

# PROPOSAL FOR A CERTIFICATE PROGRAM

**Date:** 10/8/2024

**School/College/Unit:** Franklin College of Arts and Sciences

**Department/Division:** Lamar Dodd School of Art

**Certificate Title:** Computer-Aided Design/Computer-Aided Manufacturing for Jewelry and Fashion Accessories

**CIP:**

**Effective Term:** Fall 2025

**Which campus(es) will offer this certificate?** Athens

**Level (Undergraduate, Graduate, or Post-Baccalaureate):** Undergraduate, Post-Baccalaureate

## **Program Abstract:**

The Certificate in Computer-Aided Design/Computer-Aided Manufacturing for Jewelry and Fashion Accessories (CAD/CAM) entails comprehensive training across several key areas, providing students with a robust foundation in both digital design and production. Students will become familiar with various CAD/CAM software programs, such as Rhino3D, Fusion 360, and the Adobe Suite, all of which are essential for the design and creation of jewelry and fashion accessories and knowledge of which opens opportunities to seek employment in numerous other product design industries and professions. Additionally, students will receive online industry training with Stuller Incorporated, a leading company in the global fine jewelry sector, specializing in Stuller's proprietary software, MatrixGold. The training in MatrixGold will bolster students' competitiveness in seeking CAD/CAM positions with more than 6,000 businesses and retailers worldwide that employ this Stuller proprietary software. This certificate curriculum is designed to complement or add to an existing degree for students who are making progress toward an undergraduate degree or students who already have an undergraduate degree and wish to return for the sole purpose of securing this certificate and expanding their professional reach. The program of study will utilize currently available UGA courses, instructional personnel, Lamar Dodd School of Art studio art facilities, and the Stuller, Inc. online training platform Matrix Gold Training Academy.

## **1. Purpose and Educational Objectives**

**State the purpose and educational objectives of the program. How does this program complement the mission of the institution?**

The educational objectives of the proposed Certificate in Computer-Aided Design/Computer-Aided Manufacturing for Jewelry and Fashion Accessories are aimed at equipping students with the essential skills and knowledge required for success in the jewelry and accessory design industries. Students will become versed in various CAD software such as Rhino3D, MatrixGold, Fusion 360, and the Adobe Suite, which are all standard industry design tools. The program covers 2D and 3D design principles, allowing for the creation of detailed designs that can be easily rendered and modified. Students will learn about design aesthetics, materials, and techniques specific to the jewelry and fashion accessory industries, along with production processes associated with CAM, including 3D printing, machining, laser cutting, and rapid prototyping. A unique feature of the program is the accreditation of students at the Specialist Level using industry software developed by Stuller, Inc. Upon completion of the UGA certificate, graduates will be registered as MatrixGold Specialists, positioning them as competitive candidates for CAD/CAM roles with more than 6,000 businesses and retailers globally with opportunities to seek employment in numerous other product design industries and professions.

Throughout the curriculum, students will develop creative problem-solving skills to tackle challenges in design and manufacturing while familiarizing themselves with industry standards, trends, sustainability practices, and market demands. Students will acquire skills in identifying multiple file types and preparing them for different 2D and 3D applications, as well as gaining insights into various modeling platforms and outputs, including how and when to use service bureaus. Ultimately, the program culminates in the creation of two special projects that showcase students' skills and understanding of CAD/CAM applications to enhance their portfolio and lead to increased job prospects. The program of study equips students to leverage technology for innovative designs and efficient production.

The goals of the proposed program clearly complement the mission of the Lamar Dodd School of Art, "... To promote art and design, to educate students to be empathetic and engaged citizens and to prepare them for careers as creative professionals; and to address critical issues facing Georgians and the nation through innovative research in art, art education, and design."

## **2. Need for the Program**

**Explain why this program is necessary.**

As the flagship university of Georgia, UGA should aim to offer a comprehensive range of academic programs. The Lamar Dodd School of Art (LDSOA) prioritizes maintaining a diverse array of offerings. While LDSOA currently provides several studio programs that focus on various structural materials used in art production, such as metal, clay, fabric, and paper, it does not have a program that emphasizes digital design tools for object-making. The proposed certificate seeks to fill this gap in UGA's offerings by equipping students with specialized knowledge and skills in CAD/CAM.

