Summer 2024

Course Title: Learn from the Lake: Strategies and Resources to Bring Lessons from Lake Champlain into the Classroom and Your Classroom to Lake Champlain

Number of Credits: 3 Credits Available

Level: Graduate

Course Code: (To be provided by the Center for Schools at course set-up)

Dates: 7/22/24-7/26/24 with pre- and post- asynchronous work.

Times: 8:30 - 4:00

Format: In-person + online/independent format

Remote Learning Technologies: Google Classroom

Location: Lake Champlain Maritime Museum in Vergennes and various field sites

Instructor: Meghan Bartholomew MA, meghanh@lcmm.org, (802)353-5989

Sponsor: Lake Champlain Maritime Museum and The National Oceanic and Atmospheric Administration

Publicize my Course on the Castleton website: Yes

Course Cost to Student: $435, if receiving credit

Course Description:

Learn from the Lake: View a live-stream tour of a shipwreck through the camera lens of an underwater robot. Paddle in Lake Champlain and collect scientific samples to examine under a microscope. Closely examine many life forms in the lake and surrounding rivers, from microscopic plants to flopping fish and microplastics that affect lake quality.

This course immerses teachers in the experience of learning from the Lake Champlain Watershed in ways that they can replicate in their own classrooms through the use of meaningful watershed educational experiences (MWEEs). Our sessions will immerse participants in sensory-rich experiences on or near the lake. Additionally, the group will look at resources and learn strategies that will help teachers get their students engaging with the lake as well. We will focus on pedagogical frameworks such as project-based learning and service learning as well as practical strategies to choose an effective field site to bring students as well as keeping students safe out on the water. The culminating project of the course will be to write a lesson plan that incorporates a MWEE and gets students outside, interacting with the watershed.

Audience: All Educators, but will be most helpful for intermediate, middle, and high school educators whose curriculum includes watershed science

Course Goals: Give teachers an understanding of how to provide MWEEs, meaningful watershed educational experiences, to their students.

Course Objectives: Design a lesson plan in which you plan to take your students out to a field site to learn about some aspect of environmental science and supplement your fieldwork with digital resources.

Course Schedule: (Please provide date and times of video meetings, if applicable. The schedule should demonstrate 45 hours + of new learning.)

	Monday	**Tuesday**	**Wednesday**	**Thursday**	**Friday**
	Getting Students Out on the Water	*Stream Sampling and Choosing Field Sites*	*Getting Inspiration from Lake Champlain & Learning Through Stewardship*	*Teaching Watershed Science*	*Scientific Assessment of the Lake*
8:30	Welcome & Coffee/Tea	Coffee/Tea Prep for the Day	Coffee/Tea Prep for the Day	Coffee/Tea Prep for the Day	Coffee/Tea Prep for the Day
9:00	Group discussion of pre-course readings. What is a MWEE?	Group discussion of readings	Group discussion of readings	Group discussion of readings	Water testing aboard the *Melosira* with Lake Champlain Sea Grant staff
9:30	Using digital resources to teach watershed science	Stream sampling for macroinvertebrates	Teaching about issues facing the watershed	Shipwrecks of Lake Champlain	
10:00 10:30	Watershed model activities			Looking beneath the surface: using an ROV to explore underwater	
11:00 11:30	Using the Giant Lake Champlain Map	Discussion about field sites with an expert	Discussion of how service learning can		

Time			connect with environmental education		
12:00	Lunch (BYO)	Lunch (BYO)	Lunch (BYO)	Lunch (BYO)	Lunch
12:30	Paddling on Lake Champlain- How can you get kids out on the water and learning?	Performing Tests on the River	Using Lake Champlain for Inspiration (Questions activity, art and writing about the lake)	How can technology help us with learning about watershed science?	
1:00					Present Project Ideas to the group.
1:30		Ensuring student safety at field sites and on the water	Connecting with Lake Champlain		
2:00					
2:30				Work in small groups to refine project ideas	Time to fill out Project Proposals and get instructor input on final project.
3:00					
3:30		Overview of Watershed Ecology Camp and GAP- Discussion of whether you could implement at your school	Work Time: come up with final project ideas, talk with others to help you choose one option to run with		
4:00					

Independent/Asynchronous
Pre-Course Work: Complete assigned pre-course readings, which provide information about Lake Champlain and the Lake Champlain Watershed.
Post-Course Work: Complete your final project and submit it within two weeks of course completion.

Instructor Biography: Meghan Bartholomew is a former classroom teacher who is currently the Education Programs Manager at the Lake Champlain Maritime Museum. With experience in outdoor, experiential education, her goal is to help teachers find unique resources and programs that will help get their students engaged in learning about Lake Champlain and its watershed.

