Supplementary Material

# Supplementary Table S1: Course Schedule Summaries for the Introductory course and the Data practicum course (third iteration of each course, offered in 2021)

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|  | **MIEH 690: Introductory FEW Nexus Course Schedule Summary (spring 2021)** | |  | **MIEH 691: Data Practicum Course Schedule Summary (fall 2021)** | |
| **Session** | **Lecture Topic & In-class Activity** | **Student Activities** |  | **Lecture Topic & In-class Activity** | **Student Activities** |
| # 1 | Course Overview  Uncovering the Food-Energy-Water Nexus  Five research lightning rounds, 5 min each | Read: Proctor, S.M.H. Tabatabaie and G.S. Murthy, Gateway to the perspectives of the Food-Energy-Water nexus, *Science of the Total Environment,* https://doi.org/10.1016/j.scitotenv.2020.142852  Discussion Board post -Introduce yourself and state what you hope to gain from this course, and what exposure you've had to this topic (if any)  5-minute lightning round presentation slides (5 students) |  | Course overview  Interdisciplinary Research & Conflict Management | Take 3 Hidden Bias tests: https://implicit.harvard.edu/implicit/takeatest.html.  Listen: NPR episode on Implicit Bias: https://www.npr.org/2020/06/20/880379282/the-mind-of-the-village-understanding-our-implicit-biases |
| # 2 | Systems Thinking at the Food-Energy-Water Nexus  Discuss topics and guidelines for two-page policy memos | Read: Rabi H. Mohtar and Bassel Daher, Lessons learned: Creating an interdisciplinary team and using a nexus approach to address a resource hotspot. v *Science of the Total Environment,*https://doi.org/10.1016/j.scitotenv.2018.08.406  Discussion comment on the online discussion board due before class |  | Library Science Research  Guest speaker: UMD Librarian)  How to review scientific papers |  |
| # 3 | Climate Change Impacts on Food-Energy-Water Systems  “Climate Change and Impaired Population Health: Perspectives from Countries on Opposite Ends of the Economic Spectrum”. Guest Speaker: School of Public Health faculty  Food-Energy-Water Systems as An Opportunity for Mitigation and Adaptation | Read: Jirapat Phetheet et al., Consequences of climate change on food-energy-water systems in arid regions without agricultural adaptation, analyzed using FEWCalc and DSSAT *Resources, Conservation & Recycling,* https://doi.org/10.1016/j.resconrec.2020.105309  Topic for two-page policy memo due before class  Discussion comment on the online discussion board due before class |  | Two interdisciplinary FEW system project groups present 1 -2 research papers that are relevant to your project | All students: Read the papers as assigned by the groups presenting  Groups presenting must prepare a 15-minute presentation on the papers, and submit a formal review of one paper. |
| # 4 | Economics at the Food-Energy-Water Nexus  View pre-recorded lecture from Agricultural Economics faculty at Texas A&M University | Read: Peter Saundry, Benjamin L. Ruddell. The Food-Energy-Water Nexus. Chapter 6: Economics, by Bruce A. McCarl, Yingqian Yang.  Discussion comment on the online discussion board due before class |  | Two interdisciplinary FEW system project groups present 1 -2 research papers that are relevant to your project | All students: Read the papers as assigned by the groups presenting  Groups presenting must prepare a 15-minute presentation on the papers, and submit a formal review of one paper. |
| # 5 | Water-Food Intersections: Interdisciplinary Research within the CONSERVE Center of Excellence  Guest speakers lightning rounds and panel discussion: What are the benefits and challenges of working in an interdisciplinary Center? What do we know now that we wish we knew when we formed the Center?  Guest speakers: co-Project Directors and collaborators on the CONSERVE project. | Read: Suri, Mayhah R., et al. "US farmers' opinions on the use of nontraditional water sources for agricultural activities." *Environmental research* 172 (2019): 345-357. https://doi.org/10.1016/j.envres.2019.02.035  Discussion comment on the online discussion board due before class |  | Life Cycle Assessment | Read: Choudhury, A., Felton, G., Moyle, J., & Lansing, S. (2020). Fluidized bed combustion of poultry litter at farm-scale: Environmental impacts using a life cycle approach. *Journal of cleaner production*, *276*, 124231. |
| # 6 | Lightning rounds on two-page policy memos | No required readings  Two-page policy memo due  Students present a 5-minute lightning round on their two-page policy memo |  | Group Project Work Period – groups work together on their projects for the entire class | No required readings  Work on draft of Project for Peer Review |
