**MEC3040 Module 8 HW: Biodiesel use**

**8.1: Comparing biodiesel to petro-diesel**

1. Most of the ASTM specifications for biodiesel and petro-diesel are very close if not identical. Which specifications are significantly different?

**8.2: Running diesel engines on biodiesel**

2. How does ignition differ in gasoline and diesel engines?

3. Why is biodiesel blended with petro-diesel in varying amount ranging from 5% (B5) to 99% (B99)?

**8.3: Heating with biodiesel**

4. What percent of Vermont homes are heated with oil?

5. Bourne’s Energy and other oil dealers now sell ‘bioheat’ as well as petro-diesel. What do they mean by bioheat?

**8.4: Life-cycle analysis: biodiesel EROI**

6. Why do the EROI values of biodiesel vary so greatly, even when the oil source is the same?

**8.5: Future: Europe’s lead & the promise of algae**

7. Describe how Europe used a coherent set of incentives to increase biodiesel production and use.