



MSEE

MATERIALS SCIENCE IN
EXTREME ENVIRONMENTS
UNIVERSITY RESEARCH ALLIANCE

Materials Science in Extreme Environments (MSEE) Optical Spectroscopy Workshop

Workshop Information

General

Welcome to the 1st MSEE Optical Spectroscopy Workshop! We have two full days of presentations and hands-on activities planned designed to give attendees practical experience with optical spectroscopy instrumentation, experiments, modeling, and analysis. There will also be breaks throughout the day for one-on-one or small group discussions about specific questions or problems you are trying to solve. We look forward to seeing you in Tucson!

Please Bring

A laptop computer with Microsoft Excel and a web browser. We will be using Excel spreadsheets, web links, and other software for hands-on spectral modeling and fitting activities. A limited number of computers will be available on site to share if needed.

Agenda (draft)

Tuesday, November 01, 2022

Day 1 – Experimental methods

Location: Sabino Room, Student Union Memorial Center, 1303 E. University Blvd.

Time	Title	Lead Instructors
08:00-08:30	Welcome and morning refreshments	
08:30-09:00	Workshop introduction	M. Phillips
09:00-10:00	Optical diagnostics for laser produced plasmas	S. Harilal
10:00-10:15	Break	
10:15-11:15	Vibrational spectroscopy – FTIR and Raman	H. Eilers
11:15-11:45	Frequency comb spectroscopy	J. Jones
11:45-01:00	Lunch	
Move to Meinel Optical Sciences Building, 1630 E. University Blvd		
01:00-03:00	Hands-on: spectrometer design and construction	N. Glumac
03:00-03:30	Break	
03:30-03:45	Introduction to tunable laser spectroscopy	M. Phillips
03:45-05:45	Hands-on: tunable laser spectroscopy	M. Ruesch
06:00-	Group dinner (location TBD)	



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College of Optical Sciences

Wednesday, November 02, 2022
Day 2 – Spectral analysis methods
Location: Sabino Room, Student Union Memorial Center, 1303 E. University Blvd.

Time	Title	Lead Instructor
08:00-08:30	Welcome and morning refreshments	
08:30-09:00	Spectral modeling basic concepts	M. Phillips
09:00-10:00	Atomic spectroscopy fundamentals	M. DeMagistris
10:00-10:30	Break	
10:30-11:00	Hands-on: modeling atomic spectra	M. DeMagistris
11:00-12:00	Molecular spectroscopy fundamentals	M. Ruesch
12:00-01:15	Lunch	
01:15-02:00	Hands-on: modeling molecular spectra	M. Ruesch
02:00-02:45	Hands-on: spectral fitting I	M. Phillips
02:45-03:15	Break	
03:15-04:00	Hands-on: spectral fitting II	M. Phillips
04:00-05:00	Troubleshooting in optical spectroscopy	
05:00-05:30	Q&A and workshop wrap-up	

Thursday, November 03, 2022
Day 3 – Optional activities

09:00-11:00 Visit to Opticslah, LLC
 Location: 3250 S. Dodge Blvd, Suite 7

Opticslah, LLC is a small business developing new optical spectroscopy instruments based on swept-wavelength external cavity quantum cascade lasers and fiber-based frequency combs. Stop by to see the facilities and have additional discussions about instrumentation for optical spectroscopy experiments.

Times TBD Lab tours at University of Arizona
 Location: Meinel Optical Sciences Building, 1630 E. University Blvd.

The labs of Professor R. Jason Jones perform research and development using a wide range of laser-based optical spectroscopy methods and instruments, including dual-frequency comb spectroscopy for laser-produced plasmas. Stop by to see current research projects and meet the students.

Times TBD Additional discussions
 Location: Meinel Optical Sciences Building, 1630 E. University Blvd.

Meeting spaces will be available for additional meetings or discussions about MSEE or other topics



