

McCrone Research Institute

A NOT-FOR-PROFIT CORPORATION

2820 S. Michigan Ave., Chicago, IL, 60616

phone: 312-842-7100, email: registrar@mcri.org

fax: 312-842-1078, web: www.mcri.org



Wood and Vegetable Fiber Microscopy (1540)

COURSE OUTLINE & SYLLABUS

Wood and vegetable fibers are studied with the complementary use of the hand lens, stereomicroscope and compound microscopes. Students prepare known and unknown samples interactively with the instructor after learning key anatomical features. Identification keys are used and studied to facilitate identification and characterization, noting the pitfalls and limitations for each particular material. Staining and microscopical techniques are taught for fiber characterization. This course is appropriate for anyone involved in forensic science, food industry, indoor air quality and building materials science. There is no prerequisite for this course.

Day 1:

- Microscope Calibration:
 - Köhler Illumination
 - Centration and Measuring
 - Contrast Techniques
- Introduction to Plant Anatomy:
 - Plant Classification
 - Cell and Tissue Types
 - Plant Crystals
 - Techniques and Methods

Day 2:

- Introduction to Plant Anatomy Continued:
 - Cell Wall Pitting
 - Trichomes
 - Techniques and Methods
- Identification of Softwood Fibers:
 - Techniques and Methods

Day 3:

- Identification of Hardwood Fibers:
 - Techniques and Methods
- Identification of Monocot Stem Fibers:
 - Techniques and Methods
- Identification of Root Fibers:
 - Techniques and Methods

Day 4:

- Identification of Vegetable Fibers:
 - Stem, Leaf and Seed Fibers
 - Techniques and Methods
 - Microchemical Techniques

Day 5:

- Identification of Vegetable Fibers Continued:
 - Stem, Leaf and Seed Fibers
 - Techniques and Methods
 - Microchemical Techniques

Note: This course runs Monday-Friday with class ending at noon on Friday.