



**SOUTH DAKOTA BOARD OF REGENTS  
ACADEMIC AFFAIRS FORMS**

**New Course Request**

<b>SDSU</b>	<b>Natural Sciences / Physics</b>
<b>Institution</b>	<b>Division/Department</b>
Dennis D. Hedge	3/13/2019
<b>Institutional Approval Signature</b>	<b>Date</b>

**Section 1. Course Title and Description**

Prefix & No.	Course Title	Credits
PHYS 115	Physics of Structures and Buildings	4
PHYS 115L	Physics of Structures and Buildings Lab	0

<b>PHYS 115 Course Description</b>
Students will learn and apply concepts of physics to buildings and structures using algebra and trigonometry. Principles of Newton and Kirchhoff's laws will be developed into mechanics, oscillations, thermodynamics, fluids, and circuits to explain the stability and failure of structures. Additional applications will focus on infrastructures (heating, wiring, lighting, acoustics, etc.) and energy concerns.

<b>PHYS 115L Course Description</b>
Laboratory to accompany PHYS 115.

**Pre-requisites or Co-requisites**

Prefix & No.	Course Title	Pre-Req/Co-Req?
PHYS 115L	Physics of Structures and Buildings Lab	Co-Req
	MATH 102 College Algebra, MATH 115 Precalculus, MATH 120 Trigonometry, MATH 121 Survey of Calculus, MATH 123 Calculus I, OR MATH 125 Calculus II	Pre-Req

**Registration Restrictions**

None
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**Section 2. Review of Course**

2.1. Was the course first offered as an experimental course?  Yes     No

PHYS 199-199L Physics of Structures and Buildings & Lab

2.2. Will this be a unique or common course?

Unique Course

Prefix & No.	Course Title	Credits
PHYS 101-101L	Survey of Physics & Lab	4-3/0-1
PHYS 111-111L	Introduction to Physics I & Lab	4-3/0-1
PHYS 113-113L	Introduction to Physics II & Lab	4-3/0-1

*Provide explanation of differences between proposed course and existing system catalog courses below:*

PHYS 115-115L is designed for Architecture and Construction Management majors. The math requirements/problem types are more complex than PHYS 101 and yet combines elements of both PHYS 111 and PHYS 113 (e.g. from PHYS 111: kinematics, oscillations; from PHYS 113: electrical circuits, lighting) along with additional material (e.g. truss analysis, acoustics and sound absorption) not covered by any of the traditional physics courses.
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One of the goals of PHYS 115 is to prepare Architecture and Construction Management majors for their required courses GE 241 (Applied Mechanics) and CM 333 (Mechanical, Electrical, Plumbing Systems).

**Section 3. Other Course Information**

**3.1. Are there instructional staffing impacts?**

**No.** Schedule Management, explain below: PHYS 111 will be reduced in size and the savings from this reduction will allow for staffing of PHYS 115.

**3.2. Existing program(s) in which course will be offered:** Architecture (B.F.A.), Construction Management (B.S.)

**3.3. Proposed instructional method by university:** PHYS 115: R-Lecture; PHYS 115L: L-Laboratory

**3.4. Proposed delivery method by university:** 001 - Face to Face Term Based Instruction

**3.5. Term change will be effective:** Fall 2019

**3.6. Can students repeat the course for additional credit?**  Yes, total credit limit:  No

**3.7. Will grade for this course be limited to S/U (pass/fail)?**  Yes  No

**3.8. Will section enrollment be capped?**  Yes, max per section: PHYS 115L - 16 per lab  No: PHYS 115

**3.9. Will this course equate (i.e., be considered the same course for degree completion) with any other unique or common courses in the common course system database in Colleague and the Course Inventory Report?**  Yes  No

**3.10. Is this prefix approved for your university?**  Yes  No

**Section 4. Department and Course Codes (Completed by University Academic Affairs)**

**4.1. University Department Code:** SPHY

**4.2. Proposed CIP Code:** 40.0801

Is this a new CIP code for the university?  Yes  No

**NEW COURSE REQUEST  
Supporting Justification for On-Campus Review**

Larry Browning	Larry Browning	12/20/2018
<b>Request Originator</b>	<b>Signature</b>	<b>Date</b>
Yung Huh	Yung Huh	12/20/2018
<b>Department Chair</b>	<b>Signature</b>	<b>Date</b>
Matt Miller	Matt Miller	12/21/2018
<b>School/College Dean</b>	<b>Signature</b>	<b>Date</b>

1. Provide specific reasons for the proposal of this course and explain how the changes enhance the curriculum.

PHYS 115-115L is designed for Architecture and Construction Management majors. Students will learn and apply concepts of physics to buildings and structures using algebra and trigonometry. The math requirements/problem types are more complex than PHYS 101 and yet combines elements of both PHYS 111 and PHYS 113 (e.g. from PHYS 111: kinematics, oscillations; from PHYS 113: electrical circuits, lighting) along with additional material (e.g. truss analysis, acoustics and sound absorption) not covered by any of the traditional physics courses. One of the goals of PHYS 115 is to prepare Architecture and Construction

Management majors for their required courses GE 241 Applied Mechanics and CM 333 Mechanical, Electrical, Plumbing Systems. Currently no such course exists in the curriculum.

2. Note whether this course is:       Required     Elective
3. In addition to the major/program in which this course is offered, what other majors/programs will be affected by this course?  
None
4. If this will be a dual listed course, indicate how the distinction between the two levels will be made.  
N/A
5. Desired section size                      PHYS 115 – 108; PHYS 115L - 16 per lab
6. Provide qualifications of faculty who will teach this course. List name(s), rank(s), and degree(s).  
Larry Browning, Professor, Ph.D.
7. Note whether adequate facilities are available and list any special equipment needed for the course.  
Facilities are adequate.
8. Note whether adequate library and media support are available for the course.  
Yes, this course will not require new library nor media support.
9. Will the new course duplicate courses currently being offered on this campus?  
 Yes       No
10. If this course may be offered for variable credit, explain how the amount of credit at each offering is to be determined.  
N/A