

COURSE TITLE: WHERE'S YOUR WATER COME FROM? CEDAR RIVER WATERSHED

NO OF CREDITS: 1 QTR CREDIT

CONTACT HRS: 10

WA CLOCK HRS: 9

OR PDUs: 9

INSTRUCTORS:

KATIE SAYLOR, M.S.

CEDAR RIVER WATERSHED EDUCATION CENTER

19901 CEDAR FALLS RD SE

NORTH BEND WA, 98045

425/222-3735—HOME

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CELESE SPENCER, M.S.R.I.

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This course will be taught by Katie Saylor and/or Celese Spencer.

COURSE DESCRIPTION:

When you woke up this morning, did you realize that you woke up in a watershed? When you turn on the faucet, have you ever stopped to wonder where that water comes from? Join Seattle Public Utilities' dynamic educators to learn more about water, watersheds, and how to bring them to life in your classroom. During this one-day workshop in North Bend, WA, you will visit the municipal Cedar River Watershed, 90,000 acres of land that provides water to 70% of the greater Seattle area (possibly you?!)

Besides seeing the Source and enhancing your understanding of your water supply, you will engage in hands-on activities that will be easily duplicable in your classroom. Discover how teaching about watersheds can readily integrate with subjects you already teach—science, social studies, language and visual arts. Compare water quality from different watersheds, and learn how land stewardship directly affects the livelihood of aquatic creatures. Find out about educational opportunities that exist at the Education Center for you and your class. This workshop is designed for teachers of grades 3-8. We will meet at the Cedar River Watershed Education Center in North Bend, 30 miles east of Seattle.

Expect to be both indoors and outside, dress for the weather and bring sturdy walking shoes.

Materials fee: none.

LEARNING OUTCOMES:

As a result of taking this course, participants will:

1. Understand where their water comes from, and the many interesting features of the municipal CRW.
2. Compare water quality parameters for people and aquatic wildlife
3. Gather hands-on activities to help them teach about watersheds in their classroom
4. Understand how watersheds can be integrated with all subject areas: language arts, social studies, science, visual arts
5. Know what opportunities are available to their classes: Rattlesnake Lake Recreation Area, Education Center, Exhibit Hall, Field trips
6. Discover different watershed stewardship opportunities for them and their classrooms in the greater Seattle/Puget Sound area.

REQUIREMENTS FOR COURSE CREDIT

Following are the general course requirements weighted for determining the granting of university credit. Antioch University Seattle requires 75% or better for 400 level credit to be awarded and 85% or better for 500 level credit.

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|--------------------------------------------------------------|-----|
| 1. Attendance and active participation in all class sessions | 40% |
| 2. Reading of articles, handouts, books or texts | 30% |
| 3. Satisfactory completion of all outside assignments | 30% |

400 & 500 LEVEL OUTSIDE ASSIGNMENT

After ruminating on the website information found in the Required Reading do **one** of the following:

1. Create a map/diagram/story/narrative about your watershed address. Include key waterways, landmarks, potential sources of pollution, and (if present) visible efforts to protect your watershed (e.g. educational signs, stenciled storm drains, etc.) What wildlife lives in your watershed that needs to be protected? Include proposed ways to further protect your watershed.

OR

2. Research where your drinking water comes from. Write a 1-2 page paper on your personal water supply. Who manages it? Where is it kept? How is it treated? How is it being protected? What specific issues surround the quantity and quality of your water supply? Address how you would integrate this information into your existing curriculum. Bibliography to follow APA style.

OR

3. Complete water testing in a stream, lake or creek in your watershed, testing for nitrate, phosphate, dissolved oxygen, pH, and temperature. Assess the physical characteristics and health of the watershed, including riparian area, human disturbance/influences, and biological indicators of water quality. Write a 1-2 page paper summarizing your results, include a photo of the site you tested, and record wildlife observed.

OR

4. Another assignment of your own design with prior approval of the instructor.

500 LEVEL OUTSIDE ASSIGNMENT

In addition to the 400 Level Assignment do **one** of the following:

5. Design a field trip for your class to the Cedar River Watershed Education Center, visiting the Exhibits and Rattlesnake Lake. In addition, create a custom permit or guide for students to use in the Exhibits, aligning their learning to your classroom curriculum. In your lesson plan, describe your teaching situation and how this field trip fits into existing curricula. Your lesson plans should be formatted according to your district's standards.

OR

6. Coordinate with local agencies to perform a stewardship project in your local watershed. Either individually or with your class, spend at least one day improving habitat and water quality for your watershed address. Write a 1-2 page reflection on the project, describing what was done and any improvements or changes you would make in the future. Take photos and create a slide show/power point to document your work. Arrange to show your presentation to other classes at your school.

OR

7. Another assignment of your own design with prior approval of the instructor.

ASSIGNMENT FORMAT & DUE DATE:

- Papers should be word-processed, double-spaced, single sided and sent to instructor's home or email address listed in this syllabus.
- All assignments are due to the instructor within two weeks of the last class session.

