Course Material Submission Form
OAN Match Definition Form

Today's Date:	October 30, 2007

Use this table to specify institutional data	
College/University:	Cleveland State University
Name and title of individual submitting on behalf of the college/university	
Name:	Jae-won Lee
Title:	Director of Curricular Affairs
Address:	2121 Euclid Ave., MU-278
Email:	j.lee@csuohio.edu
Phone:	216-687-4632
Fax:	216-687-5435

Indicate the reason for this submission:

☒ New Course Match
☐ Course Renumbering Only (do not use for calendar changes)
☐ Revised Materials - Faculty review panel requested clarification
☐ Revised Materials - Institution submitting additional information
☐ Revised Materials - Course content revised by institution, including situations of both content and credit hour change
☐ Revised Materials – Other

Describe specific revisions being made for "Revised Materials" submissions:

Institutional Notes to Faculty Panel (the institution is encouraged to add any additional clarifications for this submission):

At Cleveland State University, three different courses—PHY 242, PHY 244, and PHY 244H—satisfy OSC 017 (Calculus-based Physics II). The basic course is PHY 242. PHY 244 adds a 2000-word writing requirement to the requirements of PHY 242. PHY 242 and PHY 244 meet concurrently as a single class. PHY 244H is an honor's version of PHY 244; it has some additional laboratory experiments. Materials for PHY 242 were submitted previously.

Table 1 – Use this table to describe the course match for which materials are being submitted for the first time or revised.

Proposed effective year and term of match (Final effective date will depend on actual approval of match by faculty panel. Effective Year and Term is the first term in which students taking the course will receive matching credit.)

Semester institutions complete this row: 2008 Academic Year ☐ Summer ☐ Autumn ☒ Spring Quarter institutions complete this row: 20 Academic Year ☐ Summer ☐ Autumn ☐ Winter ☐ Spring	
Ohio Articulation Number (OAN) (Use a separate form for each OAN.):	**OSC 017**
Number of courses in the match:	3 (up to 10)
Current status of match:	☒ First time submission ☐ Approved ☐ Submitted ☐ Disapproved ☐ Error ☐ Resubmitted ☐ Pending ☐ Error with enrollment ☐ Not submitted

Course or Courses being matched to or currently matched to the OAN listed above. (Course Numbers must be exactly what will appear on a student's transcript.):		**Course Number**
	1.	PHY 242
	2.	PHY 244
	3.	PHY 244H
	4.	
	5.	
	6.	
	7.	
	8.	
	9.	
	10.	

Table 2 - Use this table to submit course materials for the first time or to revise previously submitted course materials. You must submit each course in a separate form, repeating the match definition information in Table 1 above for each form submitted.

Course Number. (Course Numbers must be exactly what will appear on a student's transcript.):	PHY 244	**Course Title:**	University Physics II

Hours (be sure that the hours for this course matches the hours in the OAN.)

☒ **Semester Hours 5** ☐ **Quarter Hours**

Total Credit Hours	5	**Lecture Hours**	4	**Laboratory Hours (if applicable)**	2

Course Placement in Major:	☒ Major Requirement ☐ Major Elective ☐ Major Not Offered ☐ Other

Pre-Requisite Course work (if applicable) (Be sure this is consistent with the OAN definition):

PHY 241/ 243 (University Physics I), MTH 181 (Calculus I), MTH 182 (Calculus II), three units of high-school math, three units of high-school science. Corequisite: MTH 281 (Multivariable Calculus)..

Catalog/Course Description:

PHY 244 University Physics II (4-2-5). Prerequisites: PHY 241/ 243, MTH 181, MTH 182, three units of high-school math, three units of high-school science, Corequisite: MTH 281 Calculus-based physics, including electricity, magnetism, and optics. *Writing*, *Natural Science with Laboratory.*

Texts/Outside Readings/Ancillary Materials (Be sure that the text meets performance expectations):

Halliday, Resnick, & Walker. *Fundamentals of Physics* (8th ed.). Wiley, 2007.

Course Objectives and/or Plan of Work:

(Provide a clear indication of how the course objectives align with the matched OAN's learning outcomes. This will facilitate the faculty panel course review process.)

Students enrolled in **PHY 244** complete writing assignments in addition to all assignments required of students in PHY 242. PHY 244 counts as one course toward the Writing Across the Curriculum requirement.

LEARNING OUTCOMES: After completing this course, a student should understand and be able to apply the following topics, using calculus concepts and methods (where appropriate):

1. Electric field, potential, forces
2. Current, magnetic field integration over continuous charge/current distribution
3. Induction and Inductance
4. Resistance
5. Capacitance
6. Basic circuit analysis
7. Electric power
8. Energy stored fields
9. EMF
10. Electromagnetic waves
11. Gauss Law
12. Kirchhoff's Law
13. R-L-C circuits
14. Ampere's Law
15. Faraday's Law
16. Conductivity
17. Geometric optics
18. Diffraction
19. Interference
20. Polarization

Description of Assessment and/or Evaluation of Student Learning (The assessment plan needs to be appropriate for the expected rigor of the course) :

Assessment is based on the following:

Weekly short tests: 390 points possible
Homework graded online: probably about 130 points possible
Final exam: 100 points possible
Average lab grade: 100 points possible.

