



# Survey of Astronomy

## News

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<input type="checkbox"/> <a href="#">End of semester info</a> ▼	May 8, 2014 4:31 PM	-	Published

The **Astronomy 103 final exam** will be on **Monday May 12, 10 am - noon**, in our usual classroom Physics 137. It will be very similar to the midterms: no books, notes or calculator are allowed, and you will need a #2 pencil. There are practice problems under [Quizzes: Extra Practice](#). The actual final exam will be taken from the problems in the Practice Final: Part I and Practice Final: Part II, so study these problems to prepare.

There will be no makeups of the final exam, except by prior arrangement or in cases of documented emergency. If you are unable to make it to the exam, send me an email **before the exam** if at all possible.

Also remember that the problem sets are due before the final exam on Monday May 12, and the best 12 count for 10% of your final grade.

Finally, you can still complete the two extra credit quizzes, and send me your answers to the Google Doodle extra credit posted below.

<input type="checkbox"/> <a href="#">Bonus extra credit</a> ▼	May 7, 2014 1:06 PM	-	Published
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Here is one final extra credit opportunity, in which you can show that you know more astronomy than Google.

The Google Doodle for last year's Earth Day is at <http://www.google.com/doodles/earth-day-2013>. Go to this link and watch the animation. There are at least 4 astronomical things wrong here, involving the sun, moon and stars.

For up to **three extra credit points on the final exam**, explain three of them - each correct answer is worth one bonus point on the exam.

Please send in your answers by email ([erbd@uwm.edu](mailto:erbd@uwm.edu)) before the beginning of the final exam, 10 am on Monday May 12.

More info on the final exam will be posted shortly.

<input type="checkbox"/> <a href="#">Extra credit quizzes</a> ▼	May 2, 2014 2:31 PM	-	Published
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There are two **extra credit quizzes** now available on D2L -- a passing score on each is worth +1% on your final grade.

The first extra credit quiz covers **Chapter 18** of the text, Life in the Universe, also discussed in class Friday May 2 and Monday May 5. The quiz is due by May 12 at 10 am, and a passing score is at least 85% (12/14 correct).

The second quiz involves **math problems**, similar to problems requiring calculations we've done throughout the semester. There are 15 questions, and a passing score is 80% (12/15 correct). Three attempts are allowed, and this quiz is also due by May 12 at 10 am.

Also remember that if you want to do the **extra credit research paper**, it is due by Wednesday May 7.

The **final exam** will be on Monday May 12 at 10 am. We'll review in class on Wednesday May 7, and there will be more info on the final provided next week.

**Midterm 3, other upcoming events** ▼ Apr 18, 2014 12:02 PM - Published

Coming up in Astronomy 103:

- **Quiz 11** on Chapters 14, 15 is due on Monday, and the associated problem set is Problem Set 11
- **Midterm 3** will be in class on **Wednesday April 23**, and will cover:
  - Neutron stars and black holes (Ch 13)
  - The solar system (Chs 4, 6, 7, + bits of Ch 5 [Earth] and 8 [moons of Jupiter, Saturn])
  - The Milky Way Galaxy (Ch 14)
- We'll review in class on Monday April 21
- On Friday April 25 we'll continue Chapter 16, Galaxies and Dark Matter, and start Chapter 17, Cosmology, on Monday April 28

**Extra Credit #3** ▼ (dismissed) Apr 14, 2014 1:34 PM - Published

Here is the next Astronomy 103 extra credit opportunity:

### Extra Credit #3

- Short research paper on an astronomical topic
- Choose a topic that interests you
  - Must be approved: email me or ask in class, and ask if you'd like suggestions
- Write short paper (1 page minimum) about topic
- At least three sources required, must be listed at end of paper
- Must be in your own words
- Acceptable sources:
  - Published books and magazines
  - Webpages from universities (.edu) and government organizations (e.g. NASA)
  - Wikipedia is not an acceptable source but is a great place to start – follow the references!
- If you want to do something based on a news story that's ok, but since this is research rather than a news summary your paper should focus on some background aspect of the news story
- Hand in paper copy or email by last day of classes, Wednesday May 7
- +1% on final grade

**April 2 update** ▼ (dismissed) Apr 2, 2014 12:49 PM - Published

Upcoming events in Astronomy 103:

- **Quiz 9** on the solar system is due Monday April 7, and the associated problem set is Problem Set 9.
- **Friday** in class we'll talk about the Jovian planets, which is Chapter 7 of the textbook. We'll also cover some of the material in Chapter 8.
- **Monday April 7** we'll talk about planets around other stars, which is section 4.4 of the book.
- On **Wednesday April 9** we'll start Chapter 14, the Milky Way galaxy.
- There is another opportunity for **extra credit stargazing** on Wednesday April 9, from 9-10 pm. See the stargazing handout under Content for more info.

