REQUEST FOR ADDITION OF NEW COURSE

Department: Physics and Astronomy  Date: 11/09/12
College: Science

PROPOSED COURSE

Short Title: PARTICLE MECHANICS
Rubric & No.: PHYS 2110  Title: Particle Mechanics

COURSE CREDIT

Graduate Credit: YES X NO
Semester Hours of Credit: 3.0
(For combination course types only: Lecture Hours, Lab/Sem/Rec Hours. If course may be repeated for credit (i.e., special topics), course may be taken for a max. of ___ credit hours.
Credit will not be given for this course and: PHYS 2001, PHYS 1201

GRADING

Final Exam: YES X NO Grading System: Letter Grade Pass/Fail
(Attach justification if the proposed course will not hold a final exam during examination week.)

COURSE TYPE

(Indicate hours in the appropriate course type)

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| Maximum enrollment per section: 70 (use integer, e.g., 25 not 20-30)

CATALOG TEXT

(Concise catalog statement exactly as you wish it to appear in the LSU General Catalog)
2110 Particle Mechanics (3) Prereq.: grade of "C" or better in MATH 1550; credit or registration in MATH 1552 or 1553. Vectors, forces and motion, Newton's Laws, conservation of energy and momentum, rotational kinematics and dynamics, equilibrium and elasticity, oscillations.

BUDGET IMPACT

If this course is approved, will additional staff be needed? YES X NO
Will additional space, equipment, special library materials or other major expense be involved? YES X NO
(If answer to either question above is "yes" attach explanation.)

ATTACHMENTS

ATTACH THE FOLLOWING TO YOUR PROPOSAL.
JUSTIFICATION: Justification must explain why this course is needed and how it fits into the curricula. Will the course duplicate other courses?
SYLLABUS: Including 14 week outline of the subject matter; titles of text, lab manual, and/or required readings; grading scale and criteria
(For 4000-level, specify graduate student grading criteria if requirements differ for graduate and undergraduate students).

APPROVALS

Department Faculty Approval: 12/5/12
College Faculty Approval: 4/24/13
Department Chair's Signature: 1/17/13
College Dean's Signature: 3/5/2013
Graduate Dean's Signature (for 4000 level and above): 6/30/13
Chair, FS C&O Committee: 6/14/13

College Contact: Kim Kubierce
(please print name)
College Contact E-mail: Kkubierce@lsu.edu

Academic Affairs Approval: 6/14/13
Justification for a Three-Semester Physics Sequence for Technical Majors

The current course sequence of 2101/2102 with PHYS 1100 was implemented twenty years ago to improve retention of students in engineering programs. PHYS 1100 was not part of any degree program, but was offered to help those students with no or poor physics backgrounds prepare for the PHYS 2101/2102 sequence. The PHYS 2101/2102 sequence adopted a "mile-wide, inch-deep" approach comprising all of mechanics, fluids, thermodynamics and sound in the first semester, then electricity, magnetism, optics and occasionally some modern physics in the second. This was done to satisfy the needs of the College of Engineering for students being ready for three courses: Statics, Thermodynamics, and Circuits. It was clear that too much material was in the 2101 class, and over the years, some of that material (vectors, kinematics, Newton's Laws) migrated into 1100, and then was reviewed quickly in 2101.

Students were placed in PHYS 1100 based on the physics placement test, which was a twenty question multiple choice test on mechanics with an extensive formula sheet provided. The minimum passing score was first set at 60%, but pressure from the administration at the time lowered it to 45%. This test is less rigorous than the current 1100 final exam, and does not do a good job of testing for those skills that 2101 requires. We also had evidence that the contents of the test were known to some high schools. Three years ago we revised 5 of the 20 questions, and provided two versions of the test, and percentage of students who passed dropped from over 60% to 43% and has remained there. It is clear that a marginally passing score on this placement exam is not a good predictor of success in PHYS-2101. A significant number of students who earned a "pass," and thus 3 hours credit, on the placement test were nonetheless encouraged by the advisors in engineering and science to enroll in PHYS-1100 in order to improve their likelihood of future success. In the past three years, as the University aggressively expanded its enrollment, we saw that the percentage of students taking PHYS 1100 because they were ill prepared has dramatically swelled. Currently, over 85% of students in the technical physics sequence take 1100.

This resulted in a situation where a majority of students in physical science and engineering were taking 9 credit hours of physics even though one of the courses did not count for their degree. It is worth pointing out that it has been a source of irritation for the parents of some of those students that one of the three hour courses in physics did not count towards the major. Furthermore, the pace in 1100 was very slow, and even with shifting of some material into 1100, the pace in 2101 and 2102 was still too fast to ensure most students mastered the material. Finally, the decision taken last year by the Faculty Senate to no longer require physics in high school as an admission requirement at LSU, allowing it to be replaced by courses such as introduction to technology or environmental science, means that more and more students will come in with no high school physics background.

This situation has been made worse by the new state legislation mandating that all physics courses be completely transferrable between any public institutions in the state, and that 2 year
schools be allowed to produce associate degree programs in science that would allow students to take their engineering physics courses before arriving at LSU. It is clear that no recognition is being paid to the widely varying levels of rigor in these courses, not to mention the fact that several schools in Louisiana are awarding college credit for physics to students who sit in a high school classroom and never set foot in a post-secondary institution, being taught by someone who may not have the credentials to teach at the college level. When students with these mediocre backgrounds arrive here, they do not do well in their physics courses.

Given the disparate skill levels of students entering the current PHYS-2101 (i.e., poorly prepared but successful PHYS-1100, marginal but passing placement score, well prepared with high placement score, AP credit, etc), a reorganization of PHYS-2101 into a course more suitable for a "cold start" in physics is indicated. A reduction in topics covered, coupled with a reduction in class size, is recommended.

To address the need for a broad overview of physics, including topics in modern physics, as well as the detailed treatment of topics needed to prepare students for their core engineering discipline courses (Statics, Dynamics, Thermodynamics, Electric Circuits) the Department of Physics and Astronomy will adopt a three-semester sequence in physics: PHYS-2110, 2112, 2113. PHYS 2110 will be a prerequisite for PHYS 2112 and PHYS 2113, but the latter two courses can be taken in either order, and could even be taken simultaneously.

Recommendations

- Drop PHYS 1100 and the physics placement test.
- Restore Newtonian Mechanics to PHYS 2110, but reducing it to a careful treatment of particle mechanics only, removing waves, sounds, fluids and thermodynamics.
- Move wave, sound, fluids, thermodynamics into a new PHYS 2112, and add material in modern physics.
- Retain electricity and magnetism as the main theme of PHYS 2113, culminating in electromagnetic waves.
- PHYS 2112 and 2113 can be taken in either order, or simultaneously, and only require 2110.
- PHYS 2110 will have PHYS 2108 lab, and PHYS 2113 will have PHYS 2109 lab. No lab for 2112.
- All three courses will be General Education – Physical Science courses.

All students who used to take the 2101/2102 sequence would take the new PHYS 2110, but the individual discipline may decide on one or both of PHYS 2112 and 2113, possibly with one of those in the required curriculum and another as a recommended technical elective.

We realize that if all three courses are taken, then this means a 3 credit hour increase in the amount of courses for the degree. We counter that by pointing out that we had a system where one of those three hours, PHYS 1100, was done "off the books" as far as credit was concerned,
and so now we are explicitly recognizing that most students who need these classes have been taking 9 hours.

Math Prerequisites

After much discussion, we feel very strongly that the first semester of calculus should be a prerequisite, not a co-requisite, for PHYS 2110. The structure of PHYS 2110 requires the students understand and be ready to use derivatives by the third week of class, and that they be able to use integrals by the seventh week of class. The syllabus for MATH 1550/1551 shows that these concepts are not covered until 3 or 4 weeks later than we need them.

In PHYS 2113, with its emphasis on vector calculus, it is necessary that student have some familiarity with that subject, which is presented in MATH 2057. While we feel that a co-requisite of MATH 2057 is appropriate, this course is not required for many majors that need the 2113 class. We are working with the College of Engineering to formulate some additional online material that the students can use to fill in the missing math background. However, they must be familiar with calculus II, so we have imposed a corequisite of MATH 1552 for PHYS 2110 so that students taking 2112 or 2113 have the minimum background. Furthermore, the student must have completed calculus II with a C or better before attempting PHYS 2112 or 2113.

This may cause some difficulty in pushing back some courses that have a physics prerequisite, since a student who comes in ready to take calculus will not start the physics sequence until the second semester. However, a student who makes timely progress through the calculus sequence will be able to complete the physics sequence as early as their third semester if they take both 2112 and 2113 in the third semester. Also, if one of the physics courses is delayed until their fourth semester, that will only affect either the Circuits or the Thermodynamics class that the engineering students take.

Transfer Credit

By its very structure, this sequence will fit into the Board of Regents articulation matrix. In spring 2012, faculty from across the state met to attempt to implement the new statewide course catalog, which will form the curriculum to be incorporated in the anticipated statewide Associate Degree. We presented this model to them as a way to maintain rigor and still help weaker students. They endorsed the slower, more thorough, approach of this new sequence. The new statewide course descriptions mirror the descriptions of these courses. It was felt that 2 year colleges might be able to teach the 2110 class and possibly one of the other classes, but not teach the full sequence. The statewide Associate Degree that is now mandated could include PHYS 2110, and make the others optional.

The other difficulty will be in transfer credit from out of state institutions where this class is still two semesters (6 credit hours). This will prevent us from accepting a 6 hour 2-semester class for the 9 credit hours of the 2110/2112/2113 sequence. The material in the first semester of the standard physics sequence covers all of the material in PHYS 2110 and then more, we would be awarding credit for PHYS 2110 for any course that covered at least that material. The second semester of the usual two semester sequence covers the same material as PHYS 2113. Because
of the additional material in 2113 on modern physics, which is rarely covered in a two semester sequence, and the more thorough treatment of thermodynamics and wave motion, we would probably not be awarding transfer credit for PHYS 2112.

For College Board Advanced Placement credit, we would be giving credit for PHYS 2110 with a 4 or 5 on the Physics C – Mechanics test. A grade of 4 or 5 on the Physics C – Electricity and Magnetism would earn credit for PHYS 2113. No credit will be earned through International Baccalaureate AP credit, since the physics content in that curriculum is not calculus-based.

Implementation

Once this change is approved, we will drop the placement exam and PHYS 1100, and offer 2110 for students who have not taken or passed 1100. For students who have passed 1100 in the past, we will encourage them to enroll in 2110, but will offer 2101 for two semesters. Students who have passed 2101 should enroll in PHYS 2113, since the material in 2113 overlaps nearly completely with the material in PHYS 2102. Departments and Colleges will substitute 2113 for the students who need 2102. We will not start the process of dropping PHYS 2101 and 2102 until two semesters have passed after the start of new sequence. All departments have been notified and they will have agreed to submit curricular change forms in Fall 2013 to have their revised curriculum use the new sequence.

