

□ Combine 3 fundamental ingredients:

- (a) physics, basically mechanics (kinematics / dynamics)
- (b) supporting mathematics
- (c) numerical methods to solve equations describing the evolution of specific systems

□ Objectives:

- Build background in physics and mathematics required to structure and implement common 2D/3D physics problems and simulations
- Be able to tackle more advanced texts on the subject

□ Schedule - Friday mornings:

- Lecture sessions
- Targeted lab / project meetings (later in 2nd half of semester)

Assessment

- [30%] Weekly HWKs (theory or lab problems):
 - Practice new material to hone your skills. HWKs are posted on Fridays before class and are generally due the following Wednesday@ 23:00 (careful: 20%/day penalty for late HWKs)
- [30%] Written Final Exam:
 - Third week before the end of classes
- [40%] Term Project: kicks off around week #5, presented in class in the last 2 weeks of classes
 - 10% : Project planning and execution (make a plan, discuss it in class and follow through)
 - 20% : Live Demo (quality of work, professionalism, oral presentation)
 - 10% : Packaging-Documentation-Report

Schedule

<i>Weekly Schedule</i>	<i>Week 1</i>	<i>Week 2</i>	<i>Week 3</i>	<i>Week 4</i>
<i>Coursework</i>	Principles useful to games Points & Lines Geometry Trigonometry	Vector and Matrix Operations useful in games	Transformations used in games Unit Conversions	Make things move - Motion in 1D, 2D and 3D
<i>Laboratory</i>	HWK	HWK	HWK	HWK
<i>Project</i>	-	-	-	-

<i>Weekly Schedule</i>	<i>Week 5</i>	<i>Week 6</i>	<i>Weeks 7-10</i>	<i>Week 11</i>	<i>Last Weeks</i>
<i>Coursework</i>	Newton’s Laws Energy & Momentum Conservation, Collisions	Rotational Motion in Games	A) Term-Project progress assessment (presentations & discussions) B) Selected Topics in Game Physics	Written Final Exam	Project presentations & Deliverables
<i>Laboratory</i>	HWK	HWK	<u>Sporadic</u> HWKs		
<i>Project</i>	Design & develop a realistic game from scratch or using a game engine of choice				