

Upper Iowa University Independent Study Program

PHY 110-08 Introduction to Astronomy

Please read this introduction carefully and thoroughly before starting the course and refer to it for guidance as you proceed through the course!

COURSE DESCRIPTION:

This course provides a fundamental understanding of celestial objects, with emphasis on the Sun, the Moon, the planets and the stars. Major topics include telescopes, the formation of the solar system and the Universe, solar energy and the life cycles of stars. Three semester credits.

REQUIRED COURSE MATERIALS:

1. Text: *Explorations: An Introduction to Astronomy*, Fifth Edition, 2008. Thomas T. Arny. McGraw-Hill. New York, NY. 594 pp.
2. Syllabus (You're reading it right now!)
3. A CD-ROM and a password to an Internet help site accompany the text, but these are optional for you to use. They would be very helpful to browse; but I realize that not everyone has access to a computer or the Internet, so I will not require their use. The CD-ROM has some great visual aids, such as mini-movies of planetary motion. The Internet site also has useful study aids, such as computerized chapter quizzes and flashcards of terms and definitions.

You may purchase your textbook through MBS Direct by calling their toll free number at: 800-325-3252 or through the UIU homepage: www.uiu.edu. Click on the link for current students then select order textbooks from the options in the left hand column. Follow the link and select Independent Study for your location.

GENERAL EDUCATION TASK:

This class fulfills a General Education requirement for the Natural Sciences. Upper Iowa University assesses how well students master their general education studies by assigning a specific task. The Natural Sciences Task is stated as follows: ***“Apply scientific method, including observation, hypothesis and experiment, to support conclusions involving either physical or biological problems.”*** In your first unit (particularly in a supplemental instruction section of this syllabus), you will learn about the scientific method and how it is used to solve problems in the physical sciences. You will apply this knowledge to a practical problem in your Unit 1 lesson. If you do not feel comfortable with this information or you need help, please feel free to contact me – I want you to get this!

COURSE OBJECTIVES:

1. Students will have a solid understanding of the **scientific method** and will be aware of historically important contributions in the field of astronomy.
2. Students will have an understanding of how Newton's Laws of Gravity and Motion impact the movement of celestial objects, such as planets.
3. Students will have a basic understanding of the nature of light, the properties of atoms, and how they interact with one another.
4. Students will develop an appreciation of how various types of telescopes are used.
5. Students will have an understanding of how the Earth and its atmosphere were formed.
6. Students will have an understanding of how the Moon was formed, and how it contributes to both eclipses and tides on Earth.
7. Students will have an understanding of the solar system and how it was formed.
8. Students will have an understanding of the similarities and differences among the inner planets – Mercury, Venus, Earth and Mars.
9. Students will have an understanding of the similarities and differences among the outer planets – Jupiter, Saturn, Uranus, and Neptune.
10. Students will have an understanding of other celestial objects in the solar system, such as dwarf planets, meteors, asteroids and comets.
11. Students will have an understanding of how our Sun is structured and how it generates the energy for the entire solar system.
12. Students will have an understanding of the properties of stars, such as their distances from the Sun, their masses, their luminosities and their temperatures.
13. Students will have an understanding of how stars are formed and what becomes of them when they run out of energy.
14. Students will have an understanding of the stellar remnants, such as white dwarfs, neutron stars and black holes.
15. Students will have an understanding of the structure of the Milky Way Galaxy.
16. Students will have an understanding of other galaxies and galaxy clusters in the Universe.

17. Students will have an understanding of how the Universe was formed, and of what will become of the Universe in the distant future.

COURSE OVERVIEW:

The book contains seventeen different chapters, along with a brief preview and three “essay” sections. The course is divided into four lessons. Assignments for each lesson should be submitted as a packet with an Assignment Cover sheet (or the required information on it) attached.