**Midterm 2 on Wednesday** ▼ Mar 24, 2014 12:00 PM - Published

The next **midterm** is this Wednesday March 26 in class.

- Will cover Chapters 3, 9-12
- Problems will be similar to those on quizzes
- 45 problems
- Includes parts of quiz 4, up to quiz 8
- No book, notes or calculator
- Sheet of formulas will be given
- Calculations will be doable without a calculator
- Bring #2 pencil!
- Slides from today's review in class are on D2L

**March 21 update** ▼ Mar 21, 2014 1:54 PM - Published

A few reminders and clarifications:

- **Quiz 8** is due on Monday March 24, and the associated problem set is 8A. The quiz due Monday March 31 is Quiz 8B, and the practice problems are in problem set 8B.
- The next **midterm** will be on Wednesday after spring break, March 26. It will cover Chapter 3 and Chapters 9-12 – this is the material since last midterm. We'll review in class on Monday March 24.
- On Friday March 26 we'll start talking about the Solar System, beginning with Chapter 4.

Let me know if you have any questions.

**March 7 update** ▼ Mar 7, 2014 1:32 PM - Published

Here's what's coming up in Astronomy 103:

- **Quiz 7** is due on Monday at midnight, and you should do **Problem Sets 7A, 7B** for practice. Quiz 7 covers the interstellar medium and the lifetimes of stars.
- Next week we'll talk about **neutron stars, black holes, and the theory of relativity**. Approximate schedule:
  - **Monday**: Finish Chapter 12, Sections 13.1 – 13.3
  - **Wednesday**: 13.4 – 13.6
  - **Friday**: 13.7 – 13.8
- The **next midterm** will be on Wednesday after spring break, March 26. It will cover Chapter 3 and Chapters 9-12 – this is the material since last midterm. We'll review in class on Monday March 24.
- Friday March 14 is the due date for **extra credit #2**, the news summary. See the update posted on February 21 for more info.

**Dropped quizzes and midterm** ▼ Feb 24, 2014 9:26 AM - Published

A few people have had questions about why all their quizzes and the midterm are marked as dropped. This is because only the best 9 quizzes are used for your grade, and the 5 lowest scores will be dropped. This means that the 5 lowest scores of the first midterm are dropped. The 5 lowest scores of the second midterm are also dropped. The lowest score of the first midterm is dropped, so until after the second midterm, the first one is marked as dropped. Once you've taken the second one, you'll see that only the lowest of the two scores will be marked as dropped. So don't worry about this, and let me know if you have any questions.

**My Home**

**Survey of Astronomy**

**Ralf Kotulla**

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**Quiz 5 due Tuesday** ▾ Feb 21, 2014 1:37 PM - Published

**Quiz 5** covers the Sun, including material from lectures on Friday and on Monday February 24. To give you a little more time to work on it after Monday's lecture, the due date for quiz 5 is being extended 24 hours, to 11:59 pm on Tuesday February 25.

Problem Set 5 also covers the Sun, so these problems are practice for the quiz.

Let me know if you have any questions.

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**Extra credit #2** ▾ Feb 21, 2014 10:24 AM - Published

The second **extra credit** opportunity (the first is the ongoing stargazing sessions, see the updates below) is to write a short summary of an astronomy story you see in the news.

Some guidelines:

This must be astronomy-related, and you should choose articles that say something about the scientific interest and importance of the topic. Feel free to ask for suggestions.

At least 3 different sources are required, and these must be cited. The format of the citation doesn't matter.

The summary must be in your own words; cutting and pasting from the news articles will not be accepted. The summary should say what the main discovery or event was, something about how it was measured or discovered or observed, and something about why it's interesting or significant.

