1. Course Content

Test 1: Chapters 1-4
1.) Introduction - vocabulary, distance units, structure of universe.
2.) The mechanics of the night sky.
3.) Celestial coordinates, location systems.
4.) Earth’s seasons, cause and effects.
5.) Lunar phase cycle (moon phases).
6.) Eclipses of sun and moon.
7.) Ancient astronomers and their contributions to understanding.
8.) Planetary motion and solar system structure theories.
9.) Kepler’s Laws of Planetary Motion

Test 2: Chapters 5-7
1.) Newton’s Laws
2.) Atomic structure, the origin of the chemical elements.
3.) Relationship of color to temperature.
4.) Spectral lines and chemical composition.
5.) The Doppler Effect, light and radial motion.
6.) Rotation and the Doppler Effect.
7.) Brightness of a light source and Energy of Light.
8.) Telescopes.
9.) Radio astronomy.
10.) Astronomy with satellite observatories.

Test 3: Chapters 19-25
1.) Solar system overview and origin theory.
2.) Earth.
3.) Moon.
4.) Mercury.
5.) Venus.
6.) Mars.
7.) Jupiter.
8.) Saturn.
9.) Uranus.
10.) Neptune.
11.) Pluto.
12.) Comets and asteroids.
Test 4: Chapters 25, 8, and 9.
1.) Meteoroids, Meteors, and Meteorites.
2.) The Sun as a star.
3.) Stellar distance measures and motions.
4.) Luminosity and brightness of stars.
5.) Color classification of stars.
6.) Binary stars (stellar mass relationship).
7.) Eclipsing binaries.
8.) Stellar diameters.

Test 5: Chapters 11-18
1.) H-R Diagram.
2.) Stellar evolution birth to death. (Different star masses)
3.) Stellar corpses - Neutron stars, white dwarfs and black holes.
4.) The Milky Way galaxy, other galaxies.
5.) Dark Matter and Dark Energy
6.) Quasars and active galaxies.
7.) Cosmology.

2. Course Objectives - Upon successful completion of this course you should be able to understand semi-popular level articles, books, and news releases concerning astronomical discoveries. For a person majoring in Astronomy, they will be well equipped to move into a junior level course at transfer institution.

3. Course Format - The course will be present in lecture format. The Planetarium will be used to model the night sky. Some activities in the planetarium will be graded. Lectures will use Powerpoint, transparencies, photographic slides, and video simulations. The college observatory will be used for field projects and general observing.

4. Course Grade and Expectations:
   A. Although current policy stated in the course catalog requires no math pre-requisite, simple algebraic expressions will be discussed in some of the presentations of astronomical methods and theories.

   B. Student Assignments - reading assignments are expected to be completed by the designated time.

   C. Course grade:

      5 regular tests - 500 points
      10 quizzes - 100 points
      1 field project - 100 points
      1 final exam * - 100 points
      homework - 200 points
      video review sheets / Planetarium activities - 70 points

   *Optional for missed exam or exam replacement.

   TOTAL POINTS 970 points
**Bonus points opportunities**

- Observatory field trip: 10 points (extra credit) each
- Planetarium public show visit: 10 points (extra credit) one time

Grade Feedback: Come to office hours or email me to know how you are doing.

Calculators:

TI-30 or better.

Attendance:

Attendance will be taken daily. As stated in the MCC catalog, you are expected to attend every session of this class. I realize that some absences are unavoidable, but I encourage daily attendance. If fate strikes on exam day NO MAKE-UP TESTS will be given without prior approval. A valid reason is necessary for approval. If granted, make-up exams are expected to be taken upon your return to class, no exceptions. If a student fails to take an exam and no arrangements were made, a score of zero will be recorded. Students are responsible for material covered and announcements made during absences from class. Excessive absences will result in student withdrawn from course. Excessive tardiness will be questioned by the instructor. If you miss a test or quiz, during an absence, you must contact me by phone or catch me before class to make-up the work.

