

## INSTRUMENTATION

### **Spectroscopy**

Course: Interpretation of Infrared and Raman Spectra

Location: Bowdoin College in Brunswick, Maine

Information: <http://www.ircourses.org/sched1.html>

Course: Interpretation of Infrared Spectra

Location: California Criministics Institute

Information: <http://oag.ca.gov/cci-subject-areas/c-chemistry-program>

Course: FTIR Spectroscopy Academy

Location: Thermo Fisher, Online

Information: <https://www.thermofisher.com/us/en/home/industrial/spectroscopy-elemental-isotope-analysis/spectroscopy-elemental-isotope-analysis-learning-center/molecular-spectroscopy-information/ftir-information.html>

Course: NIR Technology

Location: Thermo Fisher, Online

Information: <https://www.thermofisher.com/us/en/home/industrial/spectroscopy-elemental-isotope-analysis/spectroscopy-elemental-isotope-analysis-learning-center/molecular-spectroscopy-information/nir-technology.html>

Course: Raman Technology

Location: Thermo Fisher, Online

Information: <https://www.thermofisher.com/us/en/home/industrial/spectroscopy-elemental-isotope-analysis/spectroscopy-elemental-isotope-analysis-learning-center/molecular-spectroscopy-information/raman-technology.html>

Course: NMR Information

Location: Thermo Fisher, Online

Information: <https://www.thermofisher.com/us/en/home/industrial/spectroscopy-elemental-isotope-analysis/spectroscopy-elemental-isotope-analysis-learning-center/molecular-spectroscopy-information/nmr-information.html>

Course: Practical Infrared Microspectroscopy – FTIR

Location: McCrone Research Institute in Chicago, IL

Information: <https://www.mcri.org/v/1059/Practical-Infrared-Microspectroscopy-FT-IR-1422>  
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Course(s): Infrared Microscopy, IR Spectral Interpretation, Raman Microspectroscopy, FTIR

Location: Hooke College in Westmount, IL

Information: <http://www.hookecollege.com/courses/>

Course: Raman Microspectroscopy

Location: McCrone Research Institute in Chicago, IL

Information: <https://www.mcri.org/v/1074/Raman-Microspectroscopy-1430>

Course: Spectroscopy, Elemental & Isotope Analysis Learning Center  
Location: Thermo Fisher, Online  
Information: <https://www.thermofisher.com/us/en/home/industrial/spectroscopy-elemental-isotope-analysis/spectroscopy-elemental-isotope-analysis-learning-center.html>

Course: Spectroscopy  
Location: Agilent Technologies, various locations  
Information: <https://inter.viewcentral.com/events/uploads/agilent/modern.html?lid=1&version=1500927484614>

### Chromatography

Course: GC, HPLC, Software, GC/MS, LC/MS, ICP/MS  
Location: Agilent Technologies, various locations  
Information: <https://inter.viewcentral.com/events/uploads/agilent/modern.html?lid=1&version=1500927484614>

Course: Gas Chromatography/Mass Spectrometry  
Location: 4 day on site (company out of Ohio)  
Information: <http://selectosep.com/training.html> <http://selectosep.com/gcms.html>

Course: Gas Chromatography Mass Spectrometry (GC-MS) Information  
Location: Thermo Fisher, Online  
Information: <https://www.thermofisher.com/us/en/home/industrial/mass-spectrometry/mass-spectrometry-learning-center/gas-chromatography-mass-spectrometry-gc-ms-information.html>

Course: Liquid Chromatography Mass Spectrometry (LC-MS) Information  
Location: Thermo Fisher, Online  
Information: <https://www.thermofisher.com/us/en/home/industrial/mass-spectrometry/mass-spectrometry-learning-center/liquid-chromatography-mass-spectrometry-lc-ms-information.html>

Course: Fundamentals of LC/MS/MS  
Location: Thermo Fisher, Online  
Information: <https://www.forensiced.org/training/courseapp.cfm?csection=Forensic%20Sciences>

### Mass Spectrometry

Course: Mass Spectra: Theory and Interpretation  
Location: California Criministics Institute/San Diego Area  
Information: <http://oag.ca.gov/cci-subject-areas/c-chemistry-program>

