Suffolk County Community College
Eastern Campus

AST 102 97152 Astronomy of Stars and Galaxies
Dr Sean McCorkle
Fall 2014  3 Sep–19 Dec    (631) 395-2546
Lec. M W 6:00 pm–7:25 pm S-111    (631) 344-4270
Lab M 7:30 pm–9:30 pm S-111 sean.r.mccorkle@gmail.com
http://astro.seanrmccorkle.net

Required Text & Materials
• Stars and Galaxies, 8th edition by Michael A. Seeds
• Astronomy Through Practical Investigations - AST 102 Laboratory Packet by Lomaga, Smiley and Warasila, w/Starfinder & protractor
• A scientific calculator

Catalog Description
Introduction to fundamental aspects of universe beyond our solar system. Topics include properties of electromagnetic radiation and its relation to study of celestial objects; structure, classification and evolution of stars, nebulae, star clusters, galaxies, and material between stars. Age, origin and evolution of universe studied in terms of modern cosmology. Occasional evening observations required. (3 hrs. lecture, 2 hrs. laboratory.) Offered on: A-E-G / 4 cr. hrs.

Prerequisites
Almost everything that is known about phenomena beyond the solar system is inferred by incorporating information from the physical sciences. Physical quantities and their inter-relationships are often most easily described with mathematical formulae. A knowledge of elementary algebra (MA07) is therefore required.

Course Objectives
Upon completion of AST 102 course requirements, the student should

• Make measurements using the metric system and perform simple forms of data analysis to enhance problem solving skills.
• Understand the night sky by knowing major stars and constellations as well as tracking the motions of the sky, the Moon, and planets.
• Understand the scientific method and how it applies to astronomy.
• Know the properties of light and how these properties are used to gather information.
• Know the structure and surface features of the Sun and how the Sun affects life on Earth.
• Trace the evolution of stars from birth to death. This includes the structure and characteristics of stars as they go through the different stages of their life cycles.
• Know how stars are grouped together (star clusters and galaxies) and the properties of these groupings.

• Have a clear understanding of the scale of the universe and our position within it.

• Understand how our acquisition of information is limited by factors such as errors in our measurements and our position within the universe.

• Gain a sufficient understanding of astronomical phenomena in order to have an appreciation for recent developments in the field.

• know the current scientific model of the beginnings of the universe

Course Outline

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This outline is tentative and may be altered due to the circumstances that occur during the semester. There will be several planetarium sessions for learning constellations and, weather permitting, there will some outside sessions for the same reason. Outside sessions will also include observing stellar and interstellar objects firsthand through telescopes. Since the clearest nights are often the coldest, and since the weather is difficult to predict, always come prepared with warm clothing!

Lab Coursework

Various forms of coursework will be assigned as part of the laboratory section of the class. A majority of the work will be based on the lab exercises found in the Astronomy through Practical Investigations packets. These labs are to be worked on in groups containing no greater than 2 students. However, each student in a group should write up their laboratory exercise individually. Copying another students work is strictly forbidden.

Lab coursework will be handed in exactly one week after it is set. Any works that are not turned in when requested will not be accepted, regardless of the reason. If a student knows that they will be absent from a class when an assignment is due, arrangements may be made in advance to turn in the assignment as long as the instructor has granted the student permission prior to the date of the absence.

Observing Sessions

On some occasions, weather permitting, we will set up a telescope outside for observing sessions, typically be during lab time. Because sky conditions are unpredictable, these cannot be scheduled, so a decision will be reached the evening of the class. Because the clearest nights are usually cold, it is essential that you always come to class prepared with warm clothes for staying outside for long periods.
Office Hours

Dr. McCorkle will be available for consultation before and after class and can be reached by email at sean.r.mccorkle@gmail.com

Grades

The semester grade will be computed in the following manner:

- 50% exams
- 50% lab coursework

A grading curve will not be applied, and there will be no opportunities for extra credit. There will be two planetarium quizzes, which will count together as one exam. There will be three lecture exams, the lowest of which will be discarded, and a cumulative final at the end of the semester (which will not be discarded). There will be no makeup exams. If a student misses an exam, the grade will be entered as zero.

Attendance

Because of the nature and amount of material in this course, it is crucial that each student attend every lecture and lab. The College has instituted the following attendance policy, which can be found in the SCCC student handbook:

The College expects that each student will exercise personal responsibility with regard to class attendance. All students are expected to attend every class session of each course for which they are registered. Students are responsible for all that transpires in class whether or not they are in attendance, even if absences are the result of late registration or add/drop activity at the beginning of a term as permitted by college policy. The College defines excessive absence or lateness as more than the equivalent of one week of class meetings during the semester. Excessive absence or lateness may lead to failure in, or removal from, the course.

A student may be removed from the class roster by an instructor at any time when, in the judgement of the instructor, absences have been excessive. This policy clearly places the responsibility of attending class on the student, that each student is allowed two absences for the semester, and permits the instructor to withdraw or fail the any student that exceeds the number of absences, and that each student is responsible for any material that was covered during the class of absence.

Withdrawal Policy

Students who wish to withdraw from the course, without academic penalty, must do so by mid-semester (Oct 29, 2014). Any student who as not withdrawn by this date will be required to finish out the semester, regardless of their grade. Therefore, any student who wishes to withdraw, but has not formally done so will be considered to still be in the class, and a final grade will be administered. It is the students' responsibility to complete the proper withdrawal procedure, not the instructors.

Cell Phones and Tablets

The Math and Science Department policy on Cell Phones and Tablets is:

Cellular phones and tablets are considered a classroom distraction and are not permitted in class at any time. All cell phones should be out of sight and either turned off or placed in silent mode so they do not ring during class. Cell phones are not a substitute for calculators.
If a calculator is required, students must be prepared with a standard, scientific or graphing calculator as permitted in that class. Students in violation of this policy will be asked to leave the class for that day and an absence will be indicated for that class. It is the student’s responsibility to request, in advance, an exception to this policy from their professor. Exceptions will be considered on a case-by-case basis.

**Cheating**

Suffolk County Community College has instituted the following policy regarding academic integrity, which can be found in the SCCC student handbook:

Any form of cheating, be it on a formal examination, informal quiz or other submitted material, is a violation of college conduct. Copying material from fellow students or from other sources during an examination may result in a failing grade for the course and/or serious disciplinary sanctions as outlined in the Code of Conduct. When students work together on a project, this becomes a joint responsibility of a group so designated and should be limited to the people and resources agreed upon with the instructor.

Any student who is caught cheating will be punished to the fullest extend of the college’s cheating policy.

**Lateness**

Students are responsible for arriving on time to class, at 6pm. Attendance will be taken at 6:05.