PHY 2060 Enriched Physics 1 with Calculus [Spring 2060] (3 credits)
Lecture Hall: NPB 1002 Class (Section) Number: 13874 (3355) Honors Program Course

Tentative Syllabus (version of 24 December 2025)
http://www.phys.ufl.edu/~meisel/PHY2060-Spring-2026.html

Subject and Focus of the Course: This enriched course the first semester of the Enriched Physics with Calculus (UF Honors course) sequence PHY 2060-2061 and is aimed at students with prior preparation in physics who wish to acquire a deeper understanding of the subject. The enriched sequence covers similar material to the Physics with Calculus sequence PHY 2048-2049, but PHY 2060 treats basic topics at a faster pace, incorporates more advanced material, and places greater emphasis on instilling conceptual understanding and on developing the ability to solve more challenging problems. The ability to communicate and explain these concepts and their applications will also be essential. More specifically, PHY 2060 covers concepts in classical mechanics, including linear and rotational kinematics and dynamics, conservation laws, oscillations, fluids and special relativity. The material is presented with the goal of providing an opportunity to critically examine and evaluate the principles of the scientific method, model construction, and use the scientific method to explain natural experiences and phenomena. PHY2060 is a general education course in physics, whose learning objectives fit within the umbrella of UF's Physical Science general education courses, see https://undergrad.aa.ufl.edu/general-education/gen-ed-program/subject-area-objectives/.

Learning Environment: My intention is to provide each student with a safe and welcoming atmosphere that affords a personalized opportunity to engage the material being presented. Specifically, I will attempt to present the course material and graded assignments in a manner respectful of the University of Florida's Core Values, https://www.ufl.edu/about/core-values/, by embracing the words used to codify these values.

> *"Celebrate differences in identities, thoughts, and abilities, and seek to provide equitable access to opportunity. Excellence is only possible by including people who bring diverse backgrounds and perspectives. Our growing diversity enhances discovery and innovation. It is reliant on freedom and civility. It enriches the UF community. It is rooted in stewardship. It is the connective tissue for all of our Core Values."*

To achieve this environment, I ask for suggestions and feedback from all students, as each perspective is important to me, and I will do my best to make appropriate adjustments.

Instructor: Mark W. Meisel (*he/him*), Department of Physics, University of Florida
Office: NPB 2358, Tel: 392-8867; **Email:** meisel@ufl.edu
Office Hours: "dynamic" schedule is online, http://www.phys.ufl.edu/~meisel/schedule.htm, and by appointment.
Note: In-person meetings made in advance by email appointment have priority. Drop-in visits are welcome, but please understand that someone may have booked an appointment with me. Tuesday evening meetings are Zoom meetings that are arranged in advance by email

Email Correspondence with Instructor: The Instructor will attempt to respond, within nominally 24 hours of regular business days, to email within the UF e-Learning system (ELS Canvas system) or from UF email accounts if the message contains the name of the student **AND the subject line contains PHY2060**. ***Email will not be sent to email addresses outside the UF-domain (ufl.edu).***

Prerequisite: Degree-seeking students only.
Corequisite: MAC 2312 or equivalent.
Attributes: General Education – Physical Science.

Textbook (required): The textbook, which is required, is ***Physics, Volume 1 (5th edition)*** by Robert Resnick, David Halliday, and Kenneth S. Krane. There is no materials and supplies fee.

Meeting Times and Location: Tuesdays + Thursdays: Periods 6+7 (12:50 pm – 2:45 pm) (12:50 hrs – 14:45 hrs) in NPB 1002 (sometimes called the small auditorium for the building).

Attendance: ***Students are expected to attend lectures*** since material outside the textbook will be presented. Unless otherwise stated, all materials covered in the text and in class are relevant for any graded exercise. The established UF Attendance Polies will be followed.

The instructor attests that "This course complies with all UF academic policies". Information on these polices and other student resources are available online, https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/.

UF Honors Program contact information: Honors Program, Honors Village Complex #4, 352-392-1519
Quick questions for an Honors advisor? Email advisor@honors.ufl.edu
Need an Honors advising appointment? Schedule via Microsoft Bookings: https://bit.ly/UFHonorsAdvising
Honors Program Event Calendar: https://www.honors.ufl.edu/news--events/calendar-of-events/

Posting: Materials and information concerning the course, including important announcements and dates, along with an *"in vivo"* schedule, will be posted on the Course Webpage within the UF ELS Canvas system.
NOTE the ELS Canvas grade calculation tool/algorithm remains a mystery to this Instructor, who has tried to disable its functions. If you have any questions about your points\grades on any material or for the course, please contact the Instructor.