Each lesson will have a series of objective questions that you will be required to answer. You should read the sections of text that correspond to each lesson, and then read through the objective questions on the assignments. It would help to reread the chapter material a second time as you attempt to answer the lesson objectives that are required. You do not have to copy the questions; only answers need be submitted. Typewritten answers are strongly preferred, but handwritten answers (legibly in ink) will be accepted. **Your answers should be written in complete sentences, using correct spelling and grammar, as should be expected of a college student. Failure to do so will result in the loss of points for the lesson.**

Your text has additional questions for review, key terms, and a self-test at the end of each section. It is strongly advised that you study the key terms, attempt the self-test and answer the additional questions for review in each section of the text. These materials should be done for the practice, and they do not have to be turned in to the instructor. Additionally, your text comes with a CD-ROM and a web access with very helpful graphics and study aids. I strongly suggest that you take advantage of these materials, as they will help you better understand and visualize the text information. However, this is optional – you do not need to view these computerized instructional materials to take the exams. Naturally you should study to develop a good understanding of the objectives and concepts of each unit before attempting to take the exams.

COURSE OUTLINE:

- UNIT 1:**
- (1) Read the Preview, Chapter 1, Essay 1, Chapter 2, Chapter 3 and Chapter 4.
 - (2) *Read the section on Scientific Method in the Supplemental Instructional Materials for Unit 1, located later in this syllabus.*
 - (3) Complete and submit the Lesson 1 Assignment (see Lesson Assignments section of this syllabus).
 - (4) Study the corrected Lesson 1, when you receive it back from the instructor, as well as the suggested end-of-chapter review questions, key terms and self-tests. The CD-ROM material and web site would be helpful to review, *but remember they are **not** required.*
 - (5) Complete Exam I (proctored).

- UNIT 2:**
- (1) Read Chapter 5, Essay 2, Chapter 6, Chapter 7 and Chapter 8.
 - (2) Complete and submit the Lesson 2 Assignment (see Lesson Assignments section of this syllabus).
 - (3) Study the corrected Lesson 2, when you receive it back from the instructor, as well as the suggested end-of-chapter review questions, key terms and self-tests. The CD-ROM material and web site would be helpful to review.
 - (4) Complete Exam II (proctored).

- UNIT 3:**
- (1) Read Chapter 9, Chapter 10, Chapter 11 and Chapter 12.
 - (2) Complete and submit Lesson 3 Assignment (see Lesson Assignments section of this syllabus).
 - (3) Study the corrected Lesson 3, when you receive it back from the instructor, as well as the suggested end-of-chapter review questions, key terms and self-tests. The CD-ROM material and web site would be helpful to review.
 - (4) Complete Exam III (proctored).

- UNIT 4:**
- (1) Read Chapter 13, Chapter 14, Chapter 15, Chapter 16, and Chapter 17.
 - (2) Complete and submit Lesson 4 Assignment (see Lesson Assignments section of this syllabus).
 - (3) Study the corrected Lesson 4, when you receive it back from the instructor, as well as the suggested end-of-chapter review questions, key terms and self-tests. The CD-ROM material and web site would be helpful to review.
 - (4) Complete Exam IV (proctored).

EXAMINATION INFORMATION:

Exams consist of 50 multiple-choice questions (four choices, only one is correct), each worth two points, and 25 matching and/or fill-in-the-blank questions, each worth two points. Each exam is worth a total of 150 points. The last exam (Exam IV) is not comprehensive; it covers only the Unit 4 lesson material.

There is no penalty for guessing. In other words, don't leave an answer blank on an Exam, or you will definitely lose those points. Narrow down the choices as best as you can, then choose the best answer.

For multiple choice questions, carefully read each question *and* all four choices before answering. Only one choice will be correct.

COMPOSITION OF GRADE:

Unit 1 Assignment	50 points
Unit 2 Assignment	50 points
Unit 3 Assignment	50 points
Unit 4 Assignment	50 points
Exam I	150 points
Exam II	150 points
Exam III	150 points
Exam IV (Final)	<u>150 points</u>
TOTAL	800 points

FINAL GRADE SCORES:

A	91.0-100%	728-800 points
A-	90.0-90.9%	720-727 points
B+	89.0-89.9%	712-719 points
B	81.0-88.9%	648-711 points
B-	80.0-80.9%	640-647 points
C+	79.0-79.9%	632-639 points
C	71.0-78.9%	568-631 points
C-	70.0-70.9%	560-567 points
D+	69.0-69.9%	552-559 points
D	61.0-68.9%	488-551 points
D-	60.0-60.9%	480-487 points
F	0-59.9%	0-479 points

