AST 4002 Syllabus
Astrophysics II, Galactic and Extragalactic Astronomy, Spring 2018

Professor: Liliya L.R. Williams (Tate Hall 285-10, 624-1084, llrw@umn.edu)
Class: Tu Th 2:30-4:25pm, Tate Hall B55
Office hours: Mondays 1:30pm-2:30pm; Wednesdays 10:30am-11:30pm, or just drop by.
Class Web-page: http://www.astro.umn.edu/~llrw/a4002_s18.html

Books
“The Structure and Evolution of Galaxies”, Steven Phillipps (the textbook)
“Galaxies in the Universe”, Linda Sparke & John Gallagher
“Galactic Astronomy”, Dimitri Mihalas & James Binney
“Galactic Dynamics”, James Binney & Scott Tremaine
“Galaxy Formation”, Malcolm Longair
“Introduction to Cosmology”, Barbara Ryden

Grading
Home-work 35%
In-class quizzes 15%
Midterm exam (date TBD) 15%
Final exam (date TBD) 15%
Individual presentations 20%

Presentations: last ~ 1.5 weeks of classes;
Topics due Thursday March 8; outlines due Thursday April 12.

Examples of presentation/paper topics
★ Distance to ellipticals: Fundamental Plane and Surface Brightness Fluctuations Methods
★ Observations and interpretations of the thin and thick disks in spirals
★ Mapping out neutral Hydrogen in the Milky Way Galaxy
★ Understanding the spiral structure and bar through N-body simulations
★ Globular Clusters young and old: formation scenarios
★ Rotation curves of dwarf and low surface brightness galaxies: implications for dark matter
★ Shapes of extended galaxy dark matter halos from lensing, polar ring galaxies, etc.
★ Sgr A*: supermassive black hole in the Galactic Center
★ The role of AGN in massive ellipticals and galaxy clusters
★ Jets in active galaxies
★ Early galaxies at high redshifts: Lyman-break galaxies, dropouts, etc.
★ X-ray halos of galaxy clusters
★ Reionization of the Universe: evidence from Cosmic Microwave Background and QSOs

Resources
http://xxx.lanl.gov/archive/astro-ph
http://adsabs.harvard.edu/abstract_service.html