

# Numerical Programming

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AP#5

## AP#5:

### Problem 5.1

1. Find a system of ODEs describing problems from biology, finances, engineering etc.
2. Solve the system of ODEs using numerical method(s)
3. Perform numerical experiments and visualize

### Tasks and sub-problems to consider

- ▶ Post your model in the Teams chat.
- ▶ The system should contain at least four equations.
- ▶ Describe your model in written, give reference to the source.
- ▶ Select numerical method of solution. Justify your selection of methods in written.
- ▶ Set up numerical experiments and test the method. Give detailed information in written.
- ▶ Solve toy model problem and visualize the results.

## Important Notice

- ▶ AP assigned 0 points if:
  - ▶ a model problem (ODEs, image or video etc.) provided twice by students. Make sure, your model is different from models given by others.
  - ▶ submitted results are not reproducible.
  - ▶ student cannot apply his own code for the input data provided by TA or instructor.
  - ▶ AP is submitted without written explanation of methods and approaches used.
- ▶ Submission deadline: 2 weeks after the date of AP publication.