Over the course of a few short years digital fabrication tools have become less expensive, easier to learn and widespread. 3D printing, industrial CNC routers and laser cutters provide artists and creative individuals with the means of realizing unique and critically engaged projects across and between disciplines. Artists using 3D modeling/printing and laser cutters have re-claimed artifacts destroyed by the Islamic State, have turned President Obama’s voice into sculpture, cast their wax prints into bronze sculptures, etched stills from recursive video circuits onto large wooden panels, and have transformed clothes destined for the trash into wearable art pieces by laser-etching patterns, words, and images onto them. In this studio art course students will learn the fundamentals of the technology of 3D printing, laser cutting and CNC routing in order to produce unique projects that skillfully and rigorously combine theory and practice.

Course Structure
This course is comprised of various in class and out of class exercises, major assignments and in class critiques. Digital fabrication cannot, like carpentry, metalsmithing, or any other physical production activity, be learned in theory. It must be done. Mistakes must be made. The rate of failure to success will likely be high. Failure must be embraced in order that something resembling success can be achieved. Therefore every few weeks will be conducted in a workshop style in order to focus on particular projects which use specific technologies available.
Course Objectives
1. Become familiar with artists who work with digital fabrication
2. Learn the fundamentals of 3D modeling, concomitant software tools, and 3D printing
3. Learn the fundamentals of laser cutting and etching, including basic Adobe Illustrator functions
4. Create critically engaged artworks
5. Participate in all class exercises and discussions
6. Become familiar with the workflow and scheduling process in CVAD’s FABLAB

Learning Outcomes
This course will introduce students to the tools of digital fabrication as a means for creating art objects that are critically engaging, aesthetically insightful and intellectually rigorous. Special attention will be paid to the student’s overall development with regards to both virtual and physical production and ability to synthesize key issues and art historical (and art-futurist) concerns introduced during the course of the semester. Required materials: Journal or sketchbook, external hard drive, CVAD sculpture shop card and FABLAB shop card, participation in all exercises and discussions, and a willingness to experiment. *Please budget your time wisely. The FABLAB operates according to a fairly strict schedule. Not only do you need to requisition enough time to actually fabricate projects but you also must consider that your files must be approved, which may result in your need to refine them.

Grading
Students will be graded upon completed projects, attendance and participation, presentations, and readings. Projects will be evaluated by their originality and conceptual clarity, evidence of technical development, adherence to deadline, and attention paid to detail and execution.

A=100-90  B=89-80  C=79-70  D=69-60  F= <60

Attendance Policy
It is your responsibility to attend class on time. Lateness by more than 10 minutes will result in an absence. You are allowed no more than THREE absences. More than three absences will result in a WF or an F for the class. Any necessary absences known of in advance should be approved by the Professor within the first 3 weeks of class. These absences will, however, count against the 3 absence limit. An excused absence will only be granted in the case of an illness with a written doctor’s note (presented to me as a physical copy) or a family emergency with provided documentation.

PLAGIARISM
Plagiarism is the unauthorized use or close imitation of someone else’s original work and will not be tolerated. Effort should be made to change images made by others so that they will not be construed as “borrowed” or “stolen.” Work that is plagiarized will not be accepted and may result in a failing course grade and/or expulsion from the University.

AMERICAN DISABILITIES ACT
“The College of Visual Arts and Design is committed to full academic access for all qualified students, including those with disabilities. In keeping with this commitment and in order to facilitate equality of educational access, faculty members in the College will make reasonable accommodations for qualified students with a disability, such as appropriate adjustments to the classroom environment and the teaching, testing, or learning methodologies when doing so does not fundamentally alter the course. If you have a disability, it is your responsibility to obtain verifying information from the Office of Disability Accommodation (ODA) and to inform me of your need for an accommodation. Requests for accommodation must be given to me no later than the first week of classes for students registered with the ODA as of the beginning of the current semester. If you register with the ODA after the first week of classes, your accommodation requests will be considered after this deadline. Grades assigned before an accommodation is provided will not be changed. Information about how to obtain academic accommodations can be found in UNT Policy 18.1.14, at www.unt.edu/oda, and by visiting the ODA in Room 321 of the University Union. You also may call the ODA at 940.565.4323.

Blackboard
Make sure that you can access Blackboard Learn System and that you are enrolled correctly in your course! Email your instructor immediately if you are not correctly enrolled. Your UNT email address will be the ONLY ONE used for communication with the instructor. Make sure that is working fine and check it often for announcements.

Schedule

Week 1 Introductions FABLAB training Jan 19 & 21

Week 2 3D Challenge Lasers Jan 26 & 28

Week 3 Etching and Cutting Feb 2 & 4

Week 4 Etching and Cutting Feb 9 & 11

Week 5 Basic 3D Modeling Feb 16 & 18

Week 6 3D Modeling Continued Feb 23 & 25
Week 7 Scanning Mar 1 & 3

Week 8 3D Printing Mar 8 & 10

Week 9 Spring Break Mar 15 & 17

Week 10 3D Printing Continued Mar 22 & 24

Week 11 3D Printing Continued Mar 29 & 31

Week 12 Research for Final Project Apr 5 & 7

Weeks 13 through 16 Studio Time and Apr 12- May 5
Final Presentations

Project Due Dates*
*subject to change as necessary

Jan. 26: 3D Challenge

Feb. 9: First Laser Cutter Project—Etching

Feb. 16: Second Laser Cutter Project—Cutting

March 1: Print of Everyday Item

March 10: Preliminary Scan .stl file due

March 24: Final Scan file

March 31: 3D Print

May 5: Final Project Due