

## Raw Hide to Crust Course Agenda

This course is intended for individuals working in the leather industry and is a combination of classroom lecture and hands-on application in a pilot tannery setting. The lecture portion of the course will be presented by personnel from the Leather Research Laboratory. Industry experts from the chemical supply base and working tanneries will work with attendees in the pilot tannery to help understand what it takes to make beautiful leather in a production environment. The total course will be presented at the USDA ERRC's pilot tannery facility near Philadelphia, Pennsylvania and will be completed over two weeks with a one month break between the first and second weeks.

### Week One: Raw Hide to Wet Blue: June 17-21, 2019

#### Topics Covered:

#### **Hide, Skin & Leather Histology** (ALCA Chapters 1 – 3)

- Functions & Structure of Hide & Skin
- Components of Hide & Skin
  - Relevance to Leather Processing
- Structure of Leather
  - Comparative – Bovine, Ovine & Porcine

#### **Hide Supply Considerations**

- Constraints to production
- Global market forces

#### **Beamhouse**

- General Chemistry (ALCA Chapter 4)
  - Acid / Base & Salts
  - pH Scale
- Operations
  - Soaking (ALCA Chapter 5)
    - Process Checks / Faults
  - Fleshing
    - Green or Lime
  - Liming
    - Keratin Degradation
    - Opening Up of Fibers
    - Fat Removal
    - Process Checks / Faults
    - Auxiliaries
      - Sodium Hydrosulfide
      - Sodium Sulfide
    - Process Hazards

## Beamhouse (continued)

- Delime (ALCA Chapter 6)
  - Lime & Sulfide Removal
  - pH reduction
  - Process Checks / Faults
- Splitting
  - Lime Splitting / Blue Splitting
  - Process Control
- Bating
  - Enzymes 101
- Pickling
  - Acid / Salt balance
  - Target pH
  - Pickle – Free Systems

## Tanyard

- Tanning (ALCA Chapter 7 & 8)
  - General Chemistry - pH & valences
  - Chromium Salt Chemistry
  - Alternate Tanning Agents
  - Veg Tanning
  - Fungicide Option
  - Process Checks / Faults

### **Week Two: Wet Blue to Crust: July 22-25, 2019**

#### **Retanning / Coloring / Fat Liquoring** (ALCA Chapters 11 – 14)

- Retan Chemistry Options
- Coloring Options
- Fat Liquoring Options

#### **Drying**

- Toggle
- Vacuum

#### **Mechanical Processes** (ALCA Chapter 10)

- Milling
- Staking
- Splitting
- Shaving
- Plating

## Additional References

*Practical Leather Technology* by T.C. Thorstensen.  
Leather Technician's Handbook by J. H. Sharphouse

## Course Materials Provided:

Three-ring binder with hardcopy slides from all presentations.  
Copy of the widely regarded industry reference book: *Skin, Hide and Leather Defects* by Jean Tancous.  
Leather bound notebook for note taking.  
Leather Industries of America directory.  
Latest version of *Standards Governing the Sale of North American Cattle Hides* published by the United States Hide, Skin & Leather Association.

**Course Location:** USDA Eastern Regional Research Center  
600 East Mermaid Lane  
Wyndmoor, Pennsylvania 19038  
(If using a GPS for directions, replace *Wyndmoor* with *Glenside*.)  
  
[www.ars.usda.gov/northeast-area/wyndmoor-pa/eastern-regional-research-center](http://www.ars.usda.gov/northeast-area/wyndmoor-pa/eastern-regional-research-center)

**Note:** This is a U.S. Government facility. All visitors must indicate nationality before arrival and show proper ID upon entering. If arriving by car, will also need to provide the vehicle license plate number, the day of your first visit.

**Cost:** \$1600/ person/week or \$2800/person for both weeks

**Lunch & snacks provided on all course days.**

## Recommended Airports:

Philadelphia Int'l Airport, (PHL)Philadelphia, PA  
Newark Liberty Int'l Airport (EWR), Newark, NJ  
John F. Kennedy Int'l Airport (JFK), Jamaica, NY

## Nearby Lodging:

**Chestnut Hill Hotel** (The closest hotel to ERRC)  
8229 Germantown Avenue, Philadelphia, PA 19118  
(215) 242-5909

**Holiday Inn Express and Suites**  
432 Pennsylvania Ave, Fort Washington, PA 19034  
(215) 591-9000

**Hilton Garden Inn, Fort Washington**  
530 Pennsylvania Ave., Fort Washington, PA 19034  
(215) 646-4637

**Best Western**

285 Commerce Drive, Fort Washington, PA 19034  
(215) 542-7930

**Doubletree Guest Quarters**

640 West Germantown Pike, Plymouth Meeting, PA 19462  
(610) 834-8300

**Courtyard by Marriott**

651 Fountain Road, Plymouth Meeting, PA 19462  
(610) 238-0695

**SpringHill Suites by Marriott**

430 Plymouth Road, Plymouth Meeting, PA 19462  
(610) 940-0400

**Extended StayAmerica Philadelphia - Plymouth Meeting**

437 Irwins Lane, Plymouth Meeting, PA 19462  
(610) 260-0488

Please phone in your reservation to get special USDA rate

**Registrants responsible for reservations and payment directly with hotel.**

Contact: Louisa Passano at 513 242-6300 or email [passanlb@ucmail.uc.edu](mailto:passanlb@ucmail.uc.edu) for further information or to register for one of these courses.