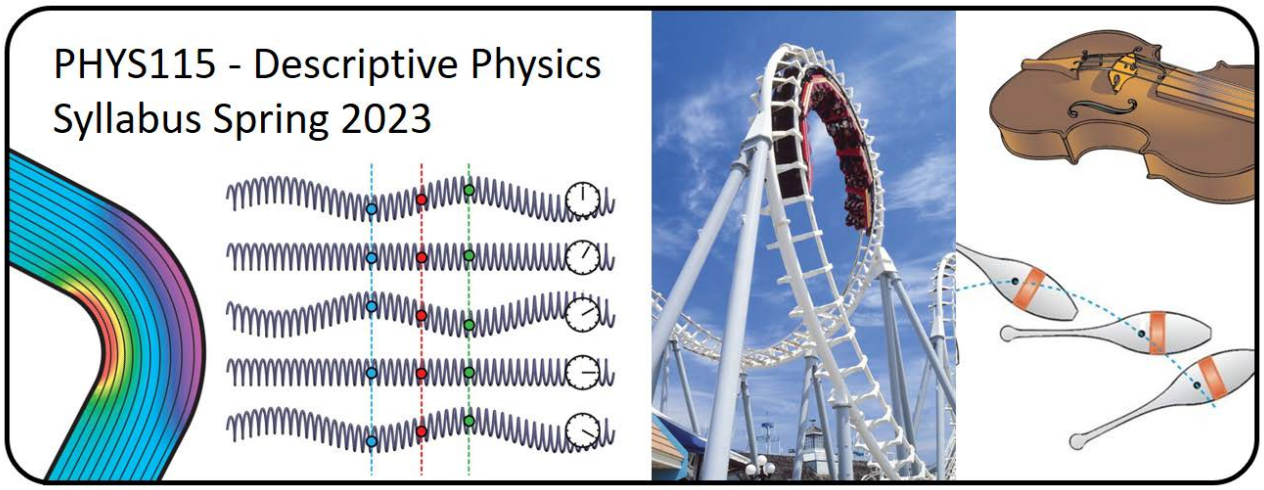

Lecturer

Prof. Cornelis ("Kees") J. Uiterwaal
Office: Jorgensen Hall, room 077 (basement)
Telephone: (402) 472-9010
Email: cuiterwaal2@unl.edu
Office hours: Mondays after class (2:30pm–4:00pm), or by appointment, or just stop by to see if I have time to help you.

Meeting times and location

We meet for lecture on Mondays, Wednesdays, and Fridays, from 1:30pm till 2:20pm, in Jorgensen Hall, room 136.
First meeting: Mon Jan 23, 2023
Last meeting: Fri May 12, 2023

Text

"How Things Work: The Physics of Everyday Life" 6/e (Wiley) by Louis A. Bloomfield. You can access the electronic version of the text in the WileyPLUS online learning environment (see below). Because access to WileyPLUS is required (see below), you do not have to buy a paper copy of the text.

Course description / ACE certification

PHYS115 offers a qualitative approach to physics for the non-science major that emphasizes concepts and how they are used to understand the everyday physical world. Recommended for all students wanting a look at basic physics. PHYS115 is certified as ACE 4 (Science).

Course websites

PHYS115 has two websites, Canvas and WileyPLUS.

Canvas lists our course as "PHYS-115-001.1231". Be sure to check this site several times a week, because I will use it as the main medium to communicate with you. Various types of information will be posted in Canvas during the course, such as *Announcements*, and, occasionally, written homework assignments (look under *Assignments*). This syllabus can be found under *Syllabus*. Relevant course materials will be posted under *Files*.

You will do most homework assignments in the online learning environment WileyPLUS (WP). Access to the WP component of this course (which includes access to the electronic version of the text) is required. My first *Announcement* in Canvas has a link to instructions on how to register.

What you will do

The learning process will involve you actively in discussions (also of demonstrations). You must attend the lectures ready to participate, having familiarized yourself ahead of time with the material to be discussed (see Lecture Schedule below), and do the assigned homework.

A few words on each activity:

LECTURE – Attendance and participation in all lectures is required. Lectures are an activity and should not be wasted by passivity: listen—think—discuss—ask questions—answer questions—be courteous. During class you will also answer live clicker questions.

CLICKER QUESTIONS – We will be using the "iClicker" Student Response System during lectures. You can use a handheld clicker for this or an app on your smartphone. For details on the app, go to www.iclicker.com/students/apps-and-remotes/apps . Payment is required to create an account for the smartphone app. Your handheld clicker or your account must be linked to our course using the "iClicker Sync" link in Canvas (in the left menu). Having either a handheld clicker or the app is required.

If the clicker answers indicate poor understanding, you will discuss the question with your classmates, after which you may revise your answer in a second voting round. This helps improve comprehension. It also helps *me* find out learn what difficulties the group may have and work them out on the spot, instead of after an exam.

HOMEWORK – Homework is assigned weekly in WileyPLUS. These assignments are named "HW Ch. 1", "HW Ch. 2", etc. Occasionally, other homework may be assigned, which will then be posted on Canvas. If you get stuck, it's best to contact the Physics Resource Center first, because TAs are available at the Center every day. Of course, you can also contact me.

