DEPARTMENT OF PHYSICS

FALL 2018 **Physics 2C** **Sept 24, 2018**

University Physics – Fluids, Waves, Thermodynamics, and Optics

Web page: https://tritoned.ucsd.edu/

INSTRUCTOR: Prof. Oleg Shpyrko, oleg@physics.ucsd.edu
Office Hours: Thursdays, 2PM-3PM, Mayer Hall Addition 4681
(Conference room, NOT my actual office).

Course Coordinator: Dawn Love, 2571 Mayer Hall Addition, 822-1468, d1love@physics.ucsd.edu

TAs: Kelson J Kaj <kkaj@ucsd.edu>
Lawson Fuller <llfuller@ucsd.edu>
Daniel Grober <dgrober@ucsd.edu>
William Hicks <whicks@ucsd.edu>
Yueqi Zhao <yuz289@ucsd.edu>
Sheena Patel <skp008@ucsd.edu>
Krishna Kinnal <kkinnal@ucsd.edu>

CLASS SCHEDULE:

Lectures:	2C(a)	TuTh	9:30AM-10:50PM	2722 York Hall
	2C(b)	TuTh	12:30PM-1:50PM	2722 York Hall

Quizzes: Fridays, 4:00PM-4:50PM (for both sections) 4 quizzes during week 3, 5, 7 and 9: Oct 19, Nov 2, Nov 17, Nov 30th.

Quiz Locations: 2C(a): York Hall 2722
2C(b): Peterson Hall 108

Discussions: Mondays-Thursday, see your section schedule below

Final Exam: 2C(a) December 13th, 8AM, location TBD
2C(b) December 14th, 11:30AM, location TBD

Final Examination: The final examination will cover all of the material of the course. **Please check your final exam schedule and inform the instructor of any conflicts within the first two weeks of the quarter.**

TEXT: Halliday & Resnick & Walker, Fundamentals of Physics, 10th Edition, Vol. 1 Part 2 & Vol. 2 Part 4, John Wiley & Sons.
Enrollment in Wiley Plus is optional (you can un-enroll within first two weeks of automatic enrollment).

PREREQUISITES: Physics 2A, Math 20C and concurrent enrollment in Math 20D: Trigonometry, vectors, and calculus will be used in lectures, problem sets and exams.

Help Is Available: Problem solving sessions are listed below. At these sessions, problems will be worked out and the weekly lectures gone over.
Attendance is mandatory and attendance will be recorded beginning with week 2, for partial credit of 5%.

Individual assistance is available during office hours for instructor and TAs.

Academic Achievement Hub Physics 2C: Academic support is provided to you (the student) each week during the quarter by either Supplemental Instruction and/or Tutoring. Please visit the website at http://commons.ucsd.edu/students/tap/index.html, for descriptions and schedules by program and course. All academic support is free; no registration or appointment required.

We will also use Piazza forums: piazza.com/ucsd/fall2018/phys2C
You need to try to solve problems and explain how far you got before asking for guidance or hints – do not expect TAs or instructor to do all the work for you in solving your homework!

Phys 2Ca				
	Monday	**Tuesday**	**Wednesday**	**Thursday**
12:00pm	**A01**	**A03**	**A05**	**A07**
	Kinnal	**Kinnal**	**Patel**	**Kinnal**
	MH 2702	**MH 2623**	**MH2623**	**MH 2623**
	949968	**949970**	**949973**	**949975**
1:00pm	**A02**	**A04**	**A06**	**A08**
	Fuller	**Patel**	**Fuller**	**Patel**
	MH2702	**MH 2623**	**MH2623**	**MH 2623**
	949969	**949972**	**949974**	**949976**
Phys 2Cb				
2:00pm	**B01**	**B03**	**B05**	**B07**
	Kaj	**Grober**	**Zhao**	**Hicks**
	MH2623	**MH 2623**	**MH 2702**	**MH2623**
	949978	**949980**	**949982**	**949984**
3:00pm	**B02**	**B04**	**B06**	**B08**
	Kaj	**Hicks**	**Grober**	**Zhao**
	MH2623	**MH2623**	**MH2702**	**MH2623**
	949979	**949981**	**949983**	**949985**

Acad. Integrity: Please read "UC Policy on Integrity of Scholarship" in the UCSD General Catalog: http://tinyurl.com/AIC-UCSD15

All quizzes and the final exam are "closed book" (you are allowed scantrons, pencils and calculators only). No laptops, tablets are allowed. Turn off your cell phones. No texting, emailing or talking is allowed until you submit your scantron and leave the room. All work is individual; do not look at your neighbor's quiz. We will be selectively checking IDs when you submit your scantrons.

Any observed violation of these rules will be immediately reported to Academic Integrity Office.

A student found in violation of UCSD Academic Integrity policy may result in an F grade in the course.

