PHY 633 - Modeling and Simulation in Physics

Course Code & Number	Course Name	C.H.	Lec.	Lab.	Tut.
PHY 633	Modeling and Simulation in Physics	4	4	0	0

Syllabus

Introduction to numerical analysis differential and integral equations for mathematical modeling of physical systems.
Dynamic motion of physical system, Motion of physical system in force free field and force field.
Motion of rigid body, constraint analysis and equation of motion of rigid body.
Collision of physical system, analysis in center of mass and lab. Frame of reference.
Physical systems interaction, particle-particle interaction and particle-field interaction, introduction to Maxwell equations.

References

- K. Erleben, J. Sporring, K. Henriksen, H. Dohlmann, Physics-Based Animation, Charles River Media, 2005.
- H. Gould, J. Tobochnik, W. Christian, A. Wesley, An Introduction to Computer Simulation Methods: Applications to Physical Systems, 3rd Edition, 2006.