Master Syllabi and Working Syllabi (if both are used):

University Physics II (PHY 242 / PHY 244) Fall 2007

Instructor: Jearl Walker, SI-125, phone/fax 216-687-2424
Text: Halliday, Resnick, and Walker, *Fundamentals of Physics* (8th. ed.)
Credits: 4 SCH-2 lab hours-5 lecture hours
Prerequisites: PHY 241 or PHY 243 (Calculus-based Physics I); MTH 181 (Calculus I); MTH 182 (Calculus II); three units of high-school math, three units of high-school science.
Corequisite: MTH 281 (Multivariable Calculus

Students enrolled in **PHY 244** complete writing assignments in addition to all assignments required of students in PHY 242. PHY 244 counts as one course toward the Writing Across the Curriculum requirement.

LEARNING OUTCOMES: After completing this course, a student should understand and be able to apply the following topics, using calculus concepts and methods (where appropriate):
1. Electric field, potential, forces
2. Current, magnetic field integration over continuous charge/current distribution
3. Induction and Inductance
4. Resistance
5. Capacitance
6. Basic circuit analysis
7. Electric power
8. Energy stored fields
9. EMF
10. Electromagnetic waves
11. Gauss Law
12. Kirchhoff's Law
13. R-L-C circuits
14. Ampere's Law
15. Faraday's Law
16. Conductivity
17. Geometric optics
18. Diffraction
19. Interference
20. Polarization

SCHEDULE OF TOPICS

Week	Chapters	Topics
1	21	Electric charge, Coulomb's law
2	22	Electric fields
3	23	Gauss' law
4	24	Electric potential
5	25	Capacitance
6	26	Current and resistance
7	27	Circuits
8	28	Magnetic fields
9	29	Magnetic fields due to currents
10	30	Induction and inductance
11	32	Magnetism of matter; Maxwell's equations
12	31	Electromagnetic oscillations and alternating current
13	33	Electromagnetic waves, reflection, refraction, polarized light
14	34	Optics: images from mirrors and lenses
15	35	Optical interference
	36	Optical diffraction

What to buy for Physics II (242 and 244) – Walker's sections Fall 2007

You definitely need WileyPlus, which is the web-based homework system associated with the textbook. However, you have several options on how to purchase it and the textbook. If you have a WileyPlus code from a previous course, see if it will work at the URL for our course (see below).

Option 1 – Buy the book and get WileyPlus for free: At the bookstore, buy the shrink-wrapped bundle of books for this course (Physics 242 and 244, not the first semester course). You are paying for Parts 3 and 4 (paperbacks) of the 8th edition of the textbook *Fundamentals of Physics* by Halliday, Resnick, and Walker.

- You don't need the full book.
- **Make sure that the bundle is shrink-wrapped with the code for Wiley Plus on an enclosed card.** At the CSU bookstore, that Wiley Plus code comes for free with the book purchase. With it you will turn in homework and you will also have access to
  - electronic copy of the full 8th edition textbook
  - Student Companion (study guide)
  - Student Solutions Manual (your homework problems are linked to these)

- Once you open up the package and find the WileyPlus code, go to our course URL http://edugen.wiley.com/edugen/class/cls41397/ and register by using the code and filling out information about yourself. I recommend that you choose a short, easy-to-remember password because you will by keystroking it in hundreds of times this semester. Use the Check Browser button to see if your computer allows cookies, java, and pop-ups (you may have to turn them on for this web site).

Option 2 – Buy WileyPlus and get the electronic book for free: Go to our course URL http://edugen.wiley.com/edugen/class/cls41397/ and purchase the "Reg code" (do you see the button on the right side?). The price is considerably less than the price of the paper book and you get free access to the electronic copy of the full book, which you can download, print, or just read on screen. Plus you get

- Student Companion (study guide)
- Student Solutions Manual (your homework problems are linked to these)

Once you purchase the code, register at our URL. I recommend that you choose a short, easy-to-remember password because you will be keystroking it in hundreds of times this semester. Use the Check Browser button to see if your computer allows cookies, java, and pop-ups (you may have to turn them on for this web site).

From the bookstore, you should also buy
1. A lab booklet, which contains instructions for the labs
2. (optional but helpful) A copy of my old exams (I make no profit on this purchase)

Homework: I give lots of problems that are graded online in the WileyPlus system. Here is our URL: http://edugen.wiley.com/edugen/class/cls41397/ . There is a button for you to bookmark the site (saving it as a favorite will not work). There are buttons to push to get an introduction to the system.
Browsers: Use the Check Browser button to see if you need to turn on cookies, java, and pop-ups for our web site. You are always welcome to use the Physics Dept computers.

