

Fundamentals of Physics

Taught by Science Olympiad Physics Events National Gold Medalists

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Topics	
Introduction <ul style="list-style-type: none"><input type="checkbox"/> Motion and vectors<input type="checkbox"/> Acceleration and velocity<input type="checkbox"/> Average and instantaneous quantities	Energy <ul style="list-style-type: none"><input type="checkbox"/> Kinetic and potential energy<input type="checkbox"/> Conservation of energy<input type="checkbox"/> Elastic and inelastic collisions
Forces <ul style="list-style-type: none"><input type="checkbox"/> Newton's laws<input type="checkbox"/> Friction<input type="checkbox"/> Normal force	Problem solving with momentum and energy
Forces <ul style="list-style-type: none"><input type="checkbox"/> Gravitational forces (Uniform)<input type="checkbox"/> Springs	Rotational Motion <ul style="list-style-type: none"><input type="checkbox"/> Centripetal acceleration<input type="checkbox"/> Angular velocity and acceleration
Problem solving with forces	Rotational Dynamics <ul style="list-style-type: none"><input type="checkbox"/> Rotational inertia<input type="checkbox"/> Torque and angular momentum
Momentum and Center of Mass <ul style="list-style-type: none">• Formulae\definitions• Impulse-momentum theorem• Conservation of momentum	Rotational Dynamics <ul style="list-style-type: none"><input type="checkbox"/> Conservation of angular momentum<input type="checkbox"/> Rotational energy

Schedule

Hours and Dates: 1:00-2:30 pm PST 6/24-26, 7/1-3, 7/8-10, 7/15-17 Thursday thru Saturday

Tuition

The cost for the entire workshop series is **\$270**, which includes 18 hours of live classes plus homework grading. Proceeds will be donated to the Valley Medical Center Foundation as part of our continuing effort to support the fight against COVID-19 pandemic.



Registration

Please register with the QR code or with the following link: <https://tinyurl.com/yapdf4uw>

Bonus Classes

STEMBoost may consider adding two bonus Thermodynamics classes if there are enough interests from the Chemistry and Physics workshops students. Thermodynamics will be taught by Edwin Xie.

Tentative dates are 8/13-8/14, 1:00-2:30 PST and **Thermodynamics** topics are:

- System/Surroundings, types of systems
- Heat, specific heat, and first law of thermodynamics
- PV diagrams and thermodynamic processes
- Entropy, enthalpy, and Gibbs free energy
- Spontaneity and more