U754-104: General Physics II

Course Format: Online

Course Author: Mark Quigley, Ph.D.

Course credits: 3

Pre/Corequisites: Completion of U754-103 General Physics I with a grade of C or better or the equivalent; Appropriate for advanced high school and first-year-or-higher college students.

Course Description: General Physics II is a continuation of General Physics I (U754-103). In this traditional, non-calculus based, second semester physics course, students will study three themes: light and optics, electricity and magnetism, and modern physics.

Required Course Materials
- Scientific pocket calculator (a simple one will do—you don’t need a graphical display model)

Optional/Recommended Course Materials

Hardware Requirements
- You will need a webcam, speakers, and microphone. You will complete your exams through an online proctor that requires all three components.
- You will need access to a scanner to upload completed worksheets.

Course Learning Objectives
- Analyze complex problems using quantitative reasoning.
- Solve optic and light problems using common laws of physics.
- Solve electricity and magnetism problems using equations for variables relating to capacitance, magnetic fields, and alternating current circuits.
- Explain fundamental concepts of modern physics such as the Heisenberg Uncertainty Principle, quantum mechanics, and atomic and nuclear physics.

Course Overview
General Physics II is broken into three main topics, each of which consists of written assignments and an associated exam. The basic structure of the course is as follows:

<table>
<thead>
<tr>
<th>MODULE #</th>
<th>MODULE TOPIC</th>
<th>EVALUATED ACTIVITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Reflection and Refraction of Light</td>
<td>Written Assignment</td>
</tr>
<tr>
<td>2</td>
<td>Mirrors and Lenses</td>
<td>Written Assignment</td>
</tr>
<tr>
<td>3</td>
<td>Wave Optics &amp; Optical Instruments</td>
<td>Written Assignment</td>
</tr>
<tr>
<td></td>
<td>Exam 1: Light and Optics</td>
<td>Exam</td>
</tr>
</tbody>
</table>

Topic 1: Light and Optics

Topic 2: Electricity and Magnetism

Effective Date 10/1/2017
Evaluation Methods

Your final grade will be based on your performance on the following:

1) Average of Written Assignments (50%)
2) Average of Exams (50%)

Written Assignments (50% of course grade)

There are twenty problems per written assignment. Each assignment includes both odd and even problems of varying levels of difficulty. Note that answers (though not solutions) to odd problems are given in the back of the textbook. Each problem counts for five points, and points are taken off in the following way:

-1 if the arithmetic is wrong
-2 if the algebra/mathematics is wrong
-3 if the basic physics is wrong
-4 or -5 if the problem is completely wrong

One written assignment consists of review questions from General Physics I; this is intended to prepare you for Topics Two (2) and Three (3).

Exams (50% of course grade)

Each exam consists of twelve problems, of which you must complete ten.

In order to receive a passing grade for the course, the average of your three exam grades must be at least 60 percent. If your average is lower than that, you must re-take one or all of the exams until your average improves enough to earn credit for the course.

Grading Scale

The following grading scale is used to evaluate all course requirements and determine your final grade:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage Range</th>
</tr>
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<tbody>
<tr>
<td>A</td>
<td>93–100</td>
</tr>
<tr>
<td>B</td>
<td>83–87.9</td>
</tr>
<tr>
<td>C</td>
<td>70–77.9</td>
</tr>
<tr>
<td>D</td>
<td>60–69.9</td>
</tr>
<tr>
<td>AB</td>
<td>88–92.9</td>
</tr>
<tr>
<td>BC</td>
<td>78–82.9</td>
</tr>
<tr>
<td>F</td>
<td>Below 60</td>
</tr>
</tbody>
</table>
Pass/Fail Option
Students who enroll in an Independent Learning (IL) course under the pass/fail option will receive a final grade of S in place of a final grade equivalent to an A, AB, B, BC, or C and a final grade of U in place of a final grade equivalent to a D or F.

Program Policies and Statements

Course Faculty Statement: The IL program enlists qualified UW faculty to develop and facilitate IL courses within their content area of expertise. There are two categories of IL faculty: Course Authors lead course development, and Course Facilitators support students enrolled in IL courses. Similar to course instructors, Course Facilitators evaluate and provide feedback on submitted coursework and respond to student inquiries regarding course content or evaluation.

Please note that, while typically occurring during summer months, Course Facilitator transitions can occur at any time even when students are in the process of completing an IL course. Students will be notified of any Course Facilitator changes via email and communication embedded in their online course. Our goal is to make Course Facilitator transitions as smooth as possible to avoid disrupting students in the process of completing a course.

Evaluation of Student Work Statement: Course Facilitators are committed to providing students with timely feedback of submitted work. Students should expect to receive feedback within three business days, exclusive of holidays. For example, if a student submits an assignment on Thursday, that student should expect to receive feedback on the assignment from a Course Facilitator by midnight on Tuesday of the following week. On occasion, a Course Facilitator may experience higher-than-usual volumes of submitted work from students enrolled in the course and may need additional time for evaluation. Course Facilitators will notify students of any anticipated delays via email and communication embedded in their online course. Students should reach out to our Student Services team at il@uwex.edu with any concerns regarding the timeliness of Course Facilitator feedback.

Student Work Submission Policy: Students are strongly encouraged to wait for Course Facilitator feedback on submitted work before proceeding in the course to ensure that their work aligns with expectations and to allow time for revisions, if needed. We therefore discourage students from submitting multiple items for feedback at once. Students who submit multiple items in the same day can expect to receive feedback on the first submission within three business days, exclusive of holidays. Remaining work will be evaluated in order of submission with an adjusted timeline. For example, if a student submits three written assignments on Tuesday, the student should expect to receive feedback on the first assignment on or before midnight on Friday, on the second assignment three business days after that, and on the third assignment three business days after that. Please note that opportunities for revision are at the discretion of the Course Facilitator.

