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SANTA BARBARA • SANTA CRUZ

DEPARTMENT OF PHYSICS AND ASTRONOMY BOX 951547 LOS ANGELES, CA 90095-1547

TO: Professor Muriel McClendon Chair, GE Governance Committee

FROM: Professor Ian S. McLean, Vice Chair Academic Affairs Department of Physics & Astronomy

Dear Professor McClendon:

The physics and Astronomy department would like to request consideration in certifying the new Physics 5 series, (Physics 5A, 5B, 5C) as General Education courses. Please, note that the new series is simply a revision of our previous Physics 6H series, i.e., Physics 6AH, 6BH, 6CH. We are adopting a new textbook "*University Physics for Life Science Majors*" by Knight, Jones and Field (published by Pearson) in which the order of the principal physics topics is slightly different. Essentially, material is exchanged between the B and C parts of the series. This is an excellent new book which we believe will enhance student understanding and appreciation of physics. For this reason, we thought it best to rename and renumber the series in order to avoid confusion. We received the support of the FEC for this change.

The learning outcomes for the Physics 5 series are the same as those outlined previously for the Physics 6H or Physics 6 series in that we expect students to have mastered the fundamental principles and applications of Classical Mechanics, Energy, Motion, Thermodynamics, Fluids, Waves, Light and Optics, Electricity, Magnetism, and Modern Physics. Students should also have acquired the necessary mathematical skills associated with the above mentioned topics, such as the use of calculus, and the basic skills needed for work in a laboratory. A more general learning outcome that is often associated with physics training is the development of critical thinking, problem solving skills, the ability to retrieve and organize scientific information, and the ability to apply scientific methodology to qualitatively and quantitatively analyze a wide variety of physical phenomena.

The grading scheme will follow that of the Physics 6H and 6 series where 75% of the grade is derived from a combination of two midterms and one final exam; 15% of the grade is based on lab work; and 10% of the grade is based on homework assignments (problem solving).

If you have any questions regarding this, please do not hesitate to contact us.

Sincerely,

Fan hi Lean

Vice Chair for Academic Affairs Physics & Astronomy Department

General Education Course Information Sheet Please submit this sheet for each proposed course

Course Title Mechanics & Energy Indicate if Seminar and/or Writing II course	
Check the recommended GE foundation area(s) and subgroups(s) for this course Foundations of the Arts and Humanities Literary and Cultural Analysis Philosophic and Linguistic Analysis Visual and Performance Arts Analysis and Practice Foundations of Society and Culture Historical Analysis Social Analysis Social Analysis Foundations of Scientific Inquiry Physical Science With Laboratory or Demonstration Component must be 5 units (or more) Life Science With Laboratory or Demonstration Component must be 5 units (or more) Briefly describe the rationale for assignment to foundation area(s) and subgroup(s) cf Physics is the foundational science. 2 hours per week of lab work is added to the lead "List faculty member(s) who will serve as instructor (give academic rank): We will offer many sections of this course each year, so a mix of our ladder faculty Do you intend to use graduate student instructors (TAs) in this course? Yes If yes, please indicate the number of TAs 16 Indicate when do you anticipate teaching this course over the next three years: 2015-16 Fall Winter Spring Enrollment Enrollment Enrollment Enrollment Enrollment Enrollment Enrollment Enrollment Enrollment Enrollment About 800 2017-18	
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Is this an <i>existing</i> course that has been modified for inclusion in the new GE? Yes Revision of an existing course that has been modified for inclusion in the new GE?	
	No x
If yes, provide a brief explanation of what has changed. <u>already was a GE course</u>	rse which
Present Number of Units: 5 Proposed Number of Units:	5

