



## UWSP – College of Natural Resources

### WATR 350

#### Special topics: *Exploring the Ag-Water Nexus in Wisconsin – Regional Field Trip*

1 credit hour

Fall 2022

In-Person

#### Overview

A cross-campus colleague network of instructors from UW-Green Bay, UW-Stevens Point, UW-Platteville, and UW-Madison will pilot a three-day field trip course built around regional variations in Wisconsin agriculture. This course would use different forms of agriculture, variations in physiography and differences in water resource systems to provide students with a greater understanding of both agriculture and water. Students and faculty will explore the nexus of agriculture and water broadly through examples and case studies of the water/agriculture connection in Wisconsin. The field course stops will leverage ongoing ag-water quality monitoring and research projects and will engage students with agricultural and- resource management professionals and producers working to mitigate the impacts of agriculture on water quality/quantity.

#### Instructors Contact Information

- Rob Michitsch
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- Kevin Masarik
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Other instructors include Kevin Fermanich (UWGB), John Luczaj (UWGB), Kevin Masarik (UWSP), Paul McGinely (UWSP), Rob Michitsch (UWSP), Anita Thompson (UWMad), Francisco Arriaga (UWMad), Margaret Kalcic (UWMad) and K.G., Karthikeyan (UWMad)

#### Schedule

Pre-trip meeting September 1

Required overnight field trip: Friday, September 9 – Sunday, September 11

#### Catalog Description

Exploring the Ag-Water Nexus in Wisconsin. Regional Field Trip. 3-day field trip course, September 8-11, 2022. There are no fees for this course. Transportation and lodging (and some food) will be covered through a grant from the Freshwater Collaborative of Wisconsin.



Pre-requisites: none

Required Text: none

### Course Materials

Provided by instructors throughout the course via Microsoft teams and handouts

### Course Learning Outcomes

- Students will gain an understanding of and be able to contrast how geological and physiographic conditions influence hydrologic processes in major agricultural areas in Wisconsin
- Students will be able to explain and contrast management activities and water resource issues associated with dominant agricultural systems found in Wisconsin
- Students will gain an understanding of approaches and challenges to assessing the impacts of agricultural activities on surface and groundwater quality and quantity
- Students will gain an understanding of technological, management and policy challenges and solutions to create a more sustainable agricultural-water nexus
- Students will become familiar with career opportunities and grow in confidence to work on sustainable solutions at the nexus of agriculture and water quality/quantity

### Grading

Grading for this course will consist of 10-20% for pre-trip readings, 40-50% for field notebook, and 40-50% for engagement/participation.

### Communication policies

- Announcements, handouts, readings, assignments, and grades will be posted on this course profile on Microsoft Teams. The course profile can be accessed at the following address  
[https://teams.microsoft.com/\\_#/school/conversations/General?threadId=19:a3g1L8pCx32GjKOKN4a\\_89moGfnL0ebfdoH2hAQvwd01@thread.tacv2&ctx=channel](https://teams.microsoft.com/_#/school/conversations/General?threadId=19:a3g1L8pCx32GjKOKN4a_89moGfnL0ebfdoH2hAQvwd01@thread.tacv2&ctx=channel)
- If you have a question about a grade, please reach out to the instructors. **If you send an email, please identify yourself by your full name and the course identification number.**

### Learning environment

To provide a stimulating and effective learning environment, everyone is expected to follow shared codes of conduct. To foster fruitful discussions, we should all strive to create an environment of mutual respect. All-in class, field, and group work interactions should be civil, respectful, and supportive of an inclusive learning environment for all students. If you have any concerns about classroom participation or classroom dynamics, I encourage you to speak with me, the Department chair, or your advisor. You may also share your concerns with the University at <https://www3.uwsp.edu/dos/Pages/resources.aspx>.



