* (June/July): 24-30.
Dis W 2/5		
Lec Th 2/6	EE to Foster Environmentally Responsible Behaviors	Handout "Definitions for use with environmental education needs assessment" - review bottom table entitled "Environmental action strategies." (see EE for Environmental Affect, above) Bardwell et al. (1994). Environmental problem solving: theory, practice and possibilities in environmental education. pp. 121. Ramsey J. & H. R. Hungerford. (2002). Perspectives on environmental education in the United States. In National Research Council, 2002, New tools for environmental protection: education, information, voluntary measures, Committee on the Human Dimensions of Global Change, T. Dietz and P.C. Stern, eds. Division of Behavioral and Social Sciences and Education, Washington, DC, National Academy Press, pp. 147-160. Braus, J. (Ed.). 2013. Influencing Conservation Action: What Research Says About Environmental Literacy, Behavior, and Conservation Results, pp TO BE ASSIGNED, SCAN remainder Wals, A. (2011). Learning our way to sustainability. *Journal of Education for Sustainable Development, 5*(2), 177-180 ONLY
Lec T 2/11	Hungerford & Volk's model and Issue Investigation/Action Research/Service Learning	**READ ALL:** Ramsey J. & H. R. Hungerford. Perspectives on environmental education in the United States. In National Research Council, 2002, New tools for environmental protection: education, information, voluntary measures, Committee on the Human Dimensions of Global Change, T. Dietz and P.C. Stern, eds. Division of Behavioral and Social Sciences and Education, Washington, DC, National Academy Press, pp. 147-160. **SIGN UP TO READ ONE:** Gaudelli, W. & Lan, C-F. (2016). Sustainability. In *Global Citizenship Education: Everyday*

		Transcendence. New York: Routledge. 101-120. (pp. 107-110 ONLY) Winther, A. A., Sadler, K. C., & Saunders, G. (2010). Approaches to environmental education. In A. M. Bodzin, E. S. Klein & S. Weaver (Eds.), *The inclusion of environmental education in science teacher education* (pp. 38-43 ONLY): Springer. Kronholm, M. and J. Ramsey. 1991. Issues and analysis: A teaching strategy for the real world. *Science and Children* October: 20-23. Tompkins, L.J. 2005. A case for community-based education: students form partnerships to tackle local environmental issues. *The Science Teacher* 72(4): 34-36. Perry, J.2004. Twenty leaden rules to make sure your project sinks! In T. Grant and G. Littlejohn, *Teaching green: The middle years*, New Society Publishers, pp. 227-228. Dominguez, L. and J. McDonald. 2005. Environmental service-learning projects: developing skills for action. *Green Teacher* Spring (76): 13-17.
Dis W 2/12*	**DUE: Bring draft problem statement for peer review**	
Lec Th 2/13	EE to Foster Environmental Impact & Preparing the pre-proposal/proposal	**READ ALL:** Ardoin, N. M., Bowers, A. W., & Gaillard, E. (in press). Environmental education outcomes for conservation: A systematic review. *Biological Conservation*, 108224. Association for the Advancement of Sustainability in Higher Education (2019). *STARS Technical Manual*. Philadelphia, PA: AASHE. pp. 1-2 ONLY, SCAN one section **SIGN UP TO READ ONE:** Johnson, B., Duffin, M., & Murphy, M. (2012). Quantifying a relationship between place-based learning and environmental quality. *Environmental Education Research*, 18(5), 609-624. Schneller, A. J. (2008). Environmental service learning: Outcomes of innovative pedagogy in Baja California Sur, Mexico. *Environmental Education Research, 14*(3), 291-307. Baudains, C. Dingle, P. W., & Styles, I. (2002). *Greening commuter mode choice through workplace intervention: Comparative effectiveness of three behaviour change strategies and implications for reducing car dependency in Perth, Western Australia*. Paper presented at the European Transport Conference.
Lec T 2/18*	**DUE: ALL Problem Statements and Problem Statement Presentations-Students (Day 1)**	
Dis W 2/19*	**DUE: Bring draft EfS lesson review based on "Guidelines" for peer review**	
Lec Th 2/20*	**DUE: Problem Statement Presentations-Students (Day 2)**	
Lec T 2/25	Evaluating EE Programs I & Preparing the evaluation plan	Steelquist, B. 1993. Questions adapted from Bennett's hierarchy. Public Information Education grant program, Puget Sound, WA in Andrews et al.1995. Educating young people about water: a guide to program planning and evaluation, 1p. Zint, M., Kraemer, A., Northway, H. and M. Lim. 2002. Evaluation of the Chesapeake Bay Foundation's conservation education programs. *Conservation Biology* 16(3): 641-649. Zint, M. 2012. Advancing environmental education programs: Insights from a review of behavioral outcome evaluations. In Dillon, J., Brody, M. Stephenson, B., and Wals, A. (eds.), *International Handbook of Research in Environmental Education.* Routledge, New York, NY.
