# IOWA WESTERN COMMUNITY COLLEGE

**Course Syllabus Information**

**PHY 221 Classical Physics II Lab –Calculus Level Online**

**Term: Summer 2014**

I. Faculty Information:

Instructor: Mr. Douglas Corteville Phone: 712-325-3403

e-mail Address: [dcorteville@iwcc.edu](mailto:dcorteville@iwcc.edu)

Office: Lewis Hall L133

Office Hours: I am in Connecticut. Use email and include your section #

**II. Course Information:**

Course Prefix/ No. Course Name Credits Lecture Lab

**PHY 221 Classical Physics II Lab – Calculus Level 1 0 1**

Course Description:

Classical Physics II Lab – Calculus Level is a one-semester course for students enrolled in Classical Physics II – Calculus Level. The course covers experiments in thermal expansion, wave motion, electricity, magnetism, AC and DC circuits, light and lenses. (0/2)

Prerequisites:

Prerequisite: Physics II – Calculus Level prior or concurrent.

Course Meeting Times Course Location

Online Web

Required Textbooks

None

Suggested Supplemental Textbooks, References

None

Materials and Supplies to be Furnished by Student

1. TI-85 series Graphing Calculator or TI-36 calculator, or better.

Course Objectives

Upon completion of this course students will be able to:

1. Solve physical problems and draw mathematically based conclusions through clear and logical reasoning from course assignments, laboratory exercises
2. use analytical techniques appropriate to the study of physics
3. symbolically represent vector quantities.
4. select and use appropriate equipment for measuring and investigating.
5. use appropriate units and apply dimensional analysis.
6. manipulate equations and solve for variables.

1. Solve problems using in Thermodynamics.
2. use calculus and geometric concepts to describe an object’s reaction to heat.
3. describe and calculate appropriate quantities for a gas using the gas laws.
4. describe and calculate appropriate quantities for an idea gas.
5. explain how thermodynamics relates to Air conditioning and heating.
6. describe the relationships in the first and second law of thermodynamics.

1. Solve problems using Calculus in electricity and magnetism
2. use algebraic and geometric concepts to the flow of charge, electric potential, and electric fields.
3. describe and calculate appropriate quantities of voltage, amperes, resistance, and charge.
4. describe and calculate appropriate quantities of Magnetic fields electromagnetic Induction and electromagnet waves .
5. explain how AC and DC motors and generators function.
6. describe the relationships between resistance, capacitance, and inductance.

1. Solve problem in Optics
2. use algebraic and geometric concepts to examine the nature of light.
3. describe and calculate appropriate quantities form Snell’s law and thin lens magnification.
4. describe and calculate appropriate quantities of Wave length speed and frequency of light .
5. explain how optical instruments function.
6. describe the relationships between the human eye and the classes we wear.

1. Solve problems in Special Theory of Relativity
2. use algebraic and geometric concepts to solve problems in time dilation.
3. describe and calculate appropriate quantities of length time and mass at speeds close the speed of light.
4. describe and calculate appropriate quantities for the relativistic addition of velocities.
5. explain the impact of special relativity on western culture.

1. Solve problems in radioactivity
2. use algebraic and geometric concepts to solve radioactive problems using half-life and decay rate.
3. describe and calculate appropriate quantities for nuclear reactions and transmutation of elements.
4. describe and calculate appropriate quantities for alpha, beta, and gamma decay.

Course Practices:

1. Attendance Requirements: Students are responsible for attending classes as scheduled. If an absence is unavoidable, the student is responsible for obtaining class notes from other students.
2. Standards for written work: Homework may be typed or legibly hand-written. If typed, submission by email is encouraged. Proper grammar and punctuation will be used.
3. Late papers and assignments: Late work will be accepted, but the instructor reserves the right to reduce the amount of credit awarded if circumstances warrant.
4. Missed exams: If a student misses a scheduled examination a make-up exam may be taken without penalty. The make-up exam will be comparable to, but different than the original exam.
5. Extra Credit: None
6. Participation: Participation: Is not be used to calculated your final grade.
7. Classroom Management and Behavior: Be on your best behavior and classroom management will take care of itself

Instructional Techniques and Practices

Lectures, individual and group discussions and exercises, transparencies, AV examples, and problem solving exercises.