HELPFUL GENERAL SUGGESTIONS:

1. To learn the most from each unit, carefully read the textbook sections listed in the syllabus. Writing down key concepts or terms with their definitions often helps students to better remember the material. *Note: In a few cases, a term's definition may not be so obvious in the chapter reading. The glossary at the end of the textbook nicely defines key terms, in case you cannot grasp a definition from the chapter reading.*
2. You should try to answer all additional study questions and define all required key terms (at the end of each Chapter) as you study for an exam; however, you *do not* need to submit these answers to me. You *do* need to submit answers to the required LESSON ASSIGNMENTS that are listed in this syllabus.

3. It is usually best to submit *one lesson at a time*, and then take the EXAM on that assignment before proceeding to the next one. This way, you will have less chance of confusion on the material to be covered in an EXAM. Also, it would help you to wait until receiving my comments and feedback on one ASSIGNMENT before submitting the next ASSIGNMENT or taking the next EXAM. This way, you may be able to correct problems in your future assignments (such as writing too little or too much), and you will have the corrected assignment to use as a study guide.
4. When submitting ASSIGNMENTS, try not to copy your answers word-for-word from your text, or from any other book, or from someone else's assignments. This is plagiarism! You learn little from copying answers verbatim. Write your answers in your own words, so I can see that you understand the material. Plagiarism may result either in receiving zero points for that lesson's assignment or a failing grade for the entire course (at the instructor's discretion).
5. It is usually a bad idea to schedule or take more than one EXAM on the same day; this is particularly true for science exams. This sometimes becomes a necessity when students procrastinate, and then they are forced to complete ASSIGNMENTS or EXAMS in a very short time period. It is in your best interest not to procrastinate, so that you have plenty of time to study and take each EXAM individually.
6. Keep up with the course on a weekly basis. It is hard to get back into course materials if you haven't reviewed them for several weeks.
7. Please keep in mind that your instructor has a rather demanding day job, teaching at the Fayette campus. There will be times when I get quite busy on campus, which may result in a lag of processing External Degree ASSIGNMENTS and EXAMS. I always try to process materials on a first-come, first-served basis. I apologize, in advance, if I am not as expedient with grading materials as you would prefer.
8. Feel free to contact me if you have questions regarding any aspect of the course. Please leave a voice message with your name and phone number if you call me and I am not available.

HINTS FOR COMPLETING LESSON ASSIGNMENTS:

1. Each lesson assignment consists of objectives adapted from *the Questions for Review* section at the end of each chapter. Please submit *complete* assignments, with cover information, containing *all 25 objectives*. It is not helpful for me to receive incomplete assignments with objectives from just one or two chapters at a time. I cannot submit an assignment grade to the External Degree office or return any of the assignment to you until I have graded the *entire* assignment. Also, pieces of assignments can get misplaced if they are not submitted together.

2. **Always attach an assignment cover sheet (located in the syllabus) with each lesson. If you e-mail assignments, please make sure that you include all of the information normally requested on the assignment cover sheet (name, date, lesson number, program location, address and phone numbers).** Make sure your name appears on the first page of the assignment, just in case the assignment cover sheet becomes detached.
3. There are 25 objectives for each lesson, each worth two points. A total of 50 points can be earned per lesson. I will be reading your answers to these questions carefully to insure that you have a good understanding of the material. Even though each objective is worth only two points, it is important to answer each objective thoroughly. This assignment is a major part of the studying process for the Exam, so I encourage you to do a good job.
4. I will give zero points for each objective where you have provided no knowledgeable answer or one point for each objective where you have not satisfactorily answered the objective (at my discretion). A satisfactory answer for the objective will earn two points. Also, I will take off points for answers that are not written in complete sentences with acceptable spelling and grammar. Some objectives have multiple questions, so please make sure you answer all parts of the objective to get full credit.
1. For most objectives, one or two *complete* sentences will suffice, although some objectives may require a bit more detail. Please keep in mind that the *quality* of your answer is more important than the *quantity* of words you use. I must feel confident that you understand the objective in order for you to receive credit for it.
6. Again, I will stress that you write your answers in complete sentences. This is a college-level course, so please show me that you can write professionally at a college level. Points may be taken off for unprofessionally written answers.
7. It is my hope (I am the eternal optimist) that you are taking this course for the *educational experience* and **not just the grade**. So please don't send in half-hearted work and just expect me to award full credit for it. I dislike the excuse "but Dr. Figdore, they are only worth two points". I take this course seriously, and I expect the same from you.
8. **REMEMBER, DO NOT COPY ANSWERS TO OBJECTIVES WORD-FOR-WORD FROM THE BOOK OR ANY OTHER SOURCE.** Put *your* answers in *your own* words, or your grade may suffer.

