

SYLLABUS--PHYSICS 162--ELEMENTARY ASTRONOMY— Spring 2023

ONLINE COURSE -- Online Astronomy Course

100% asynchronous

Satisfies general education requirement (Origins and Influences Pathway)

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nicadd.niu.edu/~hedin/162/162.html

Observatory: <http://www.physics.niu.edu/physics/observatory/index.shtml>

The course is an introduction to astronomical science extending from historical astronomy through the most recent discoveries of astrophysics including stellar evolution, supernovas, white dwarves, neutron stars, black holes, dark matter and energy, exoplanets, and the Big Bang. The course will also cover techniques used by astronomers and some of the latest conjectures such as extra dimensions or multiple universes, and the conditions that allowed life to form and develop.

BOOK: NOT REQUIRED. Suggest Discovering the Essential Universe by Comins editions 4 or 5 or 6. Assignments will be on course web page.

Section	Book Chapter Essential Universe Ed 6
1 View of Universe and the Sky	1
2 Gravitation and Planet Motion	2
3 Light and Telescopes	3
4 The Sun	9
5 Characteristics of Stars	10
6 The Lives of Stars	11
7 The Death of Stars	12
10 Formation of the Solar System	4+5
11 Astrobiology	15
8 The Galaxies	13
9 Cosmology	14

Test 1. Sections 1,2,3,4 February 21

Test 2. Sections 5,6,7 March 30

Test 3. Sections 8,9,10,11 May 3

Test 4. final all sections(optional) May 9

Class Operations: In a typical week, there will be 1-2 "lectures" on the class web page plus some number of videos or links to other pages. You should go through the lectures and check out the links.

Each lecture will have a "feedback" where you tell me something you learned from that day's presentation plus the "feedback phrase" mentioned in the presentation. Two weeks of feedbacks (usually 3-4 feedbacks) are due the Friday of every other week, and you can send in early. There will also be six assignments which are usually due a few Mondays after they are assigned, which can also be turned in early.

There are three exams plus an optional final (see grading). Example exams are on the web page and are the best guide for studying for the exam.

Communication: You should e-mail me your feedbacks and assignments in some suitable format (e-mail text for feedback is best though docx or pdf is fine, and docx or pdf files for the assignments though some students have sent me a photo of their completed assignment). The assignments are posted on the course web page. Tests will use Blackboard. I will give the time range, typically about a 30 hour window, for exam taking near the day of the test. The tests are (obviously) open book and open notes. If you can not take the exam that day, contact me before the day of the exam. If you have questions, e-mail me at hedin@niu.edu. E-mail is our way of communicating for this class. If your question applies to the entire class, I will then e-mail through Blackboard the reply to everyone.

Grading: Each test will count 100 points and the lowest test score will be dropped. There will be no makeups allowed after the day of the test; a missed test will be considered as the lowest score and dropped. You can choose to skip the final and just count the first three tests. Sample tests are on the web page. The 6 assignments receive 1/2 credit if late. They contribute 120 points. The "lecture feedbacks" will count 4 points per lecture with 100 points total and are due as shown on the web page in blocks of 3 or 4 feedbacks (1/2 credit if late). The last day to turn in assignments or feedbacks for late credit is the day of the final. You can always turn in feedbacks and assignments early. Any feedback points more than 100 count as extra credit. There are 520 total points in the class.

Class Curve 400+	A	The letter grades posted on Blackboard are
360-399	B	meaningless. If you take 4 exams, Blackboard
310-359	C	does not drop the lowest exam and so the
260-309	D	Blackboard sum of points is incorrect

There will not be any "minus" grades in this class. I will award "plus" grades (like B+) as appropriate and will determine how to do so at the end of the term.

The learning goals of this course are an introduction to the components making up our Universe. The learning outcome of this course is the student being able to explain some of the components of the Universe, and include a) analyze issues that interconnect human life and the natural world and b) utilize technology to achieve specific goals.

NIU is committed to providing an accessible educational environment and any student requiring an academic accommodation due to a disability should let their faculty member know as soon as possible, and are encouraged to contact the DRC at 815-753-1303 or drc@niu.edu. Please note that you will not

be required to disclose your disability, only your accommodations. The sooner you let your faculty know your needs, the sooner they can assist you in achieving your learning goals in this course.

Non-Discriminatory Language: This class will promote non-discriminatory language practices.

Academic Misconduct: For a detailed description of the university's definition of academic misconduct, and the process by which it is adjudicated, please refer to the Student Code of Conduct. Sanctions (consequences) for committing academic misconduct include but are not limited to, failure of the assignment, failure of the course, and suspension or expulsion from Northern Illinois University. Cheating and plagiarism of one's own or another's work will not be tolerated. For this class this means do your own work. If you are doing an assignment with a friend, that is fine but please write up your own report. Academic integrity and civility are expected of every member of the NIU community. Please review the Undergraduate Catalog for more information on this topic. Religious Observances: NIU does not observe religious holidays. It is the university's policy, however, to reasonably accommodate the religious observances of individual students in regards to class attendance, scheduling examinations, and work requirements. Religious observance includes all aspects of religious observance and practice as well as belief. Absence from classes or examinations for religious observance does not relieve students from responsibility for any part of the course work required during the period of absence. To request accommodation, students who expect to miss classes, examinations, or other assignments as a consequence of their religious observance shall provide instructors with reasonable notice of the date or dates they will be absent.