

HPSC0049 History of Astronomy and Cosmology

Course Syllabus

2019-20 session | Prof. Andrew Gregory | andrew.gregory@ucl.ac.uk

Course Information

Charts mankind's changing conception of the universe from the ancient world to the current day. Issues examined will include the origins and development of astronomy, theories of the origin of the universe and of the nature of the universe, ideas of mankind's place within the universe.

Basic course information

Course website:	https://moodle.ucl.ac.uk/course/view.php?id=38853
Moodle Web site:	https://moodle.ucl.ac.uk/course/view.php?id=38853
Assessment:	1 x 2,500 word essay 1 x 2 hour exam
Timetable:	https://timetable.ucl.ac.uk/tt/homePage.do
Prerequisites:	None
Required texts:	None
Course tutor(s):	Prof. Andrew Gregory
Contact:	0207 679 2490
Web:	http://www.ucl.ac.uk/silva/sts/staff/gregory
Office location:	1.1, 22 Gordon Square

Schedule

UCL Week	Topic	Date	Activity
6	Introduction, Egyptian and Babylonian Astronomy	13/01/20	Read weekly reading
7	Greek Cosmology and Cosmogony.	20/01/20	Read weekly reading
8	Greek, Medieval and Islamic Astronomy.	27/01/20	Read weekly reading
9	Copernicus, Tycho Brahe and Kepler.	03/02/20	Read weekly reading
10	Galileo and Newton, astronomy and cosmology from Newton to Einstein	10/02/20	Read weekly reading
11	Reading Week		
12	Relativity, Cosmology and Cosmogony and Steady State Cosmology.	28/02/20	Read weekly reading
13	The Microwave Background, COBE and the Early Universe	02/03/20	Read weekly reading
14	The Evolution of the Universe, Universe or Multiverse	09/03/20	Read weekly reading
15	c20 and c21 Astronomy. The Anthropic Principles.	16/03/20	Read weekly reading
16	The Current state of Cosmology	23/03/20	Read weekly reading

Assessments

Summary

	Description	Deadline	Word limit	Deadline for Tutors to provide Feedback
	Essay 2,500 words	18/03/20		01/04/20
	Exam 2 hours	TBC		

Assignments

Specific Criteria for Assessment for this Module:

The following are the main criteria on which your essay and exam will be marked. There are no set numbers/ percentages associated with these criteria but we will give you qualitative feedback on each of these criteria. These are the criteria for a third year essay. Note that the emphases on these criteria change as we move to higher level essays. In higher level essays, there is less emphasis on referencing/ bibliography as we simply expect you to have got this right. There is

much more emphasis on independent critique and historiography.

Referencing/ Bibliography

You need to get into the habit of referencing properly. You must reference all quotes and all references/ summaries of books, etc. Pick one system for referencing and stick to it. You need to supply a bibliography of all works referenced. You must supply author, title, date, place of publication and publisher.

Answers question?

Increasingly important in higher level essays and critical in exams. Read the question carefully, answer it specifically, do not give irrelevant material or answer other questions.

Introduction

You should give an introduction to your essay in no more than one paragraph. Introduce your topic and your line of argument, no more. Good introductions are concise and precise.

Clarity

We place great emphasis on clarity of argument and expression. Avoid ambiguity and vagueness. Try to keep your line of argument clear. It often helps clarity to divide the main body of the essay into sections.

Organisation

Is the essay organized into an introduction, main body and conclusion? Does each part flow naturally into the next one? Is the evidence in a logical order?

Argumentation

Is the main argument of the essay clear, coherent and persuasive? Is it properly supported by the evidence available? Appropriate and persuasive historical examples used?

Use of literature/use of quotation?

Does the essay make appropriate use of the literature, does it engage with the literature and does it use an appropriate number of sources? Does the essay quote the literature in an appropriate manner?

Conclusion

Your essay should have a conclusion which is clearly marked as such (new paragraph, ‘In conclusion...’). It should be substantial in summing up what you have argued and exploring the implications of what you have argued. In higher level history essays, good substantial conclusions become increasingly more important.

Reading/ use of sources

How well have the readings and other resources been used? Does the essay reflect them accurately? Is the essay overly dependent on one source?

Independent critique?

Does the essay offer some independent critique or thought on the question or does it merely report what is in the literature? This criterion becomes increasingly more important for higher level history essays.

General Historiography?

How aware is the essay of assumptions and methods used to construct a history or to evaluate it?
Is the essay aware of nuances/ critiques of the question asked?

History of Astronomy and Cosmology Historiography?

Does the essay engage with specific history astronomy/ cosmology historiography? Awareness of the problems of scientists histories? Issues with marginal science/ astrology?

Generally

This course has discussed technical, philosophical and historical aspects of the history of astronomy and cosmology. The exam has a range of questions which emphasise these different aspects. What I am looking for both in essay and exam is an integration of technical knowledge and historical and philosophical understanding. I am quite happy for you to do technically oriented questions so long as you give some historical and/ or philosophical perspective to your answer as well – what was the importance of this technical knowledge in the history of astronomy/ cosmology? What was the thinking behind it and how does it fit into our overall picture of astronomy and cosmology? If you are approaching questions from a historical or philosophical perspective demonstrate some technical knowledge of the astronomy/ cosmology you are discussing.

The Exam.

The exam is three hours long and you will have to answer three questions. All the exam questions will be covered during the course, and there will be questions on all parts of the course. Previous exam papers are on the Moodle site or are available from UCL Library online.

The exam is much more a test of understanding than memory. The questions are structured such that you will not be able to write down everything you know about the topic in one hour. The key skills in such exams are being able to orientate to what the question is asking you to do, and being able to select the most important information at your disposal in order to construct a good argument or discussion.

There will be sessions on exam technique early in the third term and I will distribute a handout on the nature of the exam and good practice in preparing for exams.

Aims & objectives

Aims:

Firstly, to give a working knowledge of astronomy and cosmology from the Babylonians to the present day. The course divides into two roughly equal parts - ancient and classical astronomy and cosmology, to Einstein, and modern astronomy and cosmology after Einstein. The course will have three strands, looking at historical, technical and philosophical questions. This will be reflected in essay and exam questions, and students will be free to specialise in whatever period or type of question they see fit. Cosmology will be taken fairly broadly, and will encompass cosmogony and questions of man's relation to the cosmos, as well as the philosophical principles which lie behind cosmology and cosmogony.

Objectives: By the end of the course it is hoped that students will have acquired:

- A working knowledge of the history of astronomy and cosmology. (
- An appreciation of the development of views on the nature of space and time. (
- An appreciation of debates about man's place in the cosmos. (
- A basic technical knowledge of major ancient and modern theories. (
- A knowledge of the philosophical principles underpinning cosmology and cosmogony. (

Reading list

See Moodle Site

Best General Introductions:

See Moodle Site

Lecture Readings:

See Moodle Site