Dis W 2/26	Review of Projects & "Project Workshop" Evaluation	Schepige, A. C., Morrell, P. D., Smith-Walters, C., Sadler, K. C., Munck, M., & Rainboth, D. (2010). Using environmental education Project curricula with elementary preservice teachers. In A. M. Bodzin, E. S. Klein & S. Weaver (Eds.), *The inclusion of environmental education in science teacher education* (pp. 281-296 SCAN ONLY): Springer.
Lec Th 2/27*	Evaluating EE Programs II **DUE: EfS Lesson review based on "Guidelines"**	Review "MEERA" at www.meera.seas.umich.edu Zint, M., Dowd, P. and B. Covitt. 2011. Enhancing environmental educators' evaluation competencies: Insights from an examination of the effectiveness of the *My Environmental Education Evaluation Resource Assistant* (MEERA) web site. *Environmental Education Research* 17(4): 471-497. Zint, M. 2009. Evaluation plan checklist.
2/29 – 3/8	**NO CLASS - Winter Break**	

Lec T 3/10*	Evaluating EE Programs III	North American Association for Environmental Education (NAAEE). 1996. Environmental education materials: Guidelines for excellence. NAAEE, Washington, D.C. Download from https://cdn.naaee.org/sites/default/files/gl_ee_materials_complete.pdf **SIGN UP TO READ ONE:** Mason, A.M. (2019). Sulitest®:A Mixed-Method, Pilot Study of Assessment Impacts on Undergraduate Sustainability-related Learning and Motivation. *Journal of Sustainable Education* 20: 1-16. Simmons, D. A. (2005). Developing guidelines for environmental education in the United States: the National Project for Excellence in Environmental Education. In E. A. Johnson & M. M. J. (Eds.), *Environmental education and advocacy: Changing perspectives of ecology and education* (pp. 161—183). New York: Cambridge University Press. Thomas, R.E.W., Teel, T., Bruyere, B. & Laurence, S. (2019). Metrics and outcomes of conservation education: a quarter century of lessons learned. *Environmental Education Research* 25(2). 172-192.
Dis W 3/11*	**DUE: Bring draft pre-proposals for peer review**	
Lec Th 3/12	Developing EE Programs I	Simmons, B. 1999. Environmental education in the standards-based curriculum. *Clearing* 104: 20-23. Archie, M. 2001. Environmental education info brief. Association for Supervision and Curriculum Development, Alexandria, VA. Ghent, C., Trauth-Nare, A., Dell, K., & Haines, S. (2014). The influence of a statewide green school initiative on student achievement in K–12 classrooms. *Applied Environmental Education & Communication*, 13(4), 250-260. Michel, J.O. & Zint, M. (in preparation). Developing competencies for SEAS. OR: Wiek, A., Withycombe, L., & Redman, C. L. (2011). Key competencies in sustainability: A reference framework for academic program development. *Sustainability Science*, 6(2), 203–218.
Lec T 3/17*	Developing EE Programs II Guest: Benjamin Morse, UM Center for Academic Innovation **DUE: Submit pre-proposals**	**Sign up to briefly review section of Act on Climate Coursera;** https://www.coursera.org/learn/act-on-climate Jacobson et al. 2006. Conservation education and outreach techniques: Chapter 1 *Designing successful conservation education and outreach*. Oxford University Press, pp. 7-34. Braus, J. 2011. Tools of Engagement: A Toolkit for Engaging People in Conservation. SCAN TABLE OF CONTENTS ONLY
Dis W 3/18		
Lec Th 3/19	Implementing EE- Professional Development	Hardee, C., Duffin, M., and PEER Associates. (2013). Five (+) guiding principles for professional development: Summary report, professional development literature review. Project Learning Tree, Washington, DC. READ pp. 1-9, SCAN remainder **SIGN UP TO READ ONE:** Mayer, V.J. and R.W. Fortner. 1987. Relative effectiveness of four modes of dissemination of curriculum materials. *Journal of Environmental Education* 19(1): 25-30. Davison, A., Brown, P., Pharo, E., Warr, K., McGregor, H., Terkes, S., Boyd, D., and Abuodha, P. (2014). Distributed leadership: Building capacity for interdisciplinary climate change teaching at four universities. *International Journal of Sustainability in Higher Education* 14(1): 98-110.
