Physics 2211: *Matter and Interactions*

Chapter 6 Standards

1. I can calculate the energy of a particle at any speed.
2. I can calculate the rest energy of a particle.
3. I can calculate the kinetic energy of a particle at any speed.
4. I can calculate the work done by a constant force.
5. I can calculate the dot product of two vectors.
6. I can apply the energy principle to solve problems.
7. I can calculate energies in eV or in J.
8. I can calculate the work done by a non-constant force.
9. I know the properties of potential energy and the relationship between force and potential energy.
10. I can calculate the potential energy of a system of two or more gravitationally interacting particles.

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11. I can calculate the potential energy of a system of two or more electrically interacting particles.
12. I can draw/interpret graphs of potential, kinetic, and total energy as a function of position.
13. I am able to determine the limits on the possible motion of a system based on energy-considerations.
14. I can calculate the masses and binding energies involved in nuclear processes.
15. I can select appropriate initial and final states for multi-state problems.
16. I can write a VPython program that shows the energies of a moving object.