

Syllabus for KEMM21

KW1/S1	Ch 23 (24)*; Ch 19: 439-440, 442-444 Ch 28 Ch 27: p. 667-668 Lecture notes	Chemo- and regioselectivity: selective reactions, protective groups. Oxidations and reductions. Elementar Retrosynthetic analysis.
KW2/S2	Ch 23 (24)*; Ch 19: 439-440, 442-444 Ch 28 Ch 27: p. 667-668 Lecture notes	Chemo- and regioselectivity: selective reactions, protective groups. Oxidations and reductions. Elementar retrosynthetic analysis.
KW3/S3	Ch 23 (24