Lec T 3/24	Field Trips – Guest: Justin Selden, Michigan Sea Grant	Woolf, L. (2006). Field Trips: The Good, Bad, and Ugly. Green Teacher (78): 36-38. Kalvaitis, D. (2007). A recipe for outdoor classroom management. *Green Teacher* 81: 36-38. Athman, J & Monroe, M. C. (2011). Enhancing natural resource programs with field trips. School of Forest Resources and Conservation Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida, 4pp. Dillon, J., Rickinson, M., Teamey, K., Morris, M., Choi, M. Y., Sanders, D., et al. (2006). The value of outdoor learning: evidence from research in the UK and elsewhere. *School science review, 87*(320), 107-111.
Dis W 3/25*	**DUE: Bring draft evaluation plans for peer review**	
Lec Th 3/26	Engaging Adults	Zint, M. & K. Wolske. 2014. From information provision to participatory deliberation: Engaging residents in the transition toward sustainable cities. In Mazmanian, D. and Blanco H. (Eds.) *The Elgar Companion to Sustainable Cities: Strategies, Methods and Outlook*. Edward Elgar Publishing, Northampton, MA, pp. 188-209. Download PDF

Lec T 3/31*	Climate Change Education **DUE: Submit evaluation plans**	**READ ALL:** Lawson, D.F., Stevenson, K.T., Peterson, M.N., Carrier, S.J., Strnad, R.L., Seekamp, E. (2019). Children can foster climate change concern among their parents. *Nature Climate Change* 9: 458-462. UNESCO Education Sector (2019). *Country progress on Climate Change Education, Training and Public Awareness: An analysis of country submissions under the United Nations Framework Convention on Climate Change.* Paris: United Nations Educational, Scientific and Cultural Organization. 16 pp. **SIGN UP TO READ ONE:** Ojala, M. 2012. Hope and climate change: the importance of hope for environmental engagement among young people. *Environmental Education Research* 18(5): 625-642. Monroe, M. C., Plate, R. R., Oxarart, A., Bowers, A., & Chaves, W. A. (2019). Identifying effective climate change education strategies: A systematic review of the research. Environmental Education Research 25(6), 791-812.
Dis W 4/1		
Lec Th 4/2	EE at State and National Level	**READ ALL:** NAAEE Communicator. Fall 2002. Components of a comprehensive state-level EE-program, p. 4. Kirk, M, Wilke, R, and A. Ruskey. (1997). A survey of the status of state- level environmental education in the United States. *Journal of Environmental Education* 29(1): 15-16 only Jacobson, S. 2009. *Communication skills for conservation professionals*. Island Press, Washington, D.C. pp 362-363. Schmidt, K.F. (1996). Green education under fire. Science 274(13): 1828-1830. NAAEE (2019). *eeAdvocate: An Advocacy Guide for Environmental Education Professionals & Supporters.* Washington DC: North American Association for Environmental Education. SCAN only. **SIGN UP TO READ ONE:** U.S. Public Law 101-619: National Environmental Education Act (NEEA) of 1990: https://www.epa.gov/sites/production/files/documents/neea.pdf SCAN ONLY. U.S. Senate Bill S.2928 - Higher Education Sustainability Act (HESA) of 2019: https://www.congress.gov/bill/116th-congress/senate-bill/2928/text WITH: U.S. Public Law 110-135: Higher Education Opportunity Act of 2008: https://www.congress.gov/110/plaws/publ315/PLAW-110publ315.pdf READ PART U (pp. 354-356) ONLY
Lec T 4/7	Community based EE – Guest: TBD	Mitchell, T. (2008). Traditional vs. Critical service-learning: Engaging the Literature to Differentiate Two Models. *Michigan Journal of Community Service Learning* 14(2): 50-68. Evans, J., Jones, R., Karvonen, A., Millard, L., & Wendler, J. (2015). Living labs and co-production: university campuses as platforms for sustainability science. *Current Opinion in Environmental Sustainability*, 16, 1-6.
Dis W 4/8*	**DUE: Bring draft proposal for peer review**	
Lec Th 4/9	EE at International Level	Nielsen, L.A. (2017). Wangari Maathai: The Green Crusader. In *Nature's Allies: Eight Conservationists who Changed Our World.* Washington DC: Island Press. 171-195.
Lec T 4/14*	**DUE: ALL Submit grant proposal and Grant Proposal Presentations-Students (Day 1)**	
Dis W 4/15	Preparing for final exam	
Lec Th 4/16	**DUE: Grant Proposal Presentations-Students (Day 2)**	
Lec T 4/21*	Concluding remarks **DUE: Submit email confirmations of completed course evaluations for extra credit**	Weilbacher, M. 2008. Green tsunami rising: environmental education's third wave. *Green Teacher* 83: 4-8 Kania, J., and Kramer, M. (2011). Collective Impact. *Stanford Social Innovation Review* *9*(1): 36-41.
Th 4/23 10-11:30	Optional Review Session, 3556 Dana	
W 4/29* 10:30-12:30	**FINAL EXAM, 3325 Dana** **DUE: Submit revised final grant proposal for extra credit**	