6. Please present concise arguments for the GE principles applicable to this course.

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xGeneral Knowledge	Applications of the scientific metho 5A covers fundamental principles at energy. It also enables students to ad work, such as the understanding and computers.	nd applications of cquire the basic sl	classical mechanics and kills needed for laboratory
xIntegrative Learning	Students have to use the mathematic physics problems. Mathematics is the		
Ethical Implications			
Cultural Diversity			
xCritical Thinking	The course develops the students' cr several ways to approach any physic judgement in selecting the most acc	es problem. Stude	nts must learn to exercise
□ Rhetorical Effectiveness			
xProblem-solving	Students have to learn first how to c the relevant parameters. Then, they use established relationships betwee draw inferences, i.e., to find the solu	have to quantify t on those quantities	hose parameters and finally in the most direct manner to
Library & Information Literacy			
		•	
	ACT PER WEEK (if not applicable wr		
1. Lecture:		3	(hours)
2. Discussion Sec	ction:	1	(hours)
3. Labs:		2	(hours)
 Experiential (s Field Trips: 	ervice learning, internships, other):		(hours) (hours)
<i>5.</i> Tield Hips.			(10013)
(A) TOTAL Student (Contact Per Week	6	(HOURS)
(B) OUT-OF-CLASS	HOURS PER WEEK (if not applicable	write N/A)	
	v & Preparation:	2	(hours)
2. Reading		$\frac{2}{3}$	(hours)
3. Group Projects:			(hours)
	Quizzes & Exams:	3	(hours)
•	eracy Exercises:	<u> </u>	(hours)
 Written Assign: 	-	3	(hours)
7. Research Activ			(hours)
7. Research Activ	ity.		(nours)

(B) TOTAL Out-of-class time per week

GRAND TOTAL (A) + (B) must equal at least 15 hours/week



General Education Course Information Sheet *Please submit this sheet for each proposed course*

ourse Title	se Number	Physics 5B						
mbe 1me		Thermodynamics, Fluids, Waves, Light, and Optics						
dicate if Seminar a	nd/or Writing II cours	se						
Check the recor	nmended GE founda	ation area(s) and subgroup	os(s) for this c	ourse				
Founda	tions of the Arts an	d Humanities						
• Liter	ary and Cultural Ana	alysis						
	sophic and Linguist	•						
• Visua	al and Performance	Arts Analysis and Practice	e					
Founda	tions of Society and	d Culture						
• Histo	orical Analysis							
• Socia	d Analysis							
Founda	tions of Scientific I	nguiry						
	ical Science	1 0		Х				
Wi	th Laboratory or Dem	onstration Component must	be 5 units (or n	nore)				
	Science							
Wi	th Laboratory or Dem	onstration Component must	be 5 units (or n	nore)				
Briefly describe	the rationale for as	signment to foundation ar	ea(s) and subg	roup(s) chose	n.			
		e. 2 hours per week of lab	-	_				
T Hysics is the	ioundational science	. 2 nours per week of lab	work is added					
"List feaulty me	mbor(a) who will a	mue as instructor (sive as	damia rank).					
		erve as instructor (give aca s course each year, so a m		er faculty and	instructors			
We will offer	many sections of this	s course each year, so a m	ix of our ladd	•				
We will offer	many sections of this to use graduate stud	s course each year, so a m lent instructors (TAs) in th	his course?	Yes <u>x</u>	instructors No			
We will offer	many sections of this to use graduate stud	s course each year, so a m	his course?	Yes <u>x</u>				
We will offer to Do you intend	many sections of this to use graduate stud If	s course each year, so a m lent instructors (TAs) in th	ix of our ladd his course? umber of TAs	Yes <u>x</u>				
We will offer to Do you intend	many sections of this to use graduate stud If	s course each year, so a m lent instructors (TAs) in the yes, please indicate the n	ix of our ladd his course? umber of TAs	Yes <u>x</u> 5 16 ars:				
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We will offer to Do you intend	many sections of this to use graduate stud If o you anticipate tead Fall	s course each year, so a m lent instructors (TAs) in th yes, please indicate the n ching this course over the Winter	ix of our ladd his course? umber of TAs	Yes <u>x</u> <u>16</u> ars: Spring				
We will offer to Do you intend Indicate when do 2015-16 2016-17	many sections of this to use graduate stud If o you anticipate tead Fall Enrollment Enrollment	s course each year, so a m lent instructors (TAs) in th Tyes, please indicate the n ching this course over the Winter Enrollment Winter Enrollment	ix of our ladd his course? umber of TAs	Yes <u>x</u> <u>16</u> ars: Spring Enrollment Spring Enrollment				
We will offer to Do you intend Indicate when d 2015-16	many sections of this to use graduate stuck If o you anticipate tead Fall Enrollment Fall Enrollment Fall	s course each year, so a m lent instructors (TAs) in th Tyes, please indicate the n ching this course over the Winter Enrollment Winter Enrollment Winter U	ix of our ladd his course? umber of TAs	Yes <u>x</u> <u>16</u> ars: Spring Enrollment Spring Enrollment Spring	No			
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Present Number of Units:

5

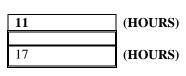
6. Please present concise arguments for the GE principles applicable to this course.