Grade Appeals Policy: Students who wish to appeal an assignment, quiz, exam, or any other grade should follow the IL grade appeals policy:

1. Email a written statement, outlining your appeal and addressed to your Course Facilitator who assigned the grade, to our Student Services team at il@uwex.edu. If a disputed grade is the result of a clerical or computational error, the Program Manager of IL at UW-Extension may adjust the grade under appeal after consultation with the Academic Coordinator of the department responsible for facilitating your course. If the appeal falls outside of clerical or computational error, your Course Facilitator will respond to your appeal in writing (attached to an email) within three business days, exclusive of holidays.

2. If you are not satisfied with your Course Facilitator’s response to your appeal, you may email a written statement of appeal to the Program Manager of IL at UW-Extension at il@uwex.edu. The Program
Manager will refer the matter to a hearing committee, appointed by UW-Extension’s Dean of Continuing Education, Outreach and E-Learning, as well as the academic dean of the UW institution having major responsibility for the IL course in question.

3. The hearing committee will request relevant information from the Course Facilitator in response to your appeal, including the grading criteria used. The hearing committee will then forward its decision, which will be final, to UW-Extension’s Dean of Continuing Education, Outreach and E-Learning (or designee), who will share the decision with the Program Manager of IL and the Academic Coordinator of the department responsible for facilitation of your course. The Program Manager of IL will notify you of the final decision.

**Course Pacing Statement:** All IL courses offered by UW-Extension follow an asynchronous, self-paced model that affords students flexibility to enroll in courses at any time outside of traditional academic calendars and set their own learning schedule upon enrollment. Students have 12 months* from their course registration processing date to complete their course, with an option to extend in three-month intervals up to a total of 18 months with approval and associated fees.

*Concurrently enrolled high school students who are taking an IL course to both meet a high school requirement and gain college credit or who are enrolled through Wisconsin’s Youth Options program have a set deadline for course completion (typically three months).

**Course Pacing Recommendations:** This course includes a pacing guide to support course completion within three months. Similar to a traditional on-campus course, each credit hour of an IL course correlates with class hours. Students are expected to put in two to three hours of work on the course per week for every class hour. For example, a three-credit IL course would correspond to nine to 12 hours per week over a three-month period (three hours of class time plus six to nine hours of additional study time per week). Similarly, a four-credit IL course would correspond to 12 to 16 hours per week over a three-month period (four hours of class time plus eight to 12 hours of additional study time per week). Students aiming to complete this course at a slower pace can adjust the pacing guide accordingly (e.g., adjusting the weekly effort from nine hours per week to six hours per week). Students aiming to complete this course at a quicker pace than the minimum course pace listed below must seek prior approval by submitting a written request to our Student Services team at il@uwex.edu. The Student Services team will collaborate with your Course Facilitator and respond to you within three business days with an approval or denial of your request, including next steps for you to follow.

- Minimum Course Pace: 3 months
- Maximum Course Pace: 18 months (includes two approved extensions and associated fees)

**Course Sequence Policy:** The Course Author(s) strategically designed this course to maximize student learning in alignment with course objectives. As such, students are strongly encouraged to proceed through the course and complete all requirements following the sequence in which they are presented. Course Facilitators will evaluate only those course requirements completed and submitted by the student.

Any skipped course requirement will earn a point value of zero unless the student secures pre-approval from the Course Facilitator to complete the course requirement out of sequence.

For example, if a student skips a required course assignment from Module 4 and moves on to submit the next required course assignment from Module 5, the student earns a grade on the Module 5 assignment and earns a zero on the Module 4 assignment.

Effective Date 10/1/2017
Exam Policy: This course requires all students to complete exams online with our proctoring service. Students receive two attempts on each exam. If you elect to take a second attempt, the average score of both exams will be recorded.

Final Grade Policy: Students may request and, upon approval, pay for extensions in three-month intervals up to a total of 18 months from their original date of registration to secure additional time to complete outstanding course requirements. When an extension is granted, Course Facilitators will calculate final grades for these students upon expiration of the 15- or 18-month window or upon completion of the course, whichever happens first.

All students who enroll in an IL course and who do not submit a formal request for withdrawal or transfer to another IL course during their initial 12-month period after registration will earn a final course grade based on all submitted course requirements. The process for submitting the formal request is located on the Policies page of the IL website.

Accessibility Statement: Students with documented disabilities have the right to request information and necessary accommodations from the University as stipulated in Section 504 of the Rehabilitation Act and in the Americans with Disabilities Act. Students interested in requesting academic accommodations must contact our Student Services team at il@uwex.edu or 1-877-UW-LEARN (895-3276) to begin the application process. Please be advised that the eligibility determination process and, upon approval, implementation of accommodations could take several weeks. It is important for students to be proactive and initiate the process early in order to ensure that accommodations are in place by the time they will be needed.

Academic Integrity Statement: Academic integrity is critical to the mission of the UW-Extension and the IL program. Students are expected to be independently familiar with University of Wisconsin System’s Student Academic Disciplinary Procedures and to recognize that their work in the course is to be their own original work that truthfully represents the time and effort applied. Violations are most serious and will be handled in a manner that fully represents the extent of the law and that suits the seriousness of its violation.