



Introduction to Properties and Testing of Refractories Expected Course Agenda: July 14–16, 2026

Learn about the significant properties of refractories in this course with classroom lectures and laboratory demonstrations.

This course is an intensive combination of classroom lectures and laboratory demonstrations that address most of the significant properties of refractories, both theoretically and experimentally. The morning lectures will emphasize common refractory testing techniques and microstructural-property relationships for all classes of refractories. The afternoon laboratory sessions are designed to give the participants experience with common refractory tests. The individual sessions are titled in the accompanying outline of the daily topics.

<u>Class Dates</u>	<u>Topics / Activities During Class</u>
1) July 14, 2026	<p>Introduction to Refractories (0.5 hr) 8–8:30 a.m.</p> <p>Thermal Properties (1.0 hr) 8:30–9:30 a.m.</p> <p>Break 9:30–9:45 a.m.</p> <p>Mechanical Properties (1.0 hr) 9:45–10:45 a.m.</p> <p>Break 10:45–11 a.m.</p> <p>Corrosion Properties (1.0 hr) 11 a.m.–12 p.m.</p> <p>Lunch 12–1 p.m.</p> <p>Thermo-Mechanical Properties (0.75 hr) 1–1:45 p.m.</p> <p>Standard Test Methods (0.75 hr) 1:45–2:30 p.m.</p> <p>Break & Travel 2:30–3 p.m.</p> <p>Laboratory Sessions (2.0 hr) 3–5 p.m.</p> <p>Lab 1 — C1113: Thermal Conductivity by Hot Wire</p> <p>Lab 2 — C832: Creep</p> <p>Lab 3 — C862 and C1445: Castable Preparation and Flow Table</p> <p>Lab 4 — C1171, C1419, and C1548: Thermal Shock, Sonic Velocity, and Elastic Moduli</p>



<p>2) July 15, 2026</p>	<p>Silica Refractories (1.0 hr) 8–9 a.m.</p> <p>Break 9–9:15 a.m.</p> <p>Alumino-Silicate Refractories (1.0 hr) 9:15–10:15 a.m.</p> <p>Break 10:15–10:30 a.m.</p> <p>Basic Refractories (1.5 hr) 10:30 a.m.–12 p.m.</p> <p>Lunch 12–1 p.m.</p> <p>Insulating Refractories (0.75 hr) 1–1:45 p.m.</p> <p>Standard Test Methods (0.75 hr) 1:45–2:30 p.m.</p> <p>Break & Travel 2:30–3 p.m.</p> <p>Laboratory Sessions (2.0 hr) 3–5 p.m.</p> <p>Lab 1 — C133: Modulus of Rupture, Cold Crushing</p> <p>Lab 2 — C113 and E228: Reheat and Thermal Expansion</p> <p>Lab 3 — C830: Porosity and Density</p> <p>Lab 4 — C583: Hot Modulus of Rupture</p>
<p>3) July 16, 2026</p>	<p>Monolithic Refractories (1.25 hr) 8–9:15 a.m.</p> <p>Break 9:15–9:30 a.m.</p> <p>Non-Oxide Refractories (0.75 hr) 9:30–10:15 a.m.</p> <p>Break 10:15–10:30 a.m.</p> <p>Composite Refractories (0.75 hr) 10:30–11:15 a.m.</p> <p>Zircon-Zirconia Refractories (0.75 hr) 11:15 a.m.–12 p.m.</p> <p>Lunch 12–1 p.m.</p>



Fused Cast Refractories (0.75 hr) 1–1:45 p.m.

Standard Test Methods (0.75 hr) 1:45–2:30 p.m.

Break & Travel 2:30–3 p.m.

Laboratory Sessions (2.0 hr) 3–5 p.m.

Lab 1 — C201: Thermal Conductivity by Water Calorimeter

Lab 2 — C16 and C24: Hot Load and PCE

Lab 3 — C577: Permeability

Lab 4 — C704: Abrasion

Additional References or Resources:

1. **Morning Sessions:** Westerville, OH - [Holiday Inn Express & Suites Columbus - Polaris Parkway; 8670 Orion Place Columbus, OH 43240 United States](#)
2. **Afternoon Sessions:** [Edward Orton Jr. Headquarters; 6991 S Old 3C Rd Hwy, Westerville, OH 43082](#)
3. **Airport:** [John Glenn Columbus International Airport \(CMH\)](#)