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xGeneral Knowledge	Applications of the scientific metho 5B covers fundamental principles at Waves, light and Optics. It also ena needed for laboratory work, such as instrumentation and computers.	nd applications of ables students to a	Thermodynamics, Fluids, cquire the basic skills
xIntegrative Learning	Students have to use the mathematic physics problems. Mathematics is the	-	
Ethical Implications			
Cultural Diversity			
xCritical Thinking	The course develops the students' conserveral ways to approach any physic judgement in selecting the most acc	cs problem. Stude	ents must learn to exercise
□ Rhetorical Effectiveness			
xProblem-solving	Students have to learn first how to c the relevant parameters. Then, they use established relationships betwee draw inferences, i.e., to find the solu	have to quantify to en those quantities	s in the most direct manner to
Library & Information Literacy			
(A) STUDENT CONT	ACT PER WEEK (if not applicable wr	ite N/A)	
 Lecture: Discussion Sec Labs: 		$\frac{\frac{3}{1}}{2}$	(hours) (hours) (hours) (hours) (hours)
(A) TOTAL Student (Contact Per Week	6	(HOURS)
(B) OUT-OF-CLASS	HOURS PER WEEK (if not applicable	write N/A)	
1. General Review	v & Preparation:	2	(hours)
2. Reading	-	3	(hours)
3. Group Projects	:		(hours)
•	Quizzes & Exams:	3	(hours)
	eracy Exercises:		(hours)
6. Written Assign	ments:	3	(hours)

7. Research Activity:

(hours)

(B) TOTAL Out-of-class time per week



GRAND TOTAL (A) + (B) must equal at least 15 hours/week

General Education Course Information Sheet Please submit this sheet for each proposed course

Department & Course Number	Physics 5C
	Physics for Life Science Majors: Electricity, Magnetism, and
Course Title	Modern Optics
Indicate if Seminar and/or Writing II course	

1 Check the recommended GE foundation area(s) and subgroups(s) for this course

Foundations of the Arts and Humanities	
 Literary and Cultural Analysis 	
• Philosophic and Linguistic Analysis	
 Visual and Performance Arts Analysis and Practice 	
Foundations of Society and Culture • Historical Analysis	
Social Analysis	
Foundations of Scientific Inquiry	
Physical Science	Х
With Laboratory or Demonstration Component must be 5 units (or more)	
• Life Science	
With Laboratory or Demonstration Component must be 5 units (or more)	

2. Briefly describe the rationale for assignment to foundation area(s) and subgroup(s) chosen.

Physics is the foundational science. 2 hours per week is added to the lecture

3.	"List f	faculty	member(s)	who	will	serve as	instructor	(give ac	ader	nic ra	ank	:):	

We will offer many sections of this course each year, so a mix of our ladder faculty and instructors

Do you intend to use graduate student instructors (TAs) in this course? Yes x No

If yes, please indicate the number of TAs 16

4. Indicate when do you anticipate teaching this course over the next three years:

2015-16	Fall	_ Winter Enrollment	Spring Enrollment
2016-17	Fall	Winter Enrollment	Spring Enrollment
2017-18	Fall	Winter Enrollment	Spring Enrollment 800
5. GE Course Units Is this an <i>existing</i>	course that has been modifie	ed for inclusion in the new GI Revision of an e	E? Yes <u>No x</u> xisting course which
If yes, provide a b	rief explanation of what has	changed. already was a G	E course

Present Number of Units:

