Astronomy 405: Introduction to cosmology
Section A01, Spring 2021

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Website for lecture notes and assignments: http://www.astro.uvic.ca/~jwillis/Jon%20Willis%20Teaching.html

Lectures: Lectures will take place online on Mondays and Thursdays 10.00 – 11.20am. A private link will be emailed to all registered students before the start of the semester.

Office hours: Office hours will take place online and by request.

Course text: Introduction to cosmology by Barbara Ryden. See over for additional reading.

Course outline:

Topic	Description	Textbook
1	A mathematical model of the universe	Chapters 3 to 6 inclusive
2	Measuring the universe	Chapter 7
3	The cosmic microwave background	Chapter 9
4	Big Bang Nucleosynthesis	Chapter 10
5	Dark Matter in the universe	Chapter 8
6	Large-scale structure	Chapter 12
7	Lambda	Chapters 4 and 6

Course assessment:
Assignments: 15%
Mid-term exams: 15+15%
Final exam: 55%

Approximately six assignments will be issued through the semester. Assignments will typically be due one week after the issue date. Late assignments will not be accepted. The first mid-term exam will take place in class at 10am on Thursday February 11th, the second mid-term will take place in class at 10am on Monday March 22nd.

Use of calculators: On all examinations the only acceptable calculator is the Sharp EL-510R. This calculator can be bought in the Bookstore for about $10.
DO NOT bring any other calculator to examinations

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Additional reading: not compulsory, just useful. All texts should be available in the UVic library

1) Carrol and Ostlie: An Introduction to Modern Astrophysics (excellent general textbook).

2) Peebles: Physical Cosmology (excellent general textbook).

3) Gunn, Longair and Rees: Observational Cosmology, 1978 Saas-Fe conference proceedings (good description of basic cosmological ideas, some sections are rather dated).

4) Rees: Perspectives in Astrophysical Cosmology (though not employed directly in the course, this book provides excellent additional reading).

5) Mo, van den Bosch and White: Galaxy formation and evolution. Very comprehensive graduate text.

6) Weinberg: The First Three Minutes (excellent reading material for early Universe physics).

7) Berry: Principles of Cosmology and Gravitation (a good introductory text for cosmology and GR).