General:

This is an introductory course in Ceramics. It involves learning how to throw on the potters wheel, handbuilding, glazing, basic design principles and a historical overview of the major artists in contemporary American ceramics (1950 to present). The goal in this class is to provide a core of information which will allow for the development of art work that is creative and personal.

Required Text:  Working With Clay, Susan Peterson

Methods:

Traditional and modern approaches of working with ceramics will be taught. Each assignment will be introduced with a demonstration/lecture and when applicable a slide presentation. Assigned projects are given in a sequence to challenge students technically and intellectually. There will be reading assignments and the text should be used as a reference to broaden your knowledge and understanding of ceramics.

Grading:

The grade in this course is based on a number of factors.

1. Work produced. While more often leads to better, the emphasis in this class will be more on quality of concept than on quantity or technique.

2. Written test, gallery paper and slide review.

3. Class participation. We will have class critiques and you are expected to talk about your work and contribute to the discussions.

4. Studio maintenance. Each student is expected to keep the studio clean and orderly.

5. Attendance. See attached Attendance Policy.

Materials:

In addition to the text, you will need some other items:

1. A small (8-1/2"x5" or smaller) notebook
2. Tools. Minimum tools needed are listed below:
   - Needle tool
   - Sponge for throwing
   - Wood modeling tool
   - Clean-up sponge
   - Wood rib RB-4
   - Water bucket
   - Trimming tool 8R-2 or LT-5
   - Cutting wire
   - Dust Mask
   - Bamboo Brush 8610-12

3. Clay
   All items are available through the Bookstore or at Clay Art Center (a Ceramic supply store).

Assignments:
The projects listed below are in the order in which they will be assigned.

Read Chapters 1,2,3 the first week of class.

Introduction to Throwing - Cylinders. This does not need to be turned in, nor do any pieces have to be fired. You may wish to save a few cylinders to use for your first glazing experience. Learning to throw starts with the cylinder and the art of throwing requires many hours of practice.

1. Bowls. Bowls are the easiest ceramic form to throw and historically one of the more important and enduring forms. Students will make two bowls, they may be thrown or handbuilt.
   1. Shallow bowl - almost flat
   2. Classic half round bowl - suitable for liquids

2. Raku Firing. The pieces for raku firing can be handbuilt or thrown. Two finished projects must be turned in. Students must fire their own work. These must be completed by mid-term. You will receive a grade on your work and I will talk to each student individually about their work after mid-term.

Read Chapters 4 and 5.

3. Plates-Slab/Thrown. We will discuss the main features of each and the demonstrations will focus on problem areas. You should make at least one slab plate and one thrown plate.

4. Cups and Pitchers. This assignment will force you to deal with the problem of adding handles to traditional utilitarian forms and with the techniques of making handles. Cups and pitchers will be demonstrated. At least two objects with handles are required.

Read Chapters 6 and 7.

5. Cylinder. Combine two thrown cylinders. The surface must be carved to create a texture/pattern or a relief. One finished piece required.

6. Vessels with Lids. We will discuss the technical problems involved in making various types of lids. Make two covered forms with a lid.

Mid Term: Gallery paper due. Your paper should critique one of the shows in Kittredge Gallery. Requirements for this paper will be discussed in class. Two raku pieces due.
Last three weeks of class

Slide test on Artists

FINAL: All Assignments are due. Students must attend final critique.

Please check out my website at: www.nwceramics.com
My office is located in Kittredge 019. You may contact me at ext. 2754. My office hours are posted on my office door.
MW 8:30-9:20, Tue 1-2

End of Semester Important Dates:

April 20 - Tuesday
Last day to work with wet clay. All throwing and handbuilding must be complete.

April 27 - Tuesday
Last bisque firing. All work must be dry and ready to fire on or before this date.

May 3 – Monday
Last Glaze Firing. Your work must be outside and ready to be fired.

Your final – Time for your class is online.

All students must meet the deadlines and help in the loading and unloading of all kilns.

Late work will not be fired.

