

## Module 1: Learning objectives

- Overview: Although much of the material of this module will be discussed in greater detail in subsequent modules, the objective of this module is to give you a reasonable overview of heat transfer.
- Heat transfer modes: You should be aware of the several modes of transfer modes of transfer and their physical origins.
- Physical insight: Given a physical situation, you should be able to perceive the relevant transport phenomena. The importance of developing this insight must not be underestimated. You will be investing a lot of time to acquire the tools needed to calculate heat transfer phenomena. However, before you can begin to use these tools to solve practical problems, you must have the intuition to determine what is happening physically. In short, you must be able to look at a problem and identify the pertinent transport phenomenon. The example and problems at the end of this module should help you to begin developing this intuition.
- Rate equations and conservation laws: You should also appreciate the significance of the rate equations and feel comfortable in using them to compute transport rates. You must also recognize the importance of the conservation laws and the need to carefully identify control volumes. With the rate equations, the conservation laws may be used to solve numerous heat transfer problems.