

| | Sunday | Monday | Tuesday | Wednesday | Thursday | Friday | Saturday |
|---------------------|---|--|---|-----------|--|---|----------|
| Week 1 | 24-Aug | 25-Aug | 26-Aug | 27-Aug | 28-Aug | 29-Aug | 30-Aug |
| | No School | No School | No School | | | | |
| <i>Class Topic</i> | | | | | Introduction; Housekeeping | | |
| <i>Core Idea(s)</i> | | | | | N/A | | |
| <i>Activity</i> | | | | | Marshmallow Challenge; Introductory Assessment | | |
| Week 2 | 31-Aug | 1-Sep | 2-Sep | 3-Sep | 4-Sep | 5-Sep | 6-Sep |
| | | Holiday | | | | | |
| <i>Class Topic</i> | | | Vectors; Constant Velocity and Relative Motion (Analytic) | | Constant Velocity and Relative Motion (Computational) | | |
| <i>Core Idea(s)</i> | | | Forces cause change in momentum | | Forces cause change in momentum | | |
| <i>Activity</i> | | Pre-class homework 1: due at 8:00pm | Project 1: Operation River Boat Crossing: Part A | | Project 1: Operation River Boat Crossing: Part B | Help Session in BPS 1410 (3pm - 6pm) | |
| Week 3 | 7-Sep | 8-Sep | 9-Sep | 10-Sep | 11-Sep | 12-Sep | 13-Sep |
| | | | | | | | |
| <i>Class Topic</i> | | | Constant Force - 1 Dimension & 2 Dimension (Analytic) | | Interactive Prediction of Motion - 2D Kinematics + Drag (Computational) | | |
| <i>Core Idea(s)</i> | | | Forces cause change in momentum | | Forces cause change in momentum | | |
| <i>Activity</i> | Post-class homework 1: due at 8:00pm | Pre-class homework 2: due at 8:00pm | Project 2: Escape from Ice State McMurdo: Parts A & B | | Project 2: Escape from Ice State McMurdo: Part C | Help Session in BPS 1410 (3pm - 6pm) | |
| Week 4 | 14-Sep | 15-Sep | 16-Sep | 17-Sep | 18-Sep | 19-Sep | 20-Sep |
| | | | | | | | |
| <i>Class Topic</i> | | | Predicting Motion with Non-constant forces - Springs (Analytic) | | Predicting Motion with Non-constant forces - Springs (Computational) | | |
| <i>Core Idea(s)</i> | | | Forces cause change in momentum | | Forces cause change in momentum | | |
| <i>Activity</i> | Post-class homework 2: due at 8:00pm | Pre-class homework 3: due at 8:00pm | Project 3: Pinball Wizard Designer: Part A | | Project 3: Pinball Wizard Designer: Part B | Help Session in BPS 1410 (3pm - 6pm) | |

| Week 5 | 21-Sep | 22-Sep | 23-Sep | 24-Sep | 25-Sep | 26-Sep | 27-Sep |
|---------------------|--------------------------------------|-------------------------------------|---|--------|---|--------------------------------------|--------|
| <i>Class Topic</i> | | | Predicting Motion with Non-constant forces - Gravitation (Analytic & Computational) | | Exam 1 | | |
| <i>Core Idea(s)</i> | | | Forces cause change in momentum | | Forces cause change in momentum | | |
| <i>Activity</i> | Post-class homework 3: due at 8:00pm | Pre-class homework 4: due at 8:00pm | Project 4: Orbiting the Earth | | In-class Individual & Collaborative Exam | Help Session in BPS 1410 (3pm - 6pm) | |
| Week 6 | 28-Sep | 29-Sep | 30-Sep | 1-Oct | 2-Oct | 3-Oct | 4-Oct |
| <i>Class Topic</i> | | | Ball and spring model; Tension and Compression | | Friction | | |
| <i>Core Idea(s)</i> | | | Atomic interactions cause macroscopic phenomenon; Forces cause change in momentum | | Atomic interactions cause macroscopic phenomenon; Forces cause change in momentum | | |
| <i>Activity</i> | Post-class homework 4: due at 8:00pm | Pre-class homework 5: due at 8:00pm | Project 5: Ophelia Sarkissian (Viper) breaks into S.H.I.E.L.D.: Part A | | Project 5: Ophelia Sarkissian (Viper) breaks into S.H.I.E.L.D.: Part B | Help Session in BPS 1410 (3pm - 6pm) | |
| Week 7 | 5-Oct | 6-Oct | 7-Oct | 8-Oct | 9-Oct | 10-Oct | 11-Oct |
| <i>Class Topic</i> | | | Multiparticle systems; Conservation of linear momentum (Analytic) | | Curving Motion (Analytic & Computational) | | |
| <i>Core Idea(s)</i> | | | Atomic interactions cause macroscopic phenomenon; Forces cause change in momentum | | Forces cause change in momentum | | |
| <i>Activity</i> | Post-class homework 5: due at 8:00pm | Pre-class homework 6: due at 8:00pm | Project 6: Investigating a car accident | | Project 6 | Help Session in BPS 1410 (3pm - 6pm) | |

