**Chemistry 6941 Advanced Organic 1**

**Schedule Spring 2023**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Class Period** | **Date** | **Topic** | **Reading** | **Homework** |
| 1 | 1/9 | Intro to phys org | Carey and Sunberg A: Ch. 1 pg. 1-24 and 41-50. | Organic 1 Final Assigned |
| 2 | 1/11 | MO Theory |  |  |
| **3** | **1/16** | **NO CLASS MLK DAY** |  |  |
| **4** | **1/18** | **NO CLASS** |  |  |
| 5 | 1/23 | Thermodynamics | Carey and Sunberg A: Ch. 3 pg. 270-297. | **Organic 1 Final Due** |
| 6 | 1/25 | Carbocations | Ch. 3 pg. 297-345. | HW 1 Assigned |
| 7 | 1/30 | Radicals | Ch. 3 pg. 297-345. | **HW 1 Due** |
| 8 | 2/1 | Carbonyl Addition Intermediates | Ch. 3 pg. 297-345. |  |
| 9 | 2/6 | Kinetic Isotope Effects | Ch. 3 pg. 297-345. |  |
| 10 | 2/8 | Hammett Plots |  | HW 2 Assigned, **Writing 1 Due** |
| 11 | 2/13 | Enolates | Carey and Sundberg B: Ch. 1. | **HW 2 Due** |
| 12 | 2/15 | Enolates 2 | [Baldwin, J. Chem. Soc. Chem. Commun. 1976, 734](about:url%20http://pubs.rsc.org/en/content/articlelanding/1976/c3/c39760000734#!divAbstract) |  |
| 13 | 2/20 | Enolates 3, Enamines, Rubottom, etc. | Kurti and Czako: Reformatzky Rxn. , Rubottom Oxidation, Bamford-Stevens-Shapiro Rxn. |  |
| 14 | 2/22 | Aldol | Carey and Sundberg B. Ch.2 pg 63-82  Kurti and Czako: Mukaiyama Aldol, Hell-Volhard Zelinsky Reaction, Henry Reaction, Knoevenagel Reaction |  |
| 15 | 2/27 | **Exam 1** |  |  |
| 16 | 3/1 | Ketone Synthesis | Kurti and Czako: Weinreb Ketone Synthesis, | **Writing 2 Due** |
| **17** | **3/6** | **No Class Spring Break** |  |  |
| **18** | **3/8** | **No Class Spring Break** |  |  |
| 19 | 3/13 | Olefination 1 | Kurti and Czako: Weinreb Ketone Synthesis, Corey-Fuchs, Peterson Olefination, Julia Lythgoe Olefination, Tebbe-Olefination, McMurry Coupling |  |
| 20 | 3/15 | Olefin-2, Olefin metathesis | Kurti and Czako: Alkene Metathesis, Alkyne Metathesis, and Enyne Metathesis.  Also read the Nobel Summary for the Olefin Metathesis Prize in 2005 linked [here](about:url%20http://www.nobelprize.org/nobel_prizes/chemistry/laureates/2005/advanced-chemistryprize2005.pdf). | HW3 Assigned |
| 21 | 3/20 | Cuprates | Carey and Sundberg B. Ch.8. 675-706. | **HW 3 Due** |
| 22 | 3/22 | Cross Coupling | Carey and Sundberg B. Ch.8. 706-758. |  |
| 23 | 3/27 | Cycloadditions | Carey and Sundberg B. Ch.6. (all sections except for those discussing enantioselectivity) |  |
| 24 | 3/29 | Sigmatropic Shifts |  | **Writing 3 Due** |
| 25 | 4/3 | Sigmatropic Rearrangements |  |  |
| 26 | 4/5 | Oxidation and Reduction |  | HW 4 Assigned |
| 27 | 4/10 | Frustrated Lewis Pairs (time permitting) |  | **HW 4 Due** |
| 28 | 4/12 | **Exam 2** |  |  |
| 29 | 4/17 | Synthesis 1 |  | HW 5 assigned |
| 30 | 4/19 | Synthesis 2 |  |  |
| 31 | 4/24 | Study period (time permitting) |  |  |
| 32 | 4/26 | Study period (time permitting) |  | **Writing 4 Due** |
|  |  |  |  |  |
| Final Exam | 5/3 | 6:00-8:00 **FINAL EXAM** |  | **HW 5 Due** |
|  |  |  |  |  |

**Schedule is subject to change**