**Collage physics syllabus**

**Instructor**: Sakurako Tani

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**Description**: Beginning course for students without a calculus background. Includes basic principles of bodies at rest and in motion, fluids, vibrations, waves, sound, and thermodynamics.

**Goal**: The goal of this course is to provide the students with an understanding of the basic principles of classical mechanics.

**Prerequisites**: MATH 105 (Trigonometry) or higher, or consent of instructor

**Textbook**: Nicholas J. Giordano, College Physics, Reasoning and Relationships 2nd edition, (Brooks/Cole, Cencage Learning), Chapters 1-13

**LONCAPA**: This course does not use Blackboard. Instead, the LON-CAPA course management system will be used to post homework, lecture notes, grades, and other information. LON-CAPA can be accessed by selecting the appropriate server at http://www.ndsu.edu/physics/lon capa/. Your username is everything to the left of the @ in your NDSU email address (use all lowercase letters). For example, if your email address is Sheldon.Cooper.2@ndsu.edu, then your LONCAPA username is sheldon.cooper.2. Initially you create your own password by following the link “Forgot Password”. For help using LON-CAPA contact your instructor or laboratory technician Paul Omernik (SE110, Paul.Omernik@ndsu.edu, 231-7047)

**Course schedule**

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| Date | Material | Task |
| Week1 6/15-6/18 | review of math(vector/trig/unit),  introduction to newton's law | HW1 |
| Week2 6/21-6/25 | 1D motion and force, 2D,3D motion | HW2/EXAM1(30min) |
| Week3 6/28-7/2 | Circular morion(G-force),  work ,momentum and conservation of energy,collision | HW3/EXAM2(30min) |
| Week4 7/5-7/9 | Rotational motion(tourqe/moment of inertia  /momentum/energy) | HW4/EXAM3(30min) |
| Week5 7/12-7/16 | Fluid(pressure/density/motion in fluid) | HW5/EXAM4(30min) |
| Week6 7/19-7/23 | introduction to SHM(spring/wave) | HW6/EXAM5(30min) |
| Week7 7/26-7/30 | Wave | HW7/EXAM6(30min) |
| Week8 8/2-8/6 | Final exam | FINAL EXAM |

**Exam**: There are 6 midterm and 1 final exam for this course. It seems like a lot, however, each midterm is 30min length with 5 questions each(all multiple choice; 3 conceptional problems 2 small calculation problems) And your lowest score on the midterm will drop.All exams are open notes (i.e., using the lecture notes and textbook is permitted during an exam). A calculator will be required for successful completion of the exams; all other electronic devices must be turned off and stored.

**Grading**: Grading will be based on LON-CAPA homework score (max. 100 points) and exams (max. 5× 20 = 100 points). From the actual number of points and the maximal number (100+100 = 200 points) the percentage will be calculated and used to grade according to: 0% - 55.0% F, 55.0% - 66.0% D, 66.0% - 77.0% C, 77.0% - 88.0% B, 88.0% -100% A. Expressed in points, this corresponds to: 0 - 109 F, 110 - 131 D, 132 - 153 C, 154 - 175 B, 176 - 200 A.