OMAHA NORTH HIGH MAGNET SCHOOL

Astronomy
Course Syllabus

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Plan Period: A5
Office/Classroom Room 244

Course Description
Students will explore the universe, the objects found in it, and study the processes that occur in it. We will focus on our own solar system and celestial bodies found in it. We will look at the different stars found in our universe and their characteristics. Finally, we will study the universe as a whole including its formation and current progress.

Course Expectations
• Complete assigned classwork. This is essential to helping you prepare for quizzes and tests.
• Participate in class. Activities and labs can further your understanding of basic science concepts.
• A research paper will be assigned once per semester. Students will be allowed to choose their subject.
• Study the material. Reviewing the class material will help you retain the information you have learned and ensure that you are better prepared for quizzes and tests.

Class Rules and Expectations

Be Safe, Be Respectful, Be Responsible

• Rules and guidelines set forth in the student handbook will be followed in this class. Any student who distracts other students or the instructor interferes with the learning environment and should expect consequences.
• Attendance: Being in class, on time, is important for student success. Anyone entering the classroom after the bell has stopped ringing is tardy. Being more than 10 minutes late will result in a truancy (skipping) referral unless student has an excusal pass with a time, date, and teacher/administrator signature.
• Electronic Devices: Electronic devices can and will be confiscated for the duration of the class period at the discretion of Mr. Teal if they are distracting to either Mr. Teal, themselves, or other students. Failure to hand over device to Mr. Teal will result in student being sent to administrator to confiscate phone, likely for the entire day.
• Food & Drink: Only chewing gum & clear water in a clear container is allowed to be consumed in class.

Assessment (customized according to subject area – examples below)
• Course grades will be determined by planned assessments such as tests, quizzes, and projects scored with rubrics.
• Tests are to be expected at the end of each major unit outlined below.
Content Standards

**AST1** Explain and relate modern astronomy concepts
- AST1.a Explain the history and evolution of the science of astronomy.
- AST1.b Define and apply common terms and concepts in astronomy.
- AST1.c Investigate and explain the relationship of astronomy in our modern world.

**AST2** Examine and explain earth’s cycles relating to stars, the sun, other planets, and the moon
- AST2.a Describe and model relative motion of stars, the sun, and planets to earth.
- AST2.b Describe and relate the motion of the earth and the effects on the seasons.
- AST2.c Investigate, observe, and explain the relative motion and the effects of the sun on the earth as it rotates and revolves.
- AST2.d Investigate, observe, and describe the motion and phases of the moon.

**AST3** Explain past and present processes and mechanics that occur in Earth’s solar system
- AST3.a Summarize the formation of the solar system.
- AST3.b Investigate and explain the processes of the sun and their possible effects on the earth.
- AST3.c Investigate and compare the planets of the solar system and their characteristics.

**AST4** Explain and categorize stars using observable properties
- AST4.a Explain how changes in a stars composition can affect its characteristics.
- AST4.b Investigate and explain how characteristics of stars can be used to provide additional information about stars.
- AST4.c Categorize and compare stars using H-R diagram.

**AST5** Investigate and describe the processes of stellar evolution
- AST5.a Describe the process of the formation of a star.
- AST5.b Explain the relationship between mass and a stars characteristics during its stellar evolution.
- AST5.c Outline and explain the steps of low mass and high mass stars from beginning to their final stages.

**AST6** Examine theories relating to the formation and current composition of the universe
- AST6.a Evaluate the theories of the origin of the universe.
- AST6.b Categorize and describe the different types of galaxies.
- AST6.c Compare and contrast the different theories for the distribution of matter in the universe.

OPS Secondary Grading Practices

All coursework and assessments are judged based on the level of student learning from “below basic” to “advanced.” This course will provide multiple opportunities to achieve at the “proficient” to “advanced” levels. Students are evaluated based on a proficiency scale or project rubric. Proficiency scales for this course are available upon request (teacher will identify location such as portal, teacher website, attached, etc.)
There are three types of coursework

- **Practice** – assignments are brief and done at the beginning of learning to gain initial content (e.g., student responses on white boards, a valid sampling of math problems, keyboarding exercises, and diagramming sentences, checking and recording resting heart rate). Practice assignments are not generally graded for accuracy (descriptive feedback will be provided in class) and are not a part of the grade. Teachers may keep track of practice work to check for completion and students could also track their practice work. Practice work is at the student’s instructional level and may only include Basic (2) level questions.

- **Formative (35% of the final grade)** – assessments/assignments occur during learning to inform and improve instruction. They are minor assignments (e.g., a three paragraph essay, written responses to guiding questions over an assigned reading, completion of a comparison contrast matrix). Formative assignments are graded for accuracy and descriptive feedback is provided. Formative work may be at the student’s instructional level or at the level of the content standard. Formative assessments/assignments will have all levels of learning – Basic (2), Proficient (3), and Advanced (4), which means that for every formative assessment/assignment, students will be able to earn an Advanced (4). Teachers will require students to redo work that is not of high quality to ensure rigor and high expectations. The students score on a formative assessment that was redone will be their final score.

- **Summative (65% of the final grade)** – assessments/assignments are major end of learning unit tests or projects used to determine mastery of content or skill (e.g., a research paper, an oral report with a power point, major unit test, and science fair project). Summative assignments are graded for accuracy. Summative assignments assess the student’s progress on grade level standards and may not be written at the student’s instructional level. Summative assessments/assignments will have all levels of learning – Basic (2), Proficient (3), and Advanced (4), which means that for every formative assessment/assignment students, will be able to earn an advanced (4).

**Are there any changes to grading?**

**Missing Coursework**
Work not turned in at all will be recorded in Infinite Campus (district grade book) as an M for missing which calculates to a score of zero.

**Redoing/Revising Coursework**
Students may be allowed redo’s and revisions of coursework for full credit during that unit of study based upon the teacher’s professional judgment and evidence collected throughout the unit. Scores for student work after retaking, revision or redoing work will not be averaged with the first attempt at coursework or assessment, but will replace the original student score.

**Late Coursework**
Students are expected to complete coursework on time. Late coursework may be accepted for full credit until the end of the unit based on the teacher’s professional judgment and evidence collected throughout the unit. Accepted late work will not result in a reduction, and the M (missing) will be replaced with the score earned by the student. The teacher or school may make exceptions depending up on student circumstances (such as prolonged absences due to illness).