



## Class Topics Summary – Level 1 Rhino 3D Essentials

*For the topics listed below, the speed at which I can cover this will depend on the size of the group. For a classroom of students, I normally recommend 6 or 7 online sessions of 3 hours apiece (or 3 full days in person). For individuals, I recommend 4 online sessions (or 2 full days in person).*

### Section 1

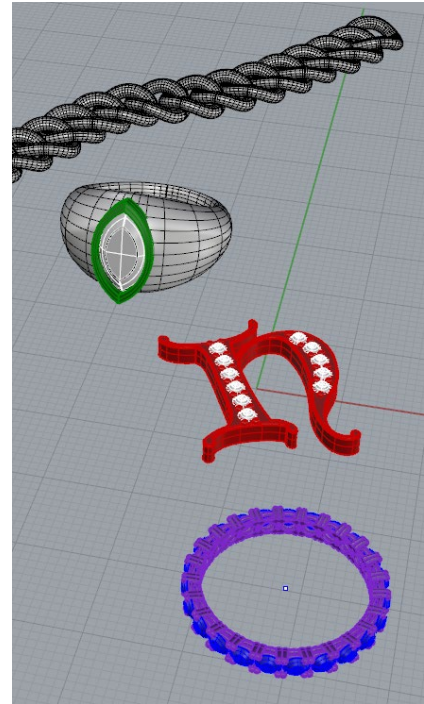
1. Introductions / Explanation of CAD and CAM
2. A basic walkthrough of the Rhino interface, including good practice
3. Organizing models with Layers
4. Precision modelling with Snaps and Osnaps
5. Building objects with curves, including
  - Explode, Join, Rebuild, Trim, Fillet and Offset
6. Basic transformation commands, including
  - Move, Rotate, Scale, and Mirror

### Section 2

1. Basic Ring Construction
  - Band Rings
  - Solitaire Rings
2. Basics of Solid modelling, including
  - Booleans
  - Key methods for building solids based on curves. (the “Key Rhino Commands”)
3. Creating Gemstones
4. Using precision values and measurements in modelling
5. Preparing a file for Rapid Prototyping
6. Basic Tolerances for Rapid Prototyping
7. Building your own claw settings
  - Rex Setting
  - Prong Setting
  - Square Setting
  - Rex Setting

### Section 3

1. The Loft Command
2. Building more complex rings
  - Pearl Ring with shoulders
  - Bombe ring
  - Optional – Eternity rings
2. Solid modelling strategy (for problem solving your own designs)
3. Essential manufacturing tolerances for various types of jewellery
4. Introduction to Surface Modelling, including closing open surfaces
5. Universal Deformation Tools (UDT) and their application
6. Basic Hollowing out methods
7. Pave Stones and Bead Settings on a Surface (including tolerances)
8. Optional – Building a Crossover Ring
9. Optional – Building a Rex Setting with Rhino History
10. Optional – Control points on surfaces





## Class Topics Summary – Level 2 Rhino 3D Essentials

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### SECTION 1

1. Review of solid modelling strategies
2. Methods of Surface Modelling, including closing open surfaces
3. Network Surfaces
4. Basic Surface Sculpture



### SECTION 2

1. The anatomy of a NURBS surface, and how to control it
  - Sculpting NURBS Control points
  - Shrinking and Untrimming NURBS Surfaces
  - Match/Blend for Curves and Surfaces
2. Building a signet ring (3 methods)
3. 2x Surface inlay techniques
4. 9x Curve on surface strategies
  - Adding inlay on a signet ring
5. Texturing surfaces
  - Flow Along Surface
  - Orient on Surface
  - Splop



### SECTION 3 - Subdivision Modelling (with Rhino 7 SubD)

1. Interface Control
2. Construction via Extruding Primitives
3. Bridge
4. Working with Open Subdivision Surfaces
5. Subdivision Pipe
6. SubD Ring Making techniques
7. Append and Offset SubD
8. Converting from NURBS to Subdivision Surfaces

