** Astronomy Syllabus 2022/23 **

**Mr. Abrams**

Welcome to my classroom! I am looking forward to the opportunity to get to know each of you and to share learning Astronomy. I hope to see you question and analyze the world around you as we discover the amazing universe around us. Science is exploration!

Contact Information

TCA email: [dabrams@asd20.org](mailto:dabrams@asd20.org); TCA phone: 484-0091 ext. 1117

Classroom Expectations

1. BE RESPECTFUL: Come to class with a willing and positive attitude – leave any bad ones in the hall. Do not talk while the teacher is speaking. Listen to your peers. Do not leave class until dismissed.
2. BE PREPARED: Come to class prepared to learn – bring appropriate materials. Get to class on time have your materials ready to work, and be ready to start your assignment.
3. BE ON TASK: Use your time effectively.
4. BE A PARTICIPANT: Your job here is to learn. Everyone will have a special role in the operation of the class and must do their part in order for the class to flow efficiently.
5. BE SAFE: Safely handle all lab equipment. No food, drinks, or gum allowed. Keep hands, feet, and objects to yourself. Report any accident immediately.

**Supplies**

Each student should have the following items for class each day;

Writing utensil (preferably a pencil or blue or black pen)

1/4” 3-ring binder

College rule (loose leaf) paper

Calculator

**Assessments**

There may be an exam at the end of each major unit. Exams are composed of multiple choice, matching, fill in the blank, short answer and essay questions. Grades for this course are based on daily assignments and participation, labs, quizzes, exams, presentations, papers, and other projects. Letter grades are given on a point system.

**Grading Policy**

**Late homework** that is one day or more late will receive a maximum grade of 90%. The only exceptions will be if arrangements are made with me ahead of time. If a student has an excused absence, extra time is given to complete the assignment. Late projects will be penalized 10% each day the project is late. The last day to turn in late work is the day before the unit test. I will use the TCA secondary **universal** **grading scale**.

**Projects**

Several collections, individual projects/reports, and group projects will be required throughout the semester. A scoring rubric will be handed out with each project.

Some additional grading information:

1. **Do your own work unless working on a group project!** Asking for help is okay, copying answers is **NOT**!
2. Turn in work on time. You will loose 10% for work that is late. The only exceptions will be if arrangements are made with me **IN ADVANCE!**
3. If you are absent from class, it is your responsibility to check the make-up work to obtain the assignment you missed.
4. Make sure you put your name and the date on all work and turn it in to the appropriate place.
5. Write neatly with a pencil or blue or black ink.

**Scope and Sequence**

We will generally be learning about astronomy and cosmology chronologically in terms of advancement and discovery. This is not a strict approach, and we will move around through time (and space) as necessary. The following is a general plan of what we will be learning, but we may deviate, omit, and change as necessary.

1. Basics of Science, Physics, and Astronomy
   1. Units, Dimensions, Conversions
   2. The Scientific Method
   3. Terms/Concepts
2. Early History of Astronomy
   1. Basics of Observation
   2. Cultural/Historical Context
3. Copernican Principle and our Solar System
   1. Paradigm Shift
   2. Telescopes
   3. Kepler and his Laws
   4. Our Solar System
4. Physics Meets Astronomy
   1. Newton’s Laws
   2. Newtonian Physics
5. Photography, Spectroscopy, and Beyond our Solar System
   1. Electromagnetic Waves
   2. Spectroscopy and the Life Cycles of Stars
   3. Beyond our Solar System
6. Modern Cosmology and the Evolution of the Universe(s)
   1. General Relativity
   2. Dynamics of the Universe
   3. Big Bang
   4. Further Theories (as time permits)