

**INSTRUCTOR:** Dr. William Passwaters

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**OFFICE HOURS**

|           |                          |
|-----------|--------------------------|
| <b>TR</b> | <b>9:00 – 10:00</b>      |
| <b>M</b>  | <b>9:00 - 11:00</b>      |
|           | <b>or by appointment</b> |

**Text:** Stars, Galaxies, & Cosmology, 5th ed., Bennett, Addison-Wesley, 2007, but any earlier edition will suffice. While the text is highly recommended, it is intended as a supplement to the material covered in lecture; examinations will be based almost solely on material covered in class.

**COURSE DESCRIPTION:** This course will not dwell on the location and arrangement of the stars although such information will be introduced as necessary. Instead, PHY 105 focuses on the structure and evolution of stars, the properties of galaxies, and past, present, and future of the Universe. Information carried by electromagnetic radiation is the means that allow this to be done. There are no college level prerequisites for the course, but an understanding of high school algebra would be helpful. The roles of people and issues in the development of our current ideas on the universe will be explored within the context of the course material.

**ATTENDANCE:** Three unexcused absences are allowed. Beginning with the fourth unexcused absence your course average will be lowered by 2%. Excused absences are limited to those due to participation in University sanctioned events (See policy in the WCU undergraduate catalog) or those accompanied by written confirmation from a doctor, military or religious organization official, etc. An unexcused absence for a day of an exam will result in a grade of zero being recorded for that exam. If a written excuse is produced for a missed examination, your final exam score will be substituted for the missed exam score. No makeup exams will be given.

**EVALUATION PROCEDURE:** Your course grade will be determined by your performance on four hourly exams (**R 9/17, R 10/15, T 11/10, and T 12/8**), a cumulative final and a series of problem sets. Your lowest hourly exam grade of the four will be dropped. Failure to take an exam will be the one that is dropped. No individual extracurricular or extra credit work will be assigned.

**Grading Scheme**

|                        |             |
|------------------------|-------------|
| <b>3 Exams</b>         | <b>60 %</b> |
| <b>10 Problem Sets</b> | <b>10 %</b> |
| <b>Final Exam</b>      | <b>30 %</b> |

**HOMEWORK:** The Reading and Homework assignments are listed on the reverse side of this sheet. Readings should be done before the corresponding lectures for maximum effectiveness. The homework is not collected and graded, but similar problems often show up on problem sets and exams. The chapter summaries and Quick Quizzes at the end of each chapter can be particularly helpful. Appropriate practice quizzes and exams for the material covered in this course can be found with web searches. Prior year PHY 105 exams will be posted on Blackboard. Familiarize yourself with these resources for best results.

**STUDENTS WITH DISABILITIES:** West Chester University is committed to make accommodations for persons with disabilities. Please make your needs known by contacting your instructor and the Office of Students with Disabilities at ext. 3217. Sufficient notice is needed in order to make the accommodations possible. The University desires to comply with the ADA of 1990.

**ACADEMIC HONESTY POLICY:** Cheating on the part of any student may result in a failing grade for the course and a letter sent to the Associate Provost's office documenting the incident.

**Study Habits:** Think physics inside **and** outside of the classroom. The concepts covered and the accompanying homework assignments are manageable if completed on a regular basis. Mastering the material the night before the exam is usually overwhelming. Work together and see me during office hours if you need help.

