Instructor: Uwe Thumm
Office: Cardwell Hall, Rm 212
Office hours: by appointment
e-mail: thumm@phys.ksu.edu
Home page: http://www.phys.ksu.edu/~thumm


Supplementary books (not required):

Basic
'Introduction to Classical Mechanics’, Arya (Prentice Hall 1990)

Advanced
'Mathematical Methods of Classical Mechanics’, Arnold, (Springer 1978)
'Order within Chaos’, Bergé, Pomeau, & Vidal (Herman 1984)
'Chaos in Classical and Quantum Mechanics’, Gutzwiller (Springer 1990)

Mathematical and computational
'Handbook of Mathematical Functions’, Abramowitz & Stegun (Dover 1972)
'A first course in computational physics’, 2nd edition, DeVries & Hasbun (Jones & Barlett 2010)

Topics: Basic Principles of Newtonian Mechanics
Lagrange's Equations
Central Force Problems, Scattering
Hamilton’s Equations of Motion
Canonical Transformations
Hamilton-Jakobi Theory
Special Relativity
Dynamical Systems and Chaos

Homework: You are encouraged to discuss strategies for solving homework assignments in small groups. However, I require that you write and return to me at the assigned due dates your own detailed solutions. You will receive no credit for solutions that you have copied. In order to obtain full credit, I also request that you present correct answers in a professional, well organized, and readable manner, including all relevant derivations and references. In addition to the “for credit” homework assignments, I will frequently ask you to complete simple calculations that we don’t have time for in class. It is important that you carefully “fill in” these gaps when reviewing your lecture notes. This is done most efficiently before the subsequent lecture.

(over)
Credit:  

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<tr>
<th>Course</th>
<th>Points</th>
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<tr>
<td>Exam 1</td>
<td>200</td>
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<td>Exam 2</td>
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<tr>
<td>Final Exam</td>
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<td>Homework/Project</td>
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Grades:  

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<tr>
<td>A</td>
<td>&gt; 849 points</td>
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<td>B</td>
<td>700-849 points</td>
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<td>F</td>
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University policy requires that the following statements appear on this syllabus:

1. **Academic Honesty**

   Kansas State University has an Honor System based on personal integrity, which is presumed to be sufficient assurance that, in academic matters, one's work is performed honestly and without unauthorized assistance. Undergraduate and graduate students, by registration, acknowledge the jurisdiction of the Honor System. The policies and procedures of the Honor System apply to all full and part-time students enrolled in undergraduate and graduate courses. The honor system website can be reached via the following URL: [www.k-state.edu/honor](http://www.k-state.edu/honor). A component vital to the Honor System is the inclusion of the Honor Pledge which applies to all assignments, examinations, or other course work undertaken by students. The Honor Pledge is implied, whether or not it is stated: "On my honor, as a student, I have neither given nor received unauthorized aid on this academic work." A grade of XF can result from a breach of academic honesty. The F indicates failure in the course; the X indicates the reason is an Honor Pledge violation.

2. **Statement Regarding Students with Disabilities**

   Students with disabilities who need classroom accommodations, access to technology, or information about emergency building/campus evacuation processes should contact the Student Access Center and/or their instructor. Services are available to students with a wide range of disabilities including, but not limited to, physical disabilities, medical conditions, learning disabilities, attention deficit disorder, depression, and anxiety. Contact the [Student Access Center](mailto:accesscenter@k-state.edu) at 785-532-6441.

3. **Expectations for Classroom Conduct**

   All student activities in the University, including this course, are governed by the [Student Judicial Conduct Code](http://www.k-state.edu/studentconduct/) as outlined in the Student Governing Association [By Laws](http://www.k-state.edu/sga/), Article V, Section 3, number 2. Students who engage in behavior that disrupts the learning environment may be asked to leave the class.