ASTRONOMY 135: Descriptive Astronomy

Course Essentials: In this course you will learn about several basic concepts in astronomy (such as tidal locking and orbital resonance) and develop an understanding of various astronomical phenomena (such as why the Moon keeps the "same" face towards the Earth or what causes the gaps in Saturn's rings). A few simple algebraic calculations and formulae will be used to aid us in our quest.

- Primary text book: "21st Century Astronomy (2nd edition)," by Jeff Hester et al. Additional Exercise Book: "Lecture-Tutorials for Introductory Astronomy", Jeffrey P. Adams et al.
- Class meeting time: Monday, Wednesday, and Friday from 9:10 to 10:00 am
- Meeting Place: CADD, room 21. CADD stands for "Communication Addition," and is the New Murrow Addition, located behind (you guessed it) the old Murrow building.
- Instructor: Prof. Sukanta Bose, Webster Hall 947H, 335-3698, sukanta@wsu.edu
- Web site: http://www.wsu.edu/~sukanta/ASTRO/astro.html
- T.A.: Jharana Dhal, Webster Hall 346, jharana_dhal@yahoo.com
- Office hours:- Bose: Monday 10:30-11:30am and Friday 4-5pm
- Studios: These will be held in Webster Hall, Room 249. Lab materials will be handed to you on the days that your section meets there.

Administrative Details: Performance in the non-Studio part of the course will be evaluated by regular lecture-tutorials and group-activities, 2 midterm exams and 1 final exam. Successful completion of ALL the studio exercises and attendance in the midterm and final exams are mandatory for a passing grade. Numerical scores will be weighted as follows: studios (25%), lecture-tutorials and group-activities (25%), 3 tests (15% midterm 1, 15% midterm 2, 20% final).

The composite, weighted score will determine each student's grade according to the table below

W.S.U. Letter Grade	W.S.U. Grade Point	Min. Percentage needed for grade
A	4.0	92
A-	3.7	89
B+	3.3	86
B	3.0	83
B-	2.7	80
C+	2.3	77
C	2.0	74
C-	1.7	71
D+	1.3	68
D	1.0	65

The dates and times of exams are listed in the calendar below. There is no make-up for a missed exercise or group activity. Makeup for exams and missed studios must be arranged in advance with the professor with suitable documentation, such as a note from the coach or doctor, and will suffer a 10% penalty in score regardless of the nature of the excuse. Students that miss class should contact the professor or T.A., preferably during office hours, to pick up any materials that may have been handed out.

Course tips:
(1) Bring the Exercise Book ("Lecture-Tutorials…") to the lectures; this is MANDATORY. These exercises and group activities are designed to help develop ***critical thinking abilities***, which will be put to test in the exams. A mere regurgitation of material from the primary text will be insufficient for fetching a good grade there.
(2) Read ahead in your book so that you are always ahead of the calendar (see below).
(3) Participate in the various group activities that your instructor will arrange.
(4) Although most studio exercises are designed to reinforce the concepts you learn in the lectures, some studio exercises will introduce concepts not discussed in the lectures.
(5) You are encouraged to ask questions in the class, but instead of getting a straight answer, expect to participate in the discussions that lead to the answer. Learning how to arrive at the correct answer is more important than the answer itself!

Course schedule: The following schedule will be followed as closely as possible:

Date	**Lecture**	**Topics**	**Notes**
	'Chapter'		
Mon. Jan 8	1	Introduction	1st week
Wed. Jan 10	2	Motions of the Earth…	
Fri. Jan 12	2	…& Phases of the Moon	
Mon. Jan 15		WSU HOLIDAY	2nd week; Martin Luther King Jr. Day
Wed. Jan 17	3	Gravity…	
Fri. Jan 19	3	…& the Planetary orbits	
Mon. Jan 22	4	Light…	3rd week
Wed. Jan 24	4	…& Temperature	
Fri. Jan 26	5	Tools of Astronomy	
Mon. Jan 29	6	The Solar System	4th week;
Wed. Jan 31	7	Terrestrial Planets…	
Fri. Feb 2	7	…& their moons	
Mon. Feb 5	8	Atmospheres of…	5th week
Wed. Feb 7	8	…terrestrial planets	
Fri. Feb 9	9	The Gas…	
Mon. Feb 12	9	…Giants	6th Week
Wed. Feb 14		EXAM	MID-TERM EXAM #1
Fri. Feb 16	10	Tides…	
Mon. Feb 19		CLASS HOLIDAY	7th Week; President's Day
Wed. Feb 21	10	…& Tidal forces	
Fri. Feb 23	11	Planetary Moons, Rings, …	

Mon. Feb 26	11	...& Pluto	8th Week
Wed. Feb 28	12	Meteoroids, Asteroids, …	
Fri. Mar 2	12	…& Comets	
Mon. Mar 5	13	Stars: Their brightness…	9th Week
Wed. Mar 7	13	…& their distances	
Fri. Mar 9	14	The Sun	
Mar 12-16		No classes	Spring Vacation
Mon. Mar 19		EXAM	10th Week; MID-TERM EXAM #2
Wed. Mar 21	15	The interstellar medium…	
Fri. Mar 23	15	…& star formation	
Mon. Mar 26	16	The life of a Star…	11th Week
Wed. Mar 28	16	… & its evolution	
Fri. Mar 30	16	Binary stars	
Mon. Apr 2	17	The death of a Star	12th Week
Wed. Apr 4	17	Supernovae & Pulsars	
Fri. Apr 6	17	Black Holes	
Mon. Apr 9	18	Galaxies	13th Week
Wed. Apr 11	18	Dark Matter	
Fri. Apr 13	18	Quasars and AGN	
Mon. Apr 16	19	The Milky Way	14th Week
Wed. Apr 18	19	How galaxies form	
Fri. Apr 20	20	Our expanding universe	
Mon. Apr 23	20	Fate of our Universe	15th Week
Wed. Apr 25	21	Formation of Structure…	
Fri. Apr 27	21	…in our Universe	
Thursday, May 3		FINAL EXAM	8-10am, CADD 21