Please check out my website at www.nwceramics.com
My office is located in Kittredge 019. You may contact me at 879-2754. My office hours are posted on my office door: MW 8:30-9:20, Tue 1-2

COURSE DESCRIPTION-AREAS OF INSTRUCTION

CERAMICS I - 247

I. Physical properties of clay
   A. Earthenware clay (Lowfire clay)
   B. Stoneware clay
   C. Porcelain clay

II. Handbuilding techniques with clay
   A. Slab building
   B. Coil building
   C. Wedging
   D. Joining clay

III. Methods of decorating on unfired clay (Greenware)
   A. Sgraffito
   B. Clay slip
   C. Added clay
   D. Stamping
E. Incise - Excise
F. Piercing
G. Burnishing
H. Wax resist
I. Engobe
J. Underglaze

IV. Methods of decorating fired clay (Bisque ware)
A. Underglaze pencils
B. Oxides
C. Glazes
   1. Pouring-dipping glazes
   2. Spraying glazing
   3. Brushing glazes
   4. Wax resist
   5. Sgraffito
   6. Oxides over glazes

V. Composition of Glazes
A. Lowfire glazes
B. Highfire glazes

VI. Firing techniques
A. Electric kilns
B. Gas kilns
C. Raku kilns

VII. This course does not presume that the student has any previous knowledge for working in clay.

GLOSSARY OF CERAMICS TERMS

Alumina
A major ingredient found in all clays and glazes. It is the chief oxide in the neutral group and imparts greater strength and higher firing temperatures to the body and glaze. When added to a glaze, it will assist in the formation of mat texture, inhibit devitrification, and increase the viscosity of the glaze during firing.

Ball Clay
An extremely fine grained, plastic, sedimentary clay. Although ball clay contains much organic matter and fires white. It usually is added to porcelain and white-ware bodies to increase plasticity.

Bat
A disk or slab of plaster on which pottery is formed or dried on. It is also used to remove excess water from clay.

Bentonite
An extremely plastic clay, formed by decomposed volcanic ash and glass, which is
used to render short clays workable and to aid glaze suspensions.

**Binders**
Various materials; gums, polyvinyl alcohol, methylcellulose used to increase glaze adherence or to impart strength to a cast or pressed clay body.

**Bisque Fire**
Preliminary firing to harden the body, usually at about cone 06, prior to glazing and subsequent glaze firing.

**Casting(or slip casting)**
A reproductive process for forming clay objects by pouring a clay slip into a hollow plaster mold and allowing it to remain long enough for a layer of clay to thicken on the mold wall. After hardening, the clay object is removed.

**Clay**
A decomposed granite-type rock. To be classed as clay, the decomposed rock must have fine particles so that it will be plastic. Clays should be free of vegetable matter but will often contain other impurities which affect their color and firing temperatures. They are classified into various types, such as ball clays, fire clays and slip clays.

**Crawling**
Separation of the glaze coating during firing, which exposes areas of unglazed clay caused by too heavy application. The glaze cracks upon drying or from uneven contraction rates between glaze and body.

**Crazing**
An undesirable and excessive crackle in the glaze, which penetrates through the glaze to the clay body. It should be remedied by adjusting the glaze or body composition to obtain a more uniform contraction ratio.

**Deflocculant**
Sodium carbonate or sodium silicate used in a casting slip to reduce the amount of water necessary to maintain a better suspension.

**Dunting**
Cracking of fired ware in a cooling kiln, the result of opening the flues and cooling too rapidly.

**Earthenware**
Low-fire pottery (below 2000°F), usually red or tan in color with an absorbency of from 5 to 20 percent.

**Engobe**
A prepared slip that is halfway between a
glaze and a clay, contains clay, feldspar, flint, a flux, plus colorants.

Fireclay  
A clay having a slightly higher percentage of fluxes than pure clay (kaolin). It fires tan or gray in color and is used in the manufacture of refractory materials, such as bricks, muffles, and so forth for industrial glass and steel furnaces. It is often quite plastic and used by the studio potter as an ingredient of stoneware bodies.

Flux  
Lowest-melting compound in a glaze, such as lead, borax, soda ash, or lime, and including the potash or soda contained in the feldspar. The flux combines easily with silica and thereby helps higher-melting alumina-silica compounds eventually to form a glaze.

Frit  
A partial or complete glaze that is melted and then reground for the purpose of eliminating the toxic effects of lead or the solubility of toxic chemicals.

Glaze Fire  
A firing cycle to the temperature at which the glaze materials will melt to form a glasslike surface coating. This is usually at the point of maximum body maturity, and it is considerably higher than the bisque fire.

Greenware  
Pottery that has not been bisque fired.

