

## Course Syllabus

# Stars & Galaxies

## PHYS 1403-03

***Fall 2017***

1. Location of Class Meeting: Farrington Building, Room 105
2. Class Meeting times: Tuesday and Thursday, 12:30 pm – 1:50 pm
3. Instructor: Dr. Alexander Mikishev
4. Office location: Farrington Building, Room 304A
5. Instructor contact information: Phone: 936.294.1601 (for Dr. Alex Mikishev);  
email: [amik@shsu.edu](mailto:amik@shsu.edu)
6. Office hours:  
Tuesday 3:00 pm – 4:30 pm  
Thursday 3:00 pm – 4:30 pm

**As per University policy, other times are available by appointment only.** These office hours are subject to change and revision without prior notification during the semester for a variety of university related functions or instructor illness.

7. Require Workbook: *Lecture Tutorials for Introductory Astronomy*, 3rd Edition by Adams, Prather & Slater (ISBN-13: 978-0-13-239226-6, ISBN-10: 0-13-239226-7).
8. Suggested Textbook: I recommend for studying: *Cosmic Perspective: Stars, Galaxies & Cosmology*, 8<sup>th</sup> Edition, by Bennett, Donahue, Schneider, and Voit. ISBN: 978-0-134-05906-8
9. Important dates: 8/24 – 1<sup>st</sup> day of the class  
8/30 – last day to make schedule changes  
9/8 – last day to drop for full refund  
11/10 – last day to drop full-term courses with a “Q”  
11/22 – 11/24 – Thanksgiving Holidays  
12/4 – 12/7 – Final week

10. Course description: This course is designed to give you a qualitative overview of everything outside the solar system, namely stars and stellar systems. There are no prerequisites, but it is expected that you have retained a working knowledge of algebra from high school. If not, you might want to seek help in the math tutoring center.

The overarching goals for this class are ...

1. Increasing your appreciation for scientific advances and the impact astronomy has had on our understanding of our Universe as well as our day-to-day lives.
2. Understanding the nature of science and how astronomers hypothesize, test, and validate astronomical concepts.
3. Developing your ability to synthesize a group of facts into a conceptual model that demonstrates a comprehension of basic astrophysical phenomena.
4. Actively engaging in your own learning through various in-class group activities.
5. Learning to work cooperatively with others in a group setting in order to communicate ideas and knowledge while working towards both group and individual goals.
6. Comprehending the relative scales of our Universe and the vastness of space.
7. Appreciating the wonder and beauty of our Universe and our role in it.

11. Course objectives:

- 1) Upon completion of this course, you should have a firm grasp of the following items... The development of the scientific method
- 2) Decoding light to determine physical properties of objects
- 3) Apparent and absolute magnitudes
- 4) Determining cosmic distances
- 5) Historical development of the laws governing the universe
- 6) Formation and evolution of stars
- 7) Galaxies
- 8) The expansion of the universe
- 9) The origin and fate of everything

12. Grades: Your grade in this course will be based on the following

Labs (please see separate lab syllabus for details) 25%

“Mastering Astronomy” and Homework 15%

Exams ( 3 ) 60%

Letter grades will be assigned according to the following scale:

$90 \leq A \leq 100$

$80 \leq B < 90$

$70 \leq C < 80$

$60 \leq D < 70$

F<60 **Be aware:** Final 79.999999999999999999 is “C”!

Example of Final grade calculation: Your grade on Labs is 90, MA & Homework is 70, and average of 3 exams is 80. For the course your Final grade is  $0.25*90+0.15*70+0.60*80 = 81$ . Your Final grade is “B”!

**AN IMPORTANT NOTE – I will not compute your grades for you until end of the semester. You will need to keep track of your own percentages so that you know what you need to do to succeed in this class. Do not ask me how you are doing.**

### 13. LABS:

You will receive the syllabus for your lab section during your first lab meeting. Lab and lecture are tied into a single grade, so your performance in lab is crucial. Your lab grades will be accessed on Blackboard for your particular lab section, but do not forget to consider them when figuring out your overall course grade. The faculty lab supervisor is Dr. Scott Miller (stm009@shsu.edu).

### EXAMS:

The in-class exams are fairly self-explanatory. These are tests that will assess your understanding of the subject for a three-week-long block. NOTE: **I ALLOW ONE MAKE-UP EXAM with 90 as a maximum grade!**

### 14. “Mastering Astronomy” and Homework:

You have an Electronic Access via Blackboard to the “Mastering Astronomy” on-line materials. These assignments are graded automatically. Homework will be based on exercises from Work book and will be assigned periodically in class.

“Mastering Astronomy” is accessible via **Pearson MyLab/Mastering** block. To find it please enter your **Blackboard** course; on the left panel you see direct to “Mastering Astronomy”.

Students can receive 24/7 technical assistance with their Pearson account by visiting <http://247pearsoned.custhelp.com/>

Our Contact person: [Ashlen.Smolik@pearson.com](mailto:Ashlen.Smolik@pearson.com)

### 15.Attendance policy:

As per Federal regulations, attendance will be taken at every class by means of a sign-in sheet. The student will be required to sign the sheet. Failure to do so will result in the student being considered absent for the class. Federal regulations, and University policy, require that the instructor reports the last day of attendance any time that a student drops, withdraws from, or fails the course.

**Attendance is not used to calculate the final course grade.**

## **University mandated parts of syllabi:**

**Student Syllabus Guidelines:** You may find on-line a more detailed description of the following policies. These guidelines will also provide you with a link to the specific university policy or procedure:

<http://www.shsu.edu/syllabus/>

**Academic Dishonesty:** Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. *See Student Syllabus Guidelines.*

**Classroom Rules of Conduct:** Students are expected to assist in maintaining a classroom environment that is conducive to learning. Students are to treat faculty and students with respect. Students are to turn off all cell phones while in the classroom. Under no circumstances are cell phones or any electronic devices to be used or seen during times of examination. Students may tape record lectures provided they do not disturb other students in the process.

**Student Absences on Religious Holy Days:** Students are allowed to miss class and other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Students remain responsible for all work. *See Student Syllabus Guidelines.*

**Students with Disabilities Policy:** It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and

email [disability@shsu.edu](mailto:disability@shsu.edu)). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see: <http://www.shsu.edu/dept/academic-affairs/documents/aps/students/811006.pdf>

Visitors in the Classroom: Only registered students may attend class. Exceptions can be made on a case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their attendance. Students wishing to audit a class must apply to do so through the Registrar's Office.

## 16. Tentative Lecture Schedule

Week 1: The so-called Scientific Method. Nature of Science. The science of Astronomy.

Week 2: Light and Matter. Decoding light and properties of objects.

Week 3: Telescopes. Cosmic distances.

Week 4: Apparent and absolute magnitudes.

Week 5: Exam 1

Week 6 Historical development of the laws governing the universe

Week 7: Our star – The Sun. Properties of stars

Week 8: Birth of stars. Star stuff.

Week 9: Evolution of stars

Week 10: Exam 2

Week 11: Our Galaxy – Milky Way

Week 12: Galaxy evolution. Birth of the Universe

Week 13: Dark matter. Fate in the Universe

Week 14: Life in the Universe.

Week 15: Final week - Exam #3

**November 21 and November 23 Thanksgiving Week No classes**