**Unit 1 (Weeks 1-4) Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Week 1 – Gas Laws**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Significant gaps** | **Some guessing** | **Great command** |
| Pressure units |  |  |  |
| The E-format convention |  |  |  |
| Equations of state |  |  |  |

**Week 2 – Thermodynamic surfaces**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Significant gaps** | **Some guessing** | **Great command** |
| Boyle isotherms |  |  |  |
| Visualizing derivative thermodynamic surfaces |  |  |  |
| Slicing |  |  |  |
| No-brainers |  |  |  |
| Analytical partial derivatives |  |  |  |

**Week 3 – Probability density functions**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Significant gaps** | **Some guessing** | **Great command** |
| The kinetic-molecular theory of gases |  |  |  |
| Probability densities |  |  |  |
| Probabilities from probability densities |  |  |  |
| Numerical moments of the speed |  |  |  |
| Analytical moments of the speed |  |  |  |

**Week 4 – Internal energy**

|  |  |  |  |
| --- | --- | --- | --- |
| **Item** | **Significant gaps** | **Some guessing** | **Great command** |
| Equipartition |  |  |  |
| Heat capacities |  |  |  |
| Interpreting |  |  |  |
| Intermolecular potential energy |  |  |  |
| Analytical |  |  |  |
| Analytical |  |  |  |