Astronomy 104  Fall 2009    Instructor: Dr. Don Summers  915-7032
Lewis 101  TTh 1:00-1:50    Office Hours: Lewis 221  TThF 2-3
Text: Cosmic Perspective, Bennett et al., 5th Ed.
Lab 1:  September 2, Wednesday 7- 8:50  Kennon Observatory   TA:  Brian Mazur
Lab 2:  September 2, Wednesday 9-10:50  Kennon Observatory  TA:  Brian Mazur
Lab 3:  September 3, Thursday 7-8:50  Lewis Hall  TA:  David Sedorook
Lab 4:  August 27, Thursday 9-10:50  Lewis Hall  TA:  Brian Mazur
http://www.phy.olemiss.edu/~kakukk/Astro/Lab/Lab.html

<table>
<thead>
<tr>
<th>Date</th>
<th>Subject</th>
<th>Chapters to read before class</th>
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<tbody>
<tr>
<td>25 Aug</td>
<td>Distances, light years, stars, constellations, galaxies</td>
<td>Chap 1 &amp; 2</td>
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<tr>
<td>27 Aug</td>
<td>Star motion: daily/yearly Transits Angles Sidereal_Time</td>
<td>Chap 2</td>
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<tr>
<td>1 Sep</td>
<td>Longitude/Latitude, Right Ascension/Declination, RA/Dec</td>
<td>Chap S1</td>
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<tr>
<td>3 Sep</td>
<td>Kepler's 3 laws, Newton's Laws, Gravity, orbits</td>
<td>Chap 3 &amp; 4</td>
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<td>8 Sep</td>
<td>Matter, Energy, Temperature, Atomic energy levels</td>
<td>Chap 5</td>
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<tr>
<td>10 Sep</td>
<td>Light, Wavelengths, Spectral Lines, Doppler Shift</td>
<td>Chap 5</td>
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<tr>
<td>15 Sep</td>
<td>Spectroscopes, Wien's Law, Black Body Radiation</td>
<td>Chap 5</td>
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<tr>
<td>17 Sep</td>
<td>Telescopes: Optical, Radio, X-ray...</td>
<td>Chap 6</td>
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<td>22 Sep</td>
<td>FIRST HOUR EXAM</td>
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<td>24 Sep</td>
<td>Why does the sun shine?, Sunspots, Neutrinos</td>
<td>Chap 14</td>
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<td>29 Sep</td>
<td>Stars: Distances Luminosity Magnitudes Temperature Size</td>
<td>Chap 15</td>
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<td>1 Oct</td>
<td>HR Diagram, Stellar Masses and Binary Stars.</td>
<td>Chap 15</td>
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<td>6 Oct</td>
<td>Gas --&gt; New Stars, Old stars Move off the Main Sequence</td>
<td>Chap 16</td>
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<td>8 Oct</td>
<td>Variable Stars, Red Giant and White Dwarf Stars</td>
<td>Chap 17</td>
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<td>13 Oct</td>
<td>Two kinds of Supernovae can explode</td>
<td>Chap 18</td>
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<tr>
<td>15 Oct</td>
<td>Neutron Stars, Gravity Waves, and Black Holes</td>
<td>Chap 18</td>
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<tr>
<td>20 Oct</td>
<td>Crab Nebula</td>
<td>Chap 18</td>
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<td>22 Oct</td>
<td>SECOND HOUR EXAM</td>
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<tr>
<td>27 Oct</td>
<td>Our Milky Way Galaxy, Globular Star Clusters</td>
<td>Chap 19</td>
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<td>29 Oct</td>
<td>100 Billion Galaxies</td>
<td>Chap 20</td>
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<td>3 Nov</td>
<td>Finding Distances with Cepheid Variables, Galaxies</td>
<td>Chap 20</td>
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<tr>
<td>5 Nov</td>
<td>Hubble's Law, Redshifts, and Distances</td>
<td>Chap 20</td>
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<td>10 Nov</td>
<td>Quasars and Active Galaxies</td>
<td>Chap 21</td>
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<td>12 Nov</td>
<td>Dark Matter in Galaxies and Galaxy Clusters</td>
<td>Chap 22</td>
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<td>17 Nov</td>
<td>THIRD HOUR EXAM</td>
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<td>19 Nov</td>
<td>Cosmology, Expanding Universe, Big Bang, 3 K Radiation</td>
<td>Chap 23</td>
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<tr>
<td>1 Dec</td>
<td>Early Universe, Inflation, Big Bang, Sub-Atomic Particles</td>
<td>Chap 23 S4</td>
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<td>3 Dec</td>
<td>Search for Extraterrestrial Civilizations</td>
<td>Chap 24</td>
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<tr>
<td>8 Dec</td>
<td>COMPREHENSIVE FINAL EXAM, 4:00pm, Tuesday, not earlier!</td>
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Grading: 1st Exam 12%  7%
Scheme: 2nd Exam 12%  7%
            3rd Exam 12%  7%
            FINAL EXAM 24%  14%   Bring a picture ID to tests.
            Pop Quizzes 15%  15%
            Lab 25%  35%
            Project  --  20%

Bring a scientific calculator (e.g. Texas Instruments TI-30Xa) to labs/tests.
Please come to the lab night and time you have signed up for. Labs are a required part of the course. You must do at least 70% of the labs to pass.
Come to labs even if it is raining. 11 11 22
Adding exponents (11+11=22). 10 x 10 = 100
stars/galaxy x galaxies = stars in the universe

Reasonable accommodations for students with disabilities will be provided.
Learning Objectives: To learn how stars, galaxies, and other wonders of the Universe work and to find out how astronomers made these discoveries and to do some of the actual experiments.