

## Astronomy & Cosmologies Syllabus – Spring 2015 – Zita and Chamberlain

Astronomy is the science of what we observe in the sky.<sup>1</sup> Cosmologies are ways in which humans have understood the creation, evolution, and structure of the universe, and our place in the universe, throughout history and across cultures.<sup>2</sup>

This interdisciplinary program will combine science and humanities. We will learn introductory astronomy through lectures, discussions, and interactive workshops. We will observe the sky using naked eyes, binoculars, and telescopes, and with virtual astronomy programs. From stars stories to modern astrophysics, we will explore cosmological concepts from perspectives such as science, literature, mythology, philosophy, and history.

*LEARNING IN COMMUNITY is a central aspect of this program. We will work in teams. Students will write primarily for peers, not just for faculty. The feedback and support that we provide each other will enrich the content and dynamic of our learning. By joining this program, everyone commits to participating in our learning community. We all take joint responsibility for making seminars rewarding. Don Finkel's "Learning Through Writing Together" will guide our work together, as we aim to deepen our understanding and wisdom together, and to hone our communication skills.*

### OUR WEEKLY ACTIVITIES

Weekend: Reading, reflection, PIQs. Alternating groups post **\*short essays**. Finish your reading and take notes. **\*Meet** your seminar team and discuss the reading. Choose your best Points, Insights, and Questions. **\*Post** your PIQs online. This prepares us all for great seminar discussions.

- Points = key points of the author – in your words
- Insights = “aha moments” and answers to questions that you discover together
- Questions = significant outstanding questions to discuss in seminar, or questions of fact for your faculty to address (that you couldn't find out in your pre-seminar discussion)
- Each teammate contributes at least one Point, one Insight, and one Question. A team of 3 will post 3 of each, for a total of 9. **\*Include** a page number from your text for each PIQ.

Monday 6-9 pm in Sem2 A2109: Seminar on Big Bang by Singh (Astronomy) or New Patterns in the Sky by Staal (Cosmologies). **\*Bring** your text(s) and notebook.

Monday daytime: read and **\*respond to some essays** by peers, some weeks. Discuss them in person.

Tuesday 6-10 pm in the CAL (Computer Applications Lab, 1<sup>st</sup> floor of Lab 2): Astro & Cosmo Vorlesung, or “before reading:” Lecture, workshop and/or discussion will focus and motivate your reading of this week's chapter of Discovering the Universe. **\*Bring** your text and notebook (and laptop if convenient).

Wednesday (no class):

- Finish **reading** this week's Universe chapter.
- Post your **PIQs on Universe**, with your team. Your PIQs will help Zita know what to spend extra time on, in Thursday's class.

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<sup>1</sup> Astrology is a belief system that involves forecasting futures based on positions of objects in the sky.

<sup>2</sup> Cosmetology is an art or science of making people pretty. Sorry, we won't be teaching those, this quarter.

- Post any **workshop response** that you may have due from Tuesday's class.
- Star Gazing : prepare a **star story** for this week's observing session (every other week or so)

Twice this quarter you will **write an inquiry-based essay** on any of our shared readings and learning. Make connections! Your writing may be analytical, exploratory, or creative. It must be carefully proofread. See the writing guidelines. Plan to write on Wednesday, then polish and post your Inquiry on Thursday.

THURSDAY: Lectures, workshops, discussions – and observing after class. Bring Universe, your notebook, maybe a laptop, and your observing texts and equipment.

Friday: today you look back on the week and your learning, individually and in community:

- Essay Responses: If you didn't post an inquiry-based essay this week, then it's your turn to **\*Respond to at least 2 of your classmates' Inquiries**. Write a thoughtful letter, as described in Finkel's "[Learning Through Writing Together](#)" and in Olson's "[Responding to Another's Writing](#)".
- Post any **workshop response** that you may have due from Thursday's class.
- Reflect on your best learning this week. Ask any outstanding questions. Faculty do read your **\*Reflections**, and they will help you write your self-evaluation at the end of the quarter.
- Quiz: Take this week's **\*Universe Quiz** online. Treat the quiz as a learning opportunity, not as a test. You can take as long as you like on this, but don't stress out about it. The software will give you feedback, and you can repeat the quiz multiple times if you like. Do it closed-book the first time, then feel free to use your textbook and notes on subsequent attempts – only as long as you are enjoying the process.

Weekends are for polishing your writing, R&R, reading and thinking, and preparing for the coming week.

- If you wrote an Inquiry this week, now is the time to **Reflect** on Responses that peers posted. You may choose to **Reply** to reach Respondent, or you may choose to **write a Summary Reflection**. Your thoughtful, specific reflections will motivate the next step of your writing: **polishing your Inquiry into an Essay**. You may find that the structure or meaning of your writing changes significantly. Sleep on it, and proofread carefully, as always. *Your Essay is due on Sunday, so it's a good idea to post your Reflections on responses on Saturday.*
- Finish Monday's seminar reading. Take notes.
- Meet your pre-seminar team, discuss the seminar reading, and post PIQs together by Sunday (*well, Monday noon at the very latest – your seminar facilitators need plenty of time to read them before class*).
- Start reading (or at least skimming) this week's Universe chapter.
- Get outside and look at the sky! Sketch some of your observations. Make note of your surroundings and circumstances. Does observing connect to natural history writing or personal journaling, for you? Can the insights you develop connect to your Inquiries and Essays?
- Rest, play, eat, take care of yourself. This is an intense learning experience. It will be most rewarding when you stay healthy. Please talk with your faculty if any concerns arise.

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