

SYLLABUS

I. COURSE TITLE

ART 5451 Ceramics: Glaze Formulation 3 Semester Hours

II. PREREQUISITES

ART 351 or equivalent

III. TEXTBOOK

Fraser, H. (1998). *Glazes for the Craft Potter*. London: The American Ceramic Society.

IV. COURSE DESCRIPTION

This course involves research and experimentation with glaze formulation, including a study of glaze chemicals and how they interact together in the firing process.

V. RATIONALE

The major goal of this course is to de-mystify notions about glazing being too difficult to control in one's work. The course is designed for the reluctant potter who is afraid to move beyond established glaze recipes. It is important for ceramic students to have a general understanding of how and why certain students will experiment modifying colors of existing glaze recipes and formulating their own glazes according to their specific needs. They will also experiment with oxidation and reduction firing conditions. Hence, the intention of this course is to provide opportunities for student to formulate their own glazes and to help them realize that glazing and firing results are not on chance but on sound judgment.

VI. LEARNING OBJECTIVES AND OUTCOMES

Upon completion of this course the student will:

- A. Alter base glazes of pre-existing glazes with different colorant.
- B. Experiment with a line blending method of formulating glazes.
- C. Create new glazes using a "four, three, two, one" method of glaze formulation suggested by Richard Behrens.
- D. Experiment changing fusion levels of glazes to alter glaze colorations.
- E. Help conduct a full tri-axial blend test of 66 combinations of glazes.
- F. Recognize common glaze faults and how to correct them.
- G. Have basic understanding of how to operate glaze software (Insight) formulate and alter glazes on a Windows or Macintosh based computer system.
- H. Experiment with glaze effects in oxidation and reduction firing conditions.
- I. Create a body of wheel thrown forms that can be glazed with the best results from lab research and experimentation.
- J. Demonstration awareness of health hazards related to glazing and firing procedures.

- K. Research glazing and firing methods and techniques in the library and record relevant information in ceramic journal.

VII. COURSE TOPICS

- A. Glaze Composition
- B. Glaze forming Oxides
- C. Glaze Materials: How Chemicals React in the Firing Process
- D. Glaze Calculations
- E. Glaze Defects
- F. Glaze Colorants
- G. Glaze Application and Decoration
- H. Kiln and Firing Techniques
- I. Special Glazes
 - a) Crystalline
 - b) Raku
 - c) Celadon
 - d) Oxblood
 - e) Lusters
 - f) Albany
 - g) Majolica
 - h) Colemanite
 - i) Tin Glazes
 - j) Wide-Range-Firing Glazes
 - k) Bristol
 - l) Hazards of Glazing and Firing
 - m) Projects

VIII. INSTRUCTIONAL METHODS AND ACTIVITIES

Methods and activities for instruction will include:

- A. Lecture
- B. Demonstration
- C. Lab Assignments
- D. Visual examples from various sources (personal, other student work, and books)
- E. Critiques

IX. ASSIGNMENTS AND EVALUATION

- A. Ceramic Notebook: each student will be required to keep a ceramic journal/notebook that should include: lecture notes, sketches for ceramic projects, glazing notations, oral reports, Xeroxes of glazing examples, etc. 10%
Method of Evaluation: The ceramic notebook will be graded on content (inclusion of lecture notes, glazing notations, library research, sketches, examples, etc.) legibility, neatness, and organization.
- B. Oral Report: One day during the semester will be dedicated to giving oral reports on glazing topics. Each student will research a hand-

building topic in the library and give a 5-8 minute oral report of his/her findings. Topics will be related to glazing methods and techniques. 10%
Method of Evaluation: The report will include a bibliography, central thesis, main points, visuals, conclusion and a practical application.
Outline and notes should be recorded in a ceramic journal or notebook.
Graduate students are expected to submit a typed version of the report to the instructor.

- C. Main Projects: Six glaze formulation assignments, and a body of work with applied research will be required during the semester. Glaze research assignments are designed to allow students the opportunity to create new glazes that will be applied on a body of work at the conclusion of the semester. 70%
- a) Modification of Two Existing Base Glazes (4 colors each glaze)
 - b) Line blend Glaze Formulation Test
 - c) "Four, three, Two, One" Glaze Formulation Test
 - d) Changing Fusions Levels of a Glaze
 - e) Tri-axial Blend Test
 - f) Oxidation and reduction firing tests
 - g) 12-15 Wheel Thrown Pots glazed with best Results
- Methods of Evaluation: Each assignment will be graded according to a specification check list. The spec (critique) sheet will be handed out at the beginning of each assignment so that students are aware of applying certain techniques/principles related to glaze alteration and formulation.
- D. Final Examination: A comprehensive exam will be required at the conclusion of the semester. 10%
- Method of Evaluation: the test will be graded according to objective information given in class related to oral reports and lecture notes.
- TOTAL 100%

X. GRADING SCALE

A. = 93-100

B. = 85-92

C. = 76-84

D. = 65-75

F. = 0-64

I. = A incomplete may be given to a student who has been providentially hindered from completing work required in a course, provided that:

1. Semester attendance requirements have been met;
2. Most of the required work has been done;
3. The student is doing passing work and the student has made prior arrangements with the faculty member to complete the remaining work at a later date.

The grade of I must be removed promptly or it becomes an F; it cannot be removed by repeating the course."

XI. LIST OF MATERIALS

Trimming tools (wire loop tools)

Metal, rubber, wooden ribs
Storage container for tools
Potter's needle
Sponge
Wire cutters
Fettling knife
Container for clay
Face mask
Rubber gloves
Empty baby food jars
Canvas material (to cover boards, or to spread out on the table)
Spray bottle
Plastic garbage bags
Kitchen fork for scoring
Airtight plastic bucket for storing clay
Bamboo brush
Hand lotion
Notebook and pencil for recording notes and drawings
Calipers

XII. REFERENCES

Available by request from the professor.