Academic Honesty: Each student is expected to generate graded work by an individual and original effort and (e.g., usually a zero grade is given on the assignment). Please review the University Policies on Academic Honesty, and links are https://policy.ufl.edu/regulation/4-040/ and https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/. **Note the process is one that involves the faculty member and the students:**

> *"Academic honesty and integrity are fundamental values of the University. Students commit to holding themselves and their peers to the high standard of honor required by the Student Honor Code. Any Student who becomes aware of a violation of the Student Honor Code is encouraged to report the violation to the appropriate University Official."*

Accommodations and Advising: Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, https://disability.ufl.edu/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the Instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Advising and Counseling: Due to the nature of the environment at the university, it is not uncommon for students to experience stressful situations, and "study harder" sometimes does not seem to work. If you find yourself in this situation, you are encouraged to seek confidential counseling, see: http://www.counseling.ufl.edu/cwc/.

UF policy for In-Class Recording: "Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal education use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor. A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and deliver by an instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless, of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code", https://policy.ufl.edu/regulation/4-040/.

General Classroom Behavior: Please avoid having distracting audio or visual events occur during class. Use of electronics in the classroom, if used, are to be related to the course material only. **Suggestion:** Be careful of using non-UF based "chat" methods because behavior on any non-UF based platforms may be considered outside the extent of the UF Honor Code.

The instructor attests that "This course complies with all UF academic policies". Information on these polices and other student resources are available online, https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/.

Graded Material and Grading Policy: Assignments submitted late will not be graded.

Note for Honors Program: A minimum grade of B is required to earn Academic points towards Honors Completion Requirements. Once you have earned your final grade in this course, please upload the course information and final grade from your Unofficial Transcript into your Honors Canvas Cohort: Honors Requirements module to earn Honors Milestone / Completion credit.

Exams: There will be two midterm exams and a final exam. They will be graded out of 100 and then your score will be multiplied by two to get the point score out of 200. The dates and chapters covered in the exams are on the schedule. All exams are closed book, and no formula sheet or notes are permitted in the exam.

Quizzes: There will be five quizzes each worth 10 points. Thus, the total number of points for quizzes is 50 points. Quizzes will be in-class and are listed on the schedule. The purpose of the quizzes is to make sure you are internalizing the material and can solve problems without all your notes and the textbook. These are the same conditions that will be employed for the exams, which count for many more points.

Homework: Homework is expected to be assigned on a regular basis (nominally weekly) and will be communicated in class and electronically. Cooperation on the homework is permitted; however, each student must generate their own homework solution. You cannot submit "group" solutions. The instructor will not solve homework problems until after the due date for the homework assignment, although guidance is available. Each homework set carries a maximum score of 10 points. At least 10 homework assignments are anticipated. At the end of the semester, your homework score will be divided by 0.9, which is like dropping one assignment. However, the maximum number of homework points is 100 points.

In-Class Exercises: Since this course is scheduled for two consecutive periods, a combination of lectures and other interactive activities will be employed. Sample activities include responding to conceptual questions, working "challenging" problems or old exam problems in small groups, and "engaging" with physics demonstrations. You will receive a few points usually just for participating in these activities. The total number of points awarded will be substantially larger than 50 points, but the maximum allowed for this portion of your grade is 50 points.

Summary: Additional details about the UF grading policies can be found at found here. The graded assignments are listed along with the maximum number of points available for each element. The total number of points is converted to a Final Course Letter Grade according to the scale used for this course.

Assignment	Points
Exam 1:	200
Exam 2:	200
Final Exam:	200
Homework:	100
Quizzes:	50
In-Class Exercises:	50

Total:	800

Final Course Letter Grade Scale	
A	≥ 680 points (85% - 100%)
A-	≥ 640 points (80% - 84.9%)
B+	≥ 600 points (75% - 79.9%)
B	≥ 560 points (70% - 74.9%)
B-	≥ 520 points (65% - 69.9%)
C+	≥ 480 points (60% - 64.9%)
C	≥ 440 points (55% - 59.9%)
C-	≥ 400 points (50% - 54.9%)
D+	≥ 360 points (45% - 49.9%)
D	≥ 320 points (40% - 44.9%)
D-	≥ 280 points (35% - 39.9%)
E	< 280 points (0% - 34.9%)

NOTE the ELS Canvas grade calculation tool/algorithm remains a mystery to this Instructor, who has tried to disable its functions. If you have any questions about your points\grades on any material or for the course, please contact the Instructor. In other words, Canvas may try to compute your grade based on scores in the electronic gradebook, but please disregard the Canvas calculations.

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Make-Up of Graded Material: Consistent with university policies described elsewhere (here), students will be allowed to make-up graded material. In most circumstances, the reason for the make-up will need to be documented by a note typically from a medical doctor, an attorney, or a UF official. Notes from family members are not acceptable. When possible, the student should inform the Instructor in advance of absences or delays in completing graded assignments. Please note that if you are not allowed on campus (https://wellness.ufl.edu/), then please do not come to class.

Incomplete Policy: A grade of incomplete is typically given to students who endure a situation in which they are incapable of completing the coursework. The I-grade is not to be given to students who are simply dissatisfied with their performance in the course. The UF CLAS Incomplete Grades policy is described here. If you find you are in a situation that might qualify you for an I-grade and you want to pursue this potential option, then you must contact the Instructor as soon as possible. The required contract is available here and the direct link is https://www.advising.ufl.edu/docs/IncompleteGradeContract.docx.

