Objectives:

Understanding a few basic principles and applying them can be a great benefit to understanding how and why a kiln functions (or if it doesn’t, how to repair it). We will attempt to demystify the process of kiln design, construction and firing throughout the semester.

We will cover the fundamentals of kiln design and construction, explore kiln designs of both the past and present and discuss issues such as choosing correct materials, basic and advanced construction techniques, arch types, burner designs (power and venturi), layout and planning, calculating kiln volume and BTU requirements, and fuel choices. Historical as well as contemporary issues, products and recent developments will be explored. A variety of kiln types will be examined including but not limited to: Wood, Soda, Salt, Reduction, and Electric.

Procedures: Lectures, demonstrations, slide presentations, and videos will be presented followed by discussion. In class group projects are required and will be a major part of this class.

We will spend much of the semester diagnosing current problems with several of our kilns and remedying a variety of issues based on your observations. You will be working in groups and coming up with plans to most effectively “repair” certain kilns.

You will have one major individual research project and presentation worth 25% of your final grade.

Evaluation: 60% Participation in kiln construction and group projects.
25% Individual research project and presentation.
15% Attendance.

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Materials

You will need the following:

- One loose-leaf notebook/binder for organizing handouts etc.
- One pad of layout/graph paper for working on kiln designs.
- Pair of leather gloves, safety glasses, ear protection, and a respirator.
- Other materials may be required at a later date. I will let you know.

Attendance

You are expected to attend each class. I take roll. Coming to class late means you are not on the roll and therefore absent. More than three unexcused absences will result in the lowering of your final grade by one full letter. Continual absences will severely affect your overall grade.

Plagiarism

Plagiarism includes knowingly "representing, by paraphrase or direct quotation, the published or unpublished work of another person as one's own in any academic exercise or activity without full and clear acknowledgment. It also includes the unacknowledged used of materials prepared by another person or agency engaged in the selling of term papers or other academic materials." The penalties for plagiarism are severe. They include warning or reprimand, grade adjustment, probation, suspension, expulsion, withholding of transcripts, denial or revocation of degrees, and referral to psychological counseling.

Disabilities

The Americans with Disabilities Act states: "Reasonable accommodation will be provided for all persons with disabilities in order to ensure equal participation within the program. If a student has a disability that will likely require some accommodation by the instructor, the student must contact the instructor and document the disability through the Disability Resource Center (797-2444), preferably during the first week of the course. Any request for special consideration relating to attendance, pedagogy, taking of examinations, etc., must be discussed with and approved by the instructor. In cooperation with the Disability Resource Center, course materials can be provided in alternative format, large print, audio, diskette, or Braille."
University policy requires that incomplete grades be assigned only in the case of documentable medical problems or other emergencies that prevent a student from completing course requirements: they are not, under any circumstances, available to prevent assignment of an unsatisfactory course grade due to poor performance.

Suggested Texts:

1. THE KILN BOOK by Fred Olsen (Required) $40.50 at Amazon.com.
2. THE ART OF FIRING by Nils Lou
3. WOOD FIRED STONEWARE AND PORCELAIN by Jack Troy
4. SALT FIRING by Janet Mansfield
5. SODA FIRING by Ruthann Tudball
6. THE ENERGY EFFICIENT POTTER by Regis Brodie
7. THE SELF RELIANT POTTER by Henrik Norsker
8. THE PREHISTORY AND HISTORY OF CERAMIC KILNS by Prudence Rice
9. KILNS by Daniel Rhodes
10. WOOD FIRED CERAMICS by C. Minogue and R. Sanderson
11. BUILDING POTTERY EQUIPMENT by R. Harvey and Sylvia and John Kolb
12. KILN BUILDING by Ian Gregory
13. GAS BURNERS for FORGES, FURNACES, and KILNS by Michael Porter

Ceramic Tech Fall Course Outline: The following schedule is tentative and may be altered as the semester progresses.

Week 1
9/1 Class intro/Syllabus review, Tour of studio and kiln projects.
9/3 Break down black-fire kilns and prepare site for new kilns.

Week 2
9/8 Continue site preparation. Wood Shop Training, Mandatory Attendance!
9/10 Basic kiln principles: Up, down, cross draft kilns; kiln shape.
Primary considerations before construction. Forced air, vented, and natural draft.

Week 3
9/15 Basic construction theory; damper, sprung arch, keystone. Evaluation and planning for project #1 – Box kiln and baby train.
Break into groups and start the planning process/design for new kilns.
9/17 Present designs and problem solve.

Week 4
9/22 Start construction on box and baby train kilns!
9/24 Work day. Present individual project.
Week 5
9/29  Work day.
10/1  Work day.

Week 6
10/6  Work day.
10/8  Work day. Present information on the kiln you have chosen for your research project.

Week 7
10/13 Cast doors for baby train.
10/15 Friday Schedule (No Class).

Week 8
10/20 Final welding and finishing touches on kilns.
10/22 Load both kilns and prep for inaugural firings!
10/23 Fire kilns.

Week 9
10/27 Unload and assess firings.
10/30 Break down soda kiln.

Week 10
11/3 Prepare site, ELECTION DAY!
11/5 Start foundation/Break down burners.

Week 11
11/10 Discuss forced air burners and rebuild burners.
11/12 Work Day.

Week 12
11/17 Work Day.
11/19 Work Day.

Week 13
11/24 Build arch forms.
11/26 Thanksgiving Holiday (No Class).

Week 14
12/1 Work Day.
12/3 Work Day.

Week 15
12/8 Work Day.
12/10 Presentations on individual research projects. Load new soda kiln.
12/11 Fire kiln

Week 16 (Finals Week)
12/14 Unload soda kiln, Final Critique 9:00-11:00, Cleanup, Mandatory Attendance.