

FUNDAMENTALS OF ASTRONOMY AND ASTROPHYSICS (PHYS 304) SYLLABUS, FALL 2019

COURSE OVERVIEW

Course Overview. We will discuss aspects of stellar astrophysics, along with galactic and, time permitting, extragalactic astrophysics and cosmology as well as exoplanet astrophysics at a level suitable for physics and other science majors with strong interest in astronomy, physics, and mathematics. The course is a junior level, calculus-based course (you must have completed PHYS 324 with a grade of C or better). The course will require a lot of thinking.

Topics. The Sun. Nuclear energy and synthesis of the elements. The end states of stars. Stellar evolution. The H-R diagram. Binary stars. Interstellar medium. Our galaxy. Quiet galaxies. Active galaxies. Galaxy clusters. Cosmology. Exoplanets.

Resources. We will use the required book "The Physical Universe" by Frank Shu. This is an excellent but older book and for that reason additional material will be provided through notes when necessary.

Instructor: Markos Georganopoulos. E-mail: georgano@umbc.edu, tel: 1 -410-455-8149.

Lectures, time and place: Monday and Wednesday 5:00 PM – 6:15 PM in
PHYS 226

Office Hours: Mo 2:30 PM - 5:00 PM in my office, PHYSICS 409.

Academic Integrity: By enrolling in this course, each student assumes the responsibilities of an active participant in UMBC's scholarly community in which everyone's academic work and behavior are held to the highest standards of honesty. Cheating, fabrication, plagiarism, and helping others to commit these acts are all forms of academic dishonesty, and they are wrong. Academic misconduct could result in disciplinary action that may include, but is not limited to, suspension or dismissal. To read the full Student Academic Conduct Policy, consult the UMBC Student Handbook, the Faculty Handbook, and the UMBC Policies section of the UMBC Directory.

Grading

Homework (30%): Homework questions will provide good practice for the types of questions likely to be posed in the mid term and final exams. A homework will be assigned almost every week. Students are expected to solve all the problems of the homework but are not required to turn them in. In the beginning of the class on the due-day of the homework, students will be given 15 min to clearly reproduce the solution of one of the homework problems selected by me.

Mid Term (30%): It will cover the material from the beginning of the class up to the lecture before the mid term. The time of the mid term exam will be announced in class at least a week in advance of the exam.

Final Exam (40%): An exam at the end of the course on all the course material, but with more emphasis on the material discussed after the first mid-term.

Grading Scale: A: 85-100, B: 70-84, C: 60-69, D: 50-59, F: Below 50

Clear handwriting, proper English grammar and syntax, as well as logical flow of your arguments and no missing steps are required in all exams and homework.

Please let me know in advance if you cannot participate in any of the exams due to religious or personal or any other reasons.