



**AST 102 – Stellar Astronomy and Cosmology (Internet)**  
**Science Department**

**Semester: Summer 2009**

**Catalog Course Description:** This course is a descriptive survey of the universe with emphasis on basic physical concepts and galactic and extra-galactic objects. Related topics of current interest are included in the course. Lecture (3.0), Laboratory (6.0).

**Prerequisite(s):** None

**Credit Hours:** 4

**Orientation Website:** <http://classes.midlandstech.edu/ast102> (mandatory, one time)

**Course Website:** URL: \_\_\_\_\_

Username: \_\_\_\_\_ Password: \_\_\_\_\_

You will get this information once you complete the mandatory online orientation.

**Class/Lab Instructor:** Jeffrey Lynn Hopkins, Physics & Astronomy

**Office:** Beltline Campus, Lindau Engineering Technology (LET) 421-B

**Office Hours:** <http://midlandstech.com/jlh/general/instructor/wit.htm>

**Telephone:** 803-738-7659 (but I recommend using email)

**E-mail:** [hopkinsj@midlandstech.edu](mailto:hopkinsj@midlandstech.edu) (Subject of your message must include 'AST102'.)

**Campus Mailbox:** LET 421

**FAX:** 803-790-7530

**Class Schedule:** It is recommended that you go online, including the class forum, at least three times a week if not every day. If you have not logged on for 14 days you are considered over the limit unless you contact me first. Detailed instructions on what to do each week are on the course website.

**Textbook(s):** Lecture: *Foundations of Astronomy*, Michael A. Seeds, 10<sup>th</sup> Ed.

Lab: *AST 102 Bundle*, LSW, 2008

**Additional Materials:** Scientific calculator, metric/standard ruler, protractor, and a personal e-mail address and computer access.

**Departmental Website:** <http://www.midlandstech.edu/science>

**Personal Website:** <http://midlandstech.com/jlh>

**Departmental Assistant:** Jan Oliver ([oliverj@midlandstech.edu](mailto:oliverj@midlandstech.edu))

**Department Chair:** Dr. Gerylyne Lopez-de-Victoria ([lopezg@midlandstech.edu](mailto:lopezg@midlandstech.edu))

**General Education Core Competency Statement:** This course is designed to meet the college's general education core competency for Scientific Reasoning.

**Course Objectives:** Upon completion of this course the student will be able to have a working knowledge of stellar astronomy and cosmology.

## **Course Outcomes and Competencies:**

**Intended Course Outcome:** Students will understand and be able to use scientific reasoning and principles through the study of basic astronomy. To promote an interest in astronomy and physics. To enable the student to more thoroughly understand the concepts of astronomy in general. To enable the student to apply knowledge to a specific problem in a systematic manner. To enable the student to develop skill in handling apparatus and to practice the procedures of making accurate measurements and presenting results in a scientific manner.

**Course Competency (Performance Measure):** Students will demonstrate their understanding and ability to use scientific reasoning and principles by answering examination questions based on the learning objectives: To solve problems using pre-college level math or answer conceptual questions by

1. describing a characteristic of astronomical instruments
2. describing a stellar property
3. describing an aspect of stellar formation and evolution
4. describing an aspect of galaxies and the universe as a whole

**Measurement Instrument:** Students will complete a set embedded examination questions prepared by faculty based on the course learning objectives.

**Course Attendance:** A student is allowed 2 class absences and 2 lab absences. Participation in the online course is one of the mechanisms for determining attendance. Students will be expected to participate on the class discussion forum weekly. Missing a test, a lab, or a homework assignment, regardless the reason, is an absence. Students adding courses after classes begin are responsible for work covered from the first day of class. All classes missed count as absences. Please note the following: You are responsible for all material and announcements presented, whether you are present or absent. You will find more information about labs on the Class FAQ on the course website.

Please note the following: You are responsible for all material and announcements presented by email or on the class forum. There are detailed questions and answers listed for the most common questions in the Frequently Asked Questions (FAQs) section of the website, so read through those pages if you have questions.

**Withdrawal:** Students may withdraw from a course anytime before the last week of classes (see the current semester college calendar, available on the MTC web site, for official dates). Students who wish to withdraw from a course must submit a withdrawal form to records. The date of withdrawal may affect a number of things, including financial aid/ tuition reimbursement, tuition refunds, and course grades. The effective date of withdrawal depends upon the date the withdrawal form is submitted to records. It is the student's responsibility to be aware of relevant dates, to make an informed decision, and if necessary, to submit withdrawal forms in a timely fashion.

For questions regarding the effect of withdrawal on financial aid or tuition reimbursement students should contact Student Financial Services. Deadlines for tuition refunds may be found on the current semester college calendar, available on the MTC web site, or by calling the cashier's office.

Students who withdraw before midterm will receive a grade of W. Students who withdraw after midterm and have an overall class average of 60% or greater will receive a grade of W. Students who withdraw after midterm and have an overall class average below 60% will receive a grade of WF, which is calculated as an F. Grades of W or WF are also assigned when a student exceeds the maximum number of absences allowed in a course. These grades are entered on the final grade roster along with the last date of attendance (LDA). Students should understand that the LDA does not constitute an effective date of withdrawal and should not consider a decision to stop attending class to be equivalent to withdrawal.

