**ES 335 Exam #2 Study Guide**

* **Force**
	+ Fundamental equation, units
	+ Vector representation
		- Point of application
		- Direction
		- Line of action
		- Magnitude
* For the following forces be able to explain, accurately represent vector (e.g. point of application, direction), understand & explain variables of equation
	+ Weight force
	+ Friction
	+ Muscle force
	+ Drag force
	+ Reaction forces
		- Ground reaction force
		- Joint reaction force
* How do we determine if movement will or will not occur?
* Be able to break forces into their component vectors and understand the importance of the component vectors.
	+ Forces acting on a slope
	+ Muscle force
* Pressure
* Understand the difference between mass and weight
* **Torque**
	+ Fundamental equation, units
	+ Understand moment arm and be able to use trig to calculate the magnitude of the moment arm
* Joint torque and torque created by weight
	+ Motive vs. resistive torque
	+ Be able to determine which direction rotation will occur
	+ Be able to diagram muscle torque and the resistive torque (torque created by weight)
	+ Contraction types
	+ Understand that moment arms change throughout the ROM
* **Balance & Posture**
* Define stability, balance, posture
* Stability strategies
	+ Proactive/reactive
	+ Fixed support/change in support
* Role of BOS
* Effective BOS
* Be able to diagram stability
* Describe in terms of torque how to improve stability
* Dynamic stability
* Postural torque—be able to diagram and understand compensatory torque