Our current planned date for the start of this new sequence is Spring 2014. For Fall 2013, we will be offering one section of PHYS 1100 for those students who wish to repeat 1100 and then take 2101. We will offer PHYS 2101 and 2102 that fall. In the spring of 2014, we will offer 2101 for any students who have completed 1100 prior to the fall and wish to stay in the old sequence. For any students just starting their physics sequence, we will place them in the new 2110 class. Engineering has agreed to do substitutions of 2110 for 2101 and 2113 for 2102 while the new curricula are approved next year.
PHYS 211f: Particle mechanics


Prerequisite: Grade of “C” or better in Calculus I (MATH 1550 or MATH 1551)

Co-requisite: Credit for or registration in Calculus II (MATH 1552 or MATH 1553)

General Education Statement: This course is a general education course in the Natural Sciences Area, and the material in the course will address the student’s achievement of this General Education Competency: LSU graduates will employ scientific and mathematical methods and technology in the resolution of laboratory and real-world problems.

CLASS OVERVIEW

- This is the introductory course primarily for physical scientists and engineers. It will introduce the concepts and methods of Mechanics and Thermodynamics. It will build your problem solving skills and your ability to apply mathematical principles to describe nature.
- You are required to read the assigned textbook material before coming to class.
- Attendance at lectures is highly encouraged! The concepts and approaches to problem solving will be developed through the readings, lectures, demonstrations and class discussion. If you need to leave early, let me know ahead of time. To encourage participation, there will be daily in-class quizzes (see below)
- It is the student’s responsibility to be familiar with the University Code of Conduct that details the university’s policy and disciplinary action regarding academic dishonesty.
- Students with special needs or accommodations should contact the Office of Disability Services (112 Johnston Hall) early so that any necessary accommodations can be arranged ASAP.

Quizzes

- Quizzes will be given in lecture everyday using an electronic response system, using wireless keypads (aka “clickers” make by Responsive Innovations. If you do not already have a clicker from another course, you will have to buy one.
- In-class quizzes help to ensure that students are up-to-date in their reading assignments, knowledge of completed homework, and concepts presented in lectures.
- “READING” quizzes will be done during the first 3 min. of class,
- “CLICKER” quizzes will occur throughout the lecture
- No make-up quizzes will be given.

Homework

- Homework is the most important part of the course!
- Homework is your physics “practice.” You will do well in the course if you do all the homework on your own since you will then be able to answer the questions and problems on the 3 tests and the final exam.
- We will use WebAssign, a web based computerized homework system located at http://webassign.net/student.html
• The first 14 days are free (grace period). During this period, use WebAssign to do your homework.

• You can register with a credit card online or you can purchase a registration card at the LSU Bookstore. Ask at the Customer Service Desk. You can also buy web access to the text so you do not need to buy the book (see Wiley for details)!

• You will be given a maximum of 3 submissions. Only the last submission will be graded, no points off for multiple submissions. Your semester percentage score will be used in computing the homework contribution to your grade.

• Do the homework daily. Often the number of problems (20-30) is too large to do in one sitting. It is best if you do the homework the same day that the material is covered in class.

• Get in the habit of carrying the units through the solution from start to finish. Units are required as part of the answer and will definitely be required on the tests.

• Homework will typically be due on Friday 5 pm. It will cover all of the material presented in lecture through the week. The WebAssign cutoff day and time is firm for full credit. HW turned in within 1 week after the due date will be reduced by 50% credit.

In-class Tests

• There will be three in-class tests (closed book) on material since the last test. Tests will consist of multiple-choice worked/concept questions and written worked problems. Because partial credit may be given, it is important that you show all work and give explanation and intermediate steps. An answer without showing the appropriate steps through a calculation will not be accepted.

• Necessary constants and most formulae will be given on a formula sheet that will be given; it will be available before the exams.

• You will need a scientific calculator.

• During your test, the only electronic device you may have with you at your seat is a scientific or graphing calculator. You may not have your cell phone, tablet, smartphone, PDA, pager, digital camera, computer, or any other device capable of taking pictures or video, sending text messages, or accessing the internet. This means not just on your person, but close enough to you that you could reach it during the test. Any student found with such a device during a test will be assumed to be violating the LSU Honor Code and will be referred to the Dean of Students for Judicial Affairs.

Grading

• Course grade will be determined by in-class quizzes, weekly homework, three 1-hour tests, and 2-hour final.

• The course grade is based on 600 points total.

• In-class clicker and reading quizzes will count 25 points and homework will count for 75 points for a total of 100 points total.

• Each of the 3 tests will count 100 points each (300 points) and the final exam will count for 200 points.

• The grading scale will be 90-100% A, 75-90% B, 60-75% C, 50-60% D, less than 50%, F

Final Exam

• The two-hour Final Exam will be cumulative with extra emphasis (approximately 1/3 of the questions and problems) on material since the last test.

• Same format as the in-class tests with ~ twice as many questions and problems.
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<tr>
<th>Chapter</th>
<th>Topics</th>
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<tbody>
<tr>
<td>Ch. 1</td>
<td>measurement, precision, significant digits, SI units, unit conversions</td>
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<tr>
<td>Ch. 2</td>
<td>kinematics in 1 dimension, displacement, velocity, acceleration</td>
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<tr>
<td>Ch. 3</td>
<td>vector mathematics, graphical and trigonometric methods, unit vectors, addition and subtraction of vectors, scalar products, vector products</td>
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<tr>
<td>Ch. 4</td>
<td>kinematics in 2 and 3 dimensions, uniform circular motion, relative motion</td>
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<tr>
<td>Ch. 5</td>
<td>forces and motion, free-body diagrams, Newton's Laws</td>
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<tr>
<td>Ch. 6</td>
<td>Forces: friction, fluid drag, forces in uniform circular motion</td>
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<tr>
<td>Ch. 7</td>
<td>kinetic energy and work, the work-kinetic energy theorem, power</td>
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<tr>
<td>Ch. 8</td>
<td>potential energy, conservation principles for mechanical energy, types of potential energy</td>
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<tr>
<td>Ch. 9</td>
<td>center of mass determination, surface and volume integrals, linear momentum and conservation principles, elastic and inelastic collisions</td>
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<tr>
<td>Ch. 10</td>
<td>rotational motion, kinematics, dynamics, torque, Newton's Laws, rotational energy</td>
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<td>Ch. 11</td>
<td>rolling and torque, conservation principles for angular momentum, collisions in rotation</td>
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<tr>
<td>Ch. 12</td>
<td>Equilibrium, forces and torques, static equilibrium, elastic properties of materials</td>
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<tr>
<td>Ch. 15</td>
<td>Simple harmonic motion, restoring forces, energy in oscillators, simple and physical pendula</td>
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Dr. Dana Browne,

The Chemistry Department supports your changes in PHYS courses to form the new courses PHYS 211Q, 2112, 2113. We will adjust our curriculum to include the new courses.

Dr. Linda Allen  
Director of Undergraduate Laboratories  
Undergraduate Chemistry Office  
Department of Chemistry  
College of Science  
LSU

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Dr. Browne

The Computer Science and Engineering Division supports the proposed change to drop the prerequisite of PHYS 1100 and distribute content in the sequences PHYS 2110/2112 and 2110/2113.

Currently in the computer science curriculum, students are required to have both a BIOL sequence and credit in a physical science sequence (from only Chemistry, Physics, Astronomy, and Geology). Students who select Physics may select any of the sequences offered by the Physics Department assuming credit in appropriate prerequisites.

Credit in PHYS 1100 is not permitted to be applied to the degree audit for our CS majors, so in that respect, the proposed changes are better applicable to the computer science degree audit.

Regards,

Coretta

Coretta Douglas, Ph.D. Computer Science 
Undergraduate/Instructional Coordinator and Instructor  
School of Electrical Engineering and Computer Science
Dr. Browne,

The disciplines of the College of Engineering will face challenges with accommodating the restructuring of the Physics sequences but understand that it must move forward. As discussed in our meeting, we would like to move forward with the proposed changes so that we could start the new sequences as soon as is possible.

Each discipline will file appropriate curricula change paperwork in due process and will work on proper transition plans for existing curricula.

Warren Waggenspak
Associate Dean
College of Engineering

Dr. Browne,

The Coastal Environmental Science (CES) degree program in the School of the Coast & Environment is supportive of these proposed changes in the physics courses. The removal of PHYS 1100 as a prerequisite for the first physics course (to be PHYS 2110) will also help our CES majors with their course loads in our curriculum.

Take Care,
Vince

Vincent L. Wilson, PhD
Professor & Director, SC&E Undergraduate Programs, Coastal Environmental Science
Chair, LSU Campus Radiation Safety Committee
Dept Environmental Sciences
Dr. Browne,

I have received input from our Curriculum Committee and we support your proposed changes to the calculus-based curriculum. I appreciate the opportunity to review your proposal, and thanks for seeking our input.

Best wishes,

Kam-biu

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Kam-biu Liu, Ph.D.
George W. Barineau III Professor
Chair
Department of Oceanography and Coastal Sciences
School of the Coast and Environment

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The College of Agriculture and the School of Human Ecology support the proposal to drop PHYS 2101. This course is one of two physics options for students in the Textile Science concentration of Textiles, Apparel, and Merchandising. If approved, the school will put through a concentration change to remove PHYS 2101 and students will take PHYS 2001.

M. E. Betsy Garrison, PhD
Associate Dean, College of Agriculture
Co-Recto, Agriculture Residential College
Professor, School of Human Ecology

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Dana and Phil,

Yes, we are considering 1201 as we already allow BS G&G majors to take Phys1201/1202 for their Physics requirements.

G&G is A OK with the changes proposed.

Carol Wicks
225-578-2692 (office)
225-223-2846 (cell)
Chair and Frank W. and Patricia Harrison Family Professor
Department of Geology and Geophysics
E235 Howe-Russell-Kniffen Geoscience Complex
College of Science
Louisiana State University
Baton Rouge LA 70803
Ok, so we will go ahead and do PHYS 2110 as the new course (instead of 2111) and then continue with 2112 and 2113.

Physics confirmed that they will begin working on the General Education paperwork later this week.

Thanks,

Kim Kubicek
Academic Counselor
College of Science
Louisiana State University
351 Hatcher Hall
(225) 578 4290
kkubicek@lsu.edu

From: Anna M Castrillo
Sent: Tuesday, May 21, 2013 4:00 PM
To: Kimberly G Kubicek
Subject: PHYS Sequence Proposals

Kim,

I have received and reviewed the PHYS Sequence proposals. This is a massive undertaking, so I am just starting from the beginning. I have a few questions in this preliminary stage:

1. First, the course number 2111 cannot be used for ten years. It was cancelled in 2013; therefore, it cannot be used again until 2023. This, then, disrupts the entire sequencing. Does the department wish to use 2110 and then continue with 2112 and 2113? Would they rather have the sequence start at 2112, 2113, and 2114? Or do you want to pick some other numbers?

2. Has paperwork been routed to the General Education Committee about making these courses General Education requirements? I do realize that you have to wait until the courses are approved by C&C; however, there are many proposals that are sent in to C&C hoping to be Gen. Ed. but never make it to the Gen Ed committee.

I will review the catalog and recommended paths to see where PHYS 1100, PHYS 2101, and 2102 fit in and see what proposals will be needed. I am sure you have some idea of how big this could be.

