

These are the rules that are presented in lecture; they correspond to pp. 162-163 in Chemistry, 7th ed., Zumdahl & Zumdahl.

*outline for **BALANCING OXIDATION-REDUCTION REACTIONS** in Acidic, Aqueous Solutions:*

1. separate equation into oxidation & reduction $\frac{1}{2}$ -reactions
2. for each $\frac{1}{2}$ -reaction:
 - a. balance all elements other than O & H
 - b. balance O with H_2O
 - c. balance H with H^+
 - d. balance charge with electrons (e^-)
3. multiply $\frac{1}{2}$ -reactions (if necessary) to balance electrons overall
4. add $\frac{1}{2}$ -reactions, cancel identical reactants/products algebraically

For exams and quizzes, you'll be provided with the following:

*outline for **BALANCING OXIDATION-REDUCTION REACTIONS** in Acidic, Aqueous Solutions:*

1. *(required memorization)*
2. for each $\frac{1}{2}$ -reaction:
 - a. balance all elements other than O & H
 - b. balance O with H_2O
 - c. balance H with H^+
 - d. balance charge with electrons (e^-)
3. *(required memorization)*
4. *(required memorization)*