WORKING IN CLAY

Design Document

by

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Executive Summary:

We will develop an instructional DVD for ART1050 "Introduction to Ceramics." In this course, students are introduced to clay as an artistic medium and learn a variety of ceramic construction techniques. Students are also introduced to studio equipment and safety precautions. The DVD will support all these learning goals.

Statement of Purpose:

Because of absences or lack of retention, students may have difficulties operating studio equipment and/or executing required class assignments. The main purpose of this DVD will be to supplement and enhance class instruction for beginning ceramics students.

The technique required to successfully use studio equipment and methodologies, especially the potter’s wheel, is dependent on a repeated observation of the process. The creation of an instructional video will allow students to review the process outside of class. Sequences of steps, hand placement, wheel speed and posture will be designed for easy review. We will document common approaches and problems to throwing on the potter’s wheel and hand building construction. Current commercial instructional videos do not illustrate common technical problems and solutions.

The DVD format will allow for random access to the desired video segment, providing a degree of interactivity which is nearly impossible with videotape. This format will also provide a higher image quality than possible on CD-ROM.

Content Outline:

The content of the DVD will be divided into the following main sections:

I. Introduction
II. Hand-building
III. Throwing
IV. Trimming on the wheel
V. Molds
VI. Surface design
VII. Drying
VIII. Bisque firing
IX. Glazes
X. Glaze firing
XI. Studio tour
XII. Ceramics vocabulary
XIII. Index
XIV. Credits
Content Outline Details:

Each of these sections is broken down into its components in the following outline:

I. Introduction

A general description of ceramics materials and processes which will introduce the chapter sequences of mix, make, dry, fire, glaze, fire and finished products. The introduction will include instructions for navigating through sections of the DVD.

I. Clay

A. Clay:
   1. How is Clay different from dirt? (1 min.)
      Demonstration using paper and water to explain the adhesion dynamic
   2. Where does it come from? (1 min.)
      Clay-digging trip on Mississippi river and other New Orleans clay sites

B. Clay Bodies
   1. Three Types of Claybodies (approx. 3 min.)
      Earthenware, stoneware, porcelain: What are they, what do they look like?
   2. Throwing, Sculpture & Paper clay (approx. 3 min.)
      Construction considerations

C. Mixing Clay (approx. 2 min.)
   Processing and equipment
   Clay mixer: how it works and safety issues
   Identifying the different bags of ingredients
   Mixing: Receipt and proper water/slip content
   Recycling: the dos and don'ts
   Preparation: wedging

II. Hand building

A. Pinch pot (approx. 1 min.)
   Pinch a pot.

B. Coil Pot (approx. 2 min.)
   Rolling coils and attachment

C. Slab Construction (approx. 3 min.)
   Slab roller, proper equipment use and safety issues, slab vase construction

D. Extruder (approx. 3 min.)
   Proper equipment use and safety issues, extruded container construction
III. Throwing
   A. What is throwing? (approx. 5 min.)
      Introduction to the potter’s wheel: proper equipment use and safety
      issues; throwing a pot: complete demonstration
   B. Centering (approx. 3 min.)
      Demonstration, common mistakes and how to correct them
   C. Opening and Forming the Bottom (approx. 3 min.)
      Demonstration, common mistakes and how to correct them
   D. Pulling up the walls (approx. 4 min.)
      Demonstration, common mistakes and how to correct them
   E. Forming basic shapes (approx. 4 min.)
      Demonstration of bowls, exaggerated forms and common mistakes
   F. Taking off the wheel (approx. 3 min.)
      Demonstration of undercutting, taking off the wheel and common mistakes

IV. Trimming on the wheel
   A. Centering pot and adhering to the wheel (approx. 2 min.)
      Demonstration of centering and adhering, common mistakes and how to
      correct them
   B. Trimming a pot (approx. 3 min.)
      Demonstration of trim tools in use, common mistakes and how to correct
      them

V. Molds
   A. Introduction to molds (approx. 1 min.)
      Listing the types of molds
   B. Hump molds (approx. 1 min.)
      Laying clay over hump molds
   C. Face molds construction (approx. 3 min.)
      How to make a face mold
   D. Pressing and releasing clay from a mold (approx. 2 min.)