The Certificate in Computer-Aided Design/Computer-Aided Manufacturing for Jewelry and Fashion Accessories is essential in meeting the growing demand for skilled professionals in the jewelry and fashion accessory industries, which are increasingly integrating advanced technology in their design and production processes. As technology continues to evolve, the need for educational programs that incorporate cutting-edge tools and practices becomes critical. This certificate will equip students with the contemporary CAD/CAM skills necessary for success in the modern workforce. This program aligns with the Lamar Dodd School of Art's mission of blending artistic creativity with technological innovation, emphasizing both artistic design principles and practical manufacturing processes. Additionally, by enhancing students' career opportunities through the development of in-demand skills and a professional portfolio, the program positions them favorably as creative professionals in a competitive job market. The program also fosters collaboration with designers and businesses, creating networking and internship opportunities that enrich students' learning experiences while promoting the creative economy. Furthermore, the program incorporates discussions on sustainable practices and ethical production, preparing students to be responsible designers in a consumer-sensitive market. Lastly, it situates jewelry and fashion accessories within the broader context of material culture, combining historical and contemporary perspectives that enhance the overall educational experience. Through these facets, the Undergraduate Certificate in Computer-Aided Design/Computer-Aided Manufacturing for Jewelry and Fashion Accessories not only addresses industry needs but also prepares students for successful and responsible careers in a rapidly evolving field.

**In addition, provide the following information:**

- a. Semester/Year of Program Initiation:** Fall 2025
- b. Semester/Year of Full Implementation of Program:** Fall 2025
- c. Semester/Year First Certificates will be awarded:** Spring 2026
- d. Annual Number of Graduates expected (once the program is established):** 5-8 students.
- e. Projected Future Trends for number of students enrolled in the program:** 5-8

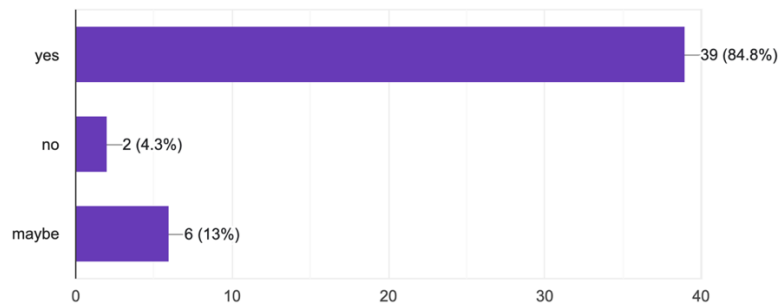
### **3. Student Demand**

Various populations may be interested in the proposed certificate. Primarily, current UGA students enrolled in degree programs, especially those in the Lamar Dodd School of Art, will benefit from the certificate as a means of gaining and documenting specialized design proficiency that is not currently offered at UGA. Additionally, there may be qualified individuals eager to learn more about CAD/CAM who are not interested in pursuing a formal graduate degree. Furthermore, some individuals seeking a career change might find designing jewelry and fashion accessories as an appealing option to explore. Lastly, as people live longer and remain healthy, many are actively engaged in pursuits well beyond retirement; some may wish to take up CAD/CAM practices as a serious hobby or as a part-time business venture.

**a. Provide documentation of evidence of student demand for this program, including a student survey.**

A student survey with a total of 46 participants from the Lamar Dodd School of Art and the College of Family and Consumer Sciences, which houses programs in Fashion Merchandising and Product Design and Development, demonstrated a positive response in regards the creation of this certificate. Edits have been made to ARST 3660 and 3660E to still include jewelry as a potential project output for the course, but also note that other design outputs are also applicable. The software covered in this course can aid in the creation of a wide variety of 2D and 3D projects. In addition, the department has received inquiries from students asking for additional courses or a program on 3D and CAD software programs.

If the Lamar Dodd School of Art created a NEW 3 course certificate program entitled "CAD/CAM for Jewelry and Fashion Accessories" Would you be interested in pursuing this certificate?  
46 responses



**b. Provide evidence that demand will be sufficient to sustain reasonable enrollment.**

The Lamar Dodd School of Art is home to majors and minors that exhibit need and demand for this certificate, including the Areas of Emphasis in Jewelry, Fabric Design, and Sculpture under the major in Art (B.F.A.); Art Education (B.F.A.); Interdisciplinary Art (A.B.); the Minor in Studio Art; and the Minor in Design and Media. It is also expected that students in units and majors across campus will also be a source of demand for the certificate, as many career options exist across various disciplines. This includes students across the Franklin College of Arts and Sciences (e.g., Computer Science) and the College of Family and Consumer Sciences (e.g., Fashion Merchandising, Product Development and Design).

**c. To what extent will minority student enrollments be greater than, less than, or equivalent to the proportion of minority students in the total student body?**

Diversity has been a long-standing objective of the Lamar Dodd School of Art and remains a central focus. It is encouraging to see substantial minority representation within the

school. Recent statistics indicate that less than 20% of designers in the field of CAD/CAM identify as minorities, highlighting the importance of fostering inclusion in this area. It has also been noted that there are more women enrolled in the current B.F.A in Art with an Area of Emphasis in Jewelry and Metalwork program than men. It is anticipated that these positive trends will carry over into the certificate, promoting a diverse and inclusive environment that supports underrepresented groups in pursuing careers in CAD/CAM design.

