

**Physics 10240 Elementary Cosmology Spring 2023**  
**Course Outline** Version 2 – January 9, 2023

Date	Book	Topic	Pages
January 17	Thorne	Relativity of Space and Time	60-86
January 19	Thorne	Warped Space-Time	87-120
January 24	Thorne	Black Holes & White Dwarfs	121-163
January 26	Thorne	Implosion	164-208
January 31	Thorne	Final State?	209-257
February 2	Thorne	Golden Age	258-299
February 7	Thorne	The Search	300-356
February 9	Thorne	Gravitational Radiation	357-411
February 14	Thorne	Reality & Hawking Radiation	412-448
February 16	Thorne	Singularities	449-482
February 21	Thorne	Time Machines	483-528
February 23		DVT presentation	
February 28	Wilczek	Reply to Keats	Intro., pp. 1-22
March 2	Wilczek	Uniformity of Structure	23-52
March 7	Wilczek	Transformations & Inevitability	53-96
March 9	Midterm Exam		
March 14	Break		
March 16	Break		
March 21	Wilczek	Quantal Reality	98-134
March 23	Wilczek	Radical Uniformity	137-170
March 28	Wilczek	Transforming Principles	171-206
March 30	Wilczek	Gluons & Asymptotic Freedom	207-228
April 4	Wilczek	Symmetry Lost & Found	231-275
April 6	Wilczek	Macrocosm & Quest	277-341
April 11	Kolata	Scientific Method & Early Astronomy	1-1 2-8
April 13	Kolata	Nebulae & Cosmic distances & Relativity	3-1 5-10
April 18	Kolata	Big Bang & CMB & Dark Matter	6-1 8-4
April 20	Kolata	Standard model & Early big bang	9-1 10-12
April 25	Kolata	Inflation & Dark energy	11-6 12-4
April 27	Kolata	Higher dimensions & String theory & Black holes	13-1 15-10
May 2		DVT presentation	
May 12	Final Exam	10:30 am - 12:30 pm	

**Important Dates**

Date	What
Report Due	March 2
Midterm Exam	March 9
Spring Break	March 11-19
DVT presentations	February 23 and May 2
Final Exam	May 12, 10:30 am

**Web Page**

<https://www3.nd.edu/~losecco/Cosmology/phy10240.html>