

Goal and idea - Module 1

GOAL:

The ultimate goal of this module is to develop terminology to discuss what differential equations are and what characterizes them.

To do so, we need to:

- Define what differential equations (DEs) are.
- Recognize what dependent and independent variables are.
- Introduce some ways in which we can characterize DEs. While there are many ways to do so in the world, we focus on classifying based on
 - ordinary or partial,
 - linear or non-linear, and
 - order.
- Finally, we examine different ways in which DEs can be written, or expressed. Many of these 'forms' have their own name.

IDEA:

We need to develop a lot of notation, which is cumbersome. Meanwhile, the scope of DEs is too large for us to master at the moment and we need to limit what we will (and can) study. In an attempt to accomplish both of these, we introduce notation, ways in which DEs can be written, and ultimately some characteristics of DEs which we will use to limit the scope of our study.

Time: Videos run 67:26 minutes.