VI. Surface Design
   A. Slips (approx. 3 min.)
      Demonstration of application methods: Sgrafitto and Mishima
   B. Relief (approx. 1 min.)
      Demonstration of high and low relief
   C. Carving (approx. 1 min.)
      Demonstration of clay carving

VII. Drying
   What could be more exciting than watching clay dry? (approx. 1 min.)
VIII. Bisque Firing
A. What is bisque firing? (approx. 2 min.)
   Compare and contrast green ware with earthenware via absorption rates,
appearance, etc.
B. Kilns (approx. 4 min.)
   An introduction to electric and gas kilns, including safety tips:
   General description of what kilns do, the difference between gas and
electric kilns, anatomy of an electric kiln, anatomy of a gas kiln
C. How to stack (load) kilns (approx. 2 min.)
   Demonstration of stacking a kiln with shelves, pots, and posts; setting
   pyrometric cones
D. Firing and cooling an electric kiln (approx. 1 min.)
   Description of the process
E. Firing and cooling a gas kiln (approx. 1 min.)
   Demonstration of the process

IX. Glazes
A. Introduction to glazes (approx. 2 min.)
   What are they? Safety issues
B. Types (approx. 2 min.)
   Compare and contrast low-fire and high-fire glazes
C. Low fire (approx. 3 min.)
   Demonstration of low-fire glaze application:
   General application, masking, waxing, oxide decoration / banding
D. High fire (approx. 6 min)
   Demonstration of high-fire glaze application:
   General application, masking, waxing, dipping, pouring, oxide decoration /
   banding
E. Dos and Don’ts (approx. 3 min.)
   Common mistakes in glaze applications:
   Too thick, too thin, on the bottom, chipping

X. Glaze Firing
A. Introduction to glaze firing (approx. 3 min.)
   Compare and contrast types of firing
B. Low fire (approx. 1 min.)
   Discussion of low fire oxidation
C. High fire (approx. 3 min.)
   Discussion of high fire reduction
D. Examples of finished products: (approx. 3 min.)
   Compare and contrast glaze fire results:
   Over-fired, under-fired, reduction and oxidation results of same glaze

XI. Studio Tour
Tour of ceramics studio. (2 min.)
XII. Ceramics Vocabulary
Illustrated glossary of terms (see Appendix A):
Each screen will include term, definition, and photograph.

XIII. Index
Exhaustive listing of all videos

XIV. Credits
Experiential Flowchart
This chart depicts the user’s experience – how he or she can navigate the DVD.
Interface Mockups

Main Menu

Submenu
Media Inventory

- 40 video segments (approximately 90 minutes total)
- 65 vocabulary terms with accompanying images and definitions (36 definitions already written)
- 13 menu screens
- Music soundtrack (approximately two minutes)
- All of the above elements will be integrated into a single DVD

Skills Assessments

Bart Everson - Videography, Recording Engineer, DVD authoring

MaPó Kinnord-Payton - Ceramics Content Supervision, Photography, Graphic Design, Music
Implementation Plan

Fall 2004

Shoot video and take photos
Complete definitions

Spring 2005

Develop peer evaluation forms
Edit videos (rough cut by March)
Design menus
Record music
DVD integration

Summer 2005

Early usability testing

Fall 2005

Distribution of DVD
Assessment

Implementation Budget

¼ release time for MaPo Kinnord-Payton, Fall 2004
¼ release time for MaPo Kinnord-Payton, Spring 2005

Travel to NCECA 2005 for MaPo Kinnord-Payton
(early peer assessment) $500

Apple Production Suite $500
DVD Media (50) $100
CD/DVD Duplicator $300
Wireless Lavalier Mic $300-500
Tripod $200-400
Assessment Plan

Fall 2005
Develop student evaluation forms
Usability testing
Test scores
Student evaluations

Spring 2006
Peer evaluations
Completion of assessment report

Assessment Budget
Travel to NCECA 2006 for MaPo Kinnord-Payton
(peer assessment) $500
Appendix A: Vocabulary
TERMINOLOGY

Art - Ceramics

BAT A disk or slab of plaster (or other materials) on which pottery is formed or dried.

BATCH Raw chemicals comprising a ceramic glaze which have been weighted out in a specific proportion designed to melt at a predetermined temperature.

BISQUE FIRE Preliminary firing (from cone 010 to 04) prior to glazing and subsequent firing at a higher temperature.

