

The blog post this is from: <https://livingstonjewelers.com/blog/dacum-competency-profile-for-goldsmiths/>  
Contact me with any questions or comments at [glivings@livingstonjewelers.com](mailto:glivings@livingstonjewelers.com).  
Please feel free to share this as long as this header is intact.

Before you read the Competency Profile below, I would like to provide a bit of background information.

The website (<http://www.dacum.org>) does not seem to have been updated since 2001.  
It does have a link to Facilitation Center at ECU (Eastern Kentucky University)  
(<https://facilitation.ecu.edu/what-developing-curriculum-dacum>).

The following description is from that website:

“Developing a Curriculum (DACUM) is a process that incorporates the use of a focus group in a facilitated storyboarding process to capture the major duties and related tasks included in an occupation, as well as, the necessary knowledge, skills, and traits. This cost-effective method provides a quick and thorough analysis of any job.”

This Competency Profile was posted by Charles Lewton-Brain in the facebook group “Teaching Online: Best Practices for Educators” (<https://www.facebook.com/groups/239369143798139>). He posted images of 4 pages of the Competency Profile for Goldsmiths. The posted pages are organized in the original DACUM storyboarding. I took the liberty of turning it into a word document with numbered lists and adding a few lines that I felt might better reflect modern concerns and tasks by goldsmiths today.  
I made some very minor changes that I feel update it with the skills needed today. I did add section K. “Make Models (CAD)” as that is an important skill as of the last 20 or so years. Otherwise, this is pretty much the same as the images posted by Charles. I have posted it below.

I have barely touched the subject of DACUM Competency Profiles. But I have learned that there is a huge amount of information in this that I think we can use to improve our teaching online. My hope is that we can use this as a model to develop a training curriculum for apprenticeship programs and for online teaching to help bring people into the world of jewelry, jewelry design, bench work in base and precious metals.  
I did add section K. “Make Models (CAD)” as that is an important skill as of the last 20 or so years. Otherwise, this is pretty much the same as the images posted by Charles.

So how does this help with the skills needed to become a goldsmith?

First, lets start with a statement that I feel is very on point.  
“teaching a process is often half-solved when it is clearly stated.”

To me, this is important because this is where a curriculum helps.

What is the role of curriculum in education?

A well-crafted curriculum serves as a reference to ensure that you're on the right track as a student and that the teacher is logically sharing information that teaches the chosen subject. Its components are designed to develop concepts, from a basic level to increasingly complex topics or skills

A curriculum has three important components. The intended outcomes, what is taught, and the manner of implementation.

We want to promote planned learning experiences with intended outcomes while recognizing the importance of possible unintended outcomes.

It is my hope that this competency profile can be used by administrators in trade schools, 4-year colleges & universities, Postsecondary vocational schools, technical colleges and high school trade classes. I will be using this as a basis for my teaching and the book I hope to write very soon helping others learn the basics of goldsmithing.

Any errors, omissions, or inaccuracies in this document are my responsibility and mine alone.

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“Charles Lewton-Brain

Thursday, December 24, 2020 at 10:37 AM.

A DACUM (Curriculum Designing Tool) for being a jeweler. Turns out this was the only one done In North America (that I know of). Developed in Canada in the 1940's (not Ohio as claimed in some places online), used by NASA and the US Marines to figure out what to teach. See [https://facilitation.eku.edu/what-developing-curriculum-dacum?fbclid=IwAR1hLBvOriA6StyNYSf6\\_RbTce0vn-h15Hs4-mTJNz-MEo0tEuhY4RroTTg](https://facilitation.eku.edu/what-developing-curriculum-dacum?fbclid=IwAR1hLBvOriA6StyNYSf6_RbTce0vn-h15Hs4-mTJNz-MEo0tEuhY4RroTTg)”

(Facebook post, Lewton-Brain, Charles, Thursday, December 24, 2020 at 10:37 AM.,

<https://www.facebook.com/groups/239369143798139/permalink/386778339057218>)

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# Competency Profile

## Occupation: Goldsmith

DACUM Workshop  
March 13 & 14, 1994.

### Participants

Charles Lewton-Brain	Lewton-Brain / Fontans Centre for Jewellery Studies
Norbert Brinkhaus	Brinkhaus Jewellers
Kirsten Ross	The Goldsmiths
Peter Jost	The Goldschmiede Studio
John Bingeman	Century Jewellers
Chris Beck	Jewels by Design
Shirley Benson	The Benchmark Goldsmiths Ltd.
Linda Chow	Birk Jewellers
Anthony Ma	Royal Jewellery
Ken Higham	Vandrea Jewellers

### Facilitator

Tony Audia

## Goldsmith Competency Profile

A goldsmith is a professional craftsman who designs, constructs, repairs, remodels and restores Jewellery.