Sincerely,

Anna Castrillo, M.A.
Coordinator
**REQUEST FOR ADDITION OF NEW COURSE**

Department: Physics and Astronomy  
College: Science  
Date: 11/09/12

**PROPOSED COURSE**  
Short Title: **Thermodynamics, Waves**  
Rubric & No.: PHYS 2112  
Title: Fluids, Thermodynamics, Waves and Modern Physics

**COURSE CREDIT**  
Graduate Credit: **YES X NO**

Semester Hours of Credit: 3.0  
(For combination course types only: Lecture Hrs. Lab/Sem/Rec Hrs)

If course may be repeated for credit (i.e. special topics), course may be taken for a max. of **credit hours**.

Credit will not be given for this course and: PHYS 2001, PHYS 1201

**GRADING**  
Final Exam: **YES X NO**  
Grading System: **Letter Grade Pass/Fail**

(Attach justification if the proposed course will not hold a final exam during examination week)

**COURSE TYPE**  
(Indicate hours in the appropriate course type)

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Maximum enrollment per section: **70** (use integer, e.g. 26 not 20-30)

**CATALOG TEXT**  
(Concise catalog statement exactly as you wish it to appear in the LSU General Catalog)

**2112 Fluids, Thermodynamics, Waves and Modern Physics (3)**  
Prereq: grade of "C" or better in PHYS 2110 and MATH 1552 or 1553. Fluids, oscillations and waves, thermodynamics, modern physics.

**BUDGET IMPACT**  
If this course is approved, will additional staff be needed? **YES X NO**

Will additional space, equipment, special library materials or other major expense be involved? **YES X NO**

(If answer to either question above is "yes" attach explanation)  
Academic Affairs Approval: **Date:**

**ATTACHMENTS**  
ATTACH THE FOLLOWING TO YOUR PROPOSAL:

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SYLLABUS: Including 14 week outline of the subject matter; titles of text, lab manual, and/or required readings; grading scale and criteria

(For 4000-level, specify graduate student grading criteria if requirements differ for graduate and undergraduate students)

**APPROVALS**

Department Faculty Approval: **12/5/12**  
College Faculty Approval: **4/24/13**

Department Chair's Signature: **1/7/13**  
College Dean's Signature: **5/20/13**

Graduate Dean's Signature (for 4000 level and above) **(date)**

College Contact: **Kim Kubicek**  
(Please print name)

College Contact E-mail: **k.kubicek@lsu.edu**  
Academic Affairs Approval: **(date)**
Justification for a Three-Semester Physics Sequence for Technical Majors

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This resulted in a situation where a majority of students in physical science and engineering were taking 9 credit hours of physics even though one of the courses did not count for their degree. It is worth pointing out that it has been a source of irritation for the parents of some of those students that one of the three hour courses in physics did not count towards the major. Furthermore, the pace in 1100 was very slow, and even with shifting of some material into 1100, the pace in 2101 and 2102 was still too fast to ensure most students mastered the material. Finally, the decision taken last year by the Faculty Senate to no longer require physics in high school as an admission requirement at LSU, allowing it to be replaced by courses such as introduction to technology or environmental science, means that more and more students will come in with no high school physics background.

This situation has been made worse by the new state legislation mandating that all physics courses be completely transferrable between any public institutions in the state, and that 2 year
schools be allowed to produce associate degree programs in science that would allow students to take their engineering physics courses before arriving at LSU. It is clear that no recognition is being paid to the widely varying levels of rigor in these courses, not to mention the fact that several schools in Louisiana are awarding college credit for physics to students who sit in a high school classroom and never set foot in a post-secondary institution, being taught by someone who may not have the credentials to teach at the college level. When students with these mediocre backgrounds arrive here, they do not do well in their physics courses.

Given the disparate skill levels of students entering the current PHYS-2101 (i.e., poorly prepared but successful PHYS-1100, marginal but passing placement score, well prepared with high placement score, AP credit, etc), a reorganization of PHYS-2101 into a course more suitable for a "cold start" in physics is indicated. A reduction in topics covered, coupled with a reduction in class size, is recommended.

To address the need for a broad overview of physics, including topics in modern physics, as well as the detailed treatment of topics needed to prepare students for their core engineering discipline courses (Statics, Dynamics, Thermodynamics, Electric Circuits) the Department of Physics and Astronomy will adopt a three-semester sequence in physics: PHYS-2110, 2112, 2113. PHYS 2110 will be a prerequisite for PHYS 2112 and PHYS 2113, but the latter two courses can be taken in either order, and could even be taken simultaneously.

Recommendations

- Drop PHYS 1100 and the physics placement test.
- Restore Newtonian Mechanics to PHYS 2110, but reducing it to a careful treatment of particle mechanics only, removing waves, sounds, fluids and thermodynamics.
- Move wave, sound, fluids, thermodynamics into a new PHYS 2112, and add material in modern physics.
- Retain electricity and magnetism as the main theme of PHYS 2113, culminating in electromagnetic waves.
- PHYS 2112 and 2113 can be taken in either order, or simultaneously, and only require 2110.
- PHYS 2110 will have PHYS 2108 lab, and PHYS 2113 will have PHYS 2109 lab. No lab for 2112.
- All three courses will be General Education - Physical Science courses.

All students who used to take the 2101/2102 sequence would take the new PHYS 2110, but the individual discipline may decide on one or both of PHYS 2112 and 2113, possibly with one of those in the required curriculum and another as a recommended technical elective.

We realize that if all three courses are taken, then this means a 3 credit hour increase in the amount of courses for the degree. We counter that by pointing out that we had a system where one of those three hours, PHYS 1100, was done "off the books" as far as credit was concerned,
and so now we are explicitly recognizing that most students who need these classes have been taking 9 hours.

Math Prerequisites

After much discussion, we feel very strongly that the first semester of calculus should be a prerequisite, not a co-requisite, for PHYS 2110. The structure of PHYS 2110 requires the students understand and be ready to use derivatives by the third week of class, and that they be able to use integrals by the seventh week of class. The syllabus for MATH 1550/1551 shows that these concepts are not covered until 3 or 4 weeks later than we need them.

In PHYS 2113, with its emphasis on vector calculus, it is necessary that student have some familiarity with that subject, which is presented in MATH 2057. While we feel that a co-requisite of MATH 2057 is appropriate, this course is not required for many majors that need the 2113 class. We are working with the College of Engineering to formulate some additional online material that the students can use to fill in the missing math background. However, they must be familiar with calculus II, so we have imposed a corequisite of MATH 1552 for PHYS 2110 so that students taking 2112 or 2113 have the minimum background. Furthermore, the student must have completed calculus II with a C or better before attempting PHYS 2112 or 2113.

This may cause some difficulty in pushing back some courses that have a physics prerequisite, since a student who comes in ready to take calculus will not start the physics sequence until the second semester. However, a student who makes timely progress through the calculus sequence will be able to complete the physics sequence as early as their third semester if they take both 2112 and 2113 in the third semester. Also, if one of the physics courses is delayed until their fourth semester, that will only affect either the Circuits or the Thermodynamics class that the engineering students take.

Transfer Credit

By its very structure, this sequence will fit into the Board of Regents articulation matrix. In spring 2012, faculty from across the state met to attempt to implement the new statewide course catalog, which will form the curriculum to be incorporated in the anticipated statewide Associate Degree. We presented this model to them as a way to maintain rigor and still help weaker students. They endorsed the slower, more thorough, approach of this new sequence. The new statewide course descriptions mirror the descriptions of these courses. It was felt that 2 year colleges might be able to teach the 2110 class and possibly one of the other classes, but not teach the full sequence. The statewide Associate Degree that is now mandated could include PHYS 2110, and make the others optional.

The other difficulty will be in transfer credit from out of state institutions where this class is still two semesters (6 credit hours). This will prevent us from accepting a 6 hour 2-semester class for the 9 credit hours of the 2110/2112/213 sequence. The material in the first semester of the standard physics sequence covers all of the material in PHYS 2110 and then more, we would be awarding credit for PHYS 2110 for any course that covered at least that material. The second semester of the usual two semester sequence covers the same material as PHYS 2113. Because
of the additional material in 2113 on modern physics, which is rarely covered in a two semester sequence, and the more thorough treatment of thermodynamics and wave motion, we would probably not be awarding transfer credit for PHYS 2112.

For College Board Advanced Placement credit, we would be giving credit for PHYS 2110 with a 4 or 5 on the Physics C – Mechanics test. A grade of 4 or 5 on the Physics C – Electricity and Magnetism would earn credit for PHYS 2113. No credit will be earned through International Baccalaureate AP credit, since the physics content in that curriculum is not calculus-based.

Implementation

Once this change is approved, we will drop the placement exam and PHYS 1100, and offer 2110 for students who have not taken or passed 1100. For students who have passed 1100 in the past, we will encourage them to enroll in 2110, but will offer 2101 for two semesters. Students who have passed 2101 should enroll in PHYS 2113, since the material in 2113 overlaps nearly completely with the material in PHYS 2102. Departments and Colleges will substitute 2113 for the students who need 2102. We will not start the process of dropping PHYS 2101 and 2102 until two semesters have passed after the start of new sequence. All departments have been notified and they will have agreed to submit curricular change forms in Fall 2013 to have their revised curriculum use the new sequence.

Our current planned date for the start of this new sequence is Spring 2014. For Fall 2013, we will be offering one section of PHYS 1100 for those students who wish to repeat 1100 and then take 2101. We will offer PHYS 2101 and 2102 that fall. In the spring of 2014, we will offer 2101 for any students who have completed 1100 prior to the fall and wish to stay in the old sequence. For any students just starting their physics sequence, we will place them in the new 2110 class. Engineering has agreed to do substitutions of 2110 for 2101 and 2113 for 2102 while the new curricula are approved next year.
PHYS-2112: Fluids, Thermodynamics, Waves and Modern Physics


Pre-requisites: grade of C or better in PHYS 2110; grade of C or better in either MATH 1552 or 1553

General Education Statement: This course is a general education course in the Natural Sciences Area, and the material in the course will address the student’s achievement of this General Education Competency: LSU graduates will employ scientific and mathematical methods and technology in the resolution of laboratory and real-world problems.

CLASS OVERVIEW

• This is part of the introductory course primarily for technical science majors (chemistry, geology, and engineering). It extends the material from PHYS 2110 to discuss wave motion, fluids, thermodynamics, and modern physics. It will build your problem solving skills and your ability to apply mathematical principles to describe nature.
• You are required to read the assigned textbook material before coming to class.
• Attendance at lectures is highly encouraged! The concepts and approaches to problem solving will be developed through the readings, lectures, demonstrations and class discussion. If you need to leave early, let me know ahead of time. To encourage participation, there will be daily in-class quizzes (see below)
• It is the student’s responsibility to be familiar with the University Code of Conduct that details the university’s policy and disciplinary action regarding academic dishonesty.
• Students with special needs or accommodations should contact the Office of Disability Services (112 Johnston Hall) early so that any necessary accommodations can be arranged ASAP.