Course Format: Physics 2 A-B-C-D is a lecture course covering mechanics, electricity and magnetism, waves and modern physics. Physics 2C is a calculus-based science-engineering general physics course covering fluid mechanics, waves in elastic media, sound waves, temperature, heat and the first law of thermodynamics, kinetic theory of gases, entropy and the second law of thermodynamics, electromagnetic waves, geometric optics, interference and diffraction.

HW Assignments: Problem sets are assigned as selections from each text chapter. Solutions will be available on the TED website. The problems will be worked in detail during the problem session. The homework will not be graded, but exam problems may resemble homework that is assigned.

Quizzes: 4 quizzes during week 3, 5, 7 and 9: Oct 19, Nov 2, Nov 17, Nov 30th. The quizzes will contribute to 60% of your overall grade, weighted at 15% each.

We will provide relevant formula sheet for each quiz. You are allowed to use calculator and pencils/scantrons only.

Not allowed: books, laptops, tablets, phones or any other materials. Please turn your cellphones off during the quiz. Using a phone for <u>any</u> reason during the quiz or the final exam is violation of academic integrity. Talking to another student during the quiz or the final exam (for any reason), or looking at their exams is violation of academic integrity. If you have any questions or concerns during the quiz or the exam, raise your hand and ask the TA or the proctor.

<u>There will be no make-up quizzes or exams.</u>

You must purchase blue books for the quizzes and final exam – they are available at Campus Bookstore.

Clickers: You have the opportunity to participate in lecture by utilizing the in-class clicker system (iClickers). Each clicker has a unique serial number on the back of the remote. In order to receive credit for your participation, you will need to register your clicker remote on TritonEd. Every question given in lecture is worth up to 2 points, you will be given one point for merely answering with a point given for answering correctly. You are allowed to discuss clicker questions with your fellow students in class if you like.

Clickers scoring will become part of lecture beginning the week 2 of the quarter, we will use them the first week as a test of the system (scores posted but do not contribute to the score until week 2).

Grading Policy:

Quizzes	60%	(Each quiz at 15%. 4 quizzes total)
Final Exam	30%	
Clickers	5%	
Discussion Session attendance	5%	

Add/Drop: Use WebReg to add/change/drop, drop from waitlists. See Toni Moore (534-1745; <tmoore@physics.ucsd.edu>) in the Physics Department, Student Affairs Office, Mayer Hall Addition, Room 2581, if you have any problems with WebReg. If you need advice, see the TA or the instructor, **but they <u>do not</u> sign any cards.**

If you are on the waitlist, please remember that TAs or instructor **cannot** move you from waitlist (registrar office does that automatically) or increase the enrollment size (set by fire marshal rules).

PHYSICS 2C(a,b) TENTATIVE COURSE SCHEDULE

Week	Date		Topics	Chapter
0	Sept. 27	Thu	Temperature scales, Temperature and Heat	18
1	Oct. 2	Tue	Class Overview	18
	Oct. 4	Thu	First Law of Thermodynamics, Conduction, Convection, & Radiation	18
2	Oct. 9	Tue	Ideal Gases, Molar Specific Heats	19
	Oct. 11	Thu	Degrees of Freedom	19
3	Oct. 16	Tue	Entropy, Second Law of Thermodynamics	20
	Oct. 18	Thu	Engines and Refrigerators	20
	Oct. 19	F (4 pm)	**Quiz 1 (Chap. 18-19, 20)**	
4	Oct. 23	Tue	Density and Pressure	14
	Oct. 25	Thu	Archimedes' Principles Bernoulli's Equation	14
5	Oct. 30	Tue	Simple Harmonic Motion & Waves	15
	Nov. 1	Thu	Superposition of Waves, Standing Waves & Resonance	16
	Nov. 2	F (4 pm)	**Quiz 2 (Chap. 20, 14, 15)**	
6	Nov. 6	Tue	Sound Waves	17
	Nov. 8	Thu	Interference, The Doppler Effect	17
7	Nov. 13	Tue	Electromagnetic Waves, Polarization	33
	Nov. 15	Thu	Reflection and Refraction	33
	Nov. 16	F (4 pm)	**Quiz 3 (Chap. 15, 16, 17)**	
8	Nov. 20	Tue	Mirrors and Images, Geometrical Optics	34
	~~Nov. 22~~	~~Thu~~	THANKSGIVING (HOLIDAY)	34
9	Nov. 27	Tue	Optical Interference, Young's Experiment	34/35
	Nov. 29	Thu	Geometrical Optics	
	Nov. 30	F (4 pm)	**Quiz 4 (Chap. 17, 33, 34)**	
10	Dec. 4	Tue	Diffraction, Diffraction Gratings	35
	Dec. 6	Thu	Class Review	
EXAM	Dec. 13	Thu (8 am)	**FINAL EXAM 2C(a)**	
	Dec 14	Fri (11:30am)	**FINAL EXAM 2C(b)**	