

# Bike Crank - Exercises

Author: Rajesh Bhaskaran, Cornell University

[Problem Specification](#)

[1. Pre-Analysis & Start-Up](#)

[2. Geometry](#)

[3. Mesh](#)

[4. Physics Setup](#)

[5. Numerical Solution](#)

[6. Numerical Results](#)

[7. Verification & Validation](#)

[Exercises](#)

[Comments](#)

## Exercises

### Exercise 1: Modeling a Different Crank Geometry

[Problem Specification \(pdf file\)](#)

Geometry: [Download parasolid file](#)

Geometry Dimensions (for hand calculations): [See this pdf file](#)

### Exercise 2: Modeling a Cantilever Beam using Beam Theory, 2D Elasticity and 3D Elasticity

[Problem Specification \(pdf file\)](#)

Quick Video Summary:

- creating new coordinate systems
- positioning coordinating systems to create construction geometry
- determine displacements at any location
- how to create a mid-beam surface to determine the stresses along the midplane of the beam

[Go to Comments](#)

[Go to all ANSYS Learning Modules](#)