

**ECET 102/CPET 101 Electrical Circuits**  
**Homework 8**  
**Total 90 Points**

**Assigned Date: Mar. 28, 2012**

**Due Date: April 4, 2012, before 4:00PM**

**Hand-In Requirements:**

1. Use Microsoft Words, MATLAB to prepare your homework
2. Copy all questions
3. Give detailed calculation to receive full credit
4. Email your hw 8 to both Mr. Sayed Hassan, Lab Instructor at [hasssn01@ipfw.edu](mailto:hasssn01@ipfw.edu) and Prof. Lin at [lin@ipfw.edu](mailto:lin@ipfw.edu)

**Chapter 8 Methods of Analysis, Total 90 points**

- Question 15 (30 points) – Branch-Current Analysis
  - Use Branch-Current Analysis to find  $I_{R1}$  (4 ohm),  $I_{R3}$  (8 ohm),  $I_{R2}$  (2 ohm), and  $V_a$  (15 points)
  - Use MATLAB to solve for  $I_{R1}$ ,  $I_{R2}$ ,  $I_{R3}$ , and  $V_a$ ; need to submit your m file (15 points)
- Question 15 (30 points) – Repeat the same problem, using Mesh Analysis
  - Use Mesh Analysis to find  $I_{R1}$  (4 ohm),  $I_{R3}$  (8 ohm),  $I_{R2}$  (2 ohm), and  $V_a$  (15 points)
  - Use MATLAB to solve for  $I_{R1}$ ,  $I_{R2}$ ,  $I_{R3}$ , and  $V_a$  (15 points, need to submit your m file)
- Question 40 (30 points)
  - Use Nodal analysis to find the voltage across  $R3$  (8 ohm) – (10 points)
  - Use MATLAB to find the voltage across  $R3$  (10 points, see posted Ex8\_21.m for reference; need to submit your m file)
  - Use source conversion method to find the voltage across  $R3$  (10 points, see Example 8-21, and the posted lecture note for reference)