CLAY Al2O3 . 2SiO2 . H2O in it’s pure form. This of course does not exist in nature but is the theoretical formula. Granite type rock (igneous or metamorphic ) decomposed into fine particles, of a plastic quality.

CLAYBODY Combinations of different clay and other material such as fire clays, ball clay, earthenware clays, silica, feldspar and or grog to create a specific receipt that serves the needs of the ceramic artist and or manufacturer.

COILING A hand method of forming pottery by building up the walls with rope-like rolls of clay and then joined.

CRAWLING Separation of the glaze surface, (after firing) caused by too heavy application, which 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 cooling and contraction rate.

DIPPING Glazing pottery by immersing it in a large pan or vat of glaze.

DRYFOOT To clean the bottom of a glazed piece before firing.

DUNTING Crackling of fired ware in a cooling kiln - the result of opening the flues and cooling too rapidly.

FOOT The ring like base of a ceramic piece, used to support surrounding body in a decorative or functional manner

FRIT A partial or complete glaze which is melted and then re-ground for the purpose of eliminating the toxic effects of lead.

GLAZE A liquid suspension of finely ground minerals which is applied by brushing, pouring or spraying on the surface of bisque-fired ceramic ware. After drying the ware is fired to the temperature at which the glaze ingredients will melt together to form a glassy surface coating.
GLAZE FIRE A firing cycle to the temperature at which the glaze materials melt to form a glass like surface coating. This is usually at the point of maximum body maturity and it is considerably higher than the first bisque fire.

GREENWARE Pottery which has not been bisque fired. (Raw ware)

GROG Hard fired clay which 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 20 to 40 percent grog may be used depending upon the amount of detail desired and whether the pieces are free standing or pressed in molds.

KILN A furnace made of refractory clay materials for firing ceramic products.

KILN FURNITURE Refractory shelves and posts upon which ceramic ware is place while being fired in the kiln.

KILN WASH A protective coating of refractory materials applied to the surface of the shelves and the kiln floor to prevent excess glaze from fusing the ware tight. An inexpensive and effective wash may be made from equal parts to flint and kaolin.

KNEADING Also called Wedging. Working clay with the fingers or with the heel of the hand in order to obtain a uniform consistency.

LEATHER HARD The condition of the raw ware when most of the moisture has left the body, but when it is still soft enough to be carved or burnished easily.

MAT GLAZE A dull-surfaced glaze with no gloss, but pleasant to the touch, not to be confused with an incompletely fired glaze. Mat surfaces may be developed by the addition or barium carbonate, or alumina, and a slow cooling cycle.

MOLDS 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.

OXIDIZING FIRING A fire during which the kiln chamber retains an ample supply of oxygen. This means that the combination in the fire box must be perfectly adjusted. (Hot blue flame.) An electric kiln, gives an oxidizing firing.

PLASTICITY The quality which allows clay to be manipulated and still maintain its shape without cracking or sagging.

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.
SGRAFFITO Decoration achieved by scratching through a colored slip to show the contrasting body color beneath.

SHORT A body of clay lacking in plasticity.

THROWING Forming pottery of plastic clay on a potter’s wheel.

TURNING Trimming the walls and foot of a pot on the wheel, while the clay is in a leather hard state.

VISCOSITY Property of resisting flow. A viscous glaze flows slowly.

VITREOUS Pertaining to the hard, glassy, and nonabsorbent quality of a body or glaze.

WARPING Distortion of a pot in drying, because of uneven wall thickness or a warm draft of air, or in firing when a kiln does not heat uniformly.

WAX RESIST A method of decorating pottery by brushing on a design with a warm wax solution or a wax emulsion. This will prevent an applied stain or glaze from adhering to the decorated portions. The wax may be applied to either the raw or bisque ware, over or between two layers of glaze.

WEDGING Kneading and cutting plastic clay, forcibly throwing down one piece upon the other in order to obtain a uniform texture free from air pockets.

NOTE: Other terms and their meanings not listed here are given in class lectures.

FIGURATIVE OXIDES
FORM BURNISHING
FUNCTIONAL VOLATILIZATION
FUSE PYROMETRIC CONES
IN THE ROUND ANTHROPORMORPHIC
RELIEF
SCULPTURAL
VESSEL
COILS
PINCH
CAST
RAKU
HUMP MOLD
SLAB
COMPOSITION
CONTENT
COLORANT
SLIP
TERRA SIGILLATA