FY2008 Learning Technologies Grants Proposal

(COVER PAGE)

Project Information

Laser Cutting-Edge Technology for Art and Design
Project Title

Thomas L. Houser
Project Director

Lamar Dodd School of Art
Requesting Department

$15,000.00
Amount Requested Year 1

$15,000.00
Amount Requested Year 2

Project Director's Signature

Proposal Endorsement Signatures

Department Head

Dean

Proposal Abstract (100 words)

CAD modeling allows students to design, manipulate and study objects or spaces as two- or three-dimensional digital images. Leading architecture, interior, graphic and product design firms incorporate laser technology to turn digital images into physical prototypes or models for study, manipulation, refinement and presentation purposes. This proposal adds laser cutting equipment to existing CAD and proto-typing facilities in the LDSOA. Significantly, it extends access to CAD and laser technologies throughout non-traditional drawing and painting, digital media, graphic design, sculpture, jewelry and the studio foundations programs. Resultant student-made objects and models both should facilitate design problem-solving and also enrich artistic expressions.

Section I. Project Description.

Laser technology presents new opportunities for artists in all disciplines. This proposal specifically addresses diverse applications ranging from the creation of detailed hard-edge design components for drawing and painting, to the fabrication of molds for casting jewelry, to the production of full- and scale-model prototypes for product and architectural design. By providing laser cutting technology to our students, we will enable them to stay competitive at a base level and to experiment with materials and processes at advanced problem-solving levels.

Significantly, this proposal builds on existing facilities and equipment within the Lamar Dodd School of Art. These include computer-aided design (CAD) facilities in the Visual Arts Building, the Broad Street Studios, and the Thomas Street Art Annex, as well as those that will be present in the new School of Art building on East Campus. Related digitally-driven technology include our three-axis CNC-router and roto-casting equipment.

Studio artists will be able to meld conventional drawing and painting techniques with digital technologies by incorporating laser-cut stencils and other repetitive tools for compositional purposes. Similarly, they can draw an image manually, scan it into the computer, and have it laser-cut in delicate relief on a transparent layer that floats over a painting or cut into a material serving as an underlayment attached to, and painted over on a canvas. The possibilities are endless. The level of detail possible for pattern-making is far superior to that which is possible through conventional techniques.

Computer modeling allows students to design, manipulate and study objects or spaces as two- or three-dimensional images on screen. While this technology significantly facilitates the production of graphics, there are inherent disconnects between the computer operator/designer/artist and the object or space on screen. Physical models bridge those distances. Such models are time and labor intensive. This proposal adds laser cutting and engraving equipment to our existing School of Art design CAD facilities.

Leading architecture, interior, graphic and product design firms have embraced laser technology to turn very detailed 3-D images into physical prototypes/models for study, manipulation, refinement and presentation purposes. A laser cutter would allow interior design students the ability to study and communicate ideas of form, light, and space with incredible accuracy and detail. They can do so in a timeframe that allows greater investigation and development of concepts than possible through manual model-making techniques.

Jewelry students can laser-cut actual pieces of jewelry. Likewise, they can make transient forms to use in traditional casting techniques.

Interior Design, Digital Media, and Sculpture students can model products including furniture. Resultant student-made objects and models will facilitate design problem-solving on one hand and enrich artistic expressions on the other.

Specific Courses Benefiting from This Proposal

MAJOR	COURSE	TITLE	ENROLLMENT
Interior Design	ARID 3100	Concepts Studio	34
	ARID 3110	Studio II	34
	ARID 3120	Studio III	34
	ARID 3130	Studio IV	34
	ARID 3310	Building Systems	34
	ARID 3340	Furniture	34
	ARID 3410	CAD	34
	ARID 4110	Studio V	34
	ARID 4620	Treatise/Exit Show	34
Drawing & Painting	ARST 2010	Introductory Painting	16
	ARST 2110	Intermediate Painting	16
	ARST 3140	Painting Studio	16
	ARST 4110	Senior Exit in Painting	
Digital Media	ARST 3800	Transmedia	30
	ARST 4810	CAD and Fabrication	45
Foundations	ARST 1060	Color and Composition	90
	ARST 1080	3D Design	130
Graphic Design	ARGD 3050	3D Illustration	16
	ARGD 4020	Environmental Graphics	16
	ARGD 4110	Portfolio	16
Jewelry	ARST 3610	Jewelry	30
	ARST 3620	Metalwork	15
Sculpture	ARST 2400	Beginning Sculpture	45
	ARST 3420	Wood as Sculptural Material	15
	ARST 4420	Sculpture and Spatial Context	15

TOTAL ENROLLMENT: 829

Other Areas within the School of Art

All graduate students within the School of Art will have access to this technology through relevant courses and directed studies.

Section II. Budget

This proposal is for a 40-watt, fully-contained laser cutter/engraver capable of cutting materials up to 24" x 36".

This is a two-year request. Equipment would be purchased through a lease-to-own agreement. Prices were quoted by Jackson & Associates, Inc., Gainesville, GA. Total project costs are indicated on the following chart.

Students have access to requisite drawing and computer-aided design software in computer labs in Broad Street Studio 2, Tanner, the Visual Arts Building, and the Student Learning Center.

The laser-cutter will be housed in the Interior Design program area in the Lamar Dodd School of Art. One exhaust duct will be run to the outside of the building. No other environmental controls are needed.

Proposed Budget

ITEM	Quantity	Total Cost	Requested from LTG	Provided by Other Sources
Epilog Legend 36 EXT 40 watt laser cutter with blower	1	$28,650.00	$28,650.00	0.00
Epilog Rotary attachment	1	1,150.00	0.00	1,150.00
Shipping and 2-year lease-to-own	flat fee	1,350.00	1,350.00	0.00
Photograve software	1	395.00	0.00	395.00
Air Assist 30hp Compressor	1	300.00	0.00	300.00
Autodesk software	site license	4,000.00	0.00	4,000.00
CorelDraw software	4	238.00	0.00	238.00
Rhino software	lab license	700.00	0.00	700.00
Facilities renovation	estimate	1,000.00	0.00	1,000.00
Dell Precision 340	2	3,372.40	0.00	3,372.40
TOTALS		**$41,155.40**	**$30,000.00**	**$11,155.40**

Budget Justification

- All of the requested parts are necessary for the laser cutter to operate.
- Items provided by other sources are existing items that will be directly related to the laser equipment.
- The materials to be cut will be supplied by students or through the appropriate use of lab fees.

Project Timeline

Date	Objective	Person(s) Responsible
08/08	Function in ID courses	Thomas Houser
10/08	Function in art studio courses	Thomas Houser with course instructors

Section III. Learning Outcomes

Adding the laser cutter and engraving equipment to the Lamar Dodd School of Art's computer-aided design facilities will set our interior design program apart from the majority of programs like it nation-wide. Our students will be able to move to higher levels of design investigation than currently possible. They will acquire skills that will distinguish UGA graduates as technologically, artistically and professionally advanced. More importantly, students will become better problem-solvers. The success of this grant will be measured by the work created by the students as evidenced in their portfolios.

The potential applications throughout the School of Art are reflected in the course listings and introductory comments made above. These focus on melding conventional techniques with digital and digitally-driven technology.

Section IV. Support Plan

Initial training on the use of the equipment is provided by the supplier. Interior Design faculty will in turn train key faculty in other areas of the School of Art. However, for practical logistical reasons ID faculty will actively monitor the use and maintenance of the equipment.