Lecture schedule

The following schedule lists the lecture dates and tentative lecture topics. The sections listed (from our text: "How Things Work", see above) are your reading assignments for each day. The schedule is tentative, and will be changed if necessary.

Week		Topic	Section
Nr.	Monday		
1	Jan 23	COURSE LOGISTICS, INTRODUCTION	–
		Skating	1.1
		Skating	1.1
2	Jan 30	Falling Balls	1.2
		Falling Balls	1.2
		Ramps	1.3
3	Feb 6	Ramps	1.3
		Seesaws	2.1
		Seesaws	2.1
4	Feb 13	Wheels	2.2
		Wheels	2.2
		Bumper Cars	2.3
5	Feb 20	Bumper Cars	2.3
		Spring Scales	3.1
		Spring Scales	3.1
6	Feb 27	Ball Sports: Bouncing	3.2
		Ball Sports: Bouncing	3.2
		SPILLOVER	–
7*	Mar 6	REVIEW	–
		Carousels and Roller Coasters	3.3
		Carousels and Roller Coasters	3.3
8	Mar 13	NO CLASS (SPRING BREAK)	–
		NO CLASS (SPRING BREAK)	–
		NO CLASS (SPRING BREAK)	–
9	Mar 20	Balloons	5.1
		Balloons	5.1
		Water Distribution	5.2
10	Mar 27	Water Distribution	5.2
		Clocks	9.1
		Clocks	9.1
11	Apr 3	Musical Instruments	9.2
		Musical Instruments	9.2
		SPILLOVER	–
12*	Apr 10	REVIEW	–
		Static Electricity	10.1
		Static Electricity	10.1
13	Apr 17	Xerographic Copiers	10.2
		Xerographic Copiers	10.2
		Flashlights	10.3
14	Apr 24	Flashlights	10.3
		Household Magnets	11.1
		Household Magnets	11.1
15	May 1	Electric Power Distribution	11.2
		Electric Power Distribution	11.2
		Radio	12.1
16	May 8	Radio	12.1
		SPILLOVER	–
		REVIEW	–
17		FINAL EXAM: Thu May 18, 1:00pm – 3:00pm	

*exam on Tuesday night in this week

Exams and grading

EXAMS – There will be two one-hour midterm exams and a two-hour final exam, with a preliminary schedule as follows:

Midterm exam 1	Tue Mar 7	room TBD	7:00pm – 8:00pm
Midterm exam 2	Tue Apr 11	room TBD	7:00pm – 8:00pm
Final exam	Thu May 18	room TBD	1:00pm – 3:00pm[†]

([†]Date and time for final as per Final Exam Schedule.) All exams are *in-person*. You will need an electronic calculator during the exams. Calculators may not be shared. Cellphones, smartphones, tablets, or any other electronic devices are not allowed. If you miss an exam because of illness or some other (e.g. family) emergency, you must contact me at your first opportunity. An unexcused absence will result in a zero score for the exam and that score will not be dropped.

GRADING – You can score up to 1000 course points derived from the following activities:

Activity	Course pts.
Lecture attendance and participation (incl. clickers)	50
Homework assignments (mostly in WileyPLUS)	150
Midterm exam 1	250
Midterm exam 2	250
Final exam	300

Letter grades will be determined from your final score using the table below. The table shows the lower and upper cutoff for a grade (100% = 1000 course points). For example, for a score of 83% you will get a B+. Note: When the circumstances justify doing so, I may report a different course grade for a student. Those opting for a Pass/No Pass grade will get "Pass" if their letter grade would have been C or more (so, for a score of 66% or more), and "No Pass" otherwise. Any request for grade changes must be made within two weeks after the graded work is made available.

Percentage	Letter
0–50%	F
50–54%	D–
54–58%	D
58–62%	D+
62–66%	C–
66–70%	C
70–74%	C+
74–78%	B–
78–82%	B
82–86%	B+
86–90%	A–
90–94%	A
94–100%	A+

Students with Disabilities

Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska - Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 117 Louise Pound Hall, 472-3787.

Helpful sites

The webpages of Hypermath may help you reviewing relevant mathematics for this course. Other recommended, curated online resources are Hyperphysics and Eric Weisstein's World of Science. Having a more general scope, Wolfram|Alpha (a self-described "computational knowledge engine") offers a wealth of information on a broad range of topics. See what happens if you enter 'iron' (omit quotes), or 'time in Australia', 'sin(3i)', 'steam', '1/4 inch bolt', or 'C major 7th chord'. This "engine" does symbolic calculation as well. For instance, to find the derivative of the sine function enter 'D[Sin[x],x]'. To see an example of integration, let it find the primitive of $\sqrt{(1-x^2)}$, by entering 'Integrate[Sqrt[1-x^2],x]'.

UNL Course Policies and Resources

Students are responsible for knowing the university Course Policies and Resources. Follow the link for detailed information on the University's attendance policy, academic honesty policy, services for students with disabilities, mental health and well-being resources, final exam schedule (15th week policy), emergency procedures (on campus), diversity & inclusiveness statement, and Title IX policy.

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