6. Please present concise arguments for the GE principles applicable to this course.

•	• • • • •		
xGeneral Knowledge	Applications of the scientific metho 5C covers fundamental principles a Modern Optics. It also enables stud laboratory work, such as the unders and computers.	nd applications of ents to acquire the	Electricity, Magnetism, and basic skills needed for
xIntegrative Learning	Students have to use the mathemati physics problems. Mathematics is t	-	
Ethical Implications			
Cultural Diversity			
xCritical Thinking	The course develops the students' c several ways to approach any physi judgement in selecting the most acc	cs problem. Studer	nts must learn to exercise
Rhetorical Effectiveness			
xProblem-solving	Students have to learn first how to a the relevant parameters. Then, they use established relationships betwee draw inferences, i.e., to find the sol	have to quantify the those quantities	nose parameters and finally in the most direct manner to
Library & Information Literacy			
(A) STUDENT CONT	ACT PER WEEK (if not applicable wi	.:+0 N/A)	
	ACT FER WEEK (II not applicable wi		
1. Lecture:	4	3	(hours)
 Discussion Sec Labs: 	tion:	1 2	(hours)
	ervice learning, internships, other):	2	(hours) (hours)
5. Field Trips:	ervice learning, mernsnips, ouler).		(hours)
(A) TOTAL Student C	Contact Per Week	6	(HOURS)
(B) OUT-OF-CLASS	HOURS PER WEEK (if not applicable	write N/A)	
1. General Review	& Preparation:	3	(hours)
2. Reading		2	(hours)
3. Group Projects:			(hours)
	Quizzes & Exams:	3	(hours)
5. Information Lit	eracy Exercises:		(hours)
6. Written Assignm	nents:	3	(hours)
7. Research Activi		·	(hours)
	•		``