Safety Practices and Policies

1. 1st Aid Kit is located in Lewis Hall 105.

Classroom Assessment Techniques

The instructor will periodically obtain and evaluate informal feedback from students in order to evaluate learning and refine instruction.

Grading

1. Exams/Tests: None.
2. Labs are due the day a chapter test is due.

***GRADING POLICY:***

Labs: 100% A 90%-100%

B 80%-89%

C 70%-79%

D 60%-69%

F 0-59%

Important Dates

**June 2nd Summer classes begin**

**July 25th Summer Semester ends**

Problem Resolution

If you have a conflict with me, concerns about my teaching and/or the course material, please discuss this first with me. If we cannot resolve the difficulty, contact Kim Carter, Dean of Math, Engineering and Industrial Technologies, in Lewis Hall Room 103A, phone number 325-3329

Notice of Class Cancellation

1. Emergency closing of entire campus such as for weather – Students will be notified through the Reiver Alert system. Students must register for this service; find Reiver Alert on your ROC homepage.

2. Emergency cancellation of a class session such as for faculty illness – Students will be notified through an announcement on the ROC course page if possible and/or a posted note on the classroom door.

|  |  |  |
| --- | --- | --- |
| DATE | WEEK | Lab |
| 2 JUN 14 | 1 | Chapters 17and 18 Labs |
| 9 JUN 14 | 2 | Chapters 19 and 20 Labs |
| 16 JUN14 | 3 | Chapters 21, 22 and 23 Labs |
| 23 JUN14 | 4 | Chapters 24, 25, and 26 Labs |
| 30 JUN 14 | 5 | Chapters 27 and 28 Labs |
| 7 JUL14 | 6 | Chapters 29, 30, and 31 Labs |
| 14 JUL14 | 7 | Chapters 32, and 35 Labs |
| 21JUL14 | 8 | Chapters 36 Labs |

**III. College Policy/Information**

Honor Code – Academic Honesty

Upon enrolling at Iowa Western Community College, each student assumes an obligation to conduct her/his academic affairs in a manner compatible with the standards of academic honesty established by the College and its faculty. If this obligation is neglected or ignored by the student, disciplinary action will be taken.

Diversity Statement

Iowa Western Community College values diversity and supports learning experiences that promote intellectual growth and human enrichment.

American with Disabilities Act Statement

If you are an individual with a disability who requires an accommodation to fully participate in academic programs or campus activities, please email [disabilityservices@iwcc.edu](mailto:disabilityservices@iwcc.edu) or call 712-325-3299. Accommodations are arranged through the Student Success Office, located in the Student Center (2nd floor). Please allow for adequate time to implement your accommodations.

FERPA

Student rights concerning access to educational records are spelled out in Federal Public Law 98-380 as amended by Public Law 93-568 and in regulations published by the Department of Education. Student records and class schedules will be released only to students showing proper identification.

Cyber-Library and Academic Support

Students can access books, magazines, journals, newspapers, films and audio books 24/7 through the *IWCC Cyber-Library* by clicking on the “Resources” tab in any SAIL course and choosing OneSearch. For questions about finding information at your campus or center, email [cyberliabrary@iwcc.edu](mailto:cyberliabrary@iwcc.edu) or call 712-325-3478 for the Council Bluffs Campus or 712-542-5117 for the Clarinda Campus. FREE tutoring and academic assistance are available through the *Academic Support Center*, located on the second floor of the Student Center on the Council Bluffs campus, in a variety of core, general requirement classes. One-on-one assistance is available on a walk-in basis or by appointment for certain subjects. Group tutoring is available, but must be scheduled in advance. For more information about tutoring services or help in your classes, email [tutoring@iwcc.edu](mailto:tutoring@iwcc.edu) or call 712-325-3494.

Personal Electronic Devices

To provide an environment conducive to learning, Iowa Western Community College requires that cellular phones, pagers, and other personal electronic devices be turned off or set to vibrate when entering classrooms, computer labs, library, offices, auditoriums, or arena areas. Cellular phones with picture taking capabilities are not allowed in bathrooms, locker rooms or other areas where there is a reasonable expectation of privacy. Faculty members do have the right to prohibit the use of any electronic device in their classroom.