#### **4. Program of Study**

**Provide a detailed program of study for the certificate program, including:**

- a. Specific course prefixes, numbers, and titles**
- b. Identify any new courses created for this program**

The program of study will utilize currently available UGA courses, instructional personnel, Lamar Dodd studio facilities and Stuller, Inc. online training platform Matrix Gold Training Academy. The certificate includes comprehensive training across several key areas, providing students with a robust foundation in both design and production. Students will become proficient in various CAD software programs, such as Rhino3D, MatrixGold, Fusion 360, and the Adobe Suite, which are essential industry tools for designing jewelry and fashion accessories.

To complete the Undergraduate Certificate in CAD/CAM for Jewelry and Fashion Accessories, students will complete a total of 9 credit hours. Three credit hours must be satisfied in ARST 3660 and 6 credit hours must be satisfied in ARST 4680. ARST 4680 is comprised of 75% industry training online via the MatrixGold Training Academy and 25% faculty-mentored special project. During ARST 4680, students will work with faculty in the jewelry and metalwork area to establish the sequence of MatrixGold training modules via Stuller's Online Academy that are required to be accredited with Stuller, Inc. at the certification level of MatrixGold Artisan (level 1) and Specialist (level 2). Students completing the proposed sequence of UGA coursework will be competitive candidates as CAD/CAM designers for 6,000+ businesses and retailers worldwide that employ MatrixGold software. The only other institution in the state of Georgia which offers MatrixGold instruction is Savannah College of Art and Design (SCAD), although SCAD does not require students to certify at the MatrixGold Specialist level. UGA would be the only institution in Georgia to offer such mentorship and training.

**BACKGROUND:** Stuller, Inc. is considered a leader in the global fine jewelry industry, particularly in the United States. With over 50 years of experience, the company has established a strong reputation for providing high-quality jewelry components, including gemstones, diamonds, and custom design services. Stuller caters to a large network of retail jewelers, designers, and manufacturers, making it a significant player in the market. The company's focus on innovation, quality, and customer service has helped it maintain its position as a prominent supplier in the fine jewelry sector.

Program of Study Includes:

ARST 3660, CAD/CAM for Objects and Jewelry (3 hours)

ARST 4680, Directed Study in Jewelry/Metal (6 hours)

Total: 9 hours

## 5. Model Programs and Accreditation

- a. **Identify any model programs, accepted disciplinary standards, and accepted curricular practices against which the proposed program could be judged. Evaluate the extent to which the proposed curriculum is consistent with these external points of reference and provide a rationale for significant inconsistencies and differences that may exist.**
- b. **If program accreditation is available, provide an analysis of the ability of the program to satisfy the curricular standards of such specialized accreditation.**

There is no program accreditation available. The Certificate in Computer-Aided Design/Computer-Aided Manufacturing for Jewelry and Fashion Accessories has similar learning outcomes related to design, rendering, and production as the programs below. The proposed certificate stands apart from other institutional programs by incorporating a specific emphasis on the use of MatrixGold software from Stuller, Incorporated. The curriculum ultimately culminates in industry training that certifies students' competency at Stuller's *Artisan* and *Specialist* levels.

Similar programs nationally include:

### 1. **Gemological Institute of America (GIA):**

GIA offers specialized CAD programs tailored specifically to the jewelry industry. Their courses emphasize the technical skills necessary for using CAD software effectively, including design principles, rendering techniques, and production processes relevant to jewelry.

### 2. **Fashion Institute of Technology (FIT):**

FIT offers a Certificate in Jewelry Design that incorporates CAD training as part of its curriculum. The program emphasizes a balance of artistic creativity and technical proficiency, preparing students for both traditional and digital design environments.

### 3. **Rhode Island School of Design (RISD):**

RISD offers summer workshops in CAD for jewelry design, focusing on integrating digital tools with traditional crafting techniques. The workshops are project-based, allowing students to apply their skills in real-world contexts and produce a portfolio.

## Accepted Disciplinary Standards

### 1. **Software Proficiency:**

Programs typically emphasize proficiency in industry-standard software, which includes MatrixGold, Rhino, SolidWorks, and Adobe Suite. Understanding of these tools is a critical expectation in CAD/CAM education for jewelry design.

