

# **Astronomy 350: Cosmology**

Sonoma State University  
Department of Physics and Astronomy  
Spring 2009

## ***General Information***

**Instructor: Dr. Scott A. Severson**

**Class Schedule: 1:00 – 2:15 PM Monday & Wednesday**

**Classroom Location: Darwin 29**

**Office Hours: 11:00 - 11:50 AM Monday, Wednesday, Thursday**

**Office: Darwin 300L**

**Email: [scott.severson@sonoma.edu](mailto:scott.severson@sonoma.edu)**

**Phone: (707) 664-2376**

**Course Website:**

**<http://www.phys-astro.sonoma.edu/people/faculty/severson/a350>**

## ***Course Description***

This is a three-hour lecture course. The course describes what we know about the Universe and how scientists have learned it. Topics include the Big Bang, cosmic inflation, surveys of galaxies, the origin and evolution of structure in the Universe, dark matter, and dark energy. The course emphasizes the scientific method and how our knowledge of the Universe has changed over time and will continue to change, but the method continues to work.

## ***General Education***

This course may be used to satisfy general education requirements in category B3.

## ***Prerequisite:***

One prior course in astronomy.

## ***Textbook***

### **Your Cosmic Context**

#### **Authors**

Todd Duncan and Craig Taylor.

#### **ISBN-10**

0132400103.

#### **Note:**

There will be other required reading presented in the form of articles, web references and at least one additional popular-science cosmology book for the book report assignment.



textbook. Show me that you have learned something more about at least one of the subjects we are discussing in class. The paper should be four to six pages of double-spaced typed text, plus footnotes or endnotes. Late papers will be penalized. This paper will be on a book of your choice, but the book must be approved by the instructor. Further details of the assignment, including a list of pre-approved books, will be provided in class and on the course WebCT site. The report is due 4/22/2009.

***Oral Presentation***

**15 %**

You will give an in-class group presentation that will be 10-15 minutes long. The topics for these presentations and sign up sheets will be presented prior to the March 9th class period. If you prefer not to do an in-class presentation, and you obtain prior permission of the instructor, you can substitute another writing assignment.

***Midterm Exams (2)***

**30 % (15% each)**

There will be two in-class midterm exams, which will consist of fill-in-the-blank and short answer questions. The first will be held on Wednesday, March 4<sup>th</sup> and cover material from chapters 1-4 of the text and associated class material. The second will be held on Wednesday, April 8<sup>th</sup> and cover material from chapters 5-9 of the text and associated class material.

***Final Exam***

**20 %**

There will be a cumulative final exam, which will consist of fill-in-the-blank and short answer questions. It will be held in our regular classroom on: Wednesday, May 20<sup>th</sup> 2 p.m. - 3:50 p.m.

***Extra Credit***

Extra Credit (up to 5%) is available for attending a public talk on some current astronomical or physics topic and submitting a one-page synopsis. Each Monday of the semester, from February 2 through May 4, the [Department of Physics and Astronomy](#) will present a free public lecture in its renowned "[What Physicists Do](#)" series at 4:00 p.m. in Darwin 103. The lectures on February 2, 9, 23, March 23, April 6, 20, and May 4 should be of special interest to you as you study astronomy. See the following URL for details: <http://phys-astro.sonoma.edu/wpd/>

Other appropriate external work may be substituted with instructor approval.

***Instructor Discretion***

I reserve the right to raise your grade if exceptional effort and class participation are observed through the semester. Improvement throughout the semester is also noted.

**Course Standards**

This course is not graded on a curve. Writing and oral-presentation assignments will be graded according to a rubric and assigned a letter grade. These letter grades will be averaged, taking into account their relative course weighting described above, in order to determine your final grade. The writing assignment will be submitted via turnitin.com and checked for originality. Example rubric categories for assignment grading includes: Ideas – how interesting and sophisticated are the ideas presented, Organization and Coherence – is it well structured with a logical progression, Support – do you provide appropriate evidence and citations, Style – how effective are the choice of words, is it geared toward the appropriate audience and Mechanics – is it free of spelling and grammatical errors.

The following is a likely distribution of grades according to percentage of possible credit. I reserve the right to adjust this scale accordingly based on the class aggregate performance on the course assignments.

<b>A</b>	<b>&gt; 95 %</b>
<b>A-</b>	<b>90-95 %</b>
<b>B+</b>	<b>86-89 %</b>
<b>B</b>	<b>82-85 %</b>
<b>B-</b>	<b>78-81 %</b>
<b>C+</b>	<b>74-77 %</b>
<b>C</b>	<b>70-73 %</b>
<b>C-</b>	<b>66-69 %</b>
<b>D+</b>	<b>62-65 %</b>
<b>D</b>	<b>58-61 %</b>
<b>D-</b>	<b>54-57 %</b>
<b>F</b>	<b>&lt; 54 %</b>

### Other Class Policies

- Questions are encouraged.
- Turn off phones and small electronics.
- Arrive to class on time.
- Try your best to attend every class.
- Read subject material before each class.
- Start assignments early. Do not fall behind!
- Come to office hours with questions

### Course Schedule

Week	Class Date Monday	Class Date Wednesday	<i>Your Cosmic Context</i> Chapter Reading (Crossword due by Class Monday)	Assignment (Wednesday)
1	Jan 26	Jan 28	-	
2	Feb 02	Feb 04	1 & 2	
3	Feb 09	Feb 11	3	
4	-	Feb 18	4 (Wednesday)	
5	Feb 23	Feb 25	5	
6	Mar 02	Mar 04	6	Midterm 1 (Ch. 1-4)
7	Mar 09	Mar 11	7	
8	Mar 16	Mar 18	8	
9	Mar 23	Mar 25	9	
10	Mar 30	Apr 01	10	
11	Apr 06	Apr 08	11	Midterm 2 (Ch. 5-9)
12	-	-	-	
13	Apr 20	Apr 22	12	Book Report
14	Apr 27	Apr 29	13	Oral Presentations (MW)
15	May 04	May 06	14	Oral Presentations (MW)
16	May 11	May 13	-	Oral Presentations (MW)
17	-	May 20	-	Cumulative Final Wednesday May 20 2 p.m.-3:50 p.m.