Late Homework policy:

Late homework will be generally accepted with an appropriate point deduction. Homework is accepted only at the discretion of the instructor. If a student has had a long absence, late homework will be accepted, as long as the absence was excused.

**Statement on Student Assessment and Accreditation**

Muskegon Community College is fully accredited by the Higher Learning Commission located in Chicago. The College is currently seeking reaccreditation by completing a two-year process called a self-study. Accreditation helps ensure students that they are receiving a quality education and can transfer to other colleges and universities with ease and confidence. MCC is committed to an essential part of the reaccreditation process: assessing student learning. You may be asked to participate in assessing student academic achievement this semester by doing such things as:

- Evaluate your class and your instructor by completing a Student Opinion Survey, usually given toward the end of the semester.
- In some classes, you will find that one hour of class time may be devoted to completing a test of your general knowledge. Your performance on this test will not affect your grade in this course or your status in the College.
- You may also be asked to be part of a group of students who will be interviewed or surveyed about their views of the College’s strengths and weaknesses.

If you have any comments you would like to make about the quality of education at MCC, please email the College’s assessment coordinator at this address:

studentscount@muskegoncc.edu

**Statement on MCC Email**

All email communication originating from MCC to students will be via their email account. CHECK YOUR MCC EMAIL FREQUENTLY.
Statement on Student Behavior

Muskegon Community College is a community of scholars whose members include administrators, faculty, staff, and students. Mutual respect and civility are expected in the classroom or other college academic settings, as well as, in any communication. Please no texting in the classroom. Students may use their computers in the classroom to take notes, not surf the internet during lecture. If observed you will be asked to turn off your computer.

- MCC has the duty of providing students with privileges, opportunities, and protections that best promote learning;
- Students have the right to a non-threatening learning environment;
- Students have the responsibility to refrain from infringing on the right of others to learn or the right of teachers to teach; and
- Any student whose behavior disrupts learning may be subject to disciplinary action as outlined in the Muskegon Community College Student Handbook/Planner.

Academic Integrity Policy

Muskegon Community College expects that all faculty and students will adhere to high standards of personal and academic honesty. This means that all academic work will be done by the student to whom it is assigned without unauthorized aid of any kind. Faculty members, for their part, will exercise care in the planning and supervision of academic work so that honest effort will be positively encouraged.

Academic dishonesty consists of, but is not limited to:

A. Cheating. Cheating is defined as using or attempting to use, giving or attempting to give, and obtaining or attempting to obtain, materials or information, including computer material pertaining to a quiz, examination, or other work that a student is expected to do alone.

B. Plagiarism. Plagiarism is defined as the use of another’s words or ideas without acknowledgement.

C. Penalties for violation of these standards of conduct may result in sanctions of up to and including suspension or expulsion from MCC.

Statement on Dispute Resolution Process

Should a student not agree with a faculty member's decision or actions as they may relate to this policy, the following steps shall be followed:

1. A student suspected of academic dishonesty shall be notified in writing within two school days of the time the violation is discovered. Copies of the written notification shall also be filed with the department chair and Vice President of Student Services.
2. The student should try to reach resolution of the matter through direct discussion with the involved faculty member within three (3) school days of the written notification.
3. If the matter is not resolved in Step 2, the student shall bring the matter to the attention of the department chairperson of the involved faculty member.
4. If the matter is not resolved at the department chairperson level, the student shall bring the matter to the attention of the Vice President for Academic Affairs who shall render a decision within five school days of the receipt of the dispute information.
5. If a satisfactory solution is not reached at the Step 4 level, the student may file a written request with the Vice President of Student Services for a hearing before the disciplinary board. This meeting shall be held not more than 20 days following the written request. A student may request a hearing before the disciplinary board. The disciplinary and judicial procedures are outlined in the Muskegon Community College Student Handbook/Planner.