Quizzes

• Quizzes will be given in lecture everyday using an electronic response system (see clicker below). Therefore, you need to attend class and read the assigned material. In-class quizzes help to ensure that students are up-to-date in their reading assignments, knowledge of completed homework, and concepts presented in lectures.
• Typically, “READING” quizzes will be done during the first 3 min. of class, so don’t be late. “CLICKER” quizzes will occur throughout the lecture.
• No make-up quizzes will be given.
• Wireless keypads (clickers) made by Responsive Innovations will be used every day for quizzes. If you do not already have this clicker for a different course, you will be required to purchase one.

Homework

• Homework is the most important part of the course!
• Homework is your physics “practice.” You will do well in the course if you do all the homework on your own since you will then be able to answer the questions and problems on the 3 tests and the final exam.
• We will use the WebAssign computerized homework system at http://webassign.net/student.html
• The first 14 days are free (grace period). During this period, use WebAssign to do your homework.
• You can register with a credit card online or you can purchase a registration card at the LSU Bookstore. Ask at the Customer Service Desk. You can also buy web access to the text so you do not need to buy the book (see Wiley for details)!
• You will be given a maximum of 3 submissions. Only the last submission will be graded, no points off for multiple submissions. Your semester percentage score will be used in computing the homework contribution to your grade.
• Do the homework daily. Often the number of problems (20-30) is too large to do in one sitting. It is best if you do the homework the same day that the material is covered in class.
• Get in the habit of carrying the units through the solution from start to finish. Units are required as part of the answer and will definitely be required on the tests.
• Homework will typically be due on Friday 5 pm. It will cover all of the material presented in lecture through the week. The WebAssign cutoff day and time is firm for full credit. HW turned in within 1 week after the due date will be reduced by 50% credit.

In-class Tests

• There will be three in-class tests (closed book) on material since the last test. Tests will consist of multiple-choice worked/concept questions and written worked problems. Because partial credit may be given, it is important that you show all work and give explanation and intermediate steps. An answer without showing the appropriate steps through a calculation will not be accepted.
• Necessary constants and most formulae will be given on a formula sheet that will be given; it will be available before the exams.
• You will need a scientific calculator.
• During your test, the only electronic device you may have with you at your seat is a scientific or graphing calculator. You may not have your cell phone, tablet, smartphone, PDA, pager, digital camera, computer, or any other device capable of taking pictures or video, sending text messages, or accessing the internet. This means not just on your person, but close enough to you that you could reach it during the test. Any student found with such a device during a test will be assumed to be violating the LSU Honor Code and will be referred to the Dean of Students for Judicial Affairs.

Grading

• Course grade will be determined by in-class quizzes, weekly homework, three 1-hour tests, and 2-hour final.
• The course grade is based on 600 points total.
• In-class clicker and reading quizzes will count 25 points and homework will count for 75 points for a total of 100 points total.
• Each of the 3 tests will count 100 points each (300 points) and the final exam will count for 200 points.
• The grading scale will be 90-100% A, 75-90% B, 60-75% C, 50-60% D, less than 50%, F

Final Exam

• The two-hour Final Exam will be cumulative with extra emphasis (approximately 1/3 of the questions and problems) on material since the last test.
• Same format as the in-class tests with ~ twice as many questions and problems.
<table>
<thead>
<tr>
<th>Ch.</th>
<th>Topic</th>
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</thead>
<tbody>
<tr>
<td>14</td>
<td>Density and pressure, fluid statics, Pascal’s Principle, Archimedes’ Principle, Bernoulli’s Principle</td>
</tr>
<tr>
<td>15</td>
<td>Simple harmonic motion, restoring forces, energy in oscillators, types of oscillators, simple and physical pendula, damped and forced oscillations, resonance</td>
</tr>
<tr>
<td>16</td>
<td>Transverse and longitudinal waves, wave parameters, speed of travelling waves, energy and power for waves, superposition, standing waves and resonance</td>
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<tr>
<td>17</td>
<td>Sound waves, interference and beats, sound intensity, decibels, musical sounds, Doppler effect, supersonic speed and shock waves</td>
</tr>
<tr>
<td>18</td>
<td>Temperature and heat, temperature scales, 0th Law, thermal expansion, heat capacity, latent heats and phase changes, 1st Law</td>
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<td>19</td>
<td>Ideal gases, pressure, temperature, kinetic energy, RMS speed, equipartition, mean free path, molar specific heat, adiabatic expansion</td>
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<tr>
<td>20</td>
<td>Entropy, 2nd Law, reversible and irreversible processes, efficiency and coefficient of performance, Carnot cycle, engines and refrigerators</td>
</tr>
<tr>
<td>34</td>
<td>Geometrical optics and image formation, optical instruments</td>
</tr>
<tr>
<td>35</td>
<td>Interference and diffraction, single and double slits, Young’s experiment, thin film interference</td>
</tr>
<tr>
<td>36</td>
<td>Diffraction by apertures, gratings, resolving power, Raleigh Criterion</td>
</tr>
<tr>
<td>38</td>
<td>Photons and quantized energy, photoelectric effect, photon momentum, Compton Effect, matter waves, uncertainty principle, tunneling</td>
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<tr>
<td>42</td>
<td>The nucleus, radioactive decay, radioactive dating, dosimetry, models of the nucleus</td>
</tr>
<tr>
<td>43</td>
<td>Nuclear energy, binding energy, fission and fusion, nuclear reactors, the Sun and stars</td>
</tr>
</tbody>
</table>
Dr. Dana Browne,

The Chemistry Department supports your changes in PHYS courses to form the new courses PHYS 2111, 2112, 2113. We will adjust our curriculum to include the new courses.

Dr. Linda Allen
Director of Undergraduate Laboratories
Undergraduate Chemistry Office
Department of Chemistry
College of Science
LSU

Dr. Browne

The Computer Science and Engineering Division supports the proposed change to drop the prerequisite of PHYS 1100 and distribute content in the sequences PHYS 2111/2112 and 2111/2113.

Currently in the computer science curriculum, students are required to have both a BIOL sequence and credit in a physical science sequence (from only Chemistry, Physics, Astronomy, and Geology). Students who select Physics may select any of the sequences offered by the Physics Department assuming credit in appropriate prerequisites.

Credit in PHYS 1100 is not permitted to be applied to the degree audit for our CS majors, so in that respect, the proposed changes are better applicable to the computer science degree audit.

Regards,
Coretta

Coretta Douglas, Ph.D. Computer Science
Undergraduate/Instructional Coordinator and Instructor
School of Electrical Engineering and Computer Science
Dr. Browne,

The disciplines of the College of Engineering will face challenges with accommodating the restructuring of the Physics sequences but understand that it must move forward. As discussed in our meeting, we would like to move forward with the proposed changes so that we could start the new sequences as soon as is possible.

Each discipline will file appropriate curricula change paperwork in due process and will work on proper transition plans for existing curricula.

Warren Waggenspak  
Associate Dean  
College of Engineering

Dr. Browne,

The Coastal Environmental Science (CES) degree program in the School of the Coast & Environment is supportive of these proposed changes in the physics courses. The removal of PHYS 1100 as a prerequisite for the first physics course (to be PHYS 2111) will also help our CES majors with their course loads in our curriculum.

Take Care,

Vince

Vincent L. Wilson, PhD  
Professor & Director, SC&E Undergraduate Programs, Coastal Environmental Science  
Chair, LSU Campus Radiation Safety Committee  
Dept Environmental Sciences
Dr. Browne,

I have received input from our Curriculum Committee and we support your proposed changes to the calculus-based curriculum. I appreciate the opportunity to review your proposal, and thanks for seeking our input.

Best wishes,

Kam-biu

Kam-biu Liu, Ph.D.
George W. Barineau III Professor
Chair
Department of Oceanography and Coastal Sciences
School of the Coast and Environment

The College of Agriculture and the School of Human Ecology support the proposal to drop PHYS 2101. This course is one of two physics options for students in the Textile Science concentration of Textiles, Apparel, and Merchandising. If approved, the school will put through a concentration change to remove PHYS 2101 and students will take PHYS 2001.

M. E. Betsy Garrison, PhD
Associate Dean, College of Agriculture
Co-rector, Agriculture Residential College
Professor, School of Human Ecology
Dana and Phil,

Yes, we are considering 1201 as we already allow BS G&G majors to take Phys1201/1202 for their Physics requirements.

G&G is A OK with the changes proposed.

Carol Wicks
225-578-2692 (office)
225-223-2846 (cell)
Chair and Frank W. and Patricia Harrison Family Professor
Department of Geology and Geophysics
E235 Howe-Russell-Kniffen Geoscience Complex
College of Science
Louisiana State University
Baton Rouge LA 70803
REQUEST FOR ADDITION OF NEW COURSE

Department: Physics and Astronomy

College: Science

PROPOSED COURSE

Short Title: ELECTROMAGNETISM
Rubric & No.: PHYS 2113
Title: Fields: Gravity, Electricity and Magnetism

COURSE CREDIT

Graduate Credit: YES X NO
Semester Hours of Credit: 3.0
(For combination course types only: Lecture Hrs. Lab/Sem/Rec Hrs.)
If course may be repeated for credit (i.e. special topics), course may be taken for a max. of credit hours.
Credit will not be given for this course and: PHYS 1202, PHYS 2002

GRADING

Final Exam: X YES NO Grading System: X Letter Grade Pass/Fail
(Attach justification if the proposed course will not hold a final exam during examination week.)

COURSE TYPE

(Indicate hours in the appropriate course type)

Maximum enrollment per section: 70
(Use integer, e.g. 25 not 20-30)

CATALOG TEXT

(Concise catalog statement exactly as you wish it to appear in the LSU General Catalog)


BUDGET IMPACT

If this course is approved, will additional staff be needed? YES X NO
(If answer to either question above is "yes" attach explanation.)
Will additional space, equipment, special library materials or other major expense be involved? YES X NO

ATTACHMENTS

ATTACH THE FOLLOWING TO YOUR PROPOSAL.

JUSTIFICATION: Justification must explain why this course is needed and how it fits into the curricula. Will the course duplicate other courses?

SYLLABUS: Including 14 week outline of the subject matter; titles of text, lab manual, and/or required readings; grading scale and criteria (For 4000-level, specify graduate student grading criteria if requirements differ for graduate and undergraduate students).

APPROVALS

Department Faculty Approval 12/5/12
Department Chair's Signature 1/7/13
College Dean's Signature 5/20/13
Graduate Dean's Signature (for 4000 level and above) 6/20/13
College Contact: Kim Kubicek (Please print name.)
College Contact E-mail: kkubicek@lsu.edu

Academic Affairs Approval 6/29/13
Justification for a Three-Semester Physics Sequence for Technical Majors

The current course sequence of 2101/2102 with PHYS 1100 was implemented twenty years ago to improve retention of students in engineering programs. PHYS 1100 was not part of any degree program, but was offered to help those students with no or poor physics backgrounds prepare for the PHYS 2101/2102 sequence. The PHYS 2101/2102 sequence adopted a “mile-wide, inch-deep” approach comprising all of mechanics, fluids, thermodynamics and sound in the first semester, then electricity, magnetism, optics and occasionally some modern physics in the second. This was done to satisfy the needs of the College of Engineering for students being ready for three courses: Statics, Thermodynamics, and Circuits. It was clear that too much material was in the 2101 class, and over the years, some of that material (vectors, kinematics, Newton’s Laws) migrated into 1100, and then was reviewed quickly in 2101.