Required Readings/Texts: (required texts not included in cost of course)
Pre-Course Readings:
- Read text on on-water safety, which will be provided digitally
- Watch Zoom a Scientist: Watershed Science 101
- NOAA's Meaningful Watershed Experience Guide Read the first three parts of this four-part guide

Day One:
- Nisqually River Education Project: Water Quality Go through this website, exploring the field sites they show to see how different this field sites can be, then go through all of the information on the other tabs to learn about ways you can assess your field site.

Day Two:
- Read EPA's Guide to Service Learning
- Learning to Give Toolkit Read this resource then explore the lesson plans and find a one that might be a good fit for your class, whether it's related to water quality or not.

Day Three:
- If you feel that you need an introduction to ROVs, read [this short article](#) and watch [this video](#) from NOAA.
- Read [Using ROVs to Engage Youth Education with the Environment](#)
- Look at [this slideshow](#) from Wisconsin's Sea Grant program to see how you could present information about ROVs to your students

Day Four:
- [NOAA Data for Educators](#) Read the short overview, then choose one of the collections of data resources to explore in-depth.

Other Suggested Readings/Texts: None

Assignments:
- Complete daily assigned readings then write a short (3-5 sentence) response with your reaction to the reading and thoughts of how the content could tie into your teaching practice or curriculum.
- Project Proposal: email instructor with information about your planned final project by no later than 5:00 the Monday following our in-person week.

Project:
- Create a lesson plan that gets your students outside and interacting with the watershed with at least two digital tools you will use before and/or after your field work. You can use either the provided lesson plan template or one that your district uses.
  - Option A: Create a lesson that fits into a unit you currently teach with a short description of the unit and how this lesson will elevate it.
  - Option B: Create a lesson plan and an outline of a new unit you would like to incorporate into your curriculum.

Evaluation: The final project will be evaluated based on cohesiveness of MWEE fieldwork within wider unit, whether the fieldwork fulfills MWEE guidelines, and use of digital resources and whether they reinforce the goals of the lesson.

Grading: The grade for this course will be based on participation in all activities, project proposal, and the final project.

Vermont State University (VTSU) Policies

Grading Policy:
Grades are indicated by letters with a designated "quality point" value assigned to each as follows:

A	4.0
A-	3.7
B+	3.3

B	3.0
B-	2.7
C+	2.3

A grade of **B- or better** must be achieved to count this course toward a graduate degree at VTSU. For questions on transfer pathways, please contact your contact within VTSU's Department of Education. Additional grading information can be found in the VTSU Graduate Catalog under Academic Policies, Credits & Grading: https://catalog.vermontstate.edu/content.php?catoid=8&navoid=119

Expectation: Students enrolled in this course will complete a series of activities, readings, and reflections before, during and/or after any scheduled face-to-face or synchronous sessions. This will assure that Carnegie expectations for a credited course, both new learning and hours of outside preparation, are sufficiently met.

Academic Honesty Policy
Vermont State University upholds high standards of academic integrity from all community members. Academic integrity encompasses honesty, trust, fairness, respect, responsibility, and the courage to act on these fundamental values (International Center for Academic Integrity [ICAI], 2021; The Fundamental Values of Academic Integrity, 3rd ed.). A student who fails to uphold these values may experience academic consequences including a grade of F, indicating no credit, for assignments or courses, or dismissal from the University. Examples of failure to uphold academic integrity may include using unauthorized aids to complete or enhance academic work, copying another person's work on exams, quizzes, or assignments, or engaging in other forms of plagiarism. To plagiarize is to use someone else's words or ideas without full and proper citation and to present them as one's own. The sharing of VTSU password and login credentials to misrepresent oneself in online learning is a violation of academic integrity. Violations need not be intentional in nature. All members of the VTSU community are expected to investigate and understand their responsibility to act with integrity, and to seek assistance when uncertain. For more information, please see the VTSU Graduate Catalog Academic Integrity Policy: https://catalog.vermontstate.edu/content.php?catoid=8&navoid=119#academic-integrity

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https://www.vsc.edu/wp-content/uploads/2016/11/VSC-Annual-Notice.pdf

Accommodations

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Course Drop Policy:

Vermont State University offers courses to educators with the expectation that registrants will complete the course. However, the University realizes circumstances arise in one's personal life that may cause disruptions. **The policy for dropping a course is that a participant will notify the instructor in writing of the intent to withdraw from the course. The withdrawal notice should be made within the first week of the course and should include the reason for withdrawing.** After week one, changes in class status will be considered for health, bereavement, and personal or emergency situations only. Those who withdraw without adhering to this policy may receive a failing grade on their transcript and/or be liable for associated course costs. Please direct any drop requests and questions for this course to the VTSU Center for Schools, cfs@vermontstate.edu

Transcript Request:

www.vermontstate.edu/transcripts

Please direct transcript request questions to registrar@vermontstate.edu.