CHEATING, ACADEMIC DISHONESTY AND PLAGIARISM:

Because cheating, academic dishonesty and plagiarism are affronts to the University community as a whole and a denial of the offender's own integrity, they will not be tolerated. Cheating includes but is not limited to:

- the use of unauthorized books, notes or other sources in the giving or securing of help in an examination or other course assignments,
- the copying of other students' work or allowing others to copy your work,

- the submission of work that is not your own or allowing others to submit your work as theirs,
- the submission of the same work for two or more classes without the approval of any instructors involved.

Academic dishonesty includes, but is not limited to:

- sharing academic materials knowing they will be used inappropriately,
- having access to another person's work without permission,
- providing false or incomplete information on an academic document,
- changing student records without approval.
- obtaining and using texts intended for instructor use only.

Plagiarism includes, but is not limited to:

- the presentation of another's published or unpublished work as one's own,
- taking words or ideas of another and either copying them or paraphrasing them without proper citation of the source,
- using charts, graphs, statistics or tables without proper citation.

Detected cheating, academic dishonesty, or plagiarism will result in consequences that may, at the instructor's discretion, include course failure. In addition, an offender may be reported to the Senior Vice President for the Extended University, the Dean of the Extended University, or designee for possible disciplinary action, which may include suspension or dismissal from the University. Upper Iowa University may make use of various plagiarism detection services. Individuals, by enrolling in courses offered by the University, consent to submission by the University of course-related assignments to such services and the retention of a copy of such assignments by the service.

Cheating, academic dishonesty and plagiarism infractions are tracked by the Dean of the Extended University, and cumulative evidence collected from multiple incidents will be considered when making suspension or dismissal decisions.

Extended University Catalog 2008/09 page 98.

http://www.uiu.edu/catalogs/eu/policies_1.html#conduct

ATTENDANCE:

Even though a student does not attend a regular classroom in the traditional sense and keep up with a set schedule of assignments, it should be pointed out how important it is to keep yourself on a regular timely schedule if possible to complete and send in units. It is too easy to set work aside and decide to do it later. Suddenly, the need to complete assignments and get them in by deadlines can become stressful and, at times, impossible. The key would be to set time aside on a regular basis and submit work in a timely manner.

LIBRARY RESOURCES:

As a student of Upper Iowa University, you have access to the resources of the Henderson-Wilder Library on the Fayette campus. If travel to the campus is not feasible, you can access the library through the University's website. Go to: www.uiu.edu and click on the Library option located on the left side of the home page. If you would like to use InfoTrac, please contact the UIU Library staff at library@uiu.edu.

WRITING PROFICIENCY:

It is recommended that all papers and research are done in the APA style. We expect appropriate writing skills of proper grammar, punctuation, sentence structure, paragraph development, and logical sequence of thought in all written work, and exams.

It is recommended that all students purchase the APA guide/manual listed on the UIU website. *Publication Manual of the American Psychological Association*. \$27.00 new.

CITATION:

Encyclopedias of any kind, including the very popular Wikipedia, are not primary sources and should not be cited or used in constructing academic papers at the graduate or undergraduate level. They can, however, be useful to help gather some background information and to point the way to more reliable sources.

WITHDRAWAL:

If you wish to withdraw prior to the last day of the enrollment period you must contact the Center for Distance Education office by phone or in writing. After your original six month enrollment period you no longer have the option to withdraw from the course. You must finish the course or have a final grade assigned based on the coursework submitted.

SPECIAL NEEDS:

If you require accommodation for special needs, please provide documentation to: Academic Advising Coordinator.

This syllabus is tentative and subject to change.