### A. Core Skills

1. Practice Safety
2. Layout on metal
3. Saw straight lines
4. Saw curves
5. Saw angles
6. Saw complex patterns
7. File rectangular shapes
8. File curved shapes
9. File facets
10. File three dimensional shapes
11. Roll and draw metal
12. Bend metal
13. Forge metals
14. Hand finish metals (sanding)
15. Power finish metals (sanding)

### B. Use Tools

1. Use own basic hand tool set
2. Use power tools
3. Use special tools

4. Use Laser welders and similar technology
5. Display competence in soldering processes
6. Make / modify tools
7. Maintain tools and equipment
8. Organize bench and workspace

#### C. Construct Jewelry

1. Plan work sequence
2. Plan and construct for the setter
3. Fit metals
4. Fit joints
5. Create a metal puzzle
6. Join different masses and materials control setup problems
7. Perform various sheet and wire soldered construction
8. Disassemble / assemble (soldered) constructions

#### D. Make Findings

1. Design & construct Hinges
2. Design & construct pinback systems
3. Design & construct Clasps
4. Design & construct hinge-based catches
5. Design & construct keyhole and bayonet clasps
6. Design & construct opening and closing device
7. Design & construct settings

#### E. Utilize Materials Appropriately

1. Describe basic properties of gemstones and metals
2. Describe common treatments of gemstones
3. Apply basic gemstone and metal characteristics
4. Handle hazardous chemicals safely
5. Perform metal Identification tests
6. Alloy metals. Base and precious
7. Make Different Ingots
8. Make sheet and wire from ingot
9. Conserve materials

#### F. Repair / Remodel / Restore Jewelry

1. Analyze the piece
2. Identify the problem(s)
3. Analyze options
4. Select option
5. Unset / reset gemstones
6. Retip / replace prongs
7. Repair chains
8. Size rings down
9. Size rings up
10. Restore jewelry
11. Remodel jewelry

#### G. Finish Jewelry

1. Polish products
2. Use production finishing methods
3. Apply cleaning techniques

4. Perform electroplating
5. Perform chemical finishing
6. Evaluate product quality

#### H. Texture Surfaces

1. Perform different surface finishes by hand
2. Perform different surface finishes by machine
3. Perform different surface finishes by heat
4. Perform different surface finishes by etching
5. Engrave metals
6. Enamel products
7. chasing and repousse'

#### I. Design Jewelry

1. Compare & contrast different historical jewelry periods and styles (20<sup>th</sup> century)
2. Compare & contrast different historical jewelry periods and styles (19<sup>th</sup> century and earlier)
3. Display basic competence in counter sketching
4. Display basic competence in renderings
5. Display basic competence in drawing orthographic projections
6. Design and function for style
7. Custom design
8. Redesign jewelry
9. Display basic competence in photographing jewelry
10. Display basic competence in using design systems

#### J. Make Models (handmade)

1. Know different types of waxes
2. Carve a simple ring
3. Carve a complex ring
4. Carve a setting
5. Use buildup models
6. Modify existing wax models
7. Finish and polish wax models for casting
8. Make models for reproduction
9. Make molds

#### K. Make Models (CAD)

1. Know different types of CAD systems
2. Design a simple ring
3. Design a complex ring
4. Design a setting
5. Use buildup models
6. Modify existing CAD models
7. Carve / print model for casting
8. Hand finish and polish wax model for casting

#### L. Cast Metals

1. Spru waxes
2. Invest a wax model
3. Perform effective kiln burnout
4. Perform casting method.
5. Perform investment removal
6. Finish & clean raw castings

## M. Set Stones

1. Prepare and use specialized setting tools
2. Apply metals and gemstone knowledge in gem setting
3. Display basic competence in basic setting techniques
4. Display basic competence in laying out stones
5. Display basic competence in multi-stone setting techniques
6. Display basic competence in finishing and polishing gem settings
7. Display basic competence in describing and performing advanced setting techniques

## N. Demonstrate Business / Work Skills

1. Display basic competence in referring work to specialists as necessary
2. Display basic competence in estimating job costs (retail and wholesale)
3. Display basic competence in working cost effectively
4. Demonstrate legal and ethical conduct
5. Describe and discuss the Kimberly Process
6. Develop interpersonal skills
7. Develop job related etiquette