

OC III – HS 2007

Prof. E. M. Carreira
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Methods of Asymmetric Synthesis

Lectures: Wednesday, HCI J7, 07⁴⁵ – 10³⁰
Problem Solving Session: Wednesday, HCI D4/ D6/ D8, 7⁴⁵ – 8³⁰

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Attestation conditions: Attendance of **all** problem solving sessions
(signature required)

Program:

September 26	Introduction Conformational Analysis
October 3	Macrocyclic Stereocontrol Curtin-Hammett Principle
October 10	Problem Solving Session
October 17	Hydroboration Olefin Oxidations Epoxidation Dihydroxylation
October 24	Sigmatropic Rearrangements Baldwin Rules Carbanion Reactions
October 31	Problem Solving Session
November 7	Carbonyl Additions Allylations of Aldehydes Carbonyl Reductions

November 14	Aldol Reactions
November 21	Enolate Alkylations Conjugate Additions Olefin Reductions
November 28	Problem Solving Session
December 5	Additions to C=N Bonds Synthesis of Amino Acids
December 12	Cycloadditions
December 19	Problem Solving Session

Recommended Textbooks:

- (a) March's Advanced Organic Chemistry: Reactions, Mechanisms, and Structure; Smith, M. B.; March, J.; 6. Edition; John Wiley & Sons: New York, 2007.
- (b) Advanced Organic Chemistry - Part A: Structure and Mechanisms; Carey, F. A.; Sundberg, R. J.; 5. Edition; Springer-Verlag: New York, 2007.
- (c) Advanced Organic Chemistry - Part B: Reactions and Synthesis; Carey, F. A.; Sundberg, R. J.; 4. Edition; Springer-Verlag: New York, 2001.
- (d) Advanced Organic Chemistry Reaction Mechanisms; Brückner, R.; Harcourt / Academic Press: San Diego, London, Burlington, 2002.
Reaktionsmechanismen: Organische Reaktionen, Stereochemie, Moderne Synthesemethoden; Brückner, R.; 3. Auflage; Spektrum Akademischer Verlag GmbH: Weinheim, 2004.
- (e) Frontier Orbitals and Organic Chemical Reactions; Fleming, I.; John Wiley & Sons: New York, 1976.
Grenzorbitale und Reaktionen organischer Verbindungen; Fleming, I.; VCH Verlagsgesellschaft: Weinheim, 1990.
- (f) Classics in Total Synthesis: Targets, Strategies, Methods; Nicolaou, K. C.; Sorensen, E. J.; VCH Verlagsgesellschaft: Weinheim, 1996.
- (g) Classics in Total Synthesis II: More Targets, Strategies, Methods; Nicolaou, K. C.; Snyder, S. A.; Wiley-VCH: Weinheim, 2003.
Strategic Applications of Named Reactions in Organic Chemistry; Kürti, L.; Czakó, B.; Elsevier Academic Press: Oxford, 2005.
- (h) Modern Organic Synthesis: Lecture Notes; Boger, D. L.; TSRI Press: La Jolla, 1999.