### 2. **Hands-On Learning:**

Accepted standards prioritize project-based learning where students can apply their skills in practical scenarios. This incorporates the creation of a portfolio that showcases their

work and development through the program.

3. **Interdisciplinary Approaches:**

There is a strong emphasis on blending technical skills with design theory, materials science, and craftsmanship. Programs are expected to cover a range of topics that prepare students for various aspects of jewelry design and production.

4. **Industry Engagement:**

Successful programs often establish partnerships with businesses and industry professionals to provide real-world experiences through internships, projects, and networking opportunities.

There is no accreditation available for this program.

## **6. Student Learning Outcomes**

**Describe the proposed learning outcomes for the certificate.**

The proposed curriculum is designed to efficiently and effectively expose students to training in a variety of CAD/CAM applications for the design of jewelry and fashion accessories. Special projects will be conducted in consultation with the certificate coordinator, who will be the instructor of record for ARST 4680. Special projects are independent student endeavors driven by specific creative interests. They serve as a way for students to fully integrate their training while producing new design work to be included in their portfolios. The student learning outcomes for this certificate are as follows:

1. **Technical Proficiency in CAD Software:** Students will demonstrate the ability to proficiently use industry-standard CAD software (such as Rhino, MatrixGold, or Fusion 360) to create detailed 2D and 3D models of jewelry and fashion accessories.
2. **Understanding of Design Principles:** Students will apply design principles and aesthetics specific to jewelry and fashion accessories, integrating materials and techniques that enhance their creative output.
3. **File Management Skills:** Students will identify and work with multiple file types, preparing and augmenting files for different 2D and 3D applications and rendering processes.
4. **Production Process Knowledge:** Students will explain and apply various production processes associated with CAM, including 3D printing, machining, and casting, and understand how to prototype designs effectively.
5. **Creative Problem-Solving:** Students will demonstrate creative problem-solving skills by applying CAD/CAM tools to address design challenges and enhance their concepts through models and renderings.

6. Awareness of Industry Standards: Students will exhibit knowledge of current industry standards, trends, and sustainability practices that impact the design and manufacturing of jewelry and fashion accessories.
7. Portfolio Development: Students will create and present special projects that showcase their designs, modeling skills, and understanding of CAD/CAM applications, preparing them for employment in the industry.
8. Integration of Historical and Contemporary Context: Students will articulate the relationship between their design processes and broader concepts of material culture, reflecting both contemporary practices and historical influences in jewelry and fashion.

## **7. Assessment and Admissions**

**Describe how the learning outcomes for the program will be assessed. Describe the process and criteria for how students will be admitted to and retained in the program.**

### **Student Assessment**

1. Project-Based Learning: Students will engage in hands-on projects throughout the program, allowing them to apply CAD/CAM tools to real-world design challenges. Each project will be assessed based on criteria such as innovation, technical execution, adherence to project guidelines, and presentation effectiveness.
2. Quizzes and Exams: Periodic quizzes and examinations will be administered to assess students' knowledge of CAD software, production processes, and industry standards. These assessments will gauge understanding and retention of key concepts taught throughout the program.
3. Critiques and Peer Reviews: Regular critiques and peer reviews will be conducted to provide constructive feedback on students' work. Criteria for assessment will include design aesthetics, technical proficiency, and the effectiveness of problem-solving approaches.
4. Special Project Assessment: Students will create a professional portfolio that showcases their projects, models, and designs. Portfolios will be evaluated based on creativity, technical skills, design principles, and the ability to convey concepts and processes effectively.
5. Self-Evaluations: Students will engage in self-assessment exercises to reflect on their progress and learning experiences, encouraging them to take ownership of their learning outcomes and identify areas for improvement.
6. Instructor Evaluation: Faculty will evaluate student performance based on participation, engagement in class discussions, ability to apply feedback, and overall progress in developing skills related to the program outcomes.



**Admission:**

1. Requirements: Admission will be on a rolling basis and per discretion of the certificate coordinator. Prospective students will be required to submit a completed application form, which will include a personal statement outlining their interest in the program, relevant experience, and career aspirations.
2. Portfolio Submission: Applicants will be asked to provide a portfolio of their previous work or projects that demonstrate their interest and aptitude in design, crafting, or related fields.

**Retention:**

1. Advising and Support: Academic advisors and faculty and the program coordinator will provide guidance and support to assist students in staying on track with their studies. Regular check-ins can help identify challenges and assist in developing strategies for improvement.
2. Engagement in Program Activities: Active participation in workshops, critiques, and collaborative projects will be encouraged to foster a sense of community and commitment to the program.
3. Feedback Mechanisms: Students will receive constructive feedback throughout the program, which will help them understand areas for improvement and keep them engaged in their learning journey.