Comments on Knowing Your Grades: It is expected that graded material will be returned to each student in a timely fashion, usually at the start of the first-class period after which it was submitted. In most instances, the material and rubric will be reviewed during a lecture. After the review, if a student has any question about the grading of the work, please arrange for a timely meeting (typically within a week of grades being posted) with the Instructor to review the grading. Students should keep records of the materials submitted as graded exercises. **The UF ELS Canvas site is used to electronically post/record the grades**, http://elearning.ufl.edu/, but as noted elsewhere, the Canvas tools for summarizing points and grades is ***NOT*** applicable for this course.

Course Evaluations: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

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Anticipated Schedule:

Note: the *"in vivo"* schedule posted in Canvas supersedes this one as some adjustments may be needed during the semester.

This schedule lists what is covered in each lecture as well as the exam dates. The full schedule on canvas will have in-class worksheets, homework, and quizzes (worksheets), including their solutions. As noted earlier there is a homework assignment almost every week, and there are five quizzes during the semester. You are expected to read the material to be covered in each lecture before coming to the class. The lectures will cover a lot of material listed in the schedule, but they are not designed to be a substitute for the text. The lectures will consist mainly of illustrating concepts with experiments and demonstrations, discussing additional material omitted in the text, pointing out subtle points and common mistakes, and asking questions to find out and clarify misconceptions. The homework and exams will be based on materials covered in lectures as well as those listed in the schedule.

Week 1:
Tuesday, 13 January: Course overview, dimensional analysis, motion in 1D (Chpts. 1 and 2)
Thursday, 15 January: Force and Newton's Laws (Chpt. 3)

Week 2:
Tuesday, 20 January: Vectors, Projectile motion, Reference frames, relative motion (Chpt. 4)
Thursday, 22 January: Projectile motion (Secs. 4-1, 4-3, 4-4), circular motion (Sec. 4-5), **Quiz 1**

Week 3:
Tuesday, 27 January: Tension, normal forces and frictional forces (Secs. 5-1 - 5-3)
Thursday, 29 January: Uniform circular motion, linear momentum and impulse (Secs. 5-4, 6-1 to 6-3)

Week 4:
Tuesday, 03 February: Conservation of momentum, 1D collisions (Secs. 6.4, 6-5) – Elastic collisions
Thursday, 05 February: Many particle systems, center of mass (Chpt. 7), **Quiz 2**

Week 5:
Tuesday, 10 February: Review for Exam 1
Thursday, 12 February: **In-class Exam 1 on Chapters 2 – 7**

Week 6:
Tuesday, 17 February: Rotational kinematics (Chpt. 8)
Thursday, 19 February: Torque and rotational inertia (Secs. 9-1 to 9-4)

Week 7:
Tuesday, 24 February: Rotational dynamics, statics (Secs. 9-5 to 9-7)
Thursday, 26 February: Conservation of angular momentum (Chpt. 10), **Quiz 3**

Week 8:
Tuesday, 03 March: Energy Part 1 (Chpts. 11-13)
Thursday, 05 March: Energy Part 2 (Chpts. 11-13)

Week 9:
Tuesday, 10 March: Review for Exam 2
Thursday, 12 March: **In-class Exam 2 on Chapters 8 – 13**

Week 10:
Tuesday, 17 March: No Class – Spring Break
Thursday, 19 March: No Class – Spring Break

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Week 11:
Tuesday, 24 March: Gravitation (Secs. 14-1 to 14-7)
Thursday, 26 March: Fluids (Secs. 15-1 to 15-5 and 16-1 to 16-4)

Week 12:
Tuesday, 31 March: Harmonic oscillations (Secs. 17-1 to 17-8)
Thursday, 02 April: Wave motion (Chpt. 18), **Quiz 4**

Week 13:
Tuesday, 07 March: Sound waves (Chpt. 19)
Thursday, 09 April: Special Relativity, Part 1 (Secs. 20-1 to 20-3)

Week 14:
Tuesday, 14 April: Special Relativity, Part 2 (Secs. 20-4 to 20-7)
Thursday, 16 April: Special Relativity, Part 3 (Secs. 20-8 to 20-10), **Quiz 5**

Week 15:
Tuesday, 21 April: Review for final exam
Thursday, 23 April: No Class – Reading Day

Final Exam: This Exam is "Cumulative", which means it will span the entire course.
As set by the Registrar, with designation as a "Standard Exam for TR 6", where TR = Tuesday+Thursday and the earliest period (6, for this 6+7 course) is used for scheduling:

Wednesday, 29 April, Group E, 5:30 pm – 7:30 pm (17:30 hrs – 19:30 hrs), NPB 1002.

Note: All work related to this course must be resolved by Friday, 01 May 2026, 5 pm (17:00 hrs).

Acknowledgements: This syllabus draws heavily upon the experiences, advice, and materials provided by my colleagues Selman Hershfield and Dominique Laroche.

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