(B) TOTAL Out-of-class time per week

GRAND TOTAL (A) + (B) must equal at least 15 hours/week



Course	Week	Part Chapte	r Page	#Pages	Import ance	#Hour Knight		Textbook Topics	Possible Current Labs	mpor ance	Bio Applications + Lab introduction
5A	1	Orientation				0	1	Relation with Math, Chemistry and Biology			Physical origin and principle of life
	1	I Force and Motion				0	1	Relation with Math, elemistry and blology			invision origin and principle of inc
		1 2 28 1 2 2 Representing motion - Velocity, V 2 2 30 37 1 3 3 Motion in one dimension - Accel				Representing motion - Velociv, Vectors	6A1 Heart Rate	2	Motion of animals		
	2	_						Motion in one dimension - Acceleration	6A2 Kinematics	1	Coherent and random motions
	3	3	67	35	2	2	2	Vectors and motion in two dimensions		-	Motions in sports
	-	MT1					8				
	4	4	102	29	1	2	2	Forces and Newton's law of motion - Free body diagram			
	5	5	131	34	1	4	4	Applying Newton's laws - Equibrium, Friction	6A3 Newton's Law	1	Muscular System
	6	6	174	34	2	3	3	Circular Motion, Orbits, and Gravity	6A7 Rotation	3	
		7	200	32	3	2	1	Rotational motion - Torque			
		MT2					10				
	7	8	232	28	2	2	2	Equilibrium and Elasticity - Stability and balance	6A6 Biceps Muscle Model	1	
		II Conservation	Laws								
	8	9	260	29	2	2	2	Momentum - Impulse, collisions	6A5 Momentum and Impulse	2	
	9	10	289	33	1	3	3	Energy and Work - Kinetic energy, Potential energy	6A4 Conservation of Energy	1	Solar energy
	10	Review of 5A				0	1				
		FINAL					8				
5B											
	1	Review of En	57			0	1				
		11	322	39	1	3	3	Using Energy - Thermal energy, Heat, Entropy			Life as an open system
		III Properies of									
	2	12	361	44	1	3	3	Thermal properties of matter - Atomic model, Diffusion			Chemical process
	3	13	405	39	1	2	3	Fluids - Pressure, Bernoulli's equation	6C5 Fluids and Thermodynamics	1	Heart and Blood circulation, Birds, Fishes
		MT1					10				
		IV Oscillations a						.			
	4	14	444	32	1	2	2	Oscillations - Harmonic motion	6B1 Harmonic Oscillator	1	
	5	15	476	32	1	2	2	Traveling waves and sound - Voice, Hearing			Voice and hearing, Ultra sound imaging
	6	16	508	36	2	3	3	Superposition and standing wave - Music insttruments	6B2 Standing Waves	1	Music and instruments
		MT2					/				
	-	V Optics		20		2	2			2	
	7	17	544	30	1	3	3	Wave Optics - Interference, Diffraction	6C2 Microwave Optics	2	Diffraction (DNA discovery)
	8	18	574	35	1	3	3	Ray Optics - Reflection, Refraction	6C3 Geometrical Optics	1	Vision and eyes
	9	19	609	33	1	2	2	Optical Instruments - Human eye, Microscope	6C4 Physical Optics	1	Optical Microscopes
	10	Review of 5B FINAL				0	1				
5C		FINAL					7				<u> </u>
50		VI Electricity an	d Magne	tism							
	1	20	642	33	1	3	3	Electric fields and forces - Coulomb's law	6B3 Electric Statics	1	Molecular structure
	2	20	675	33	1	3	3	Electric Potential - Capacitor, electric energy	6B4 Van der Graff	1	Membrane potential
	2	21	712	27	1	2	2	Current and Resistance - Ohm's law, Energy and power		1	
	э	22 MT1	/12	21	т	2	2	current and resistance - Onin's law, energy and power			
	4	23	739	37	1	3	3	Circuits - Kirchhoff's laws, Nervous system	6B5 Electric Circuits	1	Brain and neural networks
	4 5	23	739	40	1	3	3	Magnetic fields and forces - Origin of magnetic fields	6B6 Charge to Mass Ratio	2	MRI, Mass spectrometer
	6	24	816	36	2	3	3	EM Induction and EM waves - Faraday's law, EM spectrum	6C1 Coil and Faraday's Law	1	Power Plants, Vision
	7	23	852	34	3	2	1	AC electricity	Con and randidy 5 Law	-	Electric devices (Camera, TV, Computer)
	'	MT2	032	34	J	2	10	AC circulary			Licence devices (camera, rv, computer)
		VII Modern Phys	ics				10				
	8	28	922	32	2	3	2	Quantum physics - X rays, Quantized energy levels	6C6 Photoelectric Effect	3	X-ray diffraction, Electron microscopes
	9	28	954	32	1	3		Atoms and molecules - Spectroscopy, Molecules		5	Molecular bonding and structure, Laser
	9	29	554	57	1	5	5	Atoms and molecules - spectroscopy, molecules	I		

Course	Week	Part Chapter	Page	#Pages	Import ance	#Hour Knight		Textbook Topics	Possible Current Labs	Impor tance	Bio Applications + Lab introduction
	10	30	991	36	2	3	2	Nuclear physics - Radioactivity, Medical applications	6C7 Radioactivity	1	Medical Imaging
		Review of 5C FINAL				0	1 8				

Course Revision Proposal

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	Physics 5A Physics for Life Sciences Majors: Mechanics and Energy														
	Requested revisions that apply:														
	Renumbering Title Format Requisites Units Grading Descript														
	Multiple Listing: Add New Change Number Delete														
	Concurrent Listing: Add New Change Number Delete														
	CURRENT			PROPOS	ED										
Course Number	Physics 6AH			Physics 5	ĂΑ										
<u>Title</u>	Physics for Life Scie and Dynamics (Hon	•	jors: Statics	Physics f Mechanic		ciences Maj iergy	ors:								
Short Title	STATICS & DYNA	MICS		MECHA	NICS & I	ENERGY									
<u>Units</u>	Fixed: 5			Fixed: 5											
<u>Grading</u> Basis	Letter grade or Pass	ed/Not Pa	assed	Letter gra	ade or Pa	ssed/Not Pa	ssed								
	Primary Format Lecture			Primary I Lecture -		per week									
	Secondary Format Discussion			Secondar Discussio	•	irs per week	2								
	Secondary Format Laboratory			Secondar Laborator	•	t 1rs per week	Σ.								
<u>TIE Code</u>	LECS - Lecture (Plu Activity) [T]	is Supple	mentary	LECS - L Activity)		Plus Suppler	nentary								
<u>GE</u>	No			Yes											
<u>Requisites</u>	Math 3A and 3B and	d 3C (core	equisite)	LS 30A a and 3C (c		B or Math () (te)	3A and 3B								
Description	Lecture, three hours hour; laboratory, tw requisites: Mathema corequisite: Mathem for credit to students course 6A. Statics a forces, energy, and applications to biolo systems. Physics of (solids, liquids, and and interfaces as the organisms. P/NP or	o hours. H atics 3A, 3 natics 3C. s with cre nd dynam momentum ogical and states of n gases) an ey apply to	Enforced 3B. Enforced 3B. Enforced bit for dit for nics of m, with biochemical matter d of surface o biological	laboratory Sciences 3C (3C m and dyna including to biologi 1 P/NP or 1	y, two ho 30A, 30I hay be tal mics of for thermal ical and b	ours. Requise B, or Mather cen concurre orces, motic energy, with biochemical	matics 3A, 3B, ently). Statics on, energy, h applications								