## Academic Integrity

**Ethics and Academic Honesty Policy:** When you choose to take a course with an instructor, we enter an ethical contract with each other. We should assume that I will design course activities and act in good faith to help you learn, and that you, as the student, will complete the course work yourself and to the best of your ability. That means that all course assignments should reflect your own, independent work. **I am obligated to refer any incidences of plagiarism or cheating, including failing to appropriately cite source materials, representing the work of other students as your own, or submitting work written for previous courses in this course, to the Dean of Students office for disciplinary action.** To avoid any problems, please make sure that you appropriately cite all information you use in course assignments, and that you complete all individual course work independently. If you are unsure of how to cite your information or what requires citation, I and others are here to help! For more information, please refer to the text of UW System’s Academic Integrity Policy:

[http://docs.legis.wisconsin.gov/code/admin\\_code/uws/14/](http://docs.legis.wisconsin.gov/code/admin_code/uws/14/) .

## Disability Resource Center:

Consistent with federal laws and the policies of the University of Wisconsin, it is the policy of UW-Stevens Point to provide appropriate and necessary accommodations to students with disabilities. If you require any academic accommodation due to a disability, please contact the Disability Resource Center (DRC) Director (phone: 715-346-3365; email: [drc@uwsp.edu](mailto:drc@uwsp.edu); website: <https://www.uwsp.edu/disability-resource-center/>) to register and/or request services. If you have already established accommodation through the Disability Resource Center, please communicate your approved accommodation with me at your earliest convenience so we can discuss your needs in this course.

## Changes to Syllabus

**Instructor reserves the right to modify syllabus and assignments as needed based on faculty, student and/or environmental circumstances.** If changes are made to the syllabus, amended copies will be dated and made available to the class.

## Student Resources

If you have a concern or need help addressing any issues, including academic performance, health and social problems, financial and food resources, housing problems, personal safety, **do not hesitate to approach the instructor.** Point Cares, and there are a variety of campus resources that you can access to help get the support you need (<https://www3.uwsp.edu/dos/Pages/stu-personal.aspx>).

## Course Organization

*Letter-grade scale*

Grade	Percent
A	>92.00
AB	89.00-91.99
B	82.00-88.99
BC	79.00-81.99



Grade	Percent
C	72.00-78.99
CD	69.00-71.99
D	59.00-68.99
F	<59.00

*Tentative Trip Schedule (changes may occur at the discretion of the instructors and because of logistical reasons)*

Weeks	Topics (DRAFT)
Pre-trip	Introduction - Overview of the Ag-Water Nexus in Wisconsin Water cycle in the context of geomorphic/ag setting (flow pathways) and regional ag systems in Northeast, Central and Southwest Wisconsin
Day 1	Northeastern Wisconsin – One of the most intensive dairy regions in the United States. This area has many large dairies in a region with fine textured soils, high stream drainage density and areas with shallow soils over fractured bedrock. <ul style="list-style-type: none"> <li>○ Karst: managing agriculture in shallow soils – Kewaunee or Southern Brown County (mapping landscape risk; drinking water data, etc.)</li> <li>○ Dairy water use and wastewater; Manure management</li> <li>○ End-of-field to Watershed Scale – Phosphorus focus</li> <li>○ Agricultural water treatment systems (ARTS); Phosphorus trap (Tile systems)</li> </ul>
Day 2	Central Wisconsin - One of the most important potato & vegetable growing regions in the United States. This area has coarse textured soils and a high density of high-capacity wells for irrigation. The water resources of Central Wisconsin include productive sand and gravel aquifer, baseflow-dominated trout streams and many small seepage lakes within the agricultural landscape. <ul style="list-style-type: none"> <li>○ Irrigated ag – vegetables</li> <li>○ Nitrate in groundwater</li> <li>○ GW – Surface water interactions, regional water use</li> <li>○ Irrigation and Baseflow dominated streams</li> </ul>
Day 3	Southwest Wisconsin - Southwest Wisconsin has rolling topography and was the site of early watershed management projects in the 1930s. A mix of dairy and cash grain farming within a region of shallow, loess-derived soils and fractured bedrock connected to trout streams. <ul style="list-style-type: none"> <li>○ Dairy Forage Research Center USDA-ARS</li> <li>○ Driftless area agriculture and water system</li> <li>○ Contrast Dairy and karst to NE Wis?</li> <li>○ Sustainable/Organic Ag/Grazing systems?</li> <li>○ Urban Ag water issues</li> <li>○ MMSD biosolids – ag-urban connections</li> <li>○ Spring Green nitrates; Wis River Valley sandy soils</li> </ul>