

AS 105 – Alien Worlds (Spring 2017)

Course Syllabus

Course Description:

Astronomy 105 (AS105) focuses on the search for and study of extraterrestrial worlds. We will embark on a detailed examination of our solar system, and the discovery and characterization of the thousands of planets discovered orbiting other stars. This course will examine alien worlds we can touch, alien worlds on which we can land (or have landed), alien worlds that are studied from a great distance, and the question of how common life is in the Universe. Students will use telescopes to observe the worlds of our solar system, learn the tools needed to interpret astronomical observations, and be exposed to the myriad discoveries coming from current studies of extrasolar planets, including recent results that indicate planets around other stars appear to be common.

Instructor:

Professor Philip Muirhead

Office: CAS 403

Office Phone: 617-353-6553

Email: philipm@bu.edu

Office Hours: Mon, Wed 2-3:30 in CAS 403, please email ahead if possible

Teaching Fellows:

Ms. Aurora Kesseli, aurorak@bu.edu

Sections: A6, A7, A8, A9, B1

Office hours: Tues 10-12, Wed 3:30-4:30, CAS 422

Mr. Isaac Lopez, idlopez@bu.edu

Sections: A2, A3, A4, A5

Office hours: Wed 2-3, Fri 10-12, CAS 524

Grading:

30% Homework

10% Night Labs

20% Midterm Exam

20% Final Exam

10% Lecture participation

10% Discussion participation

Lectures:

Tuesdays and Thursdays, 2:00-3:15 in STO B50

Students are required to attend all lectures, with attendance taken via the TopHat classroom response system (www.tophat.com). You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message. You can visit the Top Hat Overview (<https://success.tophat.com/s/article/Student-Top-Hat-Overview-and-Getting-Started-Guide>) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

An email invitation will be sent to you by email, but if don't receive this email, you can register by simply visiting our course website: <https://app.tophat.com/e/884337>

Note: our Course Join Code is 884337

Top Hat will require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing.

Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in app support button, or by calling 1-888-663-5491.

Discussion Sections:

Students are required to attend discussion sections. Students will be given a participation grade based on attendance and participation in discussions.

Discussion times are listed here:

<https://www.bu.edu/academics/cas/courses/cas-as-105/>

Labs:

Students are required to attend 3 lab exercises, all taking place in the evening: a lab at the planetarium (take the T to the Museum of Science, Boston) and two labs at Judson Coit Observatory (roof of CAS, follow staircase left of room 520 all the way to the roof).

The Planetarium Lab is offered on February 8th and February 9th starting at 6:30pm at the Museum of Science (only attend one showing). Please allow plenty of time to get from BU's campus to the Museum of Science (at least 45 minutes). If you are late, the planetarium operator will not grant you entrance. We will hand out a worksheet before the program, and after you will turn it in to a TF. Note that it is not possible for us to schedule an additional planetarium visit. You only need to attend one of the shows and it is free for AS 100-level students. Seats are limited, so please do not bring friends who are not enrolled in the 100-level astronomy courses. Please indicate which day you would prefer to attend using this Doodle poll. If one day is full, you must attend the other day:

<http://doodle.com/poll/un7gkk7bqfswed7e>

The first Coit Observatory lab (Night Lab 1: *Motions in the sky*) will take place on a clear Monday, Tuesday or Thursday starting at 8:30pm from January 24 to March 16, weather permitting. Similarly, the second Coit Observatory Lab (Night Lab 2: *Name that star*) will take place on a clear Monday, Tuesday or Thursday starting at 8:30pm from March 20 to May 1, weather permitting. Each night lab takes roughly 1 hour.

To find out if lab is being held, call 617-353-2630 for a recorded message at 7:30pm. Choose option #1 to see if the night lab will be held that night and option #2 for other night lab information. Lab manuals are available on the BU Astronomy website:

<http://www.bu.edu/astronomy/undergraduate/manuals/>

Website:

We will use Blackboard for course materials, homework assignments and grades:

<https://learn.bu.edu>

Textbook:

There are three textbooks for the course:

A Student's Guide to the Mathematics of Astronomy by Daniel Fleisch and Julia Kregenow, available at BU Barnes & Noble.

How to find an Exoplanet by John Asher Johnson, available at BU Barnes & Noble.

Strange New Worlds by Ray Jayawardhana, available online through the BU library and JSTOR.

Homework:

Homework is done online via Blackboard. Answers will be made available soon after the homework is due, so in general no late homework will be accepted. Homework will be assigned with due dates in lecture, typically on Sunday night at midnight.

Exams:

There will be 1 midterm exam and 1 final exam. The midterm will be held in class on Thursday March 2nd, before Spring Recess. The final exam day and time will be announced later in the semester.

Attendance & Late Policy:

You are expected to attend class. If you miss a class, check Blackboard for any assignments or news and talk with a fellow student to learn what else you missed. Under normal circumstances, late homework or in-class worksheets will not be accepted. The exams must be taken at the scheduled times.

Make up Policy:

We are aware that extraordinary circumstances can arise preventing attendance or completion of homework. There will be no make-up or late assignments accepted, and no scheduled make-up exams. Instead, we will drop the lowest homework grade and permit one absence from lecture and one absence from discussion following the add deadline (Feb 1).

Classroom Etiquette:

Please arrive punctually for the start of lecture, discussion and the labs, and remain for the duration of the class.

Academic integrity:

Group study is encouraged, but your work must be your own. Work that is copied will not be given any credit. If an answer in a homework question or a lab report requires written sentences, do not copy your answer directly from the textbook, a website, or any other source. All students are expected to follow the BU Academic Conduct Code (www.bu.edu/academics/resources/academic-conduct-code/). Cases of suspected academic misconduct will be referred to the Dean's .

Important Dates:

January 24: Night Lab 1 begins (Mon, Tues, Thurs at 8:30pm, weather permitting)

February 1: Last Day to Add Courses

February 20: Presidents' Day Holiday

February 21: Substitute Monday Schedule (no class)

February 23: Last Day to Drop Course without a "W" grade

March 2: Midterm

March 4 - 12: Spring Recess

March 16: Last opportunity to complete Night Lab 1 (But don't wait! Depends on weather)

March 20: Night Lab 2 begins (Mon, Tues, Thurs at 8:30pm, weather permitting)

May 1: Last opportunity to complete Night Lab 2 (But don't wait! Depends on weather)

May 3: Last Day of Classes