

JD200 Jewellery Design II: Computer Aided Design

Gemvision Certified Primary Equivalent



Computer aided design and manufacturing (CAD and CAM) processes are revolutionising jewellery today. This course provides an overview of the tools available to jewellers and the different CAM methods to produce prototypes and casts. Students understand the designs and materials that lend themselves well to CAD/CAM as well as both conceptual and practical methods for achieving quality results.

With this knowledge, students learn to use the industry-leading CAD software by Gemvision: Matrix VI. The JDMIS is proud to be the only independent Matrix training provider in South East Asia. This certification incorporates the curriculum of the Matrix Primary Training Course by Gemvision, and successful completion of this course earns all students an Official Certificate from Gemvision.

Lessons in this course of study include:

JD201 Introduction to CAD and CAM

The tools and techniques commonly in use for CAD and CAM methods used for jewellery including milling, rapid prototyping, and stereolithography. Production methods such as vacuum casting are also discussed.

JD202 Introduction to Gemvision Matrix VI

The Matrix VI interface is introduced together with key concepts and best practices that will lead to a smooth design process. Key strokes, the concept of 'history' and profiles & jobs are covered.

JD203 Building Simple Rings

Students use a series of simple projects to learn about ring design using open & closed shanks. The gem loader & bezel builder are used to set gemstones. Basic object manipulation is understood.

JD204 Curves and Surfaces

CAD primitives are discussed and students learn how to create and manipulate curves, create surfaces and solids and trace curves over scanned paper sketches.

JD205 Solids in Matrix and Rapid Prototyping

Students understand the concepts associated with solid modelling, and how to convert working models with multiple objects into a solid object ready for rapid prototyping using boolean commands.

JD206 Intermediate Rings and Settings

Students learn to use multiple ring rails and sweeps as well as how to use the head-builder and prong placer for greater flexibility when setting gemstones.

JD207 Multiple Gemstone Settings and Modifying Settings

Effective use of gems-on-a-curve and polar array functions to allow for channel-set gems are covered as are bezel scalloping using cutters & use of gem cutters to create holes behind gems.

JD208 Customizing and repeating shapes

Custom ring rails are used to create unusual ring/bracelet designs. Mirroring tools such as quad-flip are explored for creation of unique, custom components and designs.

JD209 Pave Settings

Curves are created and the pave builder and automatic pave builders are used to space gemstones on the surface. Pave prongs and the pave azure builder are also covered.

JD210 Further shaping and use of curves

Custom curves are created using 2-views and are used with the gem-on-surface tool to unusual effect. Custom profile sweeps and multi-rail sweeps are explained and practised.

JD211 Rendering with V-Ray

The multitude of rendering options within V-ray are explored and students learn tips for producing stunning, true-to-life renders by incorporating HDR environments and custom lights sources.

JD212 More tools and support options

Additional Matrix VI builders are discussed including eternity band builder, signet ring builder, ring resizer and art tool. Support options including manuals and Gemvision forums are discussed.



Course fees do not include Gemvision Matrix VI Software; student licences are optionally included. This course is available as a component of both Advanced Diplomas and the Specialist Diploma in Jewellery Design & Fabrication, or as a stand-alone 34-hour certification course. Individual lessons may not be taken independently. Basic computer and paper-based design knowledge is required. Computers & software are provided during training.