**Lab Exercises For CHM205 Spring 2016**

Simple distillation - separation technique for two organic liquids based on boiling point

Fractional distillation – separation technique for two liquids with closer boiling points

Experiment 6

Technique 14

Technique 15

Steam distillation – separation technique for labile compounds – Eugenol from cloves

Experiment 13

Essay Terpenes and Phenylpropanoids

Technique 18

Chromatography (column and TLC) – separation techniques based on differences in adsorption - Pigments in spinach ( relate to GC and HPLC)

Experiment 15

Essay The chemistry of vision

Technique 19

Technique 20

Isopentyl alcohol – synthesis - esterification; heating under reflux - confirm by odor

Experiment 12

Essay Esters – flavors and fragrances

4-methylcyclohexene– synthesis of an alkene; confirm by Bromine and permanganate tests for unsaturation

Experiment 22

Experiment 55C

Crystal Violet and Malachite Green – synthesis using Grignard reaction; confirm by color

Handout

Bonus Exercises:

Soap and Detergent – synthesis – hydrolysis of an ester and preparation of a sulfonate ester; confirm by testing foaming in "hard" and "soft" water

Handout

Luminol – synthesis – reduction of a nitro group; formation of an amide; energy transfer; confirm by observance of chemiluminescence

Handout

Nylon – Polyamide

Experimient 47B

Essay Polymers and Plastics