**PUBLIC SAFETY:** Place your cell phones on *silence* when in the classroom

| Day | Date    | Lec | Ch | Assigned Reading                         | Problem Set         | Suggested Problems                             |
|-----|---------|-----|----|--|---------------------|--|
| T   | Sept 1  | 1   | 1  | Course Intro. 1.1- 1.4                   |                     | 1, 3, 5, 11, 12, 13, 44, 45                    |
| R   | Sept 3  | 2   | 2  | 2.1, 2.2, 2.3, 2.4, 2.5                  |                     | 1, 3, 5, 6, 9, 10, 11, 12, 13, 14, 15, 16, 41  |
| T   | Sept 8  | 3   | 3  | 3.2, 3.3, pages 80-81                    | <b>Prob Set #1</b>  | 8, 9, 11, 54                                   |
| R   | Sept 10 | 4   | 4  | 4.1, 4.2                                 |                     | 1, 2, 7, 41, 43, 44, 45                        |
| T   | Sept 15 | 5   | 4  | 4.3, 4.4, 4.5, 6.2,<br>Pages 206-207     | <b>Prob Set #2</b>  |  |
| R   | Sept 17 | 6   |    | <b>EXAM I</b>                            |                     |  |
| T   | Sept 22 | 7   | 5  | 5.1, 5.2, 5.3,                           |                     | 1, 2, 4, 5, 6, 10, 11, 14, 15, 18, 61          |
| R   | Sept 24 | 8   | 5  | 5.4, 5.5, pages 170-171                  | <b>Prob Set #3</b>  |  |
| T   | Sept 29 | 9   | S4 | S4.1, S4.2, S4.3, S4.4,<br>pages 491-492 |                     | 5, 7, 9, 10, 11, 13, 16, 17, 19, 20, 50        |
| R   | Oct 1   | 10  | 14 | 14.1, 14.2, 14.3                         | <b>Prob Set #4</b>  | 1, 2, 5, 6, 7, 8, 10, 12, 14, 15, 17, 51, 52   |
| T   | Oct 6   | 11  | 15 | 15.1                                     |                     | 2, 3, 4, 5, 10, 11, 12, 13, 14, 15, 16, 48, 51 |
| R   | Oct 8   | 12  | 15 | 15.2, 15.3                               | <b>Prob Set #5</b>  |  |
| T   | Oct 13  |     |    | <b>Fall Break</b>                        |                     |  |
| R   | Oct 15  | 13  |    | <b>EXAM II</b>                           |                     |  |
| T   | Oct 20  | 14  | 16 | 16.1, 16.2, 16.3                         |                     | 1, 2, 3, 4, 5, 9, 10, 14, 15, 16, 17, 54       |
| R   | Oct 22  | 15  | 17 | 17.1, 17.2,                              | <b>Prob Set #6</b>  | 2, 3, 4, 6, 8, 9, 11, 13, 15, 50, 55           |
| T   | Oct 27  | 16  | 17 | 17.3, 17.4, pages 580-581                |                     |  |
| R   | Oct 29  | 17  | 18 | 18.1, 18.2, 18.3,<br>Pages 608-609       | <b>Prob Set #7</b>  | 1, 2, 3, 4, 5, 6, 8, 10, 12, 48                |
| T   | Nov 3   | 18  | 19 | 19.1, 19.2                               |                     | 1, 2, 3, 6, 9, 10, 12, 13, 14, 15, 18, 49      |
| R   | Nov 5   | 19  | 19 | 19.3                                     | <b>Prob Set #8</b>  |  |
| T   | Nov 10  | 20  |    | <b>EXAM III</b>                          |                     |  |
| R   | Nov 12  | 21  | 20 | 20.1, 20.2                               |                     | 2, 4, 7, 8, 9, 10, 12, 13, 14, 15, 42, 50      |
| T   | Nov 17  | 22  | 20 | 20.3                                     |                     |  |
| R   | Nov 19  | 23  | 22 | 22.1, 22.2                               | <b>Prob Set #9</b>  |  |
| T   | Nov 24  | 24  | 22 | 22.4, pages 700-701                      |                     | 1, 2, 6, 8, 9, 10, 11, 12, 14, 15, 49          |
| R   | Nov 26  |     |    | <b>Thanksgiving Break</b>                |                     |  |
| T   | Dec 1   | 25  | 23 | 23.1, 23.2, pages 712-713                |                     | 1, 4, 5, 6, 7, 8, 9, 10, 12, 13, 16, 46        |
| R   | Nov 3   | 26  | 23 | 23.3, 23.4                               | <b>Prob Set #10</b> |  |
| T   | Dec 8   | 27  |    | <b>EXAM IV</b>                           |                     |  |
| R   | Dec 10  | 28  |    | Final Exam preview                       |                     |  |