

## Math B6D Ordinary Differential Equations

| Student Learning Outcomes or AUO   | Measure                | PLO   | ILO | GE  |
|--|------------------------|-------|-----|-----|
| 1. Translate application problems by formulating an appropriate differential equation model. Solve using various methods such as separable, numerical, and undetermined coefficients. Interpret solutions. | Embedded exam question | PLO 2 | II  |     |
|  |                        | PLO 5 | I   |     |
|  |                        |       | III |     |
| 2. Classify various initial value problems, and apply an appropriate algorithm to find solutions.  | Embedded exam question | PLO 1 | III |     |
|  |                        | PLO 2 | II  |     |
|  |                        | PLO 3 | I   | III |
| 3. Demonstrate the knowledge of the criteria for the existence of a unique solution to an initial value problem by clearly communicating concepts in written and verbal form.                              | Embedded exam question | PLO 2 | II  |     |
|  |                        | PLO 4 | I   |     |
|  |                        |       | II  | III |

### PLOs:

1. *Demonstrate an understanding of functions from multiple perspectives.*
2. *Use numerical, graphical, symbolic, and verbal representations to solve problems and communicate with others.*
3. *Use technology as a tool for exploring mathematical concepts.*
4. *Demonstrate an ability to work with mathematical abstractions, analyze mathematical relationships, make plausible conjectures, and develop proofs.*
5. *Synthesize mathematical knowledge.*

### ILOs:

- I. *Think critically and evaluate sources and information for validity and usefulness.*
- II. *Communicate effectively in both written and oral forms.*
- III. *Demonstrate competency in a field of knowledge or with job-related skills.*
- IV. *Engage productively in all levels of society – interpersonal, community, the state and nation, and the world.*

### GELOs:

*Use the GE categories from the catalog if this is a GE course. Areas A-E*  
*General Education Learning Outcomes for Mathematics*

*B.2 Mathematics and Logic (Analytic Thinking)*

- 14. Apply formal systems of reasoning in solving problems or analyzing arguments.*