This can be turned in at any time between now and **Friday March 14**, either by email or a printed copy turned in during class. This will be worth +1% on your final grade. Please ask if you have any questions.

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**Upcoming schedule** ▾ Feb 19, 2014 1:00 PM - Published

Now that we've covered the basic tools of astronomy -- light, matter and telescopes -- we'll start studying things in the sky, beginning with the Sun and stars. Here is approximately what we'll cover in the upcoming week. We are skipping the section of the book on the solar system for the moment, but we'll return to this topic after we've talked about stars and star formation.

- **Friday February 21:** Begin Chapter 9, The Sun, sections 9.1 to 9.3.
- **Monday February 24:** Finish Chapter 9: 9.4 - 9.5
- **Wednesday February 26:** Chapter 10, sections 10.1 to 10.4
- **Friday February 28:** Chapter 10, sections 10.5 to 10.7

**Quiz 5** will be due as usual on Monday February 21.

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**February 14 update** ▾ Feb 14, 2014 12:26 PM - Published

Coming up in Astronomy 103:

• **Quiz 4 due Monday**, on Chapters 2 and 3, and work on Problem Set 4 for practice

• **First midterm is Wednesday Feb 19 in class**

– Will cover Lectures 1-8 and a bit of 9 (through Feb 10 + a bit of Feb 12)

– Textbook up to Chapter 2, Light and Matter

– Problems will be similar to those on quizzes

• About 45 multiple-choice problems

• Problems on material through Chapter 2 – includes parts of quiz 4

• No book, notes or calculator

• Sheet of formulas will be given

• Calculations will be doable without a calculator

• Bring a #2 pencil!

• Review in class on Monday Feb 17 - come with questions!

• Also begin reading **Chapter 9, The Sun**, which we'll start in class on Friday February 21.

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**Upcoming reading schedule** ▾ Feb 7, 2014 12:10 PM - Published

Here's the approximate reading schedule for the upcoming week:

- **Friday Feb 7:** Chapter 2, sections 2.1 to 2.3
- **Monday Feb 10:** Chapter 2, sections 2.4 to 2.8
- **Wednesday Feb 12:** Chapter 3, sections 3.1 to 3.3
- **Friday Feb 14:** Chapter 3, sections 3.4 and 3.5

The first midterm will be in class on Wednesday February 19. There will be more information on that coming next week, and we'll review in class on Monday February 17.

**Quiz 3** will be due on Monday as usual.

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**This week's update** ▾ Feb 4, 2014 3:50 PM - Published

- We'll finish Chapter 1 this week, and probably start Chapter 2 on Friday, so this would be a good time to finish reading Chapter 1 and start Chapter 2.

- There are rooftop stargazing sessions on Monday through Thursday this week at 8 pm, which you can attend and report on for extra credit. See below for more information. Be sure to check the webpage or Twitter first, since the weather isn't looking good this week.

- Check out the animations posted under Content for some new animations of planetary retrograde motion and the phases of Venus in the Copernican and Ptolemaic models.

- Repeating the note below about quizzes and problem sets, since some people have asked: for the first several weeks of classes, D2L will tell you that all the quizzes and problem sets you've done have been dropped. This is because only the best 12 problem sets and best 9 quizzes will be used for your grade, so until you have done more than 9 quizzes and 12 problem sets they will all be marked as dropped.

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**January 27 update** ▾ Jan 27, 2014 2:36 PM - Published

Hi all,

A few important announcements:

- **The due date for Quiz 1 will be postponed by 24 hours** due to the cancellation of classes Monday evening and Tuesday during the day, in case anyone needs to do it from a campus computer but needs to go home

early. The new due date is **Tuesday January 28, 11:59 pm.**

- There will still be a **review session** in the Library E170 today from 3-4 pm, but Tuesday's review sessions are cancelled. Review sessions will start again on Wednesday. A reminder of the review session schedule: Mondays (3-4pm), Tuesdays (11am-12pm), Wednesdays (3-4pm), and Fridays (10-11am and 2-3pm)

- If your last name starts with A-K, go to the **planetarium** across the hall from Physics 137 on Wednesday instead of coming to class, and come to class on Friday. If your last name starts with L-Z, come to class on Wednesday and go to the planetarium on Friday. Your planetarium summary is due in class during the class after the show you attend.

