

Specialized training session by CTT

T130-101 – Thermal Management

Extreme cold



Who is this course for?

This course is aimed at designers, buyers and research staff who want to better understand the physical meaning behind thermal measurements as well as discover the different categories of insulation materials for the clothing industry.

■ Prerequisite

Know the technical vocabulary of textiles: fibres, yarns, knitwear, wovens, nonwovens, etc.

Content

- Definition of thermal comfort and existing indices;
- Factors influencing thermal comfort: ambient temperature, wind effect, humid evaporation, radiant heat;
- Methods for measuring thermal comfort by parameter: thermal resistance, evaporative resistance, thermal conductivity/effusivity, case of thermal dummies, calculation of an effective operating temperature;
- Types of insulation: natural plant fibres (milkweed, kapok, etc.), natural animal fibres (wool, duck down, goose down), synthetic fibres (microfibres, hollow fibres, etc.);
- Heated textiles: working principle, design consideration, advantages and limitations, business examples.
- New measurement methods in development

Learning Objectives

- Understanding the factors that contribute to thermal insulation
- Know the methods of measuring thermal insulation
- Knowing how to select a class of insulation according to specifications
- Discovering new types of unconventional materials

Your Trainer



Justine Decaens, Manager R&D, M.sc.A.

With a master's degree in mechanical engineering and the equivalent of a bachelor's degree in textile engineering, Ms. Decaens has led several projects related to Arctic climate protection. Her master's project focused on the development of a performance index for the evaluation of traditional winter clothing and integrating active technologies.

April 14th, 2026 (in French) or April 16th, 2026 (in English)
275\$/individual + taxes (247,50\$/individual for CTT members)

Duration : 3h including a 30 minutes visit of the labs, Starting : 10h30, Ending : 14h30,
(meals at your own expense, in the Cégep cafeteria). In-person only, at the Groupe CTT, 3000 avenue Boullé, Saint-Hyacinthe