Organic Chemistry II
Chm223L
Fall 2012
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Green chemistry approaches are of growing importance to industry as companies work to both meet government regulations and increase profit by reducing waste. However, in our crowded chemistry lecture courses, there is no time to introduce and review these concepts without sacrificing traditional content. Organic lab sections afford the opportunity to introduce the twelve goals of green chemistry, which suggest significant improvements to existing chemical laboratory practices.[1] Published experiments from the *Journal of Chemical Education* were adopted in lab during the 2012 semester to reduced solvent use, address atom economy issues, and use more environmentally-friendly or renewable reagents.

1. Anastas, P. T.; Warner, J. C. *Green Chemistry: Theory and Practice,* Oxford University Press: New York, 1998, 30.

Organic Chemistry II Laboratory Schedule
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All procedures should be downloaded from Sakai in time to prepare for the experiments.

Lab Dates	Lab #	Experiment Title	Background
8/31-9/6	Lab 1	Synthesis of Nitrotyrosine	McMurry 8th ed p546-572
9/7-9/13	Lab 2	Synthesis of Malachite Green and Crystal Violet Dyes via the Grignard Reaction	McMurry 8th ed p635-637
9/14-9/20	Lab 3	Sodium Borohydride Reduction of Camphor	McMurry 8th ed p630-631
9/21-9/27	Lab 4	pH Sensitive Oxidation of an Aromatic Ketone	McMurry 8th ed p728
9/28-10/4	Lab 5	Preparation & Analysis of Biodiesel	McMurry 8th ed p678-680
10/5-10/11	Lab 6	**Lab Midterm** Passerini Reaction	--
10/12-10/18	Lab 7	**Unknown 1 Report Due** Synthesis of a Fluorescent Natural Product: The Pechmann Reaction	McMurry 8th ed p885-886
10//23-10/26	Lab 8	Azo Dyes	McMurry 8th ed p971-972
10/30-11/2	Lab 9	Reductive Amination	McMurry 8th ed p958-959
11/6-11/9	Lab 10	Green Combinatorial Synthesis and Assay of Potential Antibiotic Compounds	McMurry 8th ed p741-742
11/13-11/16	Lab 11	Preparation of Nylon & Plexiglass	McMurry 8th ed p847-849, 1248-1249, 289-293
11/27-11/30		**Lab Final Exam/Clean-Up/Check out**	

Comment [AGK-WFU1]: A green electrophilic Aromatic addition that combines medicinal interest in nitotyrosine and water as a solvent. This procedure also introduces the concepts of green chemistry to students for the first time in the background information.

Comment [AGK-WFU2]: A green reaction that uses bleach and water as the solvent and oxidizer.

Comment [AGK-WFU3]: Introduces the production of alternative fuels to students.

Comment [AGK-WFU4]: A green synthesisis using water as a solvent. Also done on a reduced scale.

Comment [AGK-WFU5]: Uses a solid resin catalyst that can be recycled.

Comment [AGK-WFU6]: The lab we aremost excited about since a large percent of students taking this class are pre-med. It introduces aqueous combinatorial synthesis of potential antibiotic compounds and students will then bioassay the mixtures.