

Syllabus for AST 4300

Galactic Astronomy

Spring 2022

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Office: 211 Bryant Space Science Center
Office Hours: M 2-3pm, W 1-2pm
Class Periods: MWF Period 9 (4:05-4:55)

Online Course Information: Handouts and assignments will be posted on Canvas.

Pre-requisites and Co-requisites: AST 3018, AST 3019

Credits: 3

Textbooks: Galactic Astronomy by Binney & Merrifield (optional)
Galaxies in the Universe by Sparke & Gallagher (optional)

Course Content

This course is designed to be an introduction to Galactic astronomy for science majors. As such, a good working knowledge of mathematics including algebra, trigonometry, and calculus is assumed. Experience with computer programming in a relevant language (e.g. python, C++, or similar) will be advantageous. One of the goals of this class is to familiarize you with the components of the Milky Way galaxy and its neighbors in the Local Group. The approach will concentrate largely on the stellar populations of these systems, and the techniques used to study their chemical abundances, ages, and distances. Another goal will be to place the Milky Way in the broader context of galaxy formation and evolution. This course will also introduce you to scholarly literature in this field and aim to teach critical thinking in the evaluation of scientific results.

Course & Grading Information

Your grade for the course will be based on the following:

Assignments and Participation	20%
Class Projects	40%
Mid-Term Exams (Feb 4, Mar 18, Apr 20)	40%

Details regarding UF grading policies can be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Homework

Homework assignments must be submitted on time (at the beginning of class) to receive full credit. For late assignments there will be a deduction of 33% per day. No homework extensions will be granted unless the extension is approved in advance of the deadline or documentation of a medical issue is provided.

Exams and Projects

All exams, which will be during the regular semester, will focus upon material covered since the previous exam. Projects must to be done **independently**. You are welcome to provide guidance to one another on how to write computer code, but these projects are *not* collaborative. The last project will be due during finals week on April 27th at 10am.

Class Expectations

You are also expected to not engage in any activity during class that is distracting to other students or detrimental to their ability to learn. Please be courteous to your fellow classmates and turn off the ringer on your phones.

Attendance and Make-up Policy

Students are expected to complete all requirements by the specified due dates. If you miss an assignment due to an excused absence as specified in the university attendance policies (catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/), you will be allowed a reasonable time to make up the missed work. The format of any make-up exam will be at the discretion of the instructor. While there will be no formal deduction for missing a class, participation is a component of your grade for the semester and regular attendance is thus strongly encouraged.

Academic Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (sccr.dso.ufl.edu/process/student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor in this class.

I strongly adhere to the previous statements and **DO NOT TOLERATE CHEATING.**

Special Accommodations

Students who require a classroom accommodation are required by UF policy to arrange accommodations themselves when needed. Students must first contact the Dean of Students Office of Disability Resources in Peabody 202 (352-392-1261). Please see the University of Florida Disability Resources website for more information at <http://www.dso.ufl.edu/drp/services/>. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

UF Counseling and Wellness Services

On-campus resources are available at the UF Counseling & Wellness Center (392-1575) for students experiencing personal or stress related problems.

Student Feedback

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at gatorevals.aa.ufl.edu/public-results/.

Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations or student-led instruction, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Grading scale: The following grading scale is guaranteed:

Letter	% Points	Letter	% Points	Letter	% Points
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Grade		Grade		Grade	
A	93 – 100	B-	80 – 83	D+	67 – 69
A-	90 – 92	C+	77 – 79	D	64 – 66
B+	87 – 89	C	74 – 76	D-	60 – 63
B	84 – 86	C-	70 – 73	E	< 60

Your actual final grade will be no lower than on this scale, which may be curved based upon the overall performance of the class.

Preliminary Lecture Schedule (Subject to Change)

The table below indicates the approximate dates for each topic/chapter. Updated will be given in class as the schedule changes. Journal articles will also be assigned periodically as reading.

Lecture Date	Lecture Content	Relevant Section in Binney & Merrifield
Week 1 (1/5)	<i>A Brief History of Galactic Astronomy</i>	1
Week 2 (1/10)	<i>Astronomical Measurements</i>	2.1-2.3,3.7
Week 3 (1/17)	<i>The Properties of Stars I</i>	3.1-3.4
Week 4 (1/24)	<i>The Properties of Stars II, Evolution of Stars and Stellar Populations I</i>	3.5-3.6,5.1
Week 5 (1/31)	<i>Star Clusters I</i> Exam on 2/4	5.4-6.1
Week 6 (2/7)	<i>Star Clusters II</i>	6.2
Week 7 (2/14)	<i>The Interstellar Medium</i>	9
Week 8 (2/21)	<i>Components of the Milky Way I</i>	10.1-10.3
Week 9 (2/28)	<i>Components of the Milky Way II</i>	10.4-10.6
Week 10 (3/14)	<i>Evolution of Stars and Stellar Populations II</i> Exam on 3/18	5.2-5.3
Week 11 (3/21)	<i>Stellar Remnants and Assorted Topics</i>	10.6
Week 12 (3/28)	<i>The Local Group and Near Field Cosmology</i>	
Week 13 (4/4)	<i>Galaxy Formation</i>	4.1,10.7
Week 14 (4/11)	<i>The Milky Way in the Era of Gaia</i> <i>Short Project Presentations</i>	
Week 15 (4/18)	<i>The Milky Way in the era of Gaia</i> Exam on 4/20	