



# MILLIKIN

## UNIVERSITY®

### COURSE SYLLABUS

## Online Physics 101 – Stars and Galaxies, Summer 2022

Professor's Name: Dr. Casey R. Watson  
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Scheduled Office Hours: Questions via Email

Required Text: 21<sup>st</sup> Century Astronomy 6<sup>th</sup> EDITION,  
Hester, Smith, Blumennthal, Kay, and Voss  
with Smartwork5: <https://digital.wwnorton.com/astro6>  
(Click **Purchase Options** and choose the \$60 one for 180-day access to the ebook and Smartwork5 homework system.)

Class Hours: Online (asynchronous)

### Course Goals

This class will benefit you in at least two ways. Through extensive practice, you will become excellent problem solvers, and, in the process, you will gain a deeper understanding of the world around you. Whatever your career path, the improvement in your approach to complex situations will be a great asset, and, for knowing the principles at the heart of Nature's wonders, you will lead richer and fuller lives.

Conceptually, the course will consist of three main parts: (1) Star Formation and Evolution (2) Galaxies and Galaxy Evolution, and (3) Cosmology.

### General Education Science Learning Goals

In the opinion of the faculty in the Departments of Biology, Chemistry, and Physics, during the completion of a Natural Science with Laboratory course at Millikin University, a student should:

1. Develop an understanding of how to use logic and the scientific method to analyze the natural world and solve problems.
2. Learn about issues in science that are important both personally and globally.

- Utilize technology in laboratory and field environments in order to connect theories and descriptions found in lectures and textbooks with real-world phenomena.

### **Mathematical Prerequisites**

You will need a basic knowledge of algebra, trigonometry, and geometry for the course, but most of our discussions will be conceptual in nature.

### **Attendance**

Online.

### **Classroom Behavior – N/A**

### **Moodle**

Most of the course information for this class will be available online through the university's Moodle system. You should check the system daily for updates.

### **Grading and Coursework**

There is NO WAY to receive extra credit; your grade will be based on the following:

Course Component	Number of points	Letter Grade	Number of Points Needed
Homework	200 points	A	920 – 1000
Practice Exams	80 points	A-	900 – 919
Exam I	160 points	B+	880 – 899
Exam II	160 points	B	820 – 879
Exam III	160 points	B-	800 – 819
Final Exam	240 points	C+	780 – 799
<b>TOTAL</b>	<b>1000 points</b>	C	720 – 779
		C-	700 – 719
		D+	680 – 699
		D	620 – 679
		D-	600 – 619
		F	0 – 599

### **Homework**

Doing homework problems is the most effective way for you to develop the necessary problem-solving skills and master the concepts that we will discuss in this course. There will be 5-10 homework sets worth 20-40 points each for a total of 200 points. We will be using the SmartWork online homework grading system that goes with your e-text (see above).

### **Exams**

There will be three exams during the semester and one comprehensive, final exam. Exam material can come from class lectures, readings, or homework. As this is an online course, all exams will be open-book, open-notes, but you will have a time limit of 1 hour for Exams 1-3 and 2 hours for the final. Before each exam, I will discuss specifically what material will be covered, and I will post a practice test on the Moodle course webpage. Each practice test will be worth 20 points (completion grade – everyone gets credit for these), and there will be 4 practice tests (one for each Exam, including the final). I will then post the answers, so you can check your work.

## Tentative Course Schedule

<b>Week (Dates)</b>	<b>Topics</b>	<b>Special Notes, Exams</b>
1 (6/6)	Course Intro Ch. 14: The Sun Ch. 13: A Field Guide to the Stars Ch. 15: Star Formation and the ISM	Read Chs. 13-15 in text, view Lecture Notes, and watch Corresponding Videos Homeworks 1-3 + Practice Exam I Assigned
2 (6/13)	<b>Exam I (Ch 13-15)</b>  Ch. 16 Low Mass Stellar Evolution Ch. 17 High Mass Stellar Evolution	Practice Exam I Answers posted <b>Exam I (Ch 13-15)</b>  Read Chs. 16-17 in text, view Lecture Notes, and watch Corresponding Videos  Homeworks 4-5 + Practice Exam II Assigned
3 (6/20)	<b>Exam II (Ch 16-17)</b>  Ch. 20 The Milky Way Ch. 19 Galaxies Ch. 22: Origin of Structure Ch. 18/21: Cosmology	Practice Exam II Answers posted <b>Exam II (Ch 16-17)</b>  Read Chs. 18-22 in text, view Lecture Notes, and watch Corresponding Videos Homeworks 6-8 + Practice Exam III Assigned
4 (6/27)	<b>Exam III (Ch 18-22)</b>	Practice Exam III Answers posted <b>Exam III (Ch 18-22)</b> Practice Final Exam Assigned
5 (7/4)	<b>Final Exam</b>	Practice Final Answers posted  <b>Final Exam</b>

## **Millikin University Syllabus Student Guidelines for All Courses**

### **TECHNICAL, CLASSROOM, AND COLLEGE POLICY INFORMATION**

#### **Disability Accommodation Policy**

Please address any special needs or special accommodations with me at the beginning of the semester or as soon as you become aware of your needs. If you are seeking classroom accommodations under the Americans with Disabilities Act, you should submit your documentation to the Office of Student Success at Millikin University, currently located in Staley Library 014.