Students were placed in PHYS 1100 based on the physics placement test, which was a twenty question multiple choice test on mechanics with an extensive formula sheet provided. The minimum passing score was first set at 60%, but pressure from the administration at the time lowered it to 45%. This test is less rigorous than the current 1100 final exam, and does not do a good job of testing for those skills that 2101 requires. We also had evidence that the contents of the test were known to some high schools. Three years ago we revised 5 of the 20 questions, and provided two versions of the test, and percentage of students who passed dropped from over 60% to 43% and has remained there. It is clear that a marginally passing score on this placement exam is not a good predictor of success in PHYS-2101. A significant number of students who earned a “pass,” and thus 3 hours credit, on the placement test were nonetheless encouraged by the advisors in engineering and science to enroll in PHYS-1100 in order to improve their likelihood of future success. In the past three years, as the University aggressively expanded its enrollment, we saw that the percentage of students taking PHYS 1100 because they were ill prepared has dramatically swelled. Currently, over 85% of students in the technical physics sequence take 1100.

This resulted in a situation where a majority of students in physical science and engineering were taking 9 credit hours of physics even though one of the courses did not count for their degree. It is worth pointing out that it has been a source of irritation for the parents of some of those students that one of the three hour courses in physics did not count towards the major. Furthermore, the pace in 1100 was very slow, and even with shifting of some material into 1100, the pace in 2101 and 2102 was still too fast to ensure most students mastered the material.

Finally, the decision taken last year by the Faculty Senate to no longer require physics in high school as an admission requirement at LSU, allowing it to be replaced by courses such as introduction to technology or environmental science, means that more and more students will come in with no high school physics background.

This situation has been made worse by the new state legislation mandating that all physics courses be completely transferrable between any public institutions in the state, and that 2 year
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Given the disparate skill levels of students entering the current PHYS-2101 (i.e., poorly prepared but successful PHYS-1100, marginal but passing placement score, well prepared with high placement score, AP credit, etc), a reorganization of PHYS-2101 into a course more suitable for a "cold start" in physics is indicated. A reduction in topics covered, coupled with a reduction in class size, is recommended.

To address the need for a broad overview of physics, including topics in modern physics, as well as the detailed treatment of topics needed to prepare students for their core engineering discipline courses (Statics, Dynamics, Thermodynamics, Electric Circuits) the Department of Physics and Astronomy will adopt a three-semester sequence in physics: PHYS-2110, 2112, 2113. PHYS 2110 will be a prerequisite for PHYS 2112 and PHYS 2113, but the latter two courses can be taken in either order, and could even be taken simultaneously.

Recommendations

- Drop PHYS 1100 and the physics placement test.
- Restore Newtonian Mechanics to PHYS 2110, but reducing it to a careful treatment of particle mechanics only, removing waves, sounds, fluids and thermodynamics.
- Move wave, sound, fluids, thermodynamics into a new PHYS 2112, and add material in modern physics.
- Retain electricity and magnetism as the main theme of PHYS 2113, culminating in electromagnetic waves.
- PHYS 2112 and 2113 can be taken in either order, or simultaneously, and only require 2110.
- PHYS 2110 will have PHYS 2108 lab, and PHYS 2113 will have PHYS 2109 lab. No lab for 2112.
- All three courses will be General Education - Physical Science courses.

All students who used to take the 2101/2102 sequence would take the new PHYS 2110, but the individual discipline may decide on one or both of PHYS 2112 and 2113, possibly with one of those in the required curriculum and another as a recommended technical elective.

We realize that if all three courses are taken, then this means a 3 credit hour increase in the amount of courses for the degree. We counter that by pointing out that we had a system where one of those three hours, PHYS 1100, was done "off the books" as far as credit was concerned,
and so now we are explicitly recognizing that most students who need these classes have been taking 9 hours.

Math Prerequisites

After much discussion, we feel very strongly that the first semester of calculus should be a prerequisite, not a co-requisite, for PHYS 2110. The structure of PHYS 2110 requires the students understand and be ready to use derivatives by the third week of class, and that they be able to use integrals by the seventh week of class. The syllabus for MATH 1550/1551 shows that these concepts are not covered until 3 or 4 weeks later than we need them.

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This may cause some difficulty in pushing back some courses that have a physics prerequisite, since a student who comes in ready to take calculus will not start the physics sequence until the second semester. However, a student who makes timely progress through the calculus sequence will be able to complete the physics sequence as early as their third semester if they take both 2112 and 2113 in the third semester. Also, if one of the physics courses is delayed until their fourth semester, that will only affect either the Circuits or the Thermodynamics class that the engineering students take.

Transfer Credit

By its very structure, this sequence will fit into the Board of Regents articulation matrix. In spring 2012, faculty from across the state met to attempt to implement the new statewide course catalog, which will form the curriculum to be incorporated in the anticipated statewide Associate Degree. We presented this model to them as a way to maintain rigor and still help weaker students. They endorsed the slower, more thorough, approach of this new sequence. The new statewide course descriptions mirror the descriptions of these courses. It was felt that 2 year colleges might be able to teach the 2110 class and possibly one of the other classes, but not teach the full sequence. The statewide Associate Degree that is now mandated could include PHYS 2110, and make the others optional.

The other difficulty will be in transfer credit from out of state institutions where this class is still two semesters (6 credit hours). This will prevent us from accepting a 6 hour 2-semester class for the 9 credit hours of the 2110/2112/2113 sequence. The material in the first semester of the standard physics sequence covers all of the material in PHYS 2110 and then more, we would be awarding credit for PHYS 2110 for any course that covered at least that material. The second semester of the usual two semester sequence covers the same material as PHYS 2113. Because
of the additional material in 2113 on modern physics, which is rarely covered in a two semester sequence, and the more thorough treatment of thermodynamics and wave motion, we would probably not be awarding transfer credit for PHYS 2112.

For College Board Advanced Placement credit, we would be giving credit for PHYS 2110 with a 4 or 5 on the Physics C – Mechanics test. A grade of 4 or 5 on the Physics C – Electricity and Magnetism would earn credit for PHYS 2113. No credit will be earned through International Baccalaureate AP credit, since the physics content in that curriculum is not calculus-based.

Implementation

Once this change is approved, we will drop the placement exam and PHYS 1100, and offer 2110 for students who have not taken or passed 1100. For students who have passed 1100 in the past, we will encourage them to enroll in 2110, but will offer 2101 for two semesters. Students who have passed 2101 should enroll in PHYS 2113, since the material in 2113 overlaps nearly completely with the material in PHYS 2102. Departments and Colleges will substitute 2113 for the students who need 2102. We will not start the process of dropping PHYS 2101 and 2102 until two semesters have passed after the start of new sequence. All departments have been notified and they will have agreed to submit curricular change forms in Fall 2013 to have their revised curriculum use the new sequence.

Our current planned date for the start of this new sequence is Spring 2014. For Fall 2013, we will be offering one section of PHYS 1100 for those students who wish to repeat 1100 and then take 2101. We will offer PHYS 2101 and 2102 that fall. In the spring of 2014, we will offer 2101 for any students who have completed 1100 prior to the fall and wish to stay in the old sequence. For any students just starting their physics sequence, we will place them in the new 2110 class. Engineering has agreed to do substitutions of 2110 for 2101 and 2113 for 2102 while the new curricula are approved next year.
PHYS-2113: Fields: Gravity, Electricity and Magnetism


Pre-requisites: grade of C or better in PHYS 2110, grade of C or better in either MATH 1552 or MATH 1553.

General Education Statement: This course is a general education course in the Natural Sciences Area, and the material in the course will address the student's achievement of this General Education Competency: LSU graduates will employ scientific and mathematical methods and technology in the resolution of laboratory and real-world problems.

CLASS OVERVIEW

- This is the introductory course primarily for technical science majors (physics, chemistry, geology, or engineers). It extends the material from PHYS 2110 to discuss electrical and magnetic phenomena, electromagnetism, and gravitation, all arising from the idea of a physical "field." It will build your problem solving skills and your ability to apply mathematical principles to describe nature.
- You are required to read the assigned textbook material before coming to class.
- Attendance at lectures is highly encouraged! The concepts and approaches to problem solving will be developed through the readings, lectures, demonstrations and class discussion. If you need to leave early, let me know ahead of time. To encourage participation, there will be daily in-class quizzes (see below)
- It is the student's responsibility to be familiar with the University Code of Conduct that details the university's policy and disciplinary action regarding academic dishonesty.
- Students with special needs or accommodations should contact the Office of Disability Services (112 Johnston Hall) early so that any necessary accommodations can be arranged ASAP.

Quizzes

- Quizzes will be given in lecture everyday using an electronic response system (see clicker below). Therefore, you need to attend class and read the assigned material. In-class quizzes help to ensure that students are up-to-date in their reading assignments, knowledge of completed homework, and concepts presented in lectures.
- Typically, "READING" quizzes will be done during the first 3 min. of class, so don't be late. "CLICKER" quizzes will occur throughout the lecture
- No make-up quizzes will be given.
- Wireless keypads (clickers) made by Responsive Innovations will be used every day for quizzes. If you do not already have this clicker for a different course, you will be required to purchase one.

Homework

- Homework is the most important part of the course!
- Homework is your physics "practice." You will do well in the course if you do all the homework on your own since you will then be able to answer the questions and problems on the 3 tests and the final exam.
• We will use the WebAssign computerized homework system at http://webassign.net/student.html
• The first 14 days are free (grace period). During this period, use WebAssign to do your homework.
• You can register with a credit card online or you can purchase a registration card at the LSU Bookstore. Ask at the Customer Service Desk. You can also buy web access to the text so you do not need to buy the book (see Wiley for details)!
• You will be given a maximum of 3 submissions. Only the last submission will be graded, no points off for multiple submissions. Your semester percentage score will be used in computing the homework contribution to your grade.
• Do the homework daily. Often the number of problems (20-30) is too large to do in one sitting. It is best if you do the homework the same day that the material is covered in class.
• Get in the habit of carrying the units through the solution from start to finish. Units are required as part of the answer and will definitely be required on the tests.
• Homework will typically be due on Friday 5 pm. It will cover all of the material presented in lecture through the week. The WebAssign cutoff day and time is firm for full credit. HW turned in within 1 week after the due date will be reduced by 50% credit.

In-class Tests

• There will be three in-class tests (closed book) on material since the last test. Tests will consist of multiple-choice worked/concept questions and written worked problems. Because partial credit may be given, it is important that you show all work and give explanation and intermediate steps. An answer without showing the appropriate steps through a calculation will not be accepted.
• Necessary constants and most formulae will be given on a formula sheet that will be given; it will be available before the exams.
• You will need a scientific calculator.
• During your test, the only electronic device you may have with you at your seat is a scientific or graphing calculator. You may not have your cell phone, tablet, smartphone, PDA, pager, digital camera, computer, or any other device capable of taking pictures or video, sending text messages, or accessing the internet. This means not just on your person, but close enough to you that you could reach it during the test. Any student found with such a device during a test will be assumed to be violating the LSU Honor Code and will be referred to the Dean of Students for Judicial Affairs.

