

**Grading Rubric for Lab I – What is in it and Why?
MSE 170 Fall 09**

Title		Must be typed Include: Name, SID#, Section number Title- Descriptive and Specific ex “Visual Characterization and Properties of four functional components of a skateboard wheel” Less appropriate- “What’s in a skateboard?”
Intro paragraphs	20 points	2 paragraphs, ~200 words Explanation of item- detailed with age, usage, brand, other identifying factors. Need about 4. New/old design and design evolution- student needs to give short description of older model, and compare performance. Conditions used in- ex “Low temperatures between -20°C and 5°C high stress loads, approximately the force exerted by...” Less appropriate “used at ski resorts” Why picked- clear 1 or two sentences. Reflect materials interests, or design. Not rambling. Personal interest in chosen object can be reflected. Good spelling, grammar, vocabulary usage
Picture/ photograph	10 points	Grade on effort, and clarity, not artistic ability Components clearly numbered or labeled. Numbers or labels in text correspond to chart Easy to tell how components fit together
3-5 components: functions and properties	20 points	Specific properties, not just “thermal” or “electrical” Properties qualified “ high electrical conductivity” Properties correspond to function ex. electrical conductivity of power cord Cost can be used as a requirement.
Component material ID	25 points	Material class: Metal, Ceramic, Polymer, Composite Atomic composition: ex Fe plus a small percentage of C How material satisfies properties: Bonding type, full credit for including bond strength. Atomic arrangement and/or microstructure
Processing	15 points	Attempt to describe processing for each component Does not have to be perfect or correct Ex “Brass was cast from a high temperature (above 800°C) melt and cold worked to impart dislocations” Less appropriate “Processed in a steel factory”
Alternatives	10 points	At least one alternative per component Why better or worse Cost can be a factor Explain in terms of properties “Stainless steel could be used because of its resistance to oxidative corrosion in wet environments” Less appropriate “Stainless steel is better because it lasts longer”
Overall Quality		Clarity, Spelling, Grammar, Readability, Perceived Effort.