| Week 8 | 12-Oct | 13-Oct | 14-Oct | 15-Oct | 16-Oct | 17-Oct | 18-Oct |
|---------------------|---|---|--|--------|---|---|--------|
| <i>Class Topic</i> | | | Energy Conservation; Work by Constant Forces | | Energy Conservation; Work by non-constant forces (analytic + computational) | | |
| <i>Core Idea(s)</i> | | | Forces cause change in momentum; Energy is conserved | | Forces cause change in momentum; Energy is conserved | | |
| <i>Activity</i> | Post-class homework 6: due at 8:00pm | Pre-class homework 7: due at 8:00pm | Project 7 | | Project 7 | Help Session in BPS 1410 (3pm - 6pm) | |
| Week 9 | 19-Oct | 20-Oct | 21-Oct | 22-Oct | 23-Oct | 24-Oct | 25-Oct |
| <i>Class Topic</i> | | | Multiparticle systems; Center of mass; Rotational and Vibrational Kinetic energy | | Exam 2 | | |
| <i>Core Idea(s)</i> | | | Forces cause change in momentum; Energy is conserved | | | | |
| <i>Activity</i> | Post-class homework 7: due at 8:00pm | Pre-class homework 8: due at 8:00pm | Project 8 | | In-class Individual & Collaborative Exam | Help Session in BPS 1410 (3pm - 6pm) | |
| Week 10 | 26-Oct | 27-Oct | 28-Oct | 29-Oct | 30-Oct | 31-Oct | 1-Nov |
| <i>Class Topic</i> | | | Multiparticle Systems & Potential Energy; spring potential & local gravitational PE | | Multiparticle Systems & Potential Energy; gravitational PE & graphing PE (analytic + computational) | | |
| <i>Core Idea(s)</i> | | | Energy is conserved | | Energy is conserved | | |
| <i>Activity</i> | Post-class homework 8: due at 8:00pm | Pre-class homework 9: due at 8:00pm | Project 9 | | Project 9 | Help Session in BPS 1410 (XXpm - XXpm) | |
| Week 11 | 2-Nov | 3-Nov | 4-Nov | 5-Nov | 6-Nov | 7-Nov | 8-Nov |
| <i>Class Topic</i> | | | Thermal Energy; Energy Transfer; Dissipation | | Point particle & real system | | |
| <i>Core Idea(s)</i> | | | Energy is conserved | | Forces cause change in momentum; Energy is conserved | | |
| <i>Activity</i> | Post-class homework 9: due at 8:00pm | Pre-class homework 10: due at 8:00pm | Project 10 | | Project 10 | Help Session in BPS 1410 (3pm - 6pm) | |

| Week 12 | 9-Nov | 10-Nov | 11-Nov | 12-Nov | 13-Nov | 14-Nov | 15-Nov |
|---------------------|---------------------------------------|--------------------------------------|---|--------|--|--------------------------------------|--------|
| | | | | | | | |
| <i>Class Topic</i> | | | Friction; Collisions | | Collisions; Rutherford experiment (Computational) | | |
| <i>Core Idea(s)</i> | | | Forces cause change in momentum; Energy is conserved | | Forces cause change in momentum; Energy is conserved | | |
| <i>Activity</i> | Post-class homework 10: due at 8:00pm | Pre-class homework 11: due at 8:00pm | Project 11 | | Project 11: The Rutherford experiment | Help Session in BPS 1410 (3pm - 6pm) | |
| Week 13 | 16-Nov | 17-Nov | 18-Nov | 19-Nov | 20-Nov | 21-Nov | 22-Nov |
| | | | | | | | |
| <i>Class Topic</i> | | | Angular momentum; torque; Translational vs rotational angular momentum | | Exam 3 | | |
| <i>Core Idea(s)</i> | | | Torques cause changes in angular momentum | | | | |
| <i>Activity</i> | Post-class homework 11: due at 8:00pm | Pre-class homework 11: due at 8:00pm | Project 12 | | In-class Individual & Collaborative Exam | Help Session in BPS 1410 (3pm - 6pm) | |
| Week 14 | 23-Nov | 24-Nov | 25-Nov | 26-Nov | 27-Nov | 28-Nov | 29-Nov |
| | | | | | Holiday | Holiday | |
| <i>Class Topic</i> | | | Conservation of angular momentum | | | | |
| <i>Core Idea(s)</i> | | | Forces cause change in momentum; Energy is conserved; Torques cause changes in angular momentum | | | | |
| <i>Activity</i> | Post-class homework 12: due at 8:00pm | Pre-class homework 12: due at 8:00pm | Project 13 | | | | |

| Week 15 | 30-Nov | 1-Dec | 2-Dec | 3-Dec | 4-Dec | 5-Dec | 6-Dec |
|---------------------|---------------------------------------|--------------------------------------|---|--------|---|--------------------------------------|--------|
| <i>Class Topic</i> | | | Conservation of angular momentum; Non-zero external torque | | Conservation theorems applied | | |
| <i>Core Idea(s)</i> | | | Forces cause change in momentum; Energy is conserved; Torques cause changes in angular momentum | | Forces cause change in momentum; Energy is conserved; Torques cause changes in angular momentum | | |
| <i>Activity</i> | Post-class homework 13: due at 8:00pm | Pre-class homework 13: due at 8:00pm | Project 14 | | Project 14 | Help Session in BPS 1410 (3pm - 6pm) | |
| Week 16 | 7-Dec | 8-Dec | 9-Dec | 10-Dec | 11-Dec | 12-Dec | 13-Dec |
| | | Finals | Finals | Finals | Finals | Finals | |
| | | | <i>Final Exam (8-10pm)</i> | | | | |