Course: Forensic Mass Spectrometry  
Location: WVU Continuing Education-Online (Only available as a block with non-trace related classes)  
Information: <http://continuinged.wvu.edu/courses/course.php?cid=24>

Course: Mass Spectrometry for Trace Evidence

Location: Free Online Course through FIU

Information: <http://ifri.fiu.edu/academic-programs/nij-sponsored-workshops/>

Course: Mass Spectrometry Learning Center

Location: Thermo Fisher, Online

Information: <https://www.thermofisher.com/us/en/home/industrial/mass-spectrometry/mass-spectrometry-learning-center.html>

### Electron Microscopy

Course: Scanning Electron Microscopy and X-ray Microanalysis

Location: Lehigh Microscopy School in Bethlehem, PA

Information: <https://www.lehigh.edu/microscopy/school/index.html>

Course: Introduction to SEM and EDS for the New SEM Operator

Location: Lehigh Microscopy School in Bethlehem, PA

Information: <https://www.lehigh.edu/microscopy/school/index.html>

Course: Specialized Courses

Location: Lehigh Microscopy School in Bethlehem, PA

Information: <https://www.lehigh.edu/microscopy/school/index.html>

Course(s): Scanning Electron Microscopy, Transmission Electron Microscopy, Advanced Imaging Techniques for Scanning Electron Microscopy, Advanced X-ray Microanalysis by EDS  
Location: Hooke College in Westmount, IL  
Information: <http://www.hookecollege.com/courses/>

Course: Scanning Electron Microscopy (SEM) and X-ray Microanalysis

Location: McCrone Research Institute in Chicago, IL

Information: <http://www.mcri.org/home/section/10/courses>

Course: Elemental Analysis of Forensic Evidence with Focus on Interpretation of the Evidence

Location: Free Online Course through FIU

Information: <http://ifri.fiu.edu/academic-programs/nij-sponsored-workshops/>

Course: SEM/TEM Training (instrument model based)

Location: JEOL USA in Peabody, MA and/or Pleasanton, CA

Information: <http://www.jeolusa.com/SERVICESTUPPORT/JEOLInstitute/SEMTEMTraining/tabid/310/Default.aspx>

### Microscopy

Course: Advanced Microscopy

Location: California Criminalistics Institute / Sacramento

Information: <http://oag.ca.gov/cci-subject-areas/m-microscopy-and-trace-program>

Course: Basic Practical Microscopy

Location: California Criminalistics Institute / Sacramento  
Information: <http://oag.ca.gov/cci-subject-areas/m-microscopy-and-trace-program?page=1>

Course: Modern Polarized Light Microscopy  
Location: Hooke College in Westmount, IL  
Information: <http://www.hookecollege.com/courses/>

Course: Microscopic Particle Handling: Particle Isolation, Manipulation, and Mounting  
Location: Hooke College in Westmount, IL  
Information: <http://www.hookecollege.com/courses/>

Course: Sample Preparation: Forensics and Trace Evidence  
Location: Hooke College in Westmount, IL  
Information: <http://www.hookecollege.com/courses/>

Course: Applied Polarized Light Microscopy/Forensic Microscopy  
Location: McCrone Research Institute in Chicago, IL  
Information: <http://www.mcri.org/home/section/10/courses>

### Fiber Courses

Course: Basic Fiber Comparison Workshop  
Location: Hamilton Country Coroner's Office  
Information: <http://www.mafs.net/mafs-2016-basic-fiber-workshop>

Course: Forensic Fiber Identification  
Location: Hooke College in Westmount, IL  
Information: <http://www.hookecollege.com/courses/>

Course: Fiber Identification  
Location: Hooke College in Westmount, IL  
Information: <http://www.hookecollege.com/courses/>

Course: Textile Fundamentals  
Location: NC State University in Raleigh, NC  
Information: <http://www.tx.ncsu.edu/departments/texed/courses.cfm>

Course: How to Identify Fibers and Fabrics  
Location: NC State University in Raleigh, NC  
Information: <http://www.tx.ncsu.edu/departments/texed/courses.cfm>

Course: Fibers and Textiles for Forensic Scientists  
Location: WVU Continuing Education-Online  
Information: <http://continuinged.wvu.edu/courses/course.php?cid=23>