**Course Grading and Scale:** The final grade for this course will be determined as follows:

- Quizzes 60%
- Final Exam 15%
- Lab 25%

A (90-100)      B (80-89)      C (70-79)      D (60-69)      F (<60)

- Total of lecture quizzes - divided by the number of quizzes - equals lecture average. Lecture average times 0.60 equals quiz points.
- Total of lab reports - divided by the number of reports - equals lab average. Lab average times 0.25 equals lab points.
- Final Exam grade times 0.15 equals exam points.
- Lecture points plus lab points plus exam points equals course average.

A grade of zero will be recorded for any announced quiz (or assignment), which is missed. There are no make-up quizzes for any reason..

**Please Note:** Should change become necessary, the instructor reserves the right to adjust the requirements, pace, or scheduling of this course. Any change will be announced in class before it becomes effective.

The Science Department Chair, Coordinators, and faculty are here to help you. If you are having any problems in your classes, please contact the person who can help you. If we don't know you are having problems, we can't help you. Gerry Lopez is Department Chair and can be reached at 822-3443; Greg Mancini is Beltline Science Coordinator and can be reached at 738-7660. Contact Jan Oliver at 822-3548 for information regarding the Airport Science Coordinator.

**Laboratory Policies:** The labs for this course are designed to be done at home without the need for specialized equipment. Each lab is a module and will be submitted approximately once a week using online forms. Exact due dates will be on the Lab Schedule page of the website. Late labs will receive a penalty of -1 point per minute after the due date. You may use the internet and your textbook and notes; but all work must be your own.

There is only one make-up lab near the end of the term, so try not to miss any. More than two labs not completed/submitted will result in a grade of W if the student is passing the course or WF if the student is failing after midterm. Before midterm you will get W. You will find more information about labs on the Lab FAQ on the course website.

**Quizzes and Final Exam:** Quizzes may be multiple choice, identification, definitions, short answers, essay and/or a mixture of these formats. I will not be any more precise at this time, because the emphasis will be on learning the concepts and nature of astronomy - not on the nature of testing.

There will be roughly a quiz every week or two. Their due dates are listed on the quiz schedule page of the website. Since you have at least 7 days to complete each assignment - more if you work ahead - no assignment will be accepted late without penalty nor will there be any make-up assignments. All quizzes will be submitted on specially designated forms on the course website. Also quizzes may not be submitted too early – they may be submitted on the due date or the six days before the due date.

There will be quizzes and a final exam. The dates and times are fixed and will not be moved or altered unless there is some natural disaster or similar event. Please do not plan on asking later to change dates or times because of a personal conflict - because these dates are fixed, and there are no make-up tests.

The final exam will not be available except during the examination period, which is posted on the course web site.

**AST 102 Lecture Information:**

<b>Week</b>	<b>Weekly Readings</b>
<b>1</b>	Ch. 6 Light and Telescopes
<b>2</b>	Ch. 7 Atoms and Starlight
<b>3</b>	Ch. 8 The Sun
<b>4</b>	Ch. 9 The Family of Stars & Ch. 10 The Interstellar Medium
<b>5</b>	Ch. 11 The Formation of Stars
<b>6</b>	Ch. 12 Stellar Evolution
<b>7</b>	Ch. 13 The Deaths of Stars & Ch. 14 Neutron Stars and Black Holes
<b>8</b>	Ch. 15 The Milky Way Galaxy
<b>9</b>	Ch. 16 Galaxies
<b>10</b>	Ch. 18 Cosmology
<b>11</b>	Final Exam

Exact test dates are listed on the course website. You will see this after you complete the online orientation.

**AST 102 Lab Information:**

<b>Week</b>	<b>Lab Module</b>
<b>1</b>	----None----
<b>2</b>	Our Star - The Sun (No. 26)
<b>3</b>	Stellar Parallax - Measuring the Distance to Stars (No. 27)
<b>4</b>	The Moving Stars (No. 28)
<b>5</b>	Stellar Spectra and Classification (No. 30)
<b>6</b>	H-R Diagram (No. 31)
<b>7</b>	Stellar Life Cycles (No. 31)
<b>8</b>	Variable Stars - Unique Stars (No. 32)
<b>9</b>	The Material Between Stars (No. 33)
<b>10</b>	The Galaxies (No. 34)

Exact due dates are listed on the course website. You will see this after you complete the online orientation.

## College Policies

---

Students are expected to read the student handbook and abide by its policies. Copies of the handbook may be obtained at various locations on campus and is located on the web: <http://www.midlandstech.edu/planner/>

**Academic Dishonesty:** The Student Code addresses what constitutes academic dishonesty. All forms of dishonesty including, but not limited to, cheating on tests, plagiarism, collusion and falsification, will call for discipline.

**Cheating on Tests** includes:

- Copying from another student's paper.
- Using materials during a test not authorized by the person giving the test.
- Collaborating with any other person during a test without permission.
- Knowingly obtaining, using, buying, selling, transporting, or soliciting in whole or part the contents of any un-administered test.
- Bribing any other person to obtain information about tests.
- Substituting for another student, or permitting another student to substitute for oneself.