Weekly Tests

Starting in the second week, there will be an exam every Friday. Each exam is worth 30 points, is multiple-choice, and will usually consist of the following:

3 decision-type questions based on the assigned book sections, the checkpoints, the lectures, and the assigned questions at the end of a chapter
4 calculation-type problems based on lecture examples and assigned homework problems. One of these problems will probably be a "modified repeat" of a previously given test problem (it will be changed somewhat). See the course calendar to see when these repeats begin.

Makeup Test

If you skip a test, you can take a make-up test during the last week of class (see the calendar in these pages). However, the make-up test will count for only one skipped test, and it will have modified-repeats from any of the exams this semester. It will not be a "mean" (punishing) test, but you

probably want to avoid it if you can.

Grades

To determine your course grade, I shall sum your points:

Weekly short tests: 390 points possible
Homework graded online: probably about 130 points possible
Final exam: 100 points possible
Average lab grade: 100 points possible.

Thus, about 720 points are possible in the course. Your standing relative to the other students sets your course grade. Usually I give out the following distribution, but it varies from class to class:

A – top 15% of the class B – next 35% C – next 35%
D – next 10% F – lowest 5% (automatic if you skip a lab or an essay)

Don't Skip Labs

An F is automatic if you skip any lab reports. (This is a Physics Department rule.) If you cannot get to your scheduled lab, try to go to another one. If you have a medical problem, call me and tell your TA. The labs do **not** have makeups.

Final Exam

The final exam will consist of 20 modified repeats from your exams this semester. They probably will be calculating-type questions instead of ranking-type questions.

My Office

SI-125, phone/fax 216-687-2424 or, on campus, extension 2424. If I am not there, please leave your phone number and I shall call you back as soon as I return. I am usually available ten hours per day, five days a week. My email address (please keep this to yourself) is hrw@csuohio.edu .

PHY 242/244 Jearl Walker **Fall 2007**

Week	Day	Date	Chap	Event	Message
1	M	Aug 27	21		A special makeup is available for Exam 1. You can make up only one other exam in the semester; the makeup is on the last day of class and is comprehensive.
	W	29	21		
	F	31	21/22		
2	M	3	–	Holiday	Don't goof off today; read Chap 22. Problem Set 1 is due today (Wed). Exam covers chaps 21 and 22.
	W	5	22		
	F	7	22	Exam 1	
3	M	11	23		
	W	12	23		
	F	14	23	Exam 2	
4	M	17	24		Starting with Exam 4, you'll have at least one "modified repeat" problem on an exam (a repeated problem that has been changed).
	W	19	24		
	F	21	24	Exam 3	
5	M	24	25		
	W	26	25		
	F	28	25	Exam 4	

6	M	Oct 1	26		
	W	3	26/27		
	F	5	27	Exam 5	
7	M	8	–	Holiday	**If CSU is ever closed** on a class day, check WileyPlus or my office phone recorder for changes in our schedule.
	W	10	27		
	F	12	27	Exam 6	
8	M	15	28		
	W	17	28		
	F	19	28	Exam 7	
9	M	22	29		
	W	24	29		
	F	26	29	Exam 8	
10	M	29	30		
	W	31	30		
	F	Nov 2	30	Exam 9	
11	M	5	33		Mon: **Essay 1** due (1000 words) *if* you are in Phy 244.
	W	7	33		
	F	9	33	Exam 10	
12	M	12	–	Holiday	
	W	14	33/34		
	F	16	34		
13	M	19	34		Mon – Fri: **Essay 2** due (500 words)
	W	21	34	Exam 11	
	F	23	–	Holiday	
14	M	26	35		
	W	28	35		
	F	30	35	Exam 12	
15	M	Dec 3	36		Mon – Fri: **Essay 3** due (500 words)
	W	5	36		
	F	7	36	Exam 13	Fri: Makeup exam also given
Final exam week	M	10	–	---	Final = 20 modified repeats from this semester, total = 100 pts; **if school is closed**, then the final will be on Monday, 17 Dec at the same time.
	W	12		Final **8:30 am**	

Schedule of Labs

Week	Lab
1	Exp 1: The Coulomb Balance
2	Exp 2: Dipoles
3	Exp 3: Equipotentials & Electric Fields
4	Exp 4: Qualitative Field Mapping
5	New Exp: Electrostatics
6	Exp 5: Wheatstone Bridge
7	Exp 6: DC Circuits
8	Exp 7: RC Circuits
9	Exp 8: e/m of the Electron
10	Exp 8A: Magnetic Force
11	Exp 9: Faraday's Law
12	Exp 10: Dispersion Prism
13	Exp 11: Mirrors and Exp 12: Lenses
14	Exp 13: Slit Diffraction and Exp 14: Diffraction Grating

Additional Documentation:

OBR Use

Approved-Effective Date	
Pending (i.e. Additional Information Requested)	
Disapproved	
Today's Date	