Analytical Mechanics II (Phys 400/500)
Syllabus
Spring 2015

Tuesday and Thursday, 8:15-9:30 am, La Tourette 227
Instructor : Dr. Vishnu Zutshi
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Phone: (815) 753-3080
Office Hours: Tuesday: 1pm – 2:30pm; Wednesday: 9am – 10am.

Course description:
Development of Lagrangian and Hamiltonian dynamics and its application to some representative systems.

Prerequisites : Phys 300

Textbook(s): Analytical Mechanics by Hand & Finch; Classical Dynamics by Thornton & Marion .

Tentative Schedule:

Lagrangian Mechanics Calculus of Variations	January
Noether's Theorem Hamiltonian Dynamics Central Force Motion	February
Canonical Transformation System of Particles	March
Non-inertial Frames Dynamics of Rigid Bodies	April

Class participation:
Full attendance at all class meetings is expected. Tardiness or leaving early must be avoided in order for the class to be productive for all. Students are strongly encouraged to participate in class discussion and ask questions during class.

In-class electronic communications:
I ask that you do not take phone calls, text, email, update your status, or tweet during lectures.

Reading assignments:
To familiarize yourself with the material covered in class, reading assignments are given for each class one week in advance.

Homework:
There will be weekly graded homework assignments. Please show your work and intermediate steps. Written assignments must be handed in at the beginning of class on the due date. Students may discuss homework concepts with each other. However, each student must submit his or her own work, i.e., he or she must formulate the results using his or her own words. The same rule applies when a book or other sources are used as a "source of inspiration". Do not turn in anything that you have copied, or anything that you do not truly understand. Note that in the exams you are on your own, and the homeworks should get you prepared for the exams.

Exams:
There will be four exams. The exams will be given in the middle of each month. The fourth exam will be comprehensive while the others will only cover the new material.

Grading:
Homeworks and exams will each be given point values and the course grade will be based on the sum of points earned. The table below gives the weighting of points earned in homework and exams;
Homework: 40%; Exams: 60%
All homework assignments and three of the four exams will be included in your grade.

Academic Integrity:
Good academic work must be based on honesty. The attempt of any student to present as his or her own work that which he or she has not produced is regarded by the faculty and administration as a serious offense. Students are considered to have cheated if they copy the work of another during an examination or turn in a paper or an assignment written, in whole or in part, by someone else. Students are responsible for plagiarism, intentional or not, if they copy material from books, magazines, or other sources without identifying and acknowledging those sources or if they paraphrase ideas from such sources without acknowledging them. Students responsible for, or assisting others in, either cheating or plagiarism on an assignment, quiz, or examination may receive a grade of F for the course involved and may be suspended or dismissed from the university. (NIU UC)

Incomplete grades:
Incompletes will only be given under extraordinary circumstances such as extended illness or callup to active military duty.

Receiving assistance:
Students are urged to contact me should they have questions concerning course materials and procedures. If you have a disability or any other special circumstance that may have some impact on your course work and for which you may require accommodations, please contact me early in the semester so that arrangements can be made with the Disability Resource Center (DRC) http://niu.edu/disability/.