Justification		The Physics 6H series was an early attempt at producing a series better able to accommodate the needs of Life Science students. The department is now proposing the 5 series which closely resembles the 6H series since it contains essentially the same physics and has the same structure with the same applications to biological and biochemical systems but with better integration with a new textbook. This new 5 series will be the main series offered to the Life Science majors at UCLA.
<u>Syllabus</u>		File <u>Copy of Physics 5 Course + Lab</u> <u>Outline 2017 Feb V12.xlsx</u> was previously uploaded. You may view the file by clicking on the file name.
Supplemental Information		This revision has been approved by the department's Academic Vice Chair, Professor Ian McLean
Effective Date	Fall 2002	Fall 2017
Department	Physics & Astronomy	Physics & Astronomy
<u>Contact</u>		Name FRANCOISE QUEVAL
Douting Hale		E-mail queval@physics.ucla.edu

Routing Help

ROUTING STATUS

Role: Registrar's Office Status: Processing Completed

Role:Registrar's Publications Office - Livesay, Blake Cary
(BLIVESAY@REGISTRAR.UCLA.EDU) - 61590Status:Added to SRS on 5/9/2017 2:31:30 PMChanges:TIE Code, DescriptionComments:Course description edited into official version.

Role:Registrar's Scheduling Office - Lin, Jessica (JLIN@REGISTRAR.UCLA.EDU) - 58253Status:Added to SRS on 5/8/2017 4:57:16 PMChanges:TIE CodeComments:reqs: (LS 30A and LS 30B) or [(Math 3A and 3B), and 3C (req/coreq)]

Role: FEC School Coordinator - Kikuchi, Myrna Dee Castillo (MKIKUCHI@COLLEGE.UCLA.EDU) - 45040 Status: Approved on 5/8/2017 12:29:41 PM

Changes: TIE Code	Physics 5
Comments: Approved by College FEC Chair, Registrar's Office.	Joe Bristow. Routing to Doug Thomson in the
Role: Department/School Coordinator - (QUEVAL@PHYSICS.UCLA.ED	
Status: Approved on 4/26/2017 3:36:27 P	Μ
Changes: Short Title, TIE Code, Supplemen	tal Info
Comments: Changed the short title of the cour	se and noted Professor McLean's approval.
Role: FEC School Coordinator - Kikuch (MKIKUCHI@COLLEGE.UCLA	
Status: Returned for Additional Info on 4/	26/2017 3:33:35 PM
Changes: TIE Code	
Comments: Routing to Francoise. Please see e	-mail.
Role: Initiator/Submitter - Queval, France	coise A (QUEVAL@PHYSICS.UCLA.EDU) - 52453

Status: Submitted on 4/21/2017 11:03:49 AM

Comments: Initiated a Course Revision Proposal

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Comments or questions? Contact the Registrar's Office at <u>cims@registrar.ucla.edu</u> or (310) 825-6704