Grog  
Hard fired clay that has been crushed or ground to various particle sizes. It is used to reduce shrinkage in such ceramic products as sculpture and architectural terra-cotta tiles, which, because of their thickness, have drying and shrinkage problems. From 5 to 25 percent grog may be used, depending upon the amount of detail desired and whether the pieces are free standing or pressed into molds.

Kaolin (E.P.K.)  
Also known china clay. It is used in glaze and porcelain bodies and fires to a pure white. Sedimentary kaolins found in Florida are more plastic than the residual types found in the Carolinas and Georgia.

Leather Hard  
The condition of the raw ware when most of the moisture has left the body but is still soft enough to be carved or burnished easily.
| **Luster** | A type of metallic decoration thought to have been discovered in Egypt and further developed in Persia during the ninth and fourteenth centuries. A mixture of a metallic salt, rosin, and bismuth nitrate is applied to a glazed piece and then refired at a lower temperature. The temperature, however, must be sufficient to melt the metal and leave a color layer on the decorated portions. |
| **Matte Glaze** | A dull-surfaced glaze with no gloss but pleasant to the touch, not to be confused with an incomplete fired glaze. Matte surfaces can be developed by the addition of barium carbonate or alumina, and a slow cooling cycle. |
| **Maturity** | The temperature or time at which a clay or clay body develops the desirable characteristics of maximum nonporosity and hardness; or the point at which the glaze ingredients enter into complete fusion, developing a strong bond with the body, a stable structure, maximum resistance to abrasion, and a pleasant surface texture. |
| **Mold** | A form or box, usually made of plaster containing a hollow negative shape. The positive form is made by pouring either wet plaster or slip into this hollow. (See casting) |
| **Overglaze** | Decoration applied with overglaze colors on the glaze and fired ware. The third firing of the overglaze ware is at a lower temperature than the glaze fire. |
| **Overglaze Colors** | Colors containing coloring oxides or ceramic stains, a flux, and some type of binder. The fluxes are necessary to allow the colors to melt into the harder glaze to which they are applied. The lower temperatures at which most underglazes are fired (about 016-013) allow the use of colorants that are unstable at higher temperatures. |
| **Oxidizing Fire** | A fire during which the kiln chamber retains an ample supply of oxygen. This means that the combustion in the firebox must be perfectly adjusted. An electric kiln always gives an oxidizing fire. |
| **Plaster of Paris** | Hydrate of calcium sulphate, made by calcining gypsum. It hardens after being |
mixed with water. Because it absorbs moisture and it can be cut and shaped easily, it is used in ceramics for drying and throwing bats, as well as for molds and casting work.

| **Plasticity** | The quality of clay that allows it to be manipulated and still maintains its shape without cracking or sagging. |
| **Porcelain** | A hard, non-absorbent clay body, white or gray in color, that rings when struck. |
| **Quartz** | Flint or silica. |

| **Raku** | Raku ware is unique in that the glazed preheated bisque is placed in the red hot kiln with long-handled tongs. The glaze matures in 15-30 minutes and the ware is then withdrawn. |
| **Reduction Fire** | A firing using insufficient oxygen; carbon monoxide thus formed unites with oxygen from the body and glaze to form carbon dioxide, producing color changes in coloring oxides. |
| **Refractory** | The quality of resisting the effects of high temperatures; also materials, high in alumina and silica, that are used for making kiln insulation, muffles, and kiln furniture. |
| **Shrinkage** | Contraction of the clay in either drying or firing. In the firing cycle the major body shrinkage for stoneware clays begins at approximately 900°C (1652°F). Earthenware clays will begin to fuse and shrink at slightly lower temperatures. |
| **Silica** | Also known as Flint is produced in the United States by grinding almost pure flint sand. |
| **Slip** | A clay in liquid suspension. |
| **Stain** | Sometimes a single coloring oxide, but usually a combination of oxides, plus alumina, flint, and a fluxing compound. This mixture is calcined and then finely ground and washed. The purpose is to form
a stable coloring agent not likely to be altered by the action of the glaze or heat. While stains are employed as glaze colorants, their chief use is as overglaze and underglaze decorations and body colorants.

<table>
<thead>
<tr>
<th>Stoneware</th>
<th>A high fire ware with slight or no absorbency. It is usually gray, tan or slightly reddish in color after a reduction firing.</th>
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<tbody>
<tr>
<td>Underglaze</td>
<td>Colored decoration applied on the bisque or greenware before the glaze is applied</td>
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