

## Civil Materials – Structural Metals Lab Report Rubric – Spring 2008

DATE: \_\_\_\_\_

SCORE: \_\_\_\_\_/100

GROUP: \_\_\_\_\_

### INTRODUCTION/CONCLUSION

|  |          |   |   |   |   |
|--|----------|---|---|---|---|
| Lab objectives are clearly stated.                               | 0        | 1 | 2 | 3 | 4 |
| Experiment is summarized and success of objectives is discussed. | 0        | 1 | 2 | 3 | 4 |
| Success of experiment is discussed.                              | 0        | 1 | 2 |   |   |
|  | _____/10 |   |   |   |   |

### MATERIALS AND METHODS

|  |          |   |   |  |  |
|--|----------|---|---|--|--|
| Materials and equipment are clearly listed.          | 0        | 1 | 2 |  |  |
| Tensile testing procedure is clearly outlined.       | 0        | 1 | 2 |  |  |
| Annealing of steel specimens is discussed.           | 0        | 1 | 2 |  |  |
| Torsion testing procedure is clearly outlined.       | 0        | 1 | 2 |  |  |
| Charpy impact testing procedure is clearly outlined. | 0        | 1 | 2 |  |  |
|  | _____/10 |   |   |  |  |

### DATA

|   |          |   |   |   |   |
|---|----------|---|---|---|---|
| Data is included in an appropriate, efficient manner. | 0        | 1 | 2 | 3 | 4 |
| Applicable diagrams and graphs are included.          | 0        | 1 | 2 | 3 | 4 |
| Appropriate units are included. [Both US and SI!]     | 0        | 1 | 2 |   |   |
|   | _____/10 |   |   |   |   |

### DATA ANALYSIS

|   |          |   |   |   |     |
|---|----------|---|---|---|-----|
| Appropriate formulae are used.  | 0        | 1 | 2 | 3 |     |
| Reasonable values are calculated.   | 0        | 1 | 2 | 3 | 4 5 |
| Effectively compares group results to class average results.                          | 0        | 1 | 2 | 3 | 4 5 |
| Experimental properties are compared to theoretical values for each respective metal. | 0        | 1 | 2 | 3 | 4 5 |
| Correct significant figures and units are used.                                       | 0        | 1 | 2 |   |     |
|   | _____/20 |   |   |   |     |

### DISCUSSION

|  |          |   |   |   |   |
|--|----------|---|---|---|---|
| Table of results is presented at beginning of section.                                 | 0        | 1 | 2 |   |   |
| Discusses properties of each material.   | 0        | 2 | 4 | 6 | 8 |
| Discusses treatments and their effects.  | 0        | 2 | 4 | 6 |   |
| Compares and contrasts properties between different specimens and different materials. | 0        | 2 | 4 | 6 | 8 |
| Discusses fracture energy/toughness, lateral expansion and fracture surfaces.          | 0        | 2 | 4 | 6 |   |
| Discusses materials in terms of their relation to civil engineering.                   | 0        | 2 | 4 | 6 |   |
| Discusses error and sources of error.  | 0        | 1 | 2 | 3 | 4 |
|  | _____/40 |   |   |   |   |

### GENERAL

|  |          |   |   |   |     |
|--|----------|---|---|---|-----|
| Paper is free of spelling or grammatical errors.         | 0        | 1 | 2 | 3 | 4 5 |
| Paper follows appropriate format. (Includes references!) | 0        | 1 | 2 | 3 | 4 5 |
|  | _____/10 |   |   |   |     |

COMMENTS: