

BEGINNING SCULPTURE

Spring 2004
Art 250 – section 440
Beginning Sculpture
Tuesday & Thursday 6-9pm

Instructor: Zach Chupa
Room 114, Studio Art Building
Ph: 831 4640
E: zachupa@hotmail.com

Course Description: Introduction to basic tools, processes and safety practices will be employed in the creation of sculptural ideas. Past and current concepts are studied through library, slides, videos, exhibitions and field trips. Students learn how to best display and present their work through regular class critiques and exhibitions in the sculpture building viewing space. Individual expression is encouraged.

Students will explore various materials and processes used in sculpture to realize three core projects. In addition to the required assignments, students will fill a sketchbook that will also be graded. There will also be a presentation given by each individual to broaden exposure to contemporary sculpture.

Course Objective: The specific objectives of this course are to expose the student to a variety of materials and techniques that can be applied to the assignments given. Students will be introduced to the styles and concepts of both past and contemporary three-dimensional work. The development of aesthetic ideals and concepts in application to the student's work will be stressed. The ability to self-criticize and verbalize about one's art and to understand criticism by others will also be stressed. Students are expected to take chances with their work.

Grading: Each project will be turned in on time. Any late hand-ins will be a lowered grade. All critiques will be attended. Your sketchbooks will be collected regularly as well as the end of the semester for final grading. Each student will be evaluated by execution of technical abilities, completion of required assignments, evidence of outside concerns reflected in all work, and combination of all these abilities within finished pieces.

Attendance: You are expected to be here on time. Attendance and tardiness will be noted. You are allowed 2 unexcused absences. If you are absent more than 2 meetings your grade will be lowered accordingly. More than 4 absences will result in failure for the course.

Studio Activity: Each student is responsible to come to class ready to work on his/her project. Individual work areas and shop cleaning is mandatory. Proper attire is necessary for this studio class. Eye protection is required in all shops. Leather and closed toe shoes/boots are required in all shops.

WEIGHTS, MELTING POINTS & BOILING POINTS OF METALS

Metal	Wt. Per Cu Ft in Lb	Melting Point in Degrees F (C)	Boiling Point in Degrees F (C)
Aluminum	166	1217 (658)	4442 (2450)
Bronze	548	1566-1832 (850-1000)	
Brass	527	1652-1724 (900-940)	
Carbon	219	6512 (3600)	
Chromium	431	3034 (1615)	
Copper	555	1981 (1083)	4703 (2595)
Gold	1205	1946 (1063)	5380 (2971)
Iron	490	2786 (1530)	5430 (2999)
Lead	708	621 (327)	3137 (1725)
Magnesium	109	1100 (593)	
Manganese	463	2300 (1260)	
Mild Steel	490	2462-2786 (1350-1530)	5450 (3049)
Nickel	555	2645 (1452)	4950 (2732)
Silver	655	1761 (960)	4010 (2210)
Tin	455	449 (231)	4120 (2271)
Titanium	218	3263 (1795)	
Tungsten	1186	5432 (3000)	10706 (5930)
Zinc	443	786 (419)	1663 (906)
4130 Steel	495	2550	5500 (3051)

Melting points of metals vary widely. Use this chart to determine how hot you will need to get the metal in order to fusion weld it. If available, I have also included boiling temperatures for each metal, where they are available, a temperature you should surely avoid.



TEMPERATURES OF SOLDERING, BRAZING & WELDING PROCESSES

Soldering, Lead Solder
250 – 800° F (121 – 427°C)

Brazing, Brass and Bronze
800 – 1200° F (427 – 649°C)

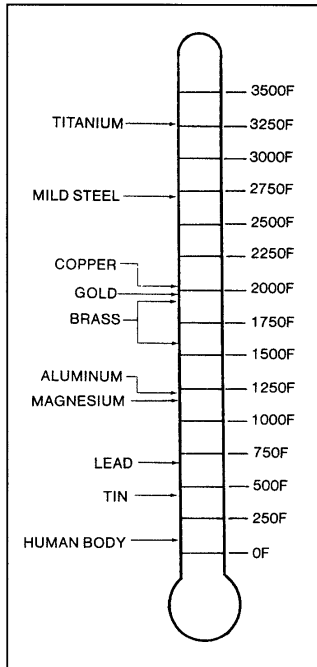
TIG Welding
5000° F (2760°C)
Arc-Temp Variable

Oxyacetylene
6300° F (3482° C)
Flame Temp, Adjustable

Oxyacetylene Cutting
6300° F (3482° C)
Flame Temp, Adjustable

Arc Welding
6000 – 10,000° F (3316 – 5538° C)
Arc Temp

Plasma-Arc Cutting
50,000° F (27,760° C)
Arc Temp



This "Thermometer" will help you visualize the melting points of various metals. It will also give you an idea of how much heat you will need to weld various metals.

Keep these working temperatures in mind. Each process—welding, brazing or soldering—is different. If you overheat the weld bead, you could "vaporize" your project! Master temperature control, and you will become a much better welder.

COLOR OF STEEL AT VARIOUS TEMPERATURES

In Fahrenheit (Centigrade)

Faint Red	900 (482)
Blood Red	1050 (566)
Dark Cherry Red	1075 (579)
Medium Cherry Red	1250 (677)
Cherry Red	1375 (746)
Bright Red & Scaling	1550 (843)
Salmon and Scaling	1650 (899)
Orange	1725 (941)
Lemon	1825 (996)
Light Yellow	1975 (1079)
White	2200 (1204)
Dazzling White	2350 (1288)

Colors as viewed in medium light, not bright sunlight.

TEMPERATURE OF WELDING FUELS

FUEL	AIR° F	w/OXYGEN° F
Acetylene (C2H2)	4800° F	6300° F
Hydrogen (H2)	4000° F	5400° F
Propane (CaHa)	3800° F	5300° F
Butane	3900° F	5400° F
Mapp Gas	2680° F	5300° F
Natural Gas (CH4+H2)	3800° F	5025° F

Spring 2004
Art 250 – section 440
Beginning Sculpture
Tuesday & Thursday 6-9pm

February	12	wood shop demo, syllabus, flex, msds, throwaway, glasses, 1 st assignment
	17	slides, presentation discussion, work session
	19	wood shop work session while at CAA
	24	select sculptor of your choice
	26	work session
March	2	work session
	4	work session
	9	wood critique, 2nd assignment - steel, metal shop demo
	11	metal shop demo
	16	work session
	18	work session
	30	work session
April Fools	1	field trip?, work session
	6	work session
	8	metal critique
	13	work session
	15	discussion of 3rd assignment – wood/steel/????
	20	work session
	22	presentation, work session
	27	work session
	29	demo and class project
May	4	work session
	6	work session
	11	work session
	13	work session
	18	final critique and mandatory clean-up