| # 7 | Building Interdisciplinary Teams  Guest Speaker – instructor of the Data practicum course  Introduce Interdisciplinary FEW Systems Research Project | Read: Halvorsen, Kathleen E., et al. "A case study of strategies for fostering international, interdisciplinary research." *Journal of Environmental Studies and Sciences* 6.2 (2016): 313-323. DOI 10.1007/s13412-015-0336-7  Discussion comment on the online discussion board due before class |  | Managing large datasets and data management (UMD Librarian) | Read: Baykoucheva, Svetla. Managing scientific information and research data. Chandos Publishing, 2015. Chapters 3 and 8.  Group Project Draft #1 due |
| # 8 | Energy-Water Intersection  Virtual Field trip to Emmitsburg, MD  Introduce topics and guidelines for short research paper | Read: Singh and Colosi 2018. Water–energy sustainability synergies and health benefits as means to motivate potable reuse of coal bed methane-produced waters. *Ambio*, https://doi.org/10.1007/s13280-018-1098-8.  Discussion comment on the online discussion board due before class |  | Social Science Research in Interdisciplinary Teams. Guest speaker: University of Maryland, Baltimore County faculty) | Read: Small, Mario Luis. "How many cases do I need?' On science and the logic of case selection in field-based research."  *Ethnography* 10.1 (2009): 5-38.  Detailed Peer Review #1 of Group Project due |
| # 9 | Food/Waste-Energy Intersections | Kibler et al. 2018. Food waste and the food-energy-water nexus: A review of food waste management alternatives. *Waste Management* 74 (2018) 52–62.  Discussion comment on the online discussion board due before class |  | Data Visualization  Guest Speaker: UMD Librarian with expertise in data visualization | Read: G. Andrienko, N. et al. (2007) Geovisual analytics for spatial decision support: Setting the research agenda, *International Journal of Geographical Information Science*, 21:8, 839-857, DOI: 10.1080/13658810701349011 |
| # 10 | Human Dimensions of the Food-Energy-Water Nexus  Guest Speaker: UMD Anthropology faculty  Topic: Q&A session on rapid ethnographic assessments | Read: Sangaramoorthy & Kroeger. Rapid Ethnographic Assessments: A Practical Approach and Toolkit for Collaborative Community Research.  Discussion comment on the online discussion board due before class |  | Group Project Work Period – groups work together on their projects for the entire class | Work on second draft of Project for Peer Review |
| # 11 | Global Perspectives: Emerging FEW Systems Innovations Around the Globe  Guest Speaker from Sanskriti Farms and Research Center, Nepal  Guest Speaker from UMD Earth System Science Interdisciplinary Center | Rasul et al. (2019). Beyond hydropower: towards an integrated solution for water, energy and food security in South Asia. *International Journal of Water Resources Development.* https://doi.org/10.1080/07900627.2019.1579705  Discussion comment on the online discussion board due before class |  | Research modeling case study: The Chesapeake Bay  Guest Speaker: University of Maryland Center for Environmental Science faculty | Group Project Draft #2 due |
| # 12 | Policy and Governance at the FEW Nexus  Guest Speaker from City University of London | Read: Periera et al. 2020. Planning for change: Transformation labs for an alternative food system in Cape Town, South Africa. Urban Transformations. https://doi.org/10.1186/s42854-020-00016-8  Short research paper due  Students present a 5-minute lightning round on their short research paper |  | Effective PPT Presentations and Posters Techniques (UMD Faculty) | Detailed Peer Review #2 of Group Project |
| # 13 | Forests, The Future of Food Systems  Field-trip to Forested, Bowie, MD  Guest Speaker: Lincoln Smith | Read: Siegner, A., Sowerwine, J., & Acey, C. (2018). Does urban agriculture improve food security? Examining the nexus of food access and distribution of urban produced foods in the United States: A systematic review. *Sustainability*, *10*(9), 2988.  Discussion comment on the online discussion board due before class |  | Group Project Work Period – groups work together on their projects for the entire class |  |
| # 14 | Interdisciplinary FEW Systems Research Project Pitches | All interdisciplinary teams submit a 1-page concept paper about your project.  All interdisciplinary teams present their project pitches (10 mins) |  | Group Project | Students present 15-minute presentations on their group projects |