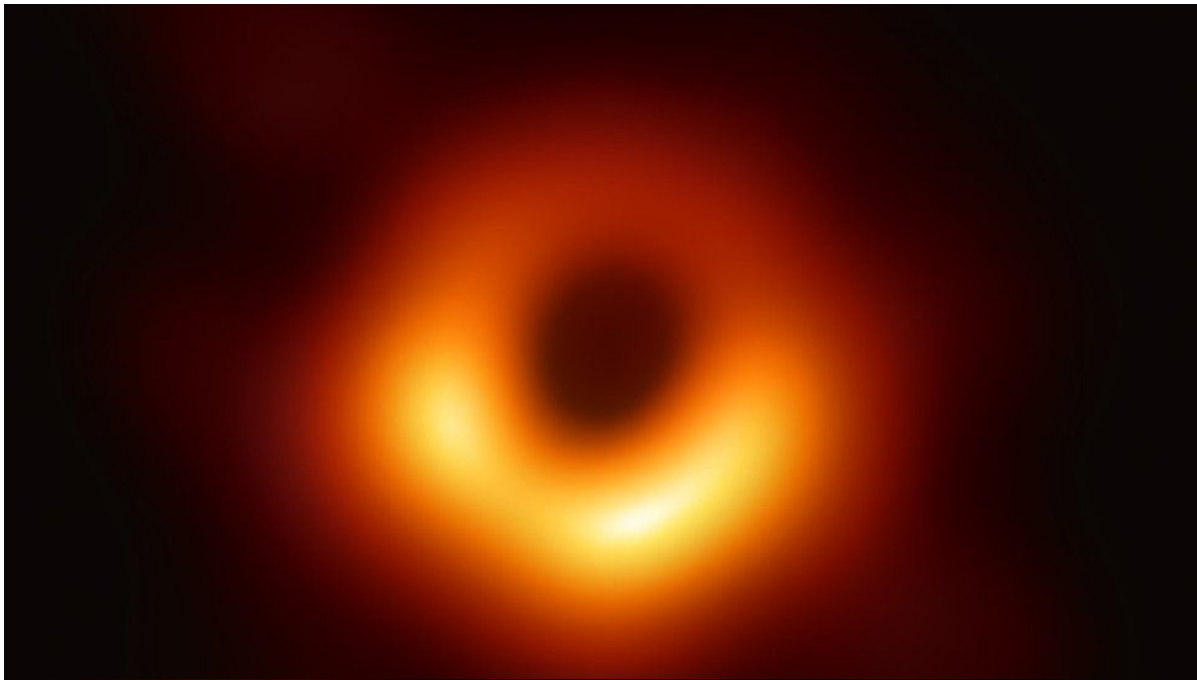



Sp23 - PRACTICAL INTRO TO RESEARCH (47975)

[Jump to Today](#)

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Classes: TTH 12:30-2:00 in PMA 15.201

Instructor: [Karl Gebhardt](http://www.as.utexas.edu/~gebhardt/index.html)  (<http://www.as.utexas.edu/~gebhardt/index.html>)

Office: PMA 15.224

Office Hours: W 1-2, or by appointment or just drop in anytime

Office Telephone: 471-1473

Email: gebhardt@utexas.edu
(<mailto:gebhardt@astro.as.utexas.edu>)

Teaching Assistant: Laurel Weiss

Office Hours:

The goal of this course is to give you the skills to become excellent researchers. It will focus on data analysis, making presentations and plots, good coding practices, using on-line material, and data mining. Coming out of the class, you should be attractive to researchers in the university as well as learn important skills for non-academic paths. Much of the coding will be based on Python and we will consider other platforms.

No textbook is required. Much of the relevant material will be articles that are available on the internet, so access to the internet is important. Lectures, along with many articles from the internet, will be provided online. I will add websites to the lists below during the semester.

