



김천대학교  
GIMCHEON UNIVERSITY

# Gimcheon University

## AST 1A2 Astronomy II

### Course Information

**Term:** Summer 2021

**Instructor:** TBA

**Contact Hours:** 58 hours

**Class Time:** 8:30 - 10:20

**Credits:** 4

**Course Format:** face to face

### Brief Description

Following the course AST 1A1 Astronomy I, students will continue exploring the nature of the galaxies and the universe in astronomy study. However, the focus of this course will turn to the Sun and the Stars, the Galaxies and the Universe. Beyond these topics, students will get to know the origin and evolution of the universe, including the Big Bang Theory and some other relevant hypothetical components: dark matter, black holes, gravitational waves as well.



## **Previous Requisites**

AST 1A1 Astronomy I

## **Learning Results**

Having successfully completed this course, students will be able to:

1. Describe the basic information of the planets in the solar system, and some other celestial bodies like comets;
2. Use telescopes to observe and to recognize the patterns and the main stars in the night and day sky;
3. Interpret the phases of the moon and the relationship between the Earth and the moon, and the Sun and the moon;
4. Introduce the human activities in the space and how these activities contribute to the understanding of the universe;
5. Explain how astronomers measure electromagnetic radiation from various sources and use that information to derive an understanding of astronomical objects and phenomena;
6. Use planetarium software like STELLARIUM to find the planets in the universe.



## Methodology

| Methodology                       | Hours      | Hours of work<br>Face-to-face | Hours of work<br>Non Face-to-<br>face |
|-----------------------------------|------------|-------------------------------|---------------------------------------|
| Lectures                          | 50         | 88 hours (60%)                |                                       |
| Practice teaching                 | 8          |                               |                                       |
| Assessment                        | 30         |                               |                                       |
| Personal study                    | 30         |                               | 68 hours (40%)                        |
| Tasks                             | 22         |                               |                                       |
| Practical teaching<br>preparation | 10         |                               |                                       |
| Bibliographic search              | 6          |                               |                                       |
| <b>TOTAL</b>                      | <b>156</b> | <b>88</b>                     | <b>68</b>                             |

## Required Textbook

1. Jeffrey Bennett, Megan Donahue, Nicholas Schneider & Mark Voit, *The Cosmic Perspective*, 8th Edition, Pearson Education, Inc. Press, 2017.
2. Lauren Jones, *Observation Exercises in Astronomy*, 1st Edition, Pearson, 2010.

## Course Content

| Week | Lesson | Content                                   |
|------|--------|---|
| 1    | 1      | The Sun and the Stars<br>Our Star         |
|      | 2      | The Sun and the Stars<br>Our Star (Cont.) |



|   |    |   |
|---|----|---|
|   | 3  | Surveying the Stars   |
|   | 4  | Surveying the Stars (Cont.)   |
|   | 5  | Star Birth<br><b>Quiz 1</b>   |
|   |    |   |
| 2 | 6  | Star Birth (Cont.)  |
|   | 7  | Star Stuff  |
|   | 8  | Star Stuff (Cont.)  |
|   | 9  | The Bizarre Stellar Graveyard   |
|   | 10 | Midterm Reviews<br><b>Quiz 2</b>  |
|   |    |   |
| 3 | 11 | <b>Midterm Test</b>   |
|   | 12 | The Galaxies<br>Our Galaxy  |
|   | 13 | The Galaxies<br>Our Galaxy (Cont.)  |
|   | 14 | Galaxies and the Foundation of Modern Cosmology                             |
|   | 15 | Galaxies and the Foundation of Modern Cosmology<br>(Cont.)<br><b>Quiz 3</b> |
|   |    |   |
| 4 | 16 | Galaxy Evolution  |
|   | 17 | Galaxy Evolution (Cont.)  |
|   | 18 | The Universe<br>The Birth of the Universe                                   |
|   | 19 | The Universe<br>The Birth of the Universe (Cont.)                           |
|   | 20 | Dark Matter, Dark Energy, and the Fate of the Universe<br><b>Quiz 4</b>     |
|   |    |   |
| 5 | 21 | <b>Field Trip</b>   |
|   | 22 | Dark Matter, Dark Energy, and the Fate of the Universe<br>(Cont.)           |
|   | 23 | Life in the Universe  |
|   | 24 | Final Exam Reviews  |
|   | 25 | <b>Final Exam</b>   |



## Rating System:

### 1. Assessment

| ASSESSMENT ITEM | PERCENT OF FINAL GRADE |
|-----------------|------------------------|
| 4 Quizzes       | 40% (10% for each)     |
| Field Trip      | 10%                    |
| Midterm Test    | 20%                    |
| Final Exam      | 30%                    |

### 2. Grading Scale

|    |         |
|----|---------|
| A+ | 90-100  |
| A  | 85-89   |
| A- | 80-84   |
| B+ | 77-79   |
| B  | 73-76   |
| B- | 70-72   |
| C+ | 67-69   |
| C  | 63-66   |
| C- | 60-62   |
| D+ | 57-59   |
| D  | 53-56   |
| D- | 50-52   |
| F  | Blow 50 |



## **General Expectations:**

Students are expected to:

- Attend all classes and be responsible for all materials covered in class and otherwise assigned;
- Complete the daily required reading and assignments before class;
- Review the previous class notes before class and make notes about questions you have about the previous class or the course reading;
- Participate in class discussions and complete required written work on time;
- Refrain from texting, phoning or engaging in computer activities unrelated to class during the class period;
- While class participation is welcome, even required, you are expected to refrain from private conversations during the class period.

## **Attending Policy**

Regular and prompt attendance is required. Attendance will be taken at the start of the course. Those that miss their name, during roll call, will be counted as absent.

Students can miss up to three classes (including labs) and earn 7% (out of 10%). After the third absence, students will earn a grade of 0% (out of 10%). Arriving late and/or leaving before the end of the class are equivalent to absences.

## **Policy on “Late Withdrawals”**

In accordance with the policy of UCAM, appeals for late withdrawal will be approved **ONLY** in case of medical emergency and similar crises.



## **Academic Honesty**

All students are expected to respect academic honesty policy. Instructors will fail assignments that show any evidence of plagiarism or other forms of cheating and will also report the student's information to the University Administration Office. A student reported to the University for cheating will be placed on the list of disciplinary probation; a student reported twice will be suspended or expelled.

## **Special Needs or Assistance**

Please contact the University Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material.