**Plagiarism** is the appropriation of any other person's work and unacknowledged incorporation of that work in one's own work offered for credit.

**Campus Emergency Protocol:** Students and employees are asked to report safety concerns or suspicious activities to Campus Security at 7199 (on campus) or 738-7199 (cell phone or off campus). In the event of an emergency, employees and/or students should immediately call Campus Security or local 911. If an emergency occurs, the college will use a variety of methods to communicate additional information and instructions including the MTC Information Centers, campus loud speakers, MTC Alerts! ([http://www.midlandstech.edu/Phone\\_Alert.htm](http://www.midlandstech.edu/Phone_Alert.htm)), voice mail, email, college Intranet, and the MTC website homepage.

**Inclement Weather Policy:** In the event weather conditions or other emergencies cause the closing or a delayed start of Midlands Technical College, announcements will be made over local radio and TV stations, on the MTC Web site, and on the college's information line (803-738-8234). Notices will be sent to students via Campus Cruiser Mail when applicable. Separate announcements may be made for day and evening classes as weather conditions change during the day.

If the college closing or reopening means that there is at least 30 minutes of a class remaining, plan to attend that class. For example, if the college opens at 10:00 a.m. in TTH, classes that normally meet at 8:00 a.m. will not meet, but classes beginning at 9:30 a.m. will meet. If the college closes at 8:00 p.m., 6:00 p.m. classes will meet for their regular time, but 7:35 p.m. classes will not meet since there are fewer than 30 minutes remaining in class.

**Student E-Mail Accounts:** All MTC students are assigned a college e-mail account upon admission to the college. This account is called "Campus Cruiser Mail." Campus Cruiser Mail is the primary mode by which the college communicates with students. Students are responsible for checking their college e-mail on a regular basis for important information and announcements about registration, financial aid, cancelled classes, emergency announcements and other notices. Students can use their college e-mail accounts to communicate with faculty, staff, fellow students, and others, in support of their educational pursuits. In addition to e-mail, students will also have access to maintaining personal calendars and "tasks lists" through their Campus Cruiser e-mail account.

**Student Evaluation of Instruction:** Students have the opportunity to evaluate this course. The confidential evaluation process is conducted through MTC Online using the individual student's username and password. Announcements will be made during the term concerning how and when to complete the online evaluation. Students are encouraged to participate in this process.

**Students Requiring Special Accommodations:** If special accommodations are needed for a student with a disability, the student should go to Counseling Services on Beltline or Airport Campus for assistance. Documentation regarding a specific disability is required in order for special arrangements to be made. Confidentiality of information received will be maintained.

## **SCIENCE DEPARTMENT CODE OF CONDUCT**

---

Student rights and responsibilities are outlined in the Student Handbook. We are extremely proud of the quality of students in the Science Department; however, there have been occasions where disciplinary action is necessary to prevent disruptive and dishonest behavior. The following items are specific violations and consequences supported by the Science Department. Your instructor will circulate a form for your signature stating that you understand the Science Department Course Syllabus, which includes this document.

1. Any student who exhibits behavior that is disruptive to the learning process such as talking, discourtesy to faculty or fellow students to include obscene language or gestures, or uncooperative actions will be asked to leave the classroom. The student will be counted absent for this class. Depending upon the nature of the offense or if it occurs during an test the instructor may require that the student see the Science Coordinator, Chair of the Science Department, or the Director of Campus Life before returning to class. Campus Security will be called for any threatening or violent behavior.
2. Beepers, cell phones, personal stereos, and similar devices are not permitted in class. Permission must be obtained from the Science Coordinator or Instructor for students who are emergency personnel or where there are extenuating circumstances. Campus Security can locate a student and will interrupt a class if there is a situation that needs immediate attention
3. Any student proven to have engaged in academic dishonesty will be given a grade of zero on the test or assignment. This includes, but is not limited to, giving or receiving information during an test, use of unauthorized materials during an test or assignment, plagiarism, or changing answers after a grade has been assigned. An instructor must have reasonable proof that dishonesty has occurred. Until an incident is verified, the student will be assigned a grade of "I" for the work. Witnesses of cheating should report this immediately to the instructor. The grade will be discussed confidentially with the student. If the student denies that academic dishonesty occurred, the Chair of the Science Department or Science Coordinator will meet with the instructor and student. The instructor will be supported if departmental guidelines for handling cheating incidences were followed. However, the student is referred to the Student Handbook for the policy on filing a grievance. In any incident involving academic dishonesty, a report will be filed with the Director of Campus Life.
4. Students with complaints about instructors should follow the appropriate chain of command as outlined in the "Science Department Conflict Resolution" form. A form can be obtained from the Science Department. Signatures must be obtained at each level before the complaint will be validated. There may be some circumstances where the first contact is with the Science Coordinator who will discuss the problem with the instructor. All efforts possible will be made to resolve conflicts internally. However students should remember that matters can also be handled through the Academic Appeal/Grievance process detailed in the Student Handbook.