#### **Distance Delivery Components**

Millikin University is committed to providing support for students using technology resources in pursuit of academic success. The Department of Information Technology resides in Shilling Hall and offers walk-in support.

Please visit <<http://millikin.libguides.com/ed-tech>> for link, resources, and additional information that aid in the use of technology in distance/hybrid delivery and technology policies.

#### **University Commitment to Student Success**

Millikin University is committed to the success of all students. As such, the University provides a variety of services devoted to academic support of both undergraduate and graduate students, although some service provision may vary by degree level. The Office of Student Success serves as the hub for these services. Services include, but are not limited to, the following:

- Tutoring
- Supplemental Instruction
- Study Skill Assistance
- One on One Advising
- Major Change Assistance
- Development of Personalized Academic Growth and Success Plans
- Support of Exploratory Studies majors
- Support for students on Academic Probation or Progress Warning
- Accommodations for Students with special learning needs
- Online Resource Library

In addition to the Office of Student Success, the University Writing and Math Centers offer students intensive support in these subject areas.

Undergraduate students who are in need of additional academic assistance are also assigned a Student Development Advisor. These advisors work with academic advisors to ensure students receive the attention they need in all aspects of their University experience.

#### **Sexual Misconduct**

Millikin University is committed to creating a campus culture of respect that is free from discrimination, sex discrimination, and sexual misconduct of all forms. Sexual misconduct is unlawful and will not be tolerated. Title IX makes it clear that violence and harassment based on sex and gender are subject to the same rights and support as

other protected categories. If you or someone you know is a victim of sexual misconduct, or you know of an alleged incident of sexual misconduct, you can speak to someone CONFIDENTIALLY by contacting Millikin University Counseling Services @ 217.424.6360, and can file a report directly to any one of the following:

- Diane Lane, Director, Human Resources/Title IX Coordinator at [dlane@millikin.edu](mailto:dlane@millikin.edu) 217-362.6416
- Tammy Maxwell, Assistant Director, Human Resources/Deputy Title IX Coordinator for Employees at [tmaxwell@millikin.edu](mailto:tmaxwell@millikin.edu) 217.362.6416
- Raphaella Prange, Dean of Student Development/Deputy Title IX Coordinator for Students at [rpalmer@millikin.edu](mailto:rpalmer@millikin.edu) 217.424.6395
- Campus Conduct Hotline, an anonymous reporting line, at 866.943.5787

## **Academic Integrity Standards**

The intellectual and moral integrity of an academic community depends upon an uncompromising commitment to honesty which guides the actions of all its members. Any disregard for this threatens the unrestricted and honest exchange of knowledge. The Faculty has the right and the responsibility to hold students to high ethical standards in conduct and in works performed, as befits a scholar at the university. Violations of academic integrity include, but are not limited to:

- Cheating
- Collusion
- Electronic Dishonesty
- Grade Falsification
- Plagiarism

Faculty members have the responsibility to investigate all suspected breaches of academic integrity that arise in their courses and shall have the authority to decide whether the student(s) has violated the Academic Integrity Policy. If it is determined that the violation occurred, the faculty member will decide the consequences, taking into account the severity and circumstances surrounding the violation, and will inform the student in writing, forwarding a copy of the letter to the Registrar and to the Dean of Student Development.

Consequences to an academic integrity violation include, but are not limited to:

- A letter in the student's academic file
- Failure on assignment(s)
- Failure in the course
- Issuance of an XF for the course
- Conduct hearing with Student Development

If a student received an XF, this remains as a permanent grade and cannot be removed from the official transcript. Some programs and majors have more explicit ethical standards, which supersede this Policy, and violation of which may result in dismissal from some programs or majors within the University.

The complete policy may be found at <<http://www.millikin.edu/handbook>>.

## **Disruptive Behavior Policy**

Students who exhibit behaviors that are considered to obstruct or disrupt the course goals or learning environment are subject to student conduct action per the University

Standards of Conduct. Behaviors that are considered disruptive include, but are not limited to: tardiness, sleeping, inappropriate use of mobile or electronic devices, use of language that is offensive or discriminatory, excessive interruption, and/or repeated violation of faculty or classroom expectations which are stated in the course syllabus. Students who exhibit such behavior may be dismissed from the class and referred to Student Development.

### **Dropping a Course and the University Withdrawal Policy**

There is an add/drop deadline for each academic term. During the allowed period, students may elect to add or drop courses by completing the proper form and requesting signature from the instructor or department chair as required. (Forms are available in Registrar's Office). Faculty members reserve the right to permit dropping or adding courses after the set deadline. Courses dropped during the appropriate period result in a W on the student transcript. Courses dropped after this period will result in the earned grade at the time of drop.

Students who leave the University during or at the end of the semester must report to the Registrar's Office to complete the necessary procedures and forms. Students who withdraw from the University may be eligible to receive a refund of charges assessed by the University in accordance with the refund schedules (undergraduate traditional, PACE, or graduate) posted in the Academic Bulletin. Students may also be involuntarily withdrawn if they engage or threaten to engage in behavior which poses a danger of causing physical harm to self or others. The Involuntary Withdrawal Policy may be found in the Student Handbook.

### **Course Evaluations**

Millikin University utilizes online course evaluations which are available beginning in the last week of each course term. Students may log into their MyMillikin portal to complete course evaluations. Evaluations are considered an important part of the teaching environment and students should feel comfortable giving thoughtful, honest feedback.