Course Revision Proposal

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	Physics 5B Physics for Life Sci	ences Majors:	Thermodynamics	, Fluids, V	Waves, Ligh	t and Optics
	Requested revisions	that apply:				
	Renumbering	Title Form	at Requisites	Units	Grading	Description
	Multiple Listing:	Add New	Change Number	Delete		
	Concurrent Listing:	Add New	Change Numbe	r Dele	ete	
	CURRENT		PROPOSED			
Course Number	Physics 6BH		Physics 5B			
<u>Title</u>	Physics for Life Sci Sound, Light, and H (Honors)		•			tht and Optics
Short Title	SOUND&LIGHT&	HYDRDYN	THERMODYN	AMICS&	WAVE	
Units	Fixed: 5		Fixed: 5			
<u>Grading</u> Basis	Letter grade or Pass	ed/Not Passed	Letter grade or F	Passed/No	ot Passed	
	Primary Format Lecture		Primary Format Lecture - 3 hour	s per wee	k	
	Secondary Format Discussion		Secondary Form Discussion - 1 h		week	
	Secondary Format Laboratory		Secondary Form Laboratory - 1 h		week	
TIE Code	LECS - Lecture (Plu Supplementary Acti		LECS - Lecture	(Plus Sup	oplementary	Activity) [T]
<u>GE</u>	No		Yes			
<u>Requisites</u>	course 6AH		LS 30A and LS 5A.	30B or M	Iath 3A, 3B,	3C; Physics
Description	Lecture, three hours one hour; laboratory Enforced requisite: 6AH. Not open for students with credit Sound and electrom interference, diffrac radioactivity, and hy with applications to biochemical system letter grading.	y, two hours. course 6A or credit to for course 6B agnetic waves tion, /drodynamics, biological and	, biochemical syst	nours. Re ies of ma on, oscill , with app	quisite: count tter, free end ations, wave blications to	rse 5A. ergy, fluids, es, sounds, biological and

Justification	The Physics 6H series was an early attemptivates 5 producing a series better able to accommodate the needs of Life Science students. The department is now proposing the 5 series which closely resembles the 6H series since it contains essentially the same physics and has the same structure with the same applications to biological and biochemical systems but with better integration with a new textbook. From now on, this new 5 series will be the main series offered to the Life Science majors at UCLA.
Syllabus	File <u>Copy of Physics 5 Course + Lab Outline 2017</u> <u>Feb V12.xlsx</u> was previously uploaded. You may view the file by clicking on the file name.
Supplemental Information	This revision has been approved by the department's Academic Vice Chair, Professor Ian McLean.
Effective Winter 2003 Date	Fall 2017
Department Physics & Astronomy	Physics & Astronomy
Contact	Name FRANCOISE QUEVAL
Routing Help	E-mail queval@physics.ucla.edu

ROUTING STATUS

Role: Registrar's Office Status: Processing Completed

Role:Registrar's Publications Office - Livesay, Blake Cary
(BLIVESAY@REGISTRAR.UCLA.EDU) - 61590Status:Added to SRS on 5/9/2017 2:37:54 PMChanges:TIE Code, DescriptionComments:Course description edited into official version.

Role: Registrar's Scheduling Office - Lin, Jessica (JLIN@REGISTRAR.UCLA.EDU) - 58253 Status: Added to SRS on 5/8/2017 2:52:31 PM

Changes: TIE Code

Comments: No Comments

Role: FEC School Coordinator - Kikuchi, Myrna Dee Castillo (MKIKUCHI@COLLEGE.UCLA.EDU) - 45040

Status: Approved on 5/8/2017 12:31:27 PM

Changes: TIE Code, Effective Date

Comments: Chair approval indicated in justification. Approved by College FEC Chair, Joe Bristow. Routing to Doug Thomson in the Registrar's Office. Role:Initiator/Submitter - Queval, Francoise A (QUEVAL@PHYSICS.UCLA.EDU)*52453Status:Submitted on 4/26/2017 3:38:45 PMComments:Initiated a Course Revision Proposal

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Comments or questions? Contact the Registrar's Office at <u>cims@registrar.ucla.edu</u> or (310) 825-6704

