

NIU Department of Physics  
Course Syllabus for *Physics 367 ---Waves and Vibrations*  
Fall Semester, 2014, Tuesdays and Thursdays, 12:30-1:45 pm

**Class room:** FR237

**Instructor:** Yasuo Ito. La Tourette 218

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**Office Hours:** Tuesdays and Thursdays, 2:00 pm – 3:00 pm; Other hours by an appointment.

**Text book:** Vibrations and Waves in Physics, 3<sup>rd</sup> ed., I. G. Main (required). Waves and Vibrations, A. P. French (supplement). ***Please read your textbook before coming to the class!!***

**40% Homework *ESSENTIAL*.** The deadline is usually 1 week after the last lecture of each chapter. (Late penalty policy might apply if necessary: 10% off for each delay late up to 1 week; 90% off for > 1 week). **Please make a copy of your homework before the submission.**

**25% Midterm Exam** (on Main Ch.1 – Ch.4) Tuesday **October 2nd**  
(Ch.5 – Ch.8) Thursday **October 30th**.

**35% Final Exam** (comprehensive) Tuesday **December 9**, 12:00 - 1:50 pm.

To pass this course, you must score at least **50% on the homework AND at least 40% overall.**

**Attendance is required.**

**Grading scale:**

A ( $90 \leq x$ ), A- ( $85 \leq x < 90$ ), B+ ( $80 \leq x < 85$ ), B ( $75 \leq x < 80$ ), B- ( $70 \leq x < 75$ ), C+ ( $65 \leq x < 70$ ), C ( $55 \leq x < 65$ ), D ( $40 \leq x < 55$ ), F ( $x < 40$ ).

**Grade points** (assigned by University):

A (4.00), A- (3.67), B+ (3.33), B (3.00), B- (2.67), C+ (2.33), C (2.00), D (1.00), F (0.00).

**For disabled students:**

“NIU abides by Section 504 of the Rehabilitation Act of 1973 which mandates reasonable accommodations be provided for qualified students with disabilities. If you have a disability and may require some type of instructional and/or examination accommodation, please contact me early in the semester so that I can provide or facilitate in providing accommodations you may need. If you have not already done so, you will need to register with the Center for Access-Ability Resources (CAAR), the designated office on campus to provide services and administer exams with accommodations for students with disabilities. The CAAR office is located on the 4th floor of the University Health Services building (815-753-1303). I look forward to talking with you soon to learn how I may be helpful in enhancing your academic success in this course.”

**(Tentative schedule)**

**Introduction to the course:** August 26, 2014

**1: Free Vibrations (Ch.1, Ch.2),**

**2: Damping (Ch.3, Ch.4),**

**3: Forced vibrations (Ch.5, Ch.6),**

(4: Anharmonic vibrations (Ch.7))

**Mid-Term Exam 1: October 2nd, Thursday**

**5: Two-coordinate vibrations (Ch.8),**

**6: Non-dispersive waves (Ch.9, Ch.10),**

**7: Fourier analysis (Ch.11),**

**Mid-Term Exam 2: October 30th, Thursday**

*The exact order of the following chapters to be decided.*

**8: Plane waves at boundaries (Ch.17)**

**9: Diffraction (Ch.18)**

**10: Dispersion (Ch.12, Ch.13, Ch.14, Ch.15),**

(9: Solitary waves (Ch.16))

**Final Exam (Tuesday, Dec 9th, 2014, 12:00 pm – 1:50 pm)**