Course: Fiber Identification and Comparison  
Location: California Criminalistics Institute / Sacramento  
Information: <http://oag.ca.gov/cci-subject-areas/m-microscopy-and-trace-program>

Course: Forensic Fiber Analysis: Advanced Microscopy and Microchemistry  
Location: McCrone Research Institute in Chicago, IL  
Information: <http://www.mcri.org/home/section/10/courses>

### Paint/Polymer Courses

Course: Introduction to Paint Formulation Short Course  
Location: The Coatings Institute at Missouri S&T campus  
Information: <http://coatings.mst.edu/introduc/>

Course: Standard XRF and SuperQ 6 training course  
Location: Pan Analytical in Westborough, MA  
Information: <http://www.panalytical.com/Event/Standard-XRF-and-SuperQ-6-training-course-3.htm>

Course: Forensic Examination of Paint Evidence  
Location: Hooke College in Westmount, IL  
Information: <https://www.mccrone.com/forensic-examination-of-paint-evidence>

Course: Pigment Identification  
Location: Hooke College in Westmount, IL  
Information: <https://www.mccrone.com/pigment-identification-course>

Course: Forensic Examination and Comparison of Paint, Tapes, and Adhesives with a Focus on Interpretation of the Evidence  
Location: Free Online Course through FIU  
Information: <http://ifri.fiu.edu/academic-programs/nij-sponsored-workshops/>

Course: IPTES Series: Tape & Paint Evidence  
Location: RTI, Online  
Information: [https://rticqpub1.connectsolutions.com/content/connect/c1/7/en/events/event/shared/1199963517/event\\_landing.html?sco-id=1200019525&\\_charset=utf-8](https://rticqpub1.connectsolutions.com/content/connect/c1/7/en/events/event/shared/1199963517/event_landing.html?sco-id=1200019525&_charset=utf-8)

Course: Automotive Paint Binders using Infrared Spectroscopy  
Location: Forensic Center of Excellence, Online

Information: <https://forensiccoe.org/webinar/webinar-automotive-paint-binders-using-infrared-spectroscopy-live/>

### Glass Courses

Course: Glass Examination and Comparison

Location: California Criminalistics Institute / Sacramento

Information: <http://oag.ca.gov/cci-subject-areas/m-microscopy-and-trace-program>

Course: Glass: Basic Principles of Trace Evidence Series

Location: WVU Continuing Education-Online

Information: <http://continuinged.wvu.edu/courses/course.php?cid=288>

Course: Forensic Microscopy of Glass

Location: McCrone Research Institute in Chicago, IL

Information: <http://www.mcri.org/home/section/10/courses>

Course: Examination and Comparison of Glass Evidence

Location: Free Online Course through FIU

Information: <http://ifri.fiu.edu/academic-programs/nij-sponsored-workshops/>

### Miscellaneous

Course: Fundamentals of Color and Appearance

Location: X-Rite, Various locations

Information: [http://www.xrite.com/top\\_services.aspx?segmentid=29&eventid=266](http://www.xrite.com/top_services.aspx?segmentid=29&eventid=266)

Course: Forensic Statistics

Location: California Criminalistics Institute / Sacramento

Information: <http://oag.ca.gov/cci-subject-areas/m-microscopy-and-trace-program>

Course: Identification of Building Materials

Location: California Criminalistics Institute / Sacramento

Information: <http://oag.ca.gov/cci-subject-areas/m-microscopy-and-trace-program>

Course: Identification of Soils & Minerals

Location: California Criminalistics Institute / Sacramento

Information: <http://oag.ca.gov/cci-subject-areas/m-microscopy-and-trace-program>

Course: Headlamp Examination

Location: California Criminalistics Institute / Sacramento

Information: <http://oag.ca.gov/cci-subject-areas/m-microscopy-and-trace-program>

Course: Gunshot Residue Identification

Location: Hooke College in Westmount, IL

Information: <http://www.hookecollege.com/courses/>

Course: Comparative Microscopy of Soil

Location: McCrone Research Institute in Chicago, IL  
Information: <http://www.mcri.org/home/section/10/courses>

