

GILBERT Hi. I'm Gilbert Strang. I'm a math professor at MIT.

STRANG:

CLEVE MOLER: And I'm Cleve Moler. I'm one of the founders of MathWorks, and I'm chief mathematician. Gil and I have made a video series about ordinary differential equations.

GILBERT This developed really from my experience of the linear algebra class. It's videotaped and
STRANG: shown on OpenCourseWare. And it was my first time to discover that millions of people were learning, watching it. And it just seemed possible to tackle the other major undergraduate courses after calculus. The other lead in to engineering and science. Differential equations with the two sides of the formulas and the computations.

CLEVE MOLER: This is not only for students that are currently in school, after calculus. But it's also for lifelong learners. People who want to come back to this material, maybe after years out of school. We want to help people who are using MATLAB to solve differential equations. To understand the MATLAB ODE suite. To turn the black boxes into grey boxes, where you have some understanding of the mathematics that underlies them.

GILBERT Really, differential equations is the expression, the mathematical expression of change. So
STRANG: engineering, finance, economics, life sciences, medical sciences where you're seeing things change over time. Those are modeled by differential equations. So we want to understand what does solutions look like for formulas? And what do they look like for numbers? For actual quantities.

CLEVE MOLER: Gil and I are matrix guys. Our professional lives have been involved with matrices. And MATLAB started life as Matrix Laboratory. Here we are doing differential equations. Why is that? That's because matrices are fundamental in understanding modern differential equations. Systems of ordinary differential equations are the key to understanding modern applications of differential equations.

GILBERT We hope you enjoy it.

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