GRADING:

The students final grade will consists of:

35% homework

35% project

30% in-class activities and class participation

Here is a list of example projects which will be updated: [projects.html](#)

(<https://utexas.instructure.com/courses/1351881/files/70026535?wrap=1>) 

(https://utexas.instructure.com/courses/1351881/files/70026535/download?download_frd=1)

General Resources

[list of text editors](#) (<https://utexas.instructure.com/courses/1351881/files/70026544?wrap=1>) 

(https://utexas.instructure.com/courses/1351881/files/70026544/download?download_frd=1)

[astropy tutorials](#)  (<https://learn.astropy.org/>)

[Python tutorial](#)  (<https://cscircles.cemc.uwaterloo.ca>)

[Linux tutorials](#)  (<http://www.ee.surrey.ac.uk/Teaching/Unix>)

[HETDEX](#)  (<http://hetdex.org>)

[NASA](#)  (<http://www.nasa.gov>)

[NED](#)  (<https://ned.ipac.caltech.edu>)

[GAIA](#)  (<http://sci.esa.int/gaia>)

[Picture of the Day](#)  (<http://antwrp.gsfc.nasa.gov/apod/astropix.html>)

[Space Weather](#)  (<http://spaceweather.com/>)

[AstroArchive](#)  (<http://arxiv.org/list/astro-ph/new>)

[Strassler's page](#)  (<http://profmattstrassler.com/>)

[LIGO](#)  (<http://www.ligo.org/>)

On-line Astronomy News

[Space.com](#)  (<http://www.space.com>)

[NY Times Science](#)  (<http://www.nytimes.com/pages/science/index.html>)

[BBC Science](#)  (<http://news.bbc.co.uk/hi/english/sci/tech/default.htm>)


[Sky and Telescope](#)  (<http://www.skyandtelescope.com>)

[SpaceRef](#)  (<http://www.spaceref.com>)

[Phys.org](#) (<https://phys.org/space-news/astronomy/>) (<https://phys.org/space-news/astronomy/>)

Class attendance and participation will be important to how you do in the class. Since we will not use a book, it is important to come to class. The calendar for the course is given on canvas. I will try to stick the schedule as closely as possible. If any dates change, I will make the changes in this file so

refer to this webpage for updates.





YOU BELONG HERE: A climate conducive to learning and creating knowledge is the right of every person in our community. Bias, harassment, and discrimination of any sort have no place here. If you notice an incident that causes concern, please contact the Professor, TA, and the Campus Climate Response Team (<http://diversity.utexas.edu/crt>  (<http://diversity.utexas.edu/crt>)).

STUDENTS WITH DISABILITIES: The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TTY. Also, please notify me of any modification/adaptation that you may require to accommodate a disability-related need. Specialized services are available on campus through Services for Students with Disabilities.






UNIVERSITY RULES: The University's deadlines and rules regarding dropping the course will be strictly enforced. I assume that you know the deadlines and the rules.

RELIGIOUS HOLIDAYS: By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.



Course Summary:

Date	Details	Due
Tue Jan 10, 2023	 Introduction! Introduction! Introduction!	12:30pm to 2pm
	 Text editor, python install Text editor, python install Text editor, python install	12:30pm to 2pm
Thu Jan 12, 2023	 Homework 1 Homework 1 Homework 1	due by 2pm
	 In-class 1 In-class 1 In-class 1	due by 2pm