- Check out the **new animations** posted today, about the phases of the Moon and eclipses. These will help you visualize what's going on. These are under the Content tab, and choose Animations from the menu on the left.

- We'll start covering material in Chapter 1 of the text on Wednesday/Friday, so please begin reading Sections 1.1 and 1.2.

- The syllabus had a typo for the date of the third midterm: Midterm 3 will be on Wednesday April 23. The updated syllabus can be found under Content -> Handouts.

Email me if you have any questions and stay warm!

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**Summary of first assignments** ▾ Jan 22, 2014 2:30 PM - Published

Here's a summary of what's coming up in Astronomy 103:

The first **reading assignment** is Appendices 1 and 2, and Sections 0.1 and 0.2 of the textbook. This covers scientific notation and astronomical measurements, and the orbital motion of the Earth.

**Quiz 1** is due at midnight (11:59 pm) on **Monday January 27**, and you should do **Problem Set 1** for practice. These are both found under the Quizzes tab. A note about quizzes and problem sets: for the first several weeks of classes, D2L will tell you that all the quizzes and problem sets you've done have been dropped. This is because only the best 12 problem sets and best 9 quizzes will be used for your grade, so until you have done more than 9 quizzes and 12 problem sets they will all be marked as dropped.

See below for information on next week's **Planetarium assignment**, and for information about **stargazing sessions for extra credit**. A handout describing the stargazing sessions can also be found under the Content tab -- choose Handouts from the menu on the left.

Notes from the first lecture are now posted. Lecture slides can be found by clicking on the Content tab above, and then choosing "Lecture slides" from the menu on the left.

And finally, for great examples of zooming out to the very large and in to the very small, watch the classic movie [Powers of Ten!](#)

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**Stargazing extra credit** ▾ Jan 22, 2014 2:09 PM - Published

There will be several **extra credit** opportunities during the semester, and the first is to attend and report on one of the stargazing sessions offered by the planetarium.

The UWM planetarium will be offering free stargazing sessions throughout the semester, using the observatory on the roof of the Physics building.

For extra credit (+1% on final grade), attend one of the sessions listed below, write a short summary of what you did and observed, and turn it in before the last day of classes.

### Free stargazing sessions at UWM

**Where:** UWM Physics Observatory Deck. Take the elevator at the east end of the Physics building to the 4th floor and make a left to climb the staircase that leads to the roof. Follow Observatory signs.

*\*\*Note: The observatory is not wheelchair accessible. If you are unable to access the Observatory but would like the extra credit opportunity, contact me at [erbd@uwm.edu](mailto:erbd@uwm.edu) for alternative arrangements.*

**When:** Weather permitting (please check on T witter or our webpage approximately 30 minutes prior to the start of stargazing), observing/stargazing will be offered on the following dates:

**Feb 3, 4, 5, 6 at 8:00-9:00 pm**

**Wed, Feb 12 at 8:00-9:00 pm**

**Wed, March 12 at 8:00-9:00 pm**

*Note the later time for the following sessions!*

**Wed April 9 at 9:00-10:00 pm**

**April 21, 22, 23, 24 at 9:00-10:00 pm**

**May 14 at 9:00-10:00 pm**

If there is a question about whether observing will be held, please check our T witter feed or Facebook, located at <http://twitter.com/UWMPlanetarium> and <https://www.facebook.com/UWMPlanetarium>. The planetarium website is <http://planetarium.uwm.edu>.

More information is located here: <http://www4.uwm.edu/planetarium/shows/stargazing.cfm> You can sign up on that page to get an email too if you wish.

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**Planetarium shows and assignment** ▼ Jan 22, 2014 2:01 PM - Published

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Next week during class time there will be planetarium shows. If your last name begins with A-K, you'll go to the planetarium on Wednesday January 29, and come to class as usual on Friday. If your name starts with L-Z, come to class on Wednesday and go to the planetarium on Friday January 31. The lecture in class will be the same both days. The planetarium is located across the hall from Physics 137, and the door will be locked when the show starts so you need to be on time!

Planetarium attendance and satisfactory completion of the planetarium assignment count for 5% of your course grade, so be sure to sign in when you visit the planetarium. After your visit, write a short (100-200 word) summary of the planetarium show, including at least one fact you learn during the show. This will be due in class during the first class after your show.

Have fun and enjoy the planetarium!

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