Course Revision Proposal

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	Physics 5C Physics for Life Sciences Majors: E	lectricity, Magnetism, and Modern Physics			
	Requested revisions that apply:				
	Renumbering Title Format	Requisites Units Grading Description			
	Multiple Listing: Add New C	hange Number Delete			
	Concurrent Listing: Add New	Change Number Delete			
	CURRENT	PROPOSED			
Course Number	Physics 6CH	Physics 5C			
<u>Title</u>	Physics for Life Sciences Majors: Electricity, Magnetism, and Transpo (Honors)	Physics for Life Sciences Majors: Electricity, ort Magnetism, and Modern Physics			
Short Title	ELCTRC&MAGNT&TRNSPT	E&M & MODERNPHYSICS			
Units	Fixed: 5	Fixed: 5			
<u>Grading</u> Basis	Letter grade or Passed/Not Passed	Letter grade or Passed/Not Passed			
	Primary Format Lecture	Primary Format Lecture - 3 hours per week			
	Secondary Format Discussion	Secondary Format Discussion - 1 hours per week			
	Secondary Format Laboratory	Secondary Format Laboratory - 2 hours per week			
<u>TIE Code</u>	LECS - Lecture (Plus Supplementar Activity) [T]	y LECS - Lecture (Plus Supplementary Activity) [T]			
<u>GE</u>	No	No			
<u>Requisites</u>	course 6BH	LS 30A and LS 30B or Math 3A, 3b and 3C; Physics 5A.			
Description	Lecture, three hours; discussion, one hour; laboratory, two hours. Enforce requisite: course 6BH. Not open for credit to students with credit for course 6C. Electrostatics in vacuum and in water. Electric current with applications to electrophysiology. Magnetism, especially NMR. Diffusion and heat flow, with applications to biological and biochemical systems. P/NP or letter	ed laboratory, two hours. Requisite: course 5A. Electrostatics in vacuum and in water. Electricity, circuits, magnetism, quantum, atomic and nuclear physics, radioactivity, with applications to biological and biochemical systems. P/NP or letter grading.			

	grading.	Physics 5
<u>Justification</u>		The Physics 6H series was an early attempt at producing a series better able to accommodate the needs of Life Science students. The department is now proposing the 5 series which closely resembles the 6H series since it contains essentially the same physics and has the same structure with the same applications to biological and biochemical systems but with better integration with a new textbook. This new 5 series will be the main series offered to the Life Science majors at UCLA.
<u>Syllabus</u>		File <u>Copy of Physics 5 Course + Lab Outline</u> <u>2017 Feb V12.xlsx</u> was previously uploaded. You may view the file by clicking on the file name.
Supplemental Information		This revision has been approved by our department's Vice Chair for Academic Affairs, Professor Ian McLean.
Effective Date	Fall 2002	Fall 2017
Department	Physics & Astronomy	Physics & Astronomy
<u>Contact</u>		Name FRANCOISE QUEVAL
Routing Help		E-mail queval@physics.ucla.edu

ROUTING STATUS

Role: Registrar's Office Status: Processing Completed

Role: Registrar's Publications Office - Livesay, Blake Cary (BLIVESAY@REGISTRAR.UCLA.EDU) - 61590 Status: Added to SRS on 5/9/2017 2:45:07 PM

Changes: TIE Code, Description

Comments: Course description edited into official version.

Role: Registrar's Scheduling Office - Lin, Jessica (JLIN@REGISTRAR.UCLA.EDU) - 58253 Status: Added to SRS on 5/8/2017 4:58:33 PM

Changes: TIE Code

Comments: No Comments

Role: FEC School Coordinator - Kikuchi, Myrna Dee Castillo (MKIKUCHI@COLLEGE.UCLA.EDU) - 45040 Status: Approved on 5/8/2017 12:32:01 PM

Changes: TIE Code, Effective Date

Comments: Chair approval indicated in justification. Approved by College FEC Chair, Joe Brifstow. Routing to Doug Thomson in the Registrar's Office.

Role:Initiator/Submitter - Queval, Francoise A (QUEVAL@PHYSICS.UCLA.EDU) - 52453Status:Submitted on 4/26/2017 3:40:45 PMComments:Initiated a Course Revision Proposal

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<u>Main Menu</u> <u>Inventory Reports</u> <u>Help Exit</u> <u>Registrar's Office</u> <u>MyUCLA</u> <u>SRWeb</u>

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