

# FUNDAMENTALS OF ASTRONOMY AND ASTROPHYSICS (PHYS 304) SYLLABUS, FALL 2014

## COURSE OVERVIEW

**Course Overview.** We will discuss aspects of stellar 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 122 or PHYS 122H with a grade of C or better).

**Topics.** Celestial coordinates, celestial mechanics, the continuous spectrum of light, interaction of light and matter, binary systems, stellar spectra, stellar atmospheres, the interior of stars, the Sun, the interstellar medium and star formation, main sequence and post main sequence stellar evolution, stellar pulsation, the fate of massive stars, the degenerate remnants of stars, elements of relativity, close binary stars.

**Resources.** We will rely on the required book "An Introduction to Modern Astrophysics" by B.W. Carroll & D. A. Ostlie (second edition). Additional material will be provided through notes, when necessary. The class web page will be the announcement board of the course, where notes, homework, and announcements will be posted. You are expected to always be familiar with the contents of the web page.

**Instructor:** Markos Georganopoulos. E-mail: [georgano@umbc.edu](mailto:georgano@umbc.edu), tel: 1-410-455-8149.

**Lectures, time and place:** MoWeFr 11:00AM - 11:50AM in Sherman Hall 015

**Office Hours:** MoWeFr 1:00AM - 2:00 PM in my office, PHYSICS 415.

**Class web page:** [http://jca.umbc.edu/~markos/courses/304\\_Fall\\_2014](http://jca.umbc.edu/~markos/courses/304_Fall_2014)

**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 every week, except for the week leading to the mid term exam. 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 10 min to clearly reproduce the solution of one 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.

**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.