Grading

• Course grade will be determined by in-class quizzes, weekly homework, three 1-hour tests, and 2-hour final.
• The course grade is based on 600 points total.
• In-class clicker and reading quizzes will count 25 points and homework will count for 75 points for a total of 100 points total.
• Each of the 3 tests will count 100 points each (300 points) and the final exam will count for 200 points.
• The grading scale will be 90-100% A, 75-90% B, 60-75% C, 50-60% D, less than 50%, F

Final Exam

• The two-hour Final Exam will be cumulative with extra emphasis (approximately 1/3 of the questions and problems) on material since the last test.
• Same format as the in-class tests with ~ twice as many questions and problems.
| Ch. 13 | Gravitation, Newton’s Law of Gravity, superposition, gravitational potential energy, Gauss’s Law, Kepler’s Laws, escape speed, orbital mechanics (i.e., Rocket Science) |
| Ch. 22 | Electric charge, conductors and insulators, Coulomb’s Law, quantization and conservation principles for charge electric fields, field maps, fields due to various charge geometries, point charges and dipoles in an electric field |
| Ch. 23 | Electric flux, Gauss’s Law for electric fields, Coulomb’s Law from Gauss’s Law, isolated charged conductors, considerations of symmetry |
| Ch. 24 | Electric potential energy and work, electric potential, equipotentials, potentials due to discrete and continuous charge distributions, isolated conductors, determining the electric field from the potential |
| Ch. 25 | Capacitors and capacitance, series and parallel arrangements, stored energy, dielectric materials, Gauss’s Law with dielectric |
| Ch. 26 | Electric current, current density, non-perfect conductors, resistivity and resistance, Ohm’s Law, power and energy in electric circuits, semiconductor materials, superconductors |
| Ch. 27 | DC circuits, energy and work, electromotive force, single and multi-loop circuits, parallel and series combinations of resistances, Kirchoff’s Laws, RC circuits, time constant |
| Ch. 28 | Magnetic fields, forces on moving charges, crossed fields, Hall effect, cyclotrons, force and torque on current carrying wires and loops, magnetic dipoles and dipole moment |
| Ch. 29 | Sources of magnetic field, Biot-Savart Law, calculating the magnetic field for various current geometries, Ampere’s Law, consideration of symmetry, forces between parallel currents, solenoids and toroids, a coil as a dipole |
| Ch. 30 | Electromagnetic induction, Faraday’s Law, Lenz’s Law, induced electric fields, induction and inductors, RL circuits and time constants, energy stored in magnetic fields, energy density in magnetic fields, mutual inductance |
| Ch. 31 | Electromagnetic oscillators, series RLC circuit, transformers, forced oscillators, resonant circuits, damped oscillators |
| Ch. 32 | Gauss’s Law for magnetism, displacement currents, induced magnetic fields, Maxwell’s equations, magnets and magnetic materials, para-, dia-, and ferromagnetism |
| Ch. 33 | Electromagnetic waves, electromagnetic spectrum, travelling EM waves, Poynting Vector, energy transport, radiation pressure, polarization, reflection and refraction |
Dr. Dana Browne,

The Chemistry Department supports your changes in PHYS courses to form the new courses PHYS 2111, 2112, 2113. We will adjust our curriculum to include the new courses.

Dr. Linda Allen
Director of Undergraduate Laboratories
Undergraduate Chemistry Office
Department of Chemistry
College of Science
LSU

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Dr. Browne

The Computer Science and Engineering Division supports the proposed change to drop the prerequisite of PHYS 1100 and distribute content in the sequences PHYS 2111/2112 and 2111/2113.

Currently in the computer science curriculum, students are required to have both a BIOL sequence and credit in a physical science sequence (from only Chemistry, Physics, Astronomy, and Geology). Students who select Physics may select any of the sequences offered by the Physics Department assuming credit in appropriate prerequisites.

Credit in PHYS 1100 is not permitted to be applied to the degree audit for our CS majors, so in that respect, the proposed changes are better applicable to the computer science degree audit.

Regards,
Coretta

Coretta Douglas, Ph.D. Computer Science
Undergraduate/Instructional Coordinator and Instructor
School of Electrical Engineering and Computer Science
Dr. Browne,

The disciplines of the College of Engineering will face challenges with accommodating the restructuring of the Physics sequences but understand that it must move forward. As discussed in our meeting, we would like to move forward with the proposed changes so that we could start the new sequences as soon as is possible.

Each discipline will file appropriate curricula change paperwork in due process and will work on proper transition plans for existing curricula.

Warren Waggenspak
Associate Dean
College of Engineering

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Dr. Browne,

The Coastal Environmental Science (CES) degree program in the School of the Coast & Environment is supportive of these proposed changes in the physics courses. The removal of PHYS 1100 as a prerequisite for the first physics course (to be PHYS 2111) will also help our CES majors with their course loads in our curriculum.

Take Care,

Vince

Vincent L. Wilson, PhD
Professor & Director, SC&E Undergraduate Programs, Coastal Environmental Science
Chair, LSU Campus Radiation Safety Committee
Dept Environmental Sciences
Dr. Browne,

I have received input from our Curriculum Committee and we support your proposed changes to the calculus-based curriculum. I appreciate the opportunity to review your proposal, and thanks for seeking our input.

Best wishes,

Kam-biu

Kam-biu Liu, Ph.D.
George W. Barineau III Professor
Chair
Department of Oceanography and Coastal Sciences
School of the Coast and Environment

The College of Agriculture and the School of Human Ecology support the proposal to drop PHYS 2101. This course is one of two physics options for students in the Textile Science concentration of Textiles, Apparel, and Merchandising. If approved, the school will put through a concentration change to remove PHYS 2101 and students will take PHYS 2001.

M. E. Betsy Garrison, PhD
Associate Dean, College of Agriculture
Co-rector, Agriculture Residential College
Professor, School of Human Ecology
Dana and Phil,

Yes, we are considering 1201 as we already allow BS G&G majors to take Phys1201/1202 for their Physics requirements.

G&G is A OK with the changes proposed.

Carol Wicks
225-578-2692 (office)
225-223-2846 (cell)
Chair and Frank W. and Patricia Harrison Family Professor
Department of Geology and Geophysics
E235 Howe-Russell-Kniffen Geoscience Complex
College of Science
Louisiana State University
Baton Rouge LA 70803
REQUEST FOR ADDITION OF NEW COURSE

Department: Mathematics  Date: 5/21/2013
College: Science

PROPOSED COURSE
Short Title: APPLIED STOCHASTIC ANALYSIS
Rubric & No.: MATH 7365  Title: Applied Stochastic Analysis

COURSE CREDIT
Graduate Credit: X YES  NO

Semester Hours of Credit: 3
(For combination course types only: Lecture Hrs.  Lab/Sem/Rec Hrs.
If course may be repeated for credit (i.e. special topics), course may be taken for a max. of ____ credit hours.
Credit will not be given for this course and:

GRADING
Final Exam: X YES  NO  Grading System: X Letter Grade  Pass/Fail
(Attach justification if the proposed course will not hold a final exam during examination week.)

COURSE TYPE
(Indicate hours in the appropriate course type)

Maximum enrollment per section: 25 (use integer, e.g. 25 not 20-30)

CATALOG TEXT
(Concise catalog statement exactly as you wish it to appear in the LSU General Catalog)

7365 Applied Stochastic Analysis (3)
Prereq: Math 7360. Brownian motion, basic stochastic calculus, applications to finance.

BUDGET IMPACT
If this course is approved, will additional staff be needed?  YES X  NO
Will additional space, equipment, special library materials or other major expense be involved?  YES X  NO
(If answer to either question above is yes attach explanation)

ATTACHMENTS
ATTACH THE FOLLOWING TO YOUR PROPOSAL

JUSTIFICATION: Justification must explain why this course is needed and how it fits into the curricula. Will the course duplicate other courses?

SYLLABUS: Including 14 week outline of the subject matter, titles of text, lab manual, and/or required readings; grading scale and criteria
(For 4000-level, specify graduate student grading criteria if requirements differ for graduate and undergraduate students).

APPROVALS
Department Faculty Approval  4/29/2013  College Faculty Approval  6/4/13

Graduate Dean's Signature (for 4000 level and above) (date)
Chair, FS C&C Committee (date)
Justification for the request for addition of Math 7365: Applied Stochastic Analysis

Applied Stochastic Analysis is an important topic in probability and is required for the Master’s degree with concentration in Finance. The Department of Mathematics has offered an applied stochastic analysis course regularly as a section of Math 7380 (Seminar in Functional Analysis), a course number more appropriate for higher level seminars and less standard courses. Accordingly, we propose the addition of a dedicated course number for the department’s basic applied stochastic analysis class.
Applied Stochastic Analysis - Math 7365

Prerequisite: Math 7360 or its equivalent, or consent of instructor

Course Description: The aim of the course is to provide the basic stochastic theory required to model and understand physical phenomena with random forces. Applications include models that arise in physics, biology, engineering, and economics.

Syllabus:

1. Introduction to modern probability theory (2 weeks)
2. Brownian motion (2 weeks)
3. Stochastic integrals (2 weeks)
4. Change of variable formula (2 weeks)
5. Stochastic equations (3 week)
6. Stochastic models (3 weeks)

Textbooks:


Course Work: Homeworks will be assigned periodically. They would account for 60% of the course grade. There will be a mid-term test and a final examination, each accounting for 20% of the course grade.

Course Grade:

- A: ≥ 90%
- B: ≥ 80%
- C: ≥ 60%
- D: ≥ 40%
- F: < 40%
Request for CHANGING an Existing Course

Department: Finance  
Course Rubric and #: FIN 4060  
College: Business  
Date: 3/4/13

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<th>Present Course Description</th>
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<tbody>
<tr>
<td>Title</td>
<td>Survey of Investing II</td>
<td></td>
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<tr>
<td>Semester Hours of Credit</td>
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<td></td>
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</tbody>
</table>

If combination course type, # hrs. of credit for lecture: lab/sem/rec: 
Repeat Credit Max (if repeatable): X
Graduate Credit? Yes: No:

Credit will not be given for this course and: FIN 3826

Contact Hours Per Week: (Indicate hours in appropriate course type.)
LEC  | LAB  | SEM  | REC  | IND  | CLIN | PRACT |
Total Weekly Contact Hours: 1
Grading System: Letter Grade X Pass/Fail

Course Description:
Include course number, title, etc., exactly as it will appear in the General Catalog
Prereq.: FIN 2060 and FIN 3715 or FIN 3716. Must be taken during the final semester of the coursework for the Personal Investing minor. Credit will not be given for this course and FIN 3826. Capstone course in the Personal Investing minor.

THERE QUESTIONS MUST BE ANSWERED COMPLETELY AND ACCURATELY OR PROPOSAL WILL BE RETURNED.

Has this change been discussed with and approved by all departments/colleges affected? Yes (X) No ( ) N/A ( )
Is this course included in any curricula, concentrations, or minors? Yes (X) No ( ) If yes, please list on a separate sheet.
Is this course a prerequisite or corequisite for other courses? Yes ( ) No (X) If yes, list courses; use separate sheet.
Is this course on the General Education list? Yes ( ) No (X)

JUSTIFICATION/EXPLANATION: Use separate sheet.

