

FUNDAMENTALS OF ASTRONOMY AND ASTROPHYSICS (PHYS 304) SYLLABUS, FALL 2020, ONLINE COURSE DUE TO COVID 19

COURSE OVERVIEW

Course Overview. We will first discuss aspects of ancient Greek astronomy, and then move to our era to discuss the Sun, nuclear energy and synthesis of the elements in stars, the end states of stars, stellar evolution, the H-R diagram, binary stars, and the interstellar medium. This leaves out a lot of current astronomy, so in the beginning of the class we will spend sometime to discuss very briefly exoplanets and the possibility of intelligent life in our galaxy, gravitational waves, and the challenging picture that modern cosmology paints for our Universe. All this will be 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 help you develop a "back of the envelope" way of thinking, learning to simplify and isolate the few relevant variables that matter in a given situation.

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 and transparencies as necessary.

Instructor: Markos Georganopoulos. E-mail: georgano@umbc.edu, tel:202 2863618

Lectures times: Monday and Wednesday 5:00 PM – 6:15 PM through webex at <https://umbc.webex.com/meet/georgano>

Office Hours: Mo 2:00 PM - 4:30 PM through webex.

Grading

Homework (30%): A homework will be assigned almost every week. The homework will assign for study the material discussed in class, the corresponding notes and book pages. Students are expected to solve all the problems of the book corresponding to the homework assignment 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 work out a problem or question that can be one of the book problems or a problem related to the assigned material in general.

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 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.

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.

At a Glance: UMBC Policies and Resources for Students during COVID-19

UMBC's Vision Statement

Our UMBC community redefines excellence in higher education through an inclusive culture that connects innovative teaching and learning, research across disciplines, and civic engagement. We will advance knowledge, economic prosperity, and social justice by welcoming and inspiring inquisitive minds from all backgrounds.

Technology: Access, Requirements, Resources, Support

To help ensure that UMBC students are equipped for academic success, the Division of Information Technology (DoIT) provides a wealth of resources and support, including tips for getting online and minimum specifications to consider when purchasing a computer. UMBC does require all students to be technologically self-sufficient, which entails having a reliable personal computer (preferably a laptop with webcam) and Internet access. It is important to note that this university requirement has been factored into UMBC's official "[cost of attendance](#)," which can be funded by student financial aid. To learn more about the resources and support that DoIT offers to students, visit doit.umbc.edu/students.

COVID-19: Safety Expectations and Guidelines

Students enrolled in this course are expected to adhere to all UMBC policies, rules, and regulations, including COVID-19 emergency health and safety rules, policies, guidelines, and signage enacted for the UMBC community. For students attending in-person classes, signage, policies, rules, and/or guidelines may include but are not limited to specific requirements for face coverings, physical distancing, and sanitization, in addition to efforts to reduce density efforts that involve reductions in seating and room capacity. Please be aware that UMBC's COVID-19 emergency health and safety rules, regulations, policies, guidelines, and/or signage are subject to change as our public health crisis evolves. Any violation will be subject to disciplinary action and may include but not limited to immediate dismissal from the classroom, removal from the classroom and/or campus, a requirement to work remotely, and/or sanctions and conditions enumerated in the [UMBC Code of Student Conduct](#) that may entail suspension or expulsion from UMBC.

Academic integrity in the Online Instruction Environment

Academic integrity is an important value at UMBC. 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. These principles and policies apply in both face-to-face and online classes. Resources for students about academic integrity at UMBC are available at <https://academicconduct.umbc.edu/resources-for-students/>

Enrollment Dates and Deadlines

Students must be familiar with the academic policies and enrollment dates and deadlines as published in the [Undergraduate Catalog](#) and the [Academic Calendar](#). They are also responsible for managing their course enrollment(s) accordingly.

Accessibility and Disability Accommodations, Guidance and Resources

Support services for students with disabilities are provided for all students qualified under the Americans with Disabilities Act (ADA & ADAAA) and Section 504 of the Rehabilitation Act who request and are eligible for accommodations. The Office of Student Disability Services (SDS) is the UMBC department designated to coordinate accommodations that would create equal access for students when barriers to participation exist in University courses, programs, or activities.

If you have a documented disability and need to request academic accommodations in your courses, please refer to the SDS website at sds.umbc.edu for registration information and office procedures.

SDS email: disAbility@umbc.edu

SDS phone: (410) 455-2459.

If you will be using SDS approved accommodations in this class, please contact me (instructor) to discuss implementation of the accommodations. During remote instruction requirements due to COVID, communication and flexibility will be essential for success.

Please note: Shady Grove campus (USG) student accommodation needs are arranged through the UMBC main campus SDS office.

Hate, Bias, Discrimination and Harassment

UMBC values safety, cultural and ethnic diversity, social responsibility, lifelong learning, equity, and civic engagement.

Consistent with these principles, [UMBC Policy](#) prohibits discrimination and harassment in its educational programs and activities or with respect to employment terms and conditions based on race, creed, color, religion, sex, gender, pregnancy, ancestry, age, gender identity or expression, national origin, veterans status, marital status, sexual orientation, physical or mental disability, or genetic information.

Students (and faculty and staff) who experience discrimination, harassment, hate or bias or who have such matters reported to them should use the [online reporting form](#) to report discrimination, hate or bias incidents; reporting may be *anonymous*.

Sex and Gender Based Violence, Harassment and Discrimination

Any student who is impacted by sexual harassment, gender-based harassment, sexual assault, sexual coercion, relationship violence, domestic violence, sexual exploitation, sexual intimidation, sex, gender-based stalking or retaliation or gender or pregnancy discrimination is encouraged to seek support and resources.

You can access support and resources even if you do not want to take any further action. You will not be forced to file a formal complaint or police report. Please be aware that the University may take action on its own if essential to protect the safety of the community.

As an instructor, I am considered a *Responsible Employee*, per UMBC's [Policy on Prohibited Sexual Misconduct, Interpersonal Violence, and Other Related Misconduct](#) I am required to report disclosures of possible violations of [the Policy](#) to the [Title IX Coordinator](#), even if the experience occurred before you attended UMBC.

While I want you to be able to share information related to your life experiences through discussion and written work, I also want you to understand that I must report Sexual Misconduct to the Title IX Coordinator so that the University can inform you of your [rights, resources and support](#).

If you need to speak with someone in confidence, who does not have an obligation to report to the Title IX Coordinator, about an incident, UMBC has the following [Confidential Resources](#) available to support you: The [Counseling Center](#): 410-455-2742; [University Health Services](#): 410-455-2542; For after-hours emergency consultation, call 301-314-7651.

Other on-campus supports and resources: [The Women's Center](#) (for students of all genders): 410-455-2714; [Title IX Coordinator](#), 410- 455-1250.

Child Abuse and Neglect

Please note that Maryland law requires that I report all disclosures or suspicions of child abuse or neglect to the Department of Social Service and/or the police.

Pregnancy

[UMBC's Sexual Misconduct, Interpersonal Violence, and Other Related Misconduct Policy](#) expressly prohibits all forms of Discrimination and Harassment on the basis of sex, including pregnancy. [Resources for pregnant students](#) are available through the University's Office of Equity and Inclusion.

In addition, students who are pregnant may be entitled to accommodations under the ADA through the [Student Disability Service Office](#), and/or under Title IX through the [Office of Equity and Inclusion](#).