## Explosives

Course: Analysis of Explosives  
Location: California Criminalistics Institute / Rancho Cordova or Los Angeles  
Information: <http://oag.ca.gov/cci-subject-areas/c-chemistry-program>

Course: Microscopical Identification of White Powders  
Location: Hooke College of Applied Sciences, in Westmount, IL  
Information: <https://www.mccrone.com/white-powder-unknowns-course>

Course: Analysis of Low Explosives  
Location: Hooke College of Applied Sciences, in Westmount, IL  
Information: <https://www.mccrone.com/analysis-of-low-explosives>

Course: Microscopy of Explosives (1722)  
Location: McCrone Research Institute, Chicago IL  
Information: <https://www.mcri.org/v/1220/Microscopy-of-Explosives-1722>

Course: Home Made Explosives (Identification, Process, Disposal) Course ID EXPL- CS-0018  
Location: RedstoneArsenal, AL  
Information: <https://www.atf.gov/careers/docs/home-made-explosives-identification-process-disposal-course-id-expl-cs-0018/download>

Course: Post Blast Investigative Techniques (Course ID EXPL-CS-0013)  
Location: RedstoneArsenal, AL  
Information: <https://www.atf.gov/careers/docs/undefined/post-blast-investigative-techniques-i-course-id-expl-cs-0013/download>

Course: Explosives Recognition & IED Exploitation (ERIE) for Intel Analysts (Course ID EXPL-CS-0028)  
Location: RedstoneArsenal, AL  
Information: <https://www.atf.gov/explosives/docs/explosives-recognition-ied-exploitation-intel-analysts-course-id-expl-cs/download>

Course: Chemistry of Pyrotechnics  
Location: Center for Improvised Explosives – Oklahoma State University  
Information: <http://www.tci-training.com/events/>

## Fire Debris

Course: Identifying Ignitable Liquids in Fire Debris  
Location: Hooke College of Applied Sciences, in Westmount, IL  
Information: <https://www.mccrone.com/Identifying-Ignitable-Liquids-in-Fire-Debris>

Course: Intermediate Analysis of Ignitable Liquids and Fire Debris  
Location: California Criminalistics Institute / various  
Information: <http://oag.ca.gov/cci-subject-areas/c-chemistry-program>

Course: Intro to Ignitable Liquids and Fire Debris  
Location: Hertzberg-Davis Forensic Science Center, California State University Los Angeles  
Information: <http://oag.ca.gov/cci-subject-areas/c-chemistry-program>

Course: Basic Fire Debris Analysis  
Location: NCFS – University of Central Florida  
Information: <https://ncfs.ucf.edu/ncfs-training/physical-evidence/basic-fire-debris-course/>

Course: Advanced Fire Debris Analysis  
Location: NCFS – University of Central Florida  
Information: <https://ncfs.ucf.edu/ncfs-training/physical-evidence/basic-fire-debris-course/>

Course: Introductory Fire Debris Analysis for the Forensic Chemist  
Location: ATF Forensic Science Laboratory – Washington in Beltsville, Maryland  
Information: <http://www.cacnews.org/training/ATF%202007%20Flyer.pdf>

Course: Advanced Fire Debris Analysis for the Forensic Chemist  
Location: ATF Forensic Science Laboratory – Washington in Beltsville, Maryland  
Information: <http://www.cacnews.org/training/ATF%202007%20Flyer.pdf>

## Hairs

Course: Identification of Animal Hairs  
Location: California Criminalistics Institute / Sacramento  
Information: <http://oag.ca.gov/cci-subject-areas/m-microscopy-and-trace-program>

Course: Hair Identification and Comparison  
Location: California Criminalistics Institute / Sacramento  
Information: <http://oag.ca.gov/cci-subject-areas/m-microscopy-and-trace-program>

Course: Animal Hair Identification  
Location: McCrone Research Institute in Chicago, IL  
Information: <http://www.mcri.org/home/section/10/courses>

Course: Hair and Fiber Microscopy  
Location: McCrone Research Institute in Chicago, IL  
Information: <http://www.mcri.org/home/section/10/courses>

Course: Hair Comparison  
Location: Hooke College of Applied Sciences



Information: <https://www.mccrone.com/hair-comparison-course>