THE STATUS OF CLIMATE CHANGE EDUCATION

IN ENGINEERING PROGRAMS ACROSS CANADA

UNIVERSITY OF WATERLOO | WATERLOO Climate Institute

Natural Resources Canada | Ressources naturelles Canada

Engineering programs are just beginning to incorporate climate change into their program outcomes and courses

38% **of civil and environmental engineering programs have started this work**

19% **Only 19% of systems and other engineering programs have started this work**

Climate science basics are already being taught by

80% **of civil and environmental engineering programs**

38% **of systems and other engineering programs**

Current pedagogical approaches

used in engineering for climate change education:

Standard approaches:
- lectures
- guest speakers
- seminars
- research

Hands-on:
- case-based learning
- experiential learning
- workshops
- projects

57% of engineering programs agreed that teaching about climate change requires special pedagogical approaches, supports and educational resources!

Top 3 enabling factors

for climate change education in engineering programs:

1. Faculty interest & expertise
2. Campus initiatives
3. Student enthusiasm

Top 3 barriers

to the integration of climate change education:

- **Time constraints**
- **Expertise constraints of instructors**
- **Limited awareness of resources**

Support needed

Engineering programs need more support in integrating climate change education into their program, including:

- **Help with the development and redesign of courses**
- **Access to relevant teaching and learning resources and tools**
- **Climate pedagogy professional development for faculty**