Note: IF COURSE IS OR WILL BE CROSS-LISTED, SEPARATE FORMS MUST BE SUBMITTED BY EACH DEPARTMENT.

APPROVALS:
Department Faculty Approval Date: 3/4/13
Department Chair's Signature: 3/4/13 (Date)
Graduate Dean's Signature: (Date)
College Contact:  
College Contact E-mail: c_juneka@sv.edu

College Faculty Approval Date: 4/22/13
college Dean's Signature: 5/16/13 (Date)
Chair, FS C & C Committee: 6/24/13 (Date)
Academic Affairs Approval: (Date)
FIN 4060 is a required course for Personal Investing minors.

Justification:

I would like to remove the prohibition of taking FIN 4060 and FIN 3826 since I have been willing to override every single case that arises. Also, I know now that the overlap is minimal.

Carlos Slawson
Professor and Chair
Department of Finance
Request for CHANGING an Existing Course

Department: Marketing
College: E. J. Ourso College of Business
Course Rubric and #: MKT 3401
Date: 5/10/13

Present Course Description

Title: Principles of Marketing

Semester Hours of Credit: 3

If combination course type, # hrs. of credit for
lecture: ___ lab/sem ___ rec: ___

Repeat Credit Max (if repeatable): ___

Graduate Credit?: Yes: ___ No: ___

Credit will not be given for this course and: ___

Contact Hours Per Week: (Indicate hours in appropriate course type.)

LEC ___ LAB ___ SEM ___ REC ___ RES/ IND CLINU/ PRACT

Total Weekly Contact Hours: ___

Grading System: Letter Grade ___ Pass/Fail ___

Course Description:
Include course number, title, etc., exactly as it appears in the General Catalog
3401 Principles of Marketing (3) Prereq.: ACCT 2000 or 2001 (2002), and either ECON 2030 or ECON 2000 (2001) and 2010 (2011). An honors course, MKT 3402, is also available. Credit will not be given for both this course and MKT 3402. Lecture-discussion, case analysis, marketing-simulation game; the field of marketing; marketing environment, functions, and institutional structure at a macro level; marketing strategy and policies at a micro level; problems of cost and productivity; viewpoints of society, consumer, and marketing manager.

Proposed Course Description

Title: Principles of Marketing

Semester Hours of Credit: 3

If combination course type, # hrs. of credit for
lecture: ___ lab/sem ___ rec: ___

Repeat Credit Max (if repeatable): ___

Graduate Credit?: Yes: ___ No: ___

Credit will not be given for this course and: ___

Contact Hours Per Week: (Indicate hours in appropriate course type.)

LEC ___ LAB ___ SEM ___ REC ___ RES/ IND CLINU/ PRACT

Total Weekly Contact Hours: ___

Grading System: Letter Grade ___ Pass/Fail ___

Course Description:
Include course number, title, etc., exactly as it will appear in the General Catalog
3401 Principles of Marketing (3) An honors course, MKT 3402, is also available. Credit will not be given for both this course and MKT 3402. Lecture-discussion, case analysis, marketing-simulation game; the field of marketing; marketing environment, functions, and institutional structure at a macro level; marketing strategy and policies at a micro level; problems of cost and productivity; viewpoints of society, consumer, and marketing manager.

THESE QUESTIONS MUST BE ANSWERED COMPLETELY AND ACCURATELY OR PROPOSAL WILL BE RETURNED.

Has this change been discussed with and approved by all departments/colleges affected? Yes (x) No ( ) N/A ( )
Is this course included in any curricula, concentrations, or minors? Yes (x) No ( ) If yes, please list on a separate sheet.
Is this course a prerequisite or corequisite for other courses? Yes (x) No ( ) If yes, list courses; use separate sheet.
Is this course on the General Education list? Yes ( ) No (x)

JUSTIFICATION/EXPLANATION: Use separate sheet.

Note: IF COURSE IS OR WILL BE CROSS-LISTED, SEPARATE FORMS MUST BE SUBMITTED BY EACH DEPARTMENT.

APPROVALS:
Department Faculty Approval Date: 3/1/13
Department Chair’s Signature: Alvin C. Burns

Graduate Dean's Signature: (Date)

College Dean’s Signature: (Date)

Chair, FS C & C Committee: (Date)

Academic Affairs Approval: (Date)

FORM C
ADMINISTRATION
USE ONLY

Effective: 5/10/13
Has this change been discussed with and approved by all departments/colleges affected?  Yes (x)  No ( )  N/A ( )

All departments/programs requiring MKT 3401 were identified via the General Catalog, and chairs/unit heads of those departments/programs were notified via email as to the proposed changes.

The departments and individuals contacted were:
- Agricultural Business; Business Education; Marketing Education  
  Agricultural Assistant Dean Jaqueline Mallet  
  jmallet@lsu.edu
- Human Ecology: Textiles, Apparel & Merchandising  
  Human Ecology Associate Dean Betsy Garrison  
  hcgarr@lsu.edu
- Mass Communications: Advertising; Public Relations  
  Mass Comm chair Robert Mann  
  bobmann@lsu.edu
- Sport Commerce  
  Sports Commerce Administrative Program Specialist (in school of kinesiology) Ellen Albardo  
  ealbara@lsu.edu
- Construction Management/Engineering  
  Technical Sales  
  Engineering Assistant Director Lillian Kleinpeter  
  liliank@eng.lsu.edu
- French: International Business  
  Humanities & Social Sciences
- Arts Administration  
  Arts Chair Kristin Sosnowsky  
  ksosno1@lsu.edu
- Business: all majors (Accounting, Economics, Finance, ISDS, & Management)  
  Chairperson of each department

No objections or comments were returned.
MKT 3401 Change – Additional Sheets #2

Is this course included in any curricula, concentrations, or minors? Yes (x) No ( ) If yes, please list on a separate sheet.

MKT 3401 is required in all undergraduate business majors; mass communications; human ecology, construction management, agriculture business, sports administration, and arts administration.

MKT 3401 is a requirement for any concentrations in the aforementioned business majors as a function of being required for the major.

Marketing is a minor available to students who wish to do so.
MKT 3401 Change – Additional Sheets #3

Is this course a prerequisite or corequisite for other courses? Yes (x) No ( ) If yes, list courses; use separate sheet.

MKT 3401 is not a corequisite for any course.

Based on a search of the LSU General Catalog, MKT 3401 is a prerequisite for the following courses:

- MKT 3411
- MKT 3421
- MKT 3427
- MKT 3441
- MKT 3500
- MKT 4414
- MKT 4423
- MKT 4440
- MKT 4443
- MKT 4490
- MKT 4500
- AGEC 4433
- HEC 4070
- MGT 3010
- MGT 3111
- MKT 3830
- MC 4034
Campus Correspondence

Date: May 15, 2013

To: LSU Courses & Curricula Committee

From: Alvin C. Burns

E. J. Ourso Distinguished Chairman

Re: Course Change Request: MKT 3401

The faculty of the Department of Marketing in the E.J. Ourso College of Business Administration recently voted to eliminate certain prerequisites listed for MKT 3401, Principles of Marketing. Specifically, it was decided that certain Accounting (ACCT) and Economics (ECON) prerequisites are no longer appropriate. The reasons for this decision are as follows.

1. These prerequisites are at least 40 years old (predate Burns’ employment at LSU in 1976, so they may be 50 years old). Five decades ago, marketing was in its formative stages as an academic discipline, and it relied on accounting and economics concepts and theory to a much greater extent than it does in its present form. As evidence of this claim, a quick survey of representative contemporary principles of marketing textbooks reveals no mention of these concepts whatsoever. Consequently, the current prerequisites are unnecessary because content in the principles of marketing course no longer relies on them.

2. About 5 years ago, the College of Business adopted the policy of allowing students with less than 60 hours (specifically as low as 54 hours) to enroll in certain principles courses including MKT 3401. The current prerequisite classes are sometimes a hindrance to students who attempt to enroll with fewer than 60 hours.

3. Nonbusiness students (e.g., construction management or mass communications) who take MKT 3401 as a requirement or an elective often petition to be admitted because accounting and/or economics are not requirements of their major programs of study. These petitions are regularly allowed. Elimination the prerequisites will allow such student to enroll in MKT 3401 without need to petition for admission.

Telephone: (225)-578-8786 Facsimile: (225)-578-8616 e-mail: alburns@lsu.edu
Request for CHANGING an Existing Course

**Department**: Rucks Dept of Management
**College**: E. J. Ourso College of Business

**Course Title**: Strategically Managing Organizations
**Course Number**: MGT 3830

**Semester Hours of Credit**: 3

**Course Description**: An honors course, MGT 3831, is also available. Prereq.: FIN 3716, MGT 3200 and MGT 3401 or MGT 3402. Open only to E. J. Ourso College of Business students. Credit will not be given for both this course and MGT 3831. May be taken only during the final 30 hours of course work. Analyzing strategic situations and decision making based on these analyses to ensure the success of for-profit and non-profit organizations.

**Credit will not be given for this course and**: MGT 3831

**Contact Hours Per Week**: 3

**Repeat Credit Max (if repeatable)**

**Graduate Credit?** Yes: No: X

**Contact Hours Per Week**: 3

**Total Weekly Contact Hours**: 3

**Grading System**: Letter Grade _X_ Pass/Fail

**Course Rubric and # MGT 3830**

**Date**: 3/15/13

**Approved by**: 
- **Academic Affairs Approval**: Date
- **Chair, FS C & C Committee**: Date
- **Dean Faculty Approval Date**: 4/22/13
- **Dean's Signature**: Date
- **Chair Faculty Approval Date**: 5/16/13
- **Dean's Signature**: Date

**Notes**: 
- **Credit will not be given for this course and**: MGT 3831
- **Graduate Credit?** Yes: No: X
- **Contact Hours Per Week**: 3
- **Total Weekly Contact Hours**: 3
- **Grading System**: Letter Grade _X_ Pass/Fail

**Proposed Course Description**

**Title**: Strategically Managing Organizations
**Short Title**: STRAT MANAGING ORGS

**Credit will not be given for this course and**: MGT 3831

**Contact Hours Per Week**: 3

**Total Weekly Contact Hours**: 3

**Grading System**: Letter Grade _X_ Pass/Fail

**Note**: IF COURSE IS OR WILL BE CROSS-LISTED, SEPARATE FORMS MUST BE SUBMITTED BY EACH DEPARTMENT.
Justification for Changing Prerequisites for MGT 3830

MGT 3830 is the college’s capstone course for all majors. Provided a student meets all course prerequisites, the course is appropriate for the last year (last 30 hours) of coursework. Allowing the course to be taken in the last year will help distribute the enrollment more evenly between the fall and spring semesters, thereby eliminating overcrowding classes during the spring semester. This change will provide a better learning environment for students enrolled in the course.

