

Ron Cole – Free Energy

Short Description:

Evolution and future of energy sources. Theories and practices involved in the production of graphene for free energy. This workshop has a substantial lab component. Some background in physics will be useful.

Long Description:

Evolution of energy technologies: Fire > Electrical > Nuclear > Magnetic

Overview of manufacturing process:

Conversion of ambient magnetic energy to electrical energy, Graphene as a precursor to GANS (gas in a nano- state), LAB: begin process of graphene creation, Keshe theory of gravity, LABS: Create sea salt solution AND observe/test graphene coated metal from previous week's lab

The link between gravity and energy:

Static and dynamic gravity reactors, Coke bottle reactors.

GANS - gas in a nano-state:

Providing local concentration of magnetic and gravitational fields, LABS: GANS baths and graphene coated metals AND DC votmeter readings of GANS baths,

The plasma to electron link:

Near future use of plasma energy, and resulting increased speed of processing, The potential for efficient interplanetary communication

Considerations in the use of GANS:

Dangers and uses of GANS, GANS harvesting and storage, Construction of a GANS sandwich reactor, Film of gravity control showing dynamic reactor during lift.

There are four sessions in the workshop with each last approximately 90 minutes each. The first workshop is scheduled for Saturday, January 17 at 6 pm. The fee for this workshop is \$100.

Stained Glass – Linda Palmer

Short Description:

This workshop is designed for a newcomer to stained glass work. Participants will make a stained glass project while learning the entire process from start to finish.

Long Description:

Session1:

Learning how to work with glass safely, Introduction to different aspects of the stained glass process. Selection of a project and discussion of what you will need to complete it.

Session 2:

Learning how to cut your glass design, Beginning grinding.

Session 3:

Continue grinding as needed, Begin foiling.

Session 4:

Continue foiling, Start the soldering process.

Session 5:

Finish soldering, Discussion of projects, what could be done differently, what went really well!

This is a five session workshop that begins on Tuesday, January 13 at 6 pm. The fee is \$275.

Basic MIG Welding – Danny Romero

Short Description:

Introduction how welding works. One hour lecture covering topics that include types of welding, materials, safety, characteristics of a "good weld", what you can do with welding.

Long Description:

This 1 session four hour workshop covers MIG welding, welding safety, characteristics of a "good weld", and practicing the skills to create good welds.

The session will cover safety (including self-protection and what clothing to wear). There will be a review of the vocabulary and definitions of the different types of welding. Students will learn how to control and maintain the weld pool and properly prepare metal to be welded. Finally students will learn (and practice) the steps to a successful weldment by running a bead and an inner corner bead. Wovser will provide the gloves and faceshields for the workshop.

Since you WILL be welding, please wear:

- Clothes that can stand getting dirty (and maybe singed.)
- Closed toed shoes or boots.
- Synthetics tend to melt and fuse to your skin (if they burn). For that reason, we prefer that you wear cotton.

This workshop is offered every Saturday starting January 17th from noon to 4. The fee is \$100.

Native American Geometry - Chris Hardaker

Short Description:

This workshop will lead to a mastery of basic elements of prehistoric geometric design. Students will learn how to recognize and appreciate its application in prehistoric and historic art and building design. This includes the mathematical identities embedded in the designs.

Long Description:

There are 4 two hour sessions for this workshop. The first session is titled *Coded: A Pre-planned Baroque City Examined Through the Lens of Sacred Geometry*. During this session students will study the geometric mystery in the 1792 design of our capital city, Washington DC. They will uncover the symbols of the great seal of the US embedded in the city using geometry as a detective tool.

In the second session, *The Geometry of Creation: Perfect Shapes, Perfect Proportions, Perfect Mathematics* students will learn to perfect shapes such as circles, triangles, hexagons, and octagons. They will also learn the mathematical features embedded into the shapes.

The third session is titled *Dynamic Rectangles and Prehistoric Pueblos of the Southwest*. In it students will explore prehistoric architecture in the southwest and will learn how Pueblo Indians designed their buildings. This type of architecture relies heavily on rectangles so students will learn to make square root rectangles.

The last session is titled *Squaring Circles in Chaco Canyon: The Great Kivas of the Anasazi*. This is an examination of the design of the Great Kivas built by the Anasazi. Students will be able to reconstruct the design of the great kivas using geometry and will focus on magnificent Chetro Ketl Great Kiva at Chaco Canyon.

This workshop begins on Wednesday January 14th at 6 pm and will run four consecutive weeks. The fee is \$200 and will consist of 20% lecture and 80% lab time.

