

# PHYS1303 Spring 2014 Syllabus

## Course Description

This course satisfies a Level I Pure and Applied Science Pillar (when taken with PHYS 1105 lab course) and the Quantitative Reasoning Proficiency and Experience of the University Curriculum. It is as a calculus-based introduction to mechanics including statics and dynamics.

## Instructor Formulated Student Learning Outcomes

It is expected that students should be able to incorporate physical concepts with mathematical techniques to solve problems in Mechanics and related topics. While only algebraic techniques will be required on exams, calculus will be utilized in the class discussion and in selected homework problems.

## General Education Student Learning Outcomes

Students demonstrate basic facility with the methods and approaches of scientific inquiry and problem-solving.

## University Curriculum(UC) required student learning outcomes(SLO).

Upon the successful completion of the class:

1. Students will be able to demonstrate basic facility with methods and approaches of scientific inquiry and problem solving.
2. Students will be able to explain how the concepts and findings of science and technology in general, or in particular sciences or technologies, shape our world.
3. Students will be able to develop quantitative models appropriate to problems in Physics.
4. Students will be able to apply symbolic systems of representation.
5. Students will be able to formulate structured and logical arguments.

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|---------------|------------|---------------------------------|
| <b>Week 1</b> | M- Jan 20  | MLK – Holliday                  |
|               | W- Jan.22  | Ch. 2 – Motion in one dimension |
|               | F Jan. 24  | Ch. 2 – Motion in one dimension |
| <b>Week 2</b> | M- Jan.27  | Ch. 2 – Motion in one dimension |
|               | W- Jan. 29 | Ch. 3 Vectors                   |

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|---------------|-------------|--|
|               | F – Jan. 31 | Ch. 3 Vectors                              |
| <b>Week 3</b> | M-Feb. 3    | Ch. 3 Vectors                              |
|               | W- Feb. 5   | Ch. 4 – Motion in two and three dimensions |
|               | F – Feb. 7  | Ch. 4 – Motion in two and three dimensions |
| <b>Week 4</b> | M – Feb. 10 | Ch. 4 – Motion in two and three dimensions |
|               | W- Feb. 12  | Ch. 4 – Motion in two and three dimensions |
|               | M- Feb. 14  | <b>Review</b>                              |
| <b>Week 5</b> | M – Feb. 17 | <b>Test 1 Ch. 2, 3, 4</b>                  |
|               | W – Feb. 19 | Ch.5 Force and motion I                    |
|               | F – Feb. 21 | Ch.5 Force and motion I                    |
| <b>Week 6</b> | M – Feb. 24 | Ch.5 Force and motion I                    |
|               | W – Feb. 26 | Ch. 7 Kinetic energy and work              |
|               | F – Feb. 28 | Ch 6 Force and motion II                   |
| <b>Week 7</b> | M – Mar. 3  | Ch 6 Force and motion II                   |
|               | W – Mar. 5  | Ch 6 Force and motion II                   |
|               | F – Mar. 7  | Ch 6 Force and motion II                   |
| <b>Week 8</b> | M- Mar. 10  | <b>Spring Break</b>                        |
|               | W – Mar. 12 | <b>Spring Break</b>                        |
|               | F – Mar. 14 | <b>Spring Break</b>                        |

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|----------------|-------------|------------------------------------|
| <b>Week 9</b>  | M – Mar. 17 | Ch. 7 Kinetic energy and work      |
|                | W – Mar. 19 | Ch. 7 Kinetic energy and work      |
|                | F – Mar. 21 | Ch. 7 Kinetic energy and work      |
| <b>Week 10</b> | M – Mar. 24 | <b>Review</b>                      |
|                | W – Mar.26  | <b>Test 2 Ch. 5, 6, 7</b>          |
|                | F – Mar. 28 | Ch. 8 Potential energy             |
| <b>Week 11</b> | M – Mar.31  | Ch. 8 Potential energy             |
|                | W. Apr. 2   | Ch. 9 Linear momentum              |
|                | F – Apr. 4  | Ch. 9 Linear momentum              |
| <b>Week 12</b> | M – Apr. 7  | Ch.10 Rotation                     |
|                | W – Apr.9   | Ch.10 Rotation                     |
|                | F – Apr.11  | Ch.11 Rolling and angular momentum |
| <b>Week 13</b> | M – Apr.14  | Ch.11 Rolling and angular momentum |
|                | W – Apr. 16 | Ch. 12 Equilibrium and elasticity  |
|                | F – Apr.18  | <b>Holliday</b>                    |
| <b>Week 14</b> | M – Apr. 21 | Ch. 12 Equilibrium and elasticity  |
|                | W – Apr.23  | Ch. 13 Gravitation                 |
|                | F – Apr. 25 | Ch. 13 Gravitation                 |
| <b>Week 15</b> | M – Apr. 28 | Ch. 14 Fluids                      |

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|--|------------------|----------------------------------|
|  | W – Apr. 30      | Ch. 14 Fluids                    |
|  | F – May. 2       | Review                           |
|  | M – May. 5       | Review                           |
|  | <b>F - May 9</b> | <b>Final exam- comprehensive</b> |

Final exam: 30 points

Exams 2 exams: 40 points;

Homework :20 points

Lecture Quizzes: 10 points

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**Total 100  
points**