Travel Information

General Visitor Information

<https://www.optics.arizona.edu/events/visit-us>

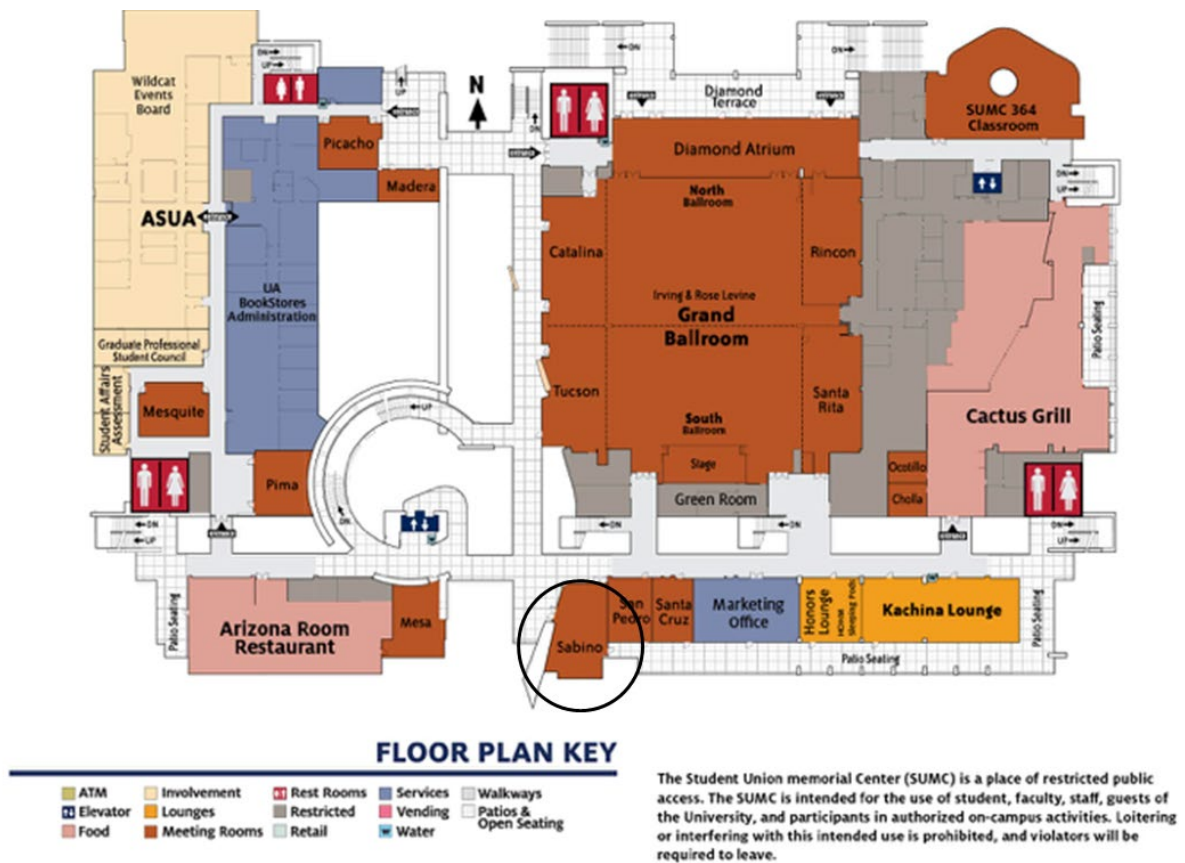
Maps

https://www.arizona.edu/sites/default/files/2022-02/visitor_map.pdf

<https://map.arizona.edu/>

Meeting Location

On Tuesday, November 01 we will meet in the Sabino Room on the third floor of the Student Union Memorial Center. See maps below for details.



Authority: ABOR Policy 7-201 • UA Campus Use Policy • A.R.S. § 13-2905, -2911

THIRD LEVEL

 UA is tobacco free.
TobaccoFree.arizona.edu





Parking

Visitor parking is available for a fee in various garages on campus
<https://parking.arizona.edu/parking/garages/visitor-parking/>

We recommend the **Second Street Parking Garage** for a convenient location near the workshop. Parking fees can be paid to a cashier or card reader upon exit.

Other options include **Cherry Avenue Garage**, **South Stadium Garage**, and **Highland Avenue Garage**. Some garages now require use of the Passport Parking App, available for free download from the Apple App Store or Google Play store.

Note that there is a basketball game on Tuesday, November 01 and some garages may close early or switch to event parking. Please look for any signs posted on campus about event parking restrictions.



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Hotels

There are no designated hotels for the workshop. Many name-brand hotels are available within a short drive to campus. Some options are available within walking distance to campus, although rates and availability can fluctuate widely.

Aloft Tucson University

<https://www.marriott.com/en-us/hotels/tusal-aloft-tucson-university/overview/?scid=f2ae0541-1279-4f24-b197-a979c79310b0>

Tucson Marriott University Park

<https://www.marriott.com/en-us/hotels/tusmp-tucson-marriott-university-park/overview/?scid=f2ae0541-1279-4f24-b197-a979c79310b0>

The Graduate Tucson

[Graduate Tucson | Hotel Near Arizona Campus \(graduatehotels.com\)](http://graduatehotels.com)

Weather

Tucson average temperatures in November are a high of 75°F and low of 44°F. Daytime weather is usually sunny and warm, with cooler morning and evening temperatures.

Workshop contacts

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