Student to Supply: Writing/drafting materials, notebook, maybe colored pencils, ruler, compass, eraser, protractor

Instructor Supplies: Graph paper and handouts

Lost Wax Casting – Cyndee Logan

Short Description:

Basic techniques for fabrication using the lost-wax casting method. Completion of a small (jewelry size) object of the class member's own design. Gold or silver may be obtained by the student just prior to casting.

Long Description:

In this workshop you will learn to: make wax molds for creating one-of-a-kind jewelry, which will then be filled with silver (metal made molten and spun into your mold). You will also learn how to use small hand and electric tools to clean and polish your completed cast metal. This class runs for four weeks, and includes independent work, lab times. The first session is Thursday, January 15th at 6 pm.

Session 1:

You will learn how to use the wax tools. You will see the complete process that you will follow in the following weeks.

Session 2:

Presentation and discussion of wax models and problem solving.

Session 3:

Selection of model to be cast, Addition of sprues and setting into plaster.

Session 4:

Casting in gold or silver, Discussion of clean-up techniques and finishing.

This workshop consists of 4 sessions lasting 3 hours each. The fee for this workshop is \$250.

3D Modeling Basics – Roger Wilson

Short Description:

3D animation is a way to describe points in space that define 1 and exactly 1 object. Using SoftImage 3.9 software, students will learn basic concepts for 3D space, become familiar with the overall workflow, and learn to model a variety of objects.

Long Description:

Session 1: The overall flow (design, model, test, render, correct, convert, print)

The Cartesian grid - x,y,z space, Points, lines, planes, edges. Face, Normal., Polygons vs curves (Bezier, cardinal, B-spline, NURBS), Output and translation files (OBJ, STL, slice).

The interface: moving around, primary section, command sidebars, command keys, Building and moving primitives: cube, sphere, torus - 2 and 3 dimensions, "Materials": RGB color and characteristics of light as applied to polygons and faces, Rendering: Albrecht Durer, the light ray path, simple light locations for modeling.

Session 2: Ways to build - creating and multiplying objects.

EXERCISES: build a cube, and several increasingly complex objects, Extruding, wrapping, duplicating.

Session 3: Creating custom objects

EXERCISES: build something cube-like, and increasingly complex objects, Tagged groups, adding and moving polygons, beveling, symmetry.

Session 4: Repairing bad objects

Identifying bad objects (folded, overlapping, reversed and doubled polygons, and others), Solutions for fixing each of the identified bad objects.

This workshop consists of 4 sessions lasting 3 hours each. Starting on Tuesday, January 13 from 6 – 9 pm. The fee is \$150.

Basic Solar Power – Mike Burgess

Short Description:

Short in depth discussion of terminology, systems and their components (focus on solar electric systems).

Long Description:

This workshop will allow you to using freely available solar power. Subjects include deciding what sort of system, sizing and pricing/costing a system. The pros and cons of a backup generator, the many types of batteries, hazards of installing yourself, maintaining the gear, performing regular maintenance. We will also touch on some house design and insulation matters.

For best results, attendees should bring copy or summary of 12 months of electric bill. Bring a Laptop to look up their residence on Google earth & to research via PVwatts.nrel.gov, to calculate required solar for their site. Spreadsheet program useful.

This workshop consists of 2 two hour sessions beginning on Sunday January 11 from 3 – 5 pm. The fee is \$50.

Basic Bicycle Repair – How to Fix a Flat - Paul (Juice) Roberts

Short Description:

This workshop covers all the necessary details on how to repair a flat tire.

Long Description:

How to get the wheel off, how to remove the tire from the wheel, how to check for tube hazards (like a nail, or piece of glass), how to put the tire and wheel back on

This is a 1 session workshop that last an hour on Saturday, January 17th at noon. The fee is \$25.

Brake and Gear Adjustments

Short Description:

This workshop covers adjustments to brakes and gear shifters.

Long Description:

Learn how to make adjustment to coaster and hand brakes and derailleurs for maximum operating efficiency.

This is a 1 session workshop that last an hour on Saturday, January 17th at 1 pm. The fee is \$25.

Chain and Seat Adjustments

Short Description:

This workshop covers adjustments to the chain and seat.

Long Description:

This workshop covers how to repair a loose or broken chain, how to adjust the seat to the most comfortable riding position.

This is a 1 session workshop that last an hour on Saturday, January 17th at 2 pm. The fee is \$25.