Due to the increased enrollment in the college, we no longer have the ability to allow students outside of business to take this course.
Request for CHANGING an Existing Course

**Department**: Oceanography & Coastal Sci.  
**College**: SC&E  
**Course Rubric and #:** OCS 7129  
**Date**: May 3, 2013

### Present Course Description

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<th>Proposed Course Description</th>
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<tr>
<td><strong>Title</strong></td>
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<td><strong>Graduate Credit?</strong></td>
<td>Yes: X No:</td>
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<td><strong>Credit will not be given for this course and:</strong></td>
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<td><strong>Contact Hours Per Week:</strong></td>
<td>(Indicate hours in appropriate course type.)</td>
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<tr>
<td><strong>Total Weekly Contact Hours:</strong></td>
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<td><strong>Grading System:</strong></td>
<td>Letter Grade X Pass/Fail</td>
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<tr>
<td><strong>Course Description:</strong></td>
<td>Include course number, title, etc., exactly as it will appear in the General Catalog</td>
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7129 Global Climate Change and Wetlands (2) Prereq.: consent of instructor. Impact of projected global climate change on stability and functioning of coastal and interior wetland ecosystems; feedback of biogeochemical changes in wetlands caused by climate change.

### Proposed Course Description

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<td><strong>Graduate Credit?</strong></td>
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<td><strong>Credit will not be given for this course and:</strong></td>
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<td><strong>Grading System:</strong></td>
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<td><strong>Course Description:</strong></td>
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7129 Global Climate Change and Wetlands (3) Prereq.: consent of instructor. Impact of projected global climate change on stability and functioning of coastal and interior wetland ecosystems; feedback of biogeochemical changes in wetlands caused by climate change.

### Additional Information

**THESE QUESTIONS MUST BE ANSWERED COMPLETELY AND ACCURATELY OR PROPOSAL WILL BE RETURNED.**

- Has this change been discussed with and approved by all departments/colleges affected? Yes (X) No ( ) N/A ( )
- Is this course a prerequisite or corequisite for other courses? Yes ( ) No (X) If yes, list courses; use separate sheet.
- Is this course on the General Education list? Yes ( ) No (X)

**JUSTIFICATION/EXPLANATION:** Use separate sheet.

**Note:** IF COURSE IS OR WILL BE CROSS-LISTED, SEPARATE FORMS MUST BE SUBMITTED BY EACH DEPARTMENT.

**APPROVALS:**

- **Department Faculty Approval Date**: 5/6/13  
- **Department Chair's Signature**: (Date)
- **Graduate Dean's Signature**: (Date)
- **College Contact**: (Please print name.)  
- **College Contact E-mail**: 

- **College Faculty Approval Date**: 5/6/13  
- **College Dean's Signature**: (Date)
- **Chair, FS C & C Committee**: (Date)
- **Academic Affairs Approval**: (Date)
Justification for OCS 7129 Global Climate Change and Wetlands

The course had been set up as a lecture course with 3 hours of lecture per week, but it was erroneously listed as a 2-credit-hour course in the catalog. This creates a problem for students who usually need a 3-credit-hour course to fulfill graduation requirements. The course had not been taught in the last seven years since the passing of the original instructor. We propose to correct the error and make it a 3-credit-hour course to match the 3-hour-per-week course structure. There is no change in the description or content of the course.
**COURSE SECTION**

05/06/13 11:06

Function ==> VSEC  Term ==> 1S/2014  Dept ==> OCS  Crs ==> 7129  Sec ==> 001

Crs Title : GLOB CLIM CHG & WETL

Last Update: 02/11/2013 OCDOCS

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<td>Location Code:</td>
<td>Add Date: 02/11/2013</td>
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<td>Enrl Maximum: 12</td>
<td>Shared Instr:</td>
<td>Begin Date: 02/11/2013</td>
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<td>Link Flag:</td>
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**Sec Title**

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<th>Days</th>
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<td>LEC</td>
<td>89-826-6603</td>
<td>2.00</td>
<td>RIVERA-MONROY, V</td>
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Remarks: TAUGHT IN ROOM 3215 ECE

PF2=SRRMENU PF3=SRRMCRS PF10=PREV PF11=NEXT
COURSE SYLLABUS
OCS 7129 Global Climate Change and Wetlands

PROFESSOR: Dr. Rivera-Monroy
OFFICE LOCATION: Room 3209 Energy, Coast & Environment Bldg.
OFFICE HOURS: by appointment
E-MAIL: vhrivera@lsu.edu

COURSE DESCRIPTION: OCS 7129 Global Climate Change and Wetlands is a 3 credit hour course involving 3 lecture hours per week in a lecture/discussion setting. Course covers the impact of projected global climate change on stability and functioning of coastal and interior wetland ecosystems; feedback of biogeochemical changes in wetlands caused by climate change.

PREREQUISITES: Consent of instructor.

LEARNING OUTCOMES
Upon successful completion of OCS 7019, the student will be climate literate and able to achieve the following:
1. Explain the essential principles of Earth's climate system;
2. Explain the present understanding of the relationship of global climate change to the stability and functioning of coastal and interior wetlands;
3. Describe the feedback of biogeochemical changes in wetlands caused by climate change;
4. Demonstrate the ability to assess scientifically credible information about climate and communicate about climate and climate change in a meaningful way.

ASSESSMENT/ASSIGNMENTS
Learning outcomes will be assessed by
• a midterm essay examination;
• a seminar/presentation of an assigned current peer-review journal article in which the presenter will give an oral overview of the paper with analysis and clarification of the material and then lead a group discussion covering the merits and application of the paper’s rational, methods, results, and conclusions; and
• a comprehensive final essay exam at the end of the semester.

All examinations/assignments will be graded using an instructor-designed rubric.

Assessment Measures
A midterm examination, a presentation, and a comprehensive final exam will assess learning outcomes.

TEXTBOOK:
Global Warming: Understanding the Forecast, 2nd Edition, David Archer

LINKS:
Archer website models http://forecast.uchicago.edu/models.html
**ANNICILLARY TEXTS:**

**GRADING & EXAMINATIONS:**

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<tr>
<td>Mid-term Examination</td>
<td>100</td>
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<td>Final Exam {comprehensive}</td>
<td>100</td>
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<tr>
<td>Presentation (overview of paper 50 pts, discussion leadership 50 pts)</td>
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<td><strong>TOTAL 300 points</strong></td>
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<td>90%-100% = A</td>
<td>80%-89% = B</td>
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<td>70%-79% = C</td>
<td>60-69% = D</td>
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<td>&lt; 60% = F</td>
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The schedule, policies, & assignments in this course are subject to change.

**OCS 7129 SCHEDULE F 2013 Instructor: Dr. Rivera-Monroy**
**Day: TH Time: 3 - 4:20**

<table>
<thead>
<tr>
<th>DAY</th>
<th>DATE</th>
<th>TOPIC: Lecture &amp; Assigned readings</th>
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<tbody>
<tr>
<td>T</td>
<td>27 Aug</td>
<td>Introduction to course. The dynamic changes taking place in the Earth's climate with emphasis on actual &amp; projected temperature rise &amp; global sea rise.</td>
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<tr>
<td></td>
<td></td>
<td>Houghton Ch. 1 Global Warming &amp; Climate Change</td>
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<tr>
<td></td>
<td></td>
<td>Archer Ch. 1 Humankind &amp; Climate</td>
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<tr>
<td>TH</td>
<td>29 Aug</td>
<td>The dynamic changes taking place in the Earth's climate with emphasis on actual &amp; projected temperature rise &amp; global sea rise.</td>
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<tr>
<td></td>
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<td>Houghton Ch. 2 The Greenhouse Effect</td>
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<td>Archer Ch. 2 Blackbody Radiation</td>
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<tr>
<td>T</td>
<td>3 Sept</td>
<td>Factors affecting global climate change</td>
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<tr>
<td></td>
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<td>Houghton Ch.</td>
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<tr>
<td></td>
<td></td>
<td>Archer Ch. 3 The Layer Model</td>
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<tr>
<td>TH</td>
<td>5 Sept</td>
<td>Green house gases and global climate change</td>
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<tr>
<td></td>
<td></td>
<td>Houghton Ch. 3 The Greenhouse Gases</td>
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<tr>
<td></td>
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<td>Archer Ch. 4 Greenhouse Gases</td>
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<tr>
<td>T</td>
<td>10 Sept</td>
<td>The greenhouse effect: the role of the biogenic gases carbon dioxide, methane, and nitrous oxide on the earth's radiation balance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Houghton</td>
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<tr>
<td></td>
<td></td>
<td>Archer Ch. 5 What Hold the Atmosphere up?, Ch. 6 Weather &amp; Climate, Ch 7. Feedbacks</td>
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<tr>
<td>TH</td>
<td>12 Sept</td>
<td>Changes in atmospheric carbon dioxide, methane and nitrous oxide during industrial period</td>
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<td>Houghton Ch. 4 Climates of the Past</td>
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<td>Archer Ch. 8 Carbon on Earth</td>
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<tr>
<td>Day</td>
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<td>Topic</td>
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| T   | 17 Sept | Source of changes in atmospheric carbon dioxide, methane, and nitrous oxide during the industrial period | Houghton Ch. 5 Modeling the Climate
Archer Ch. 9 Fossil Fuels & Energy              |
| TH  | 19 Sept | Source of changes in atmospheric carbon dioxide, methane, and nitrous oxide during the industrial period | Houghton Ch. 6 Climate Change in the Twenty-first Century & Beyond
Archer Ch. 10 The Perturbed Carbon Cycle        |
| T   | 24 Sept | Role of wetlands as sources and sinks of carbon dioxide, methane, and nitrous oxide |                                                |
| TH  | 26 Sept | Role of wetlands as sources and sinks of carbon dioxide, methane, and nitrous oxide |                                                |
| T   | 1 Oct  | Relative roles of natural and agricultural wetlands on greenhouse gas production |                                                |
| T   | 8 Oct  | Biogeochemical processes in wetland soils that cause production and consumption of greenhouse gases |                                                |
| TH  | 10 Oct | Measurement techniques for production and emission of greenhouse gases from wetlands | Archer Ch 11 The Smoking Gun                    |
| T   | 15 Oct | Biogeochemical processes in wetland soils that cause production and consumption of greenhouse gases |                                                |
| TH  | 17 Oct | Mid-Term Examination                                                 |                                                |
| T   | 22 Oct | Sea level changes during past century and projected change during the next century: World-wide affect of sea level rise on coastal ecosystems | Houghton Ch. 7 Impacts of Climate Change
Archer Ch. 12 Potential Climate Impacts         |
<p>| TH  | 24 Oct | Factors, including sea level rise, responsible for subsidence on Gulf Coast wetlands |                                                |
| T   | 29 Oct | Projections of impact of sea level rise on stability of Gulf Coast wetlands during next century |                                                |
| TH  | 31 Oct | Global Climate Change &amp; Wetlands: Journal article &amp; student-lead discussion |                                                |
| T   | 5 Nov  | Global Climate Change &amp; Wetlands: Journal article &amp; student-lead discussion |                                                |</p>
<table>
<thead>
<tr>
<th>Date</th>
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<tbody>
<tr>
<td>TH</td>
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<td>T</td>
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<td>TH</td>
<td>14 Nov</td>
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<td>TH</td>
<td>28 Nov</td>
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<td>T</td>
<td>3 Dec</td>
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<td>5 Dec</td>
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