

CAMPUS AS A LIVING LABORATORY  
PERSPECTIVES FROM DALHOUSIE UNIVERSITY

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## HISTORY AND BACKGROUND

- Since 2003, inspired by David Orr
- Students from: Faculty of Science, College of Sustainability, and beyond...
- Idea is to use the campus as a laboratory for demonstrating how to create sustainable communities.
- Objectives:
  - Learn how to write a research proposal
  - Learn how to execute research
  - Help to make the university a more sustainable place

## THE PROCESS

- Learning about campus greening issues
- Project “speed dating”
- Creating the proposal
- Executing the research
- Reporting on the research
  - Pecha Kucha
  - Final Report

## SUST/ENVS 3502 – LEARNING OUTCOMES

Learning Outcome	Learning Sub-Outcome
<ul style="list-style-type: none"><li>• Define and identify key elements of environment and sustainability issues on campus</li></ul>	<ul style="list-style-type: none"><li>• Summarize the literature on the sustainability in higher education movement</li><li>• Develop familiarity with the policies and international agreements related to campus sustainability at Dalhousie University</li></ul>
<ul style="list-style-type: none"><li>• Develop effective research questions</li><li>• </li></ul>	<ul style="list-style-type: none"><li>• Summarize the four key components to a research question</li><li>• Suggest appropriate research questions for campus sustainability issue identified by class</li></ul>
<ul style="list-style-type: none"><li>• Develop effective strategies for approaching a research question</li></ul>	<ul style="list-style-type: none"><li>• Describe and compare various research paradigms: post-positivism, constructivism, transformative, and pragmatic</li></ul>

## SUST/ENVS 3502 – LEARNING OUTCOMES

Learning Outcome	Learning Sub-Outcome
<ul style="list-style-type: none"><li>• Demonstrate understanding of typology of research objectives</li></ul>	<ul style="list-style-type: none"><li>• Develop familiarity with Wallace’s Wheel</li><li>• Suggest appropriate theoretical approaches to qualitative, quantitative and mixed methods</li><li>• Describe and compare exploratory (formulative), descriptive, relational (correlational), explanatory (causal) and transformative typologies</li></ul>
<ul style="list-style-type: none"><li>• Demonstrate knowledge of probabilistic and non-probabilistic approaches to research projects</li></ul>	<ul style="list-style-type: none"><li>• Define and compare probabilistic and non-probabilistic sampling</li><li>• Describe probabilistic sampling terminology (population, representativeness, units of analysis, sampling frame, sampling error)</li><li>• Describe probabilistic sampling methods (simple random, systematic with random start, stratified random, multistage cluster)</li><li>• Describe non-probabilistic sampling methods (convenience, purposive, snowball, quota)</li></ul>

## SUST/ENVS 3502 – LEARNING OUTCOMES

Learning Outcome	Learning Sub-Outcome
<ul style="list-style-type: none"><li>• Demonstrate understanding of methods to maintain rigour in scholarly research</li></ul>	<ul style="list-style-type: none"><li>• Describe and apply the following terms: reliability, validity, catalytic validity, trustworthiness</li></ul>
<ul style="list-style-type: none"><li>• Demonstrate understanding of major interactive methods</li></ul>	<ul style="list-style-type: none"><li>• Summarize the benefits and drawbacks of surveys, interviews, focus groups and observation</li><li>• Suggest when each interactive method is most appropriate</li></ul>
<ul style="list-style-type: none"><li>• Demonstrate ability to develop effective questions for surveys, interviews and focus groups</li></ul>	<ul style="list-style-type: none"><li>• Summarize difference between open ended and closed/discrete questions</li><li>• Demonstrate understanding of different types of closed/discrete questions (single response, categorical response, rating scale, ranking, Likert-type rating scale, semantic differential)</li></ul>

## SUST/ENVS 3502 – LEARNING OUTCOMES

Learning Outcome	Learning Sub-Outcome
<ul style="list-style-type: none"><li>• Develop understanding, and demonstrate skills in qualitative data analysis techniques</li></ul>	<ul style="list-style-type: none"><li>• Describe various coding techniques and approaches (i.e. <i>a posteriori</i>, <i>a priori</i>)</li><li>• Describe various data display techniques (graphs, matrices, flowcharts)</li><li>• Summarize and demonstrate ability to use the constant comparative method of coding</li></ul>
<ul style="list-style-type: none"><li>• Develop understanding, and demonstrate skills in quantitative data analysis techniques</li></ul>	<ul style="list-style-type: none"><li>• Understand the difference between nominal/categorical, ordinal and interval variables</li><li>• Understand and apply 3 basic categories of descriptive statistics (distribution of variables, measures of central tendency, variability and dispersion calculations)</li><li>• Describe which descriptive statistics are most appropriate for nominal/categorical, ordinal and interval variables</li></ul>

## **SUST/ENVS 3502 – LEARNING OUTCOMES**

### **Learning Outcome**

- Communicate project knowledge with accuracy and credibility to a target audience.
- Develop project planning, implementation and evaluation skills



## THE PROJECTS (EXAMPLES)

- [Dalhousie Bike Share Program: Exploring the potential for a bike share program at Dalhousie University](#)
- [Voluntary Carbon Offsets: A Way Forward for the Sustainability Movement at Dalhousie?](#)
- [Investigating Student-run Co-operatives in North America: Dalhousie Food Co-op Initiative](#)
- [De-icing Dalhousie: Assessing Salt Management Practices](#)
- [Dalhousie Photovoice: Identifying Environmental Concerns of the Dalhousie Community on Studley Campus](#)
- [Retrofitting Showerheads in Dalhousie University Residences: A Cost-Benefit Analysis](#)
- [Urban Forests: Reintroducing Native Species to Dalhousie University Campus](#)
- [Policy and Behaviour: Exploring Energy Use by Computers in the Marion McCain Building](#)

## THE BENEFITS

- Experiential learning
- Team work
- Applying concepts
- New audience for their scholarly work
- Preparation for independent research projects

## THE CHALLENGES

- Team work
- Students with different skills sets
- Not enough time (and snow days!)