Glaze Manufacturing for Industry course outline

Lesson 1
- Defining a glaze
- General categories of glazes
- How to look at a periodic table
- Oxide roles in glazes

Lesson 2
- Oxide sources from raw materials
- Pros/cons of oxide sources

Lesson 3
- How to calculate a formula
- Example of a calculated formula and outcome

Lesson 4
- Mole and Seeger calculations explained
- Example of an actual glaze formula and outcome
- Discussion of glaze calculating programs

Lesson 5
- Glaze fit – what is it?
- Thermal Expansion Coefficients explained
- Shiver and how to correct
- Craze how to test for craze and how to correct or force

Lesson 6
- Stain and colorant testing
- Line blend, triaxial, quadraxial procedures explained
- Recreating a color out of triaxial explained
- Examples of line and triaxial color “hunts”

Lesson 7
- Color theory briefly explained
- Measurement of color
- Matteness/glossiness explained
- Opacity explained

Lesson 8
- Glaze batch testing explained
- Test for viscosity
- Test for drying time
• Test for specific gravity
• Test for mill grind

Lesson 9
• Glaze aids and uses explained
• Settling and correction explained
• Adjusting glazes for production application techniques discussed

Lesson 10
• Glaze application methods discussed
• Tips on how to design a glaze application line

Lesson 11
• Types of kilns and how the type of firing can affect glazes
• Quick discussion of single fire and multi-fire processes
• Dissection of a kiln curve from a glaze point of view
• Methods to verify heat work of a kiln firing

Lesson 12
• Discussion of material vs. process defects
• Defects defined
• Different approaches to correct defects are shared
• Is it a defect or a “feature”?