1163-J5-484 **Viktoria Savatorova*** (`viktoria.savatorova@ccsu.edu`), 1615 Stanley street, New Britain, CT 06053. *Tools of the trade or how to encourage student's engagement in remote ODE class.*

The main feature of this course is that every chapter starts with a "story". The purpose of the "story" is to set the stage: we make assumptions, derive equations to solve, and formulate questions to answer. Based on equations we select a method to learn. We assemble our toolbox starting with linear equations and analytical methods of their solutions. We master the method and test solutions asking and answering "what if" questions. Then we start relaxing our assumptions. Equations become more complicated, and new tools are needed. We learn how software can help to visualize solutions and how to interpret vector fields and phase portraits. We move from linear to nonlinear problems and introduce numerical methods as our new tools. We master numerical methods and test them using original exact analytical solution as a limiting case. As we move forward, we assemble the toolbox of analytical and numerical methods we can use to solve differential equations and systems of differential equations. The class work is split into several projects. Students work in groups submitting and presenting their results on the different stages of each project. They are encouraged to communicate with their peers and instructor providing a feedback on work of others and supplementing it. (Received September 08, 2020)