Date	Details	Due
Tue Jan 17, 2023	 linux, text editor (https://utexas.instructure.com/calendar?event_id=3451875&include_contexts=course_1351881)	12:30pm to 2pm
Thu Jan 19, 2023	 Python hands-on (https://utexas.instructure.com/calendar?event_id=3451883&include_contexts=course_1351881)	12:30pm to 2pm
Tue Jan 24, 2023	 HETDEX presentation (https://utexas.instructure.com/calendar?event_id=3451882&include_contexts=course_1351881)	12:30pm to 2pm
Thu Jan 26, 2023	 Article Presentations (https://utexas.instructure.com/calendar?event_id=3451884&include_contexts=course_1351881)	12:30pm to 2pm
Tue Jan 31, 2023	 Project discussion and group selection (https://utexas.instructure.com/calendar?event_id=3451937&include_contexts=course_1351881)	12:30pm to 2pm
Thu Feb 2, 2023	 Projects selected (https://utexas.instructure.com/calendar?event_id=3451936&include_contexts=course_1351881)	12:30pm to 2pm
Tue Feb 7, 2023	 Data Analysis Basics (https://utexas.instructure.com/calendar?event_id=3451939&include_contexts=course_1351881)	12:30pm to 2pm
Thu Feb 9, 2023	 CCD presentation (https://utexas.instructure.com/calendar?event_id=3451940&include_contexts=course_1351881)	12:30pm to 2pm
Tue Feb 14, 2023	 Statistics and Data Analysis (https://utexas.instructure.com/calendar?event_id=3451944&include_contexts=course_1351881)	12:30pm to 2pm

Date	Details	Due
	include_contexts=course_1351881	
Thu Feb 16, 2023	 Statistics and Data Analysis (https://utexas.instructure.com/calendar?event_id=3451966&include_contexts=course_1351881)	12:30pm to 2pm
Tue Feb 21, 2023	 Project Presentations (https://utexas.instructure.com/calendar?event_id=3451962&include_contexts=course_1351881)	12:30pm to 2pm
Thu Feb 23, 2023	 Project Presentations (https://utexas.instructure.com/calendar?event_id=3451963&include_contexts=course_1351881)	12:30pm to 2pm
Tue Feb 28, 2023	 Plotting practics and exercises (https://utexas.instructure.com/calendar?event_id=3451999&include_contexts=course_1351881)	12:30pm to 2pm
Thu Mar 2, 2023	 Databases: SDSS, GAIA, JWST, HETDEX, others (https://utexas.instructure.com/calendar?event_id=3452018&include_contexts=course_1351881)	12:30pm to 2pm
Tue Mar 7, 2023	 Best practices for coding, Github (https://utexas.instructure.com/calendar?event_id=3452064&include_contexts=course_1351881)	12:30pm to 2pm
Thu Mar 9, 2023	 Other coding discussion (https://utexas.instructure.com/calendar?event_id=3452066&include_contexts=course_1351881)	12:30pm to 2pm

Date	Details	Due
Tue Mar 21, 2023	 Short presentation and project update (https://utexas.instructure.com/calendar?event_id=3452083&include_contexts=course_1351881)	12:30pm to 2pm
Thu Mar 23, 2023	 Short presentation with project update (https://utexas.instructure.com/calendar?event_id=3452084&include_contexts=course_1351881)	12:30pm to 2pm
Tue Mar 28, 2023	 Engaging with research, job opportunities, cv, etc (https://utexas.instructure.com/calendar?event_id=3452108&include_contexts=course_1351881)	12:30pm to 2pm
Thu Mar 30, 2023	 latex overleaf, draft cv (https://utexas.instructure.com/calendar?event_id=3452110&include_contexts=course_1351881)	12:30pm to 2pm
Tue Apr 4, 2023	 Project work (https://utexas.instructure.com/calendar?event_id=3452127&include_contexts=course_1351881)	12:30pm to 2pm
Thu Apr 6, 2023	 Project work (https://utexas.instructure.com/calendar?event_id=3452139&include_contexts=course_1351881)	12:30pm to 2pm
Tue Apr 11, 2023	 Career paths and CVs (https://utexas.instructure.com/calendar?event_id=3452263&include_contexts=course_1351881)	12:30pm to 2pm
Thu Apr 13, 2023	 Presentations (https://utexas.instructure.com/calendar?event_id=3452240&include_contexts=course_1351881)	12:30pm to 2pm

Date	Details	Due
Tue Apr 18, 2023	 Presentations (https://utexas.instructure.com/calendar?event_id=3452239&include_contexts=course_1351881)	12:30pm to 2pm
Thu Apr 20, 2023	 Wrap up and plans for research (https://utexas.instructure.com/calendar?event_id=3452238&include_contexts=course_1351881)	12:30pm to 2pm