

Project p-v-T Mound [CAT 1,4,8]:

Construct a Real-Life 3-D p-v-T “Mound” using Everyday Material

Description:

Using everyday moldable material such as mashed potatoes (yes, do play with your food!), create a 3-D p - v - T surface of a pure substance such as water. Then make slices through the “dome” part of the mound in the constant- p and constant- T directions.

Then, in a written technical memorandum (i.e., concise report):

- Describe how you constructed your p - v - T mound
- Show photos of your p - v - T mound in various viewing angles, including front (p - v), top (T - v), side (p - T), and isometric views
- Overlay three axes onto your photos: p , v , and T
- Reflect on your learning and personal journey of working on this project

Deliverable:

Present your work in a typed technical memorandum (tech memo) written solely by you, in PDF only.

Rules and Format:

- This is an individual project, to be done by you and you alone
- No out-of-pocket expenses should be incurred!
- The tech memo must include the following sections at a minimum:
 - Cover page
 - Introduction (brief description of the project, goals, etc.)
 - Methodology (strategy or plan, instruments and materials used, photos of setup, assumptions, physics involved, formulation if applicable, etc.)
 - Results and discussion: Photos of your p - v - T
 - Conclusion (any insight gained regarding your results)
 - Reflection (*your own* learning journey while working on this project; discovery about your learning style, strengths and weaknesses; discovery of your surroundings; your worldview, etc.)
 - References (optional)

Tips:

- Study Fig.3.1 of the book, and do a Google image search for “p-v-T of water”

Submission:

Submit your PDF on Gradescope only. Submissions by email or other means will be disregarded.

Due June 24, 2024 (Mon) 11:59 pm.

Grading Rubric:

	Fluency		
	2	1	0
CAT 1: Definitions & Terminologies	All quantities involved are defined and used appropriately	Some details missing; some inconsistencies	Mostly inaccurate, missing most details, or missing altogether
CAT 4: Property Relations for Pure Substance	Visual presentations of the property relations are accurate, cohesive and convincing	Some details missing; some inconsistencies	Mostly inaccurate, missing most details, or missing altogether
CAT 8: Effective Communication	Photos are high resolution and in focus; report is convincing and to the point	Some important details missing from photos or writing	Photos and writing indecipherable