MATERIALS FEE

There is no additional material fee to be paid at class.

REQUIRED READING

Access and read the Water Quality Annual Report for your personal residence. This report is available online, and mailed to each residence annually.

Read the following webpage, and any sidebar links of interest to you:

http://www.seattle.gov/util/About_SPU/Water_System/Water_Sources_&_Treatment/Cedar_River_Education_Center/index.asp

Access the following website:

http://www.seattle.gov/util/About_SPU/Water_System/Water_Quality/index.asp

Click and read the following links:

- Giardia
- Water Quality Planning and Engineering
- Cedar Treatment Facility: scroll down to CH2M Hill Cedar Team, click, and read entire page
- Water Quality Annual Reports: click and read "Water Quality Laboratory" as well as related articles on the left hand side.

Read this webpage: <http://dnr.metrokc.gov/wlr/PI/WATERSHD.HTM>

WHAT TO BRING

- Lunch, drink, snacks
- Comfortable clothing and footwear, appropriate for outside
- Raingear, if needed
- Sample of water from your home watershed (optional)
- Notebook, pens/pencils

INSTRUCTOR EVALUATION OF WORK:

Please include a self-addressed, stamped envelope if you would like to receive the instructor's comments on your assignments, or send an email to celese.spencer@seattle.gov

QUALIFICATIONS FOR TEACHING THE COURSE

Katie Saylor, M.S., has worked for Seattle Public Utilities at the Cedar River Watershed Education Center for the past five years as both a Naturalist and as an Education Specialist. She has worked in the environmental education field for seven years, designing and delivering programs for all ages. Before that, Katie was a classroom teacher in the Bellingham school district. Katie earned her B.A. in Education from Western Washington University in Bellingham and her M.S. in Science Education from Montana State University in Bozeman, where she focused on improving her naturalist skills through Action Research. Katie is a Certified Interpretive Guide through the National Association for Interpretation.

Celese Spencer, M.S.R.I., has been working in the field of Resource Interpretation and Environmental Education since 1987. She spent 7 years at Mount St. Helens National Volcanic Monument as an interpretive specialist and developed with a team NICHES, an inquiry-based science curriculum. Since 1994 she has worked for the City of Seattle in the Cedar River Watershed as part of a dynamic team creating a National award winning field curriculum and interpretive exhibits. She has helped to provide the connection between the land, water and people for thousands of visitors. She earned her BS at The Evergreen State College in Olympia in 1986 and her Masters of Resource Interpretation at Stephan F. Austin State University in Nacogdoches, Texas in 2008. Celese is also a Certified Heritage Interpreter through the National Association of Interpretation.

**WHERE'S YOUR WATER COME FROM? CEDAR RIVER WATERSHED
BIBLIOGRAPHY**

Mitchell, M. and Stapp, W. (1996) *Field manual for water quality monitoring, an environmental education program for schools*. Dexter, MI: Thomson-Shore, Inc.

Project Learning Tree, (1993) *Environmental education activity guide: Pre-K-8*. Washington DC: American Forest Foundation.

Project Wet (1995) *Water education for teachers*. Bozeman, MT: The Watercourse and the Council for Environmental Education.

Stroud Water Research Center, (2000) *The watershed tour*. LaMotte Company.

Symons, J. (1995) *Drinking water: refreshing answers to all your questions*. American Water Works Association.

Cedar River Watershed. (n.d.) Retrieved October 18, 2007 from City of Seattle: Seattle Public Utilities website:http://www.seattle.gov/util/About_SPU/Water_System/Water_Sources_&_Treatment/Cedar_River_Watershed/SPU03_001888.asp

**WHERE'S YOUR WATER COME FROM? CEDAR RIVER WATERSHED
COURSE SCHEDULE**

Course Schedule is subject to change.

CLASS MEETING PLACE

**Cedar River Watershed Education Center
19901 Cedar Falls Rd SE
North Bend WA 98045
206/733-9421**

8:00-8:30	Check in, Introductions, Agenda (Learning Labs)
8:30-9:30	What is a watershed? Group mapping activities Watershed modeling
9:30-10:15	We All Live in a Watershed: Impact of land use on water quality "Sum of the Parts" group activity
10:15-10:30	Break
10:30-11:30	Introduction to the municipal Cedar River Watershed Hands-on exploration in the Water is Magic Exhibits Field trip opportunities at the Cedar River Watershed Education Center
11:30-1:00	Land use and history of municipal Cedar River Watershed (Masonry Dam) Lecture on historical background of dam and surrounding area Integrating watersheds into art and language arts curricula
12:00-1:00	Working lunch
1:00-2:30	Water Quality indicators (Chester Morse Lake) Lecture Water quality parameters: small group discussions and presentations Water testing
2:30-3:30	Biological indicators (Rack Creek or other suitable tributary) Macroinvertebrate keying
3:30-3:45	Break
3:45-4:45	Watershed Stewardship Scenario problem solving and presentations Stewardship opportunities in your backyard
4:45-5:00	Wrap up, evaluation, good-byes