CS4392 - Computer Animation

**CS 4392** Computer Animation (3 semester credit hours) Introduction to traditional animation. Kinematics of motion. Key framing. Coordinate systems and transformations (review), Euler angles and Quaternions, Catmull Rom and B-Splines, Advanced Key framing, articulated figures (forward kinematics), human and animal modeling (soft tissue, skin, etc.). Facial animation (parametric). Physically based modeling (rigid, collision detection). Physically based modeling (deformable). Behavioral and heuristic models. Algorithmic animation. Optimization techniques. Animation languages and systems. Motion capture and real time control. Virtual reality and animation. Rendering and temporal aliasing. 2D and 3D morphing. 3D modeling. Prerequisites: **MATH 2418** and (**CE 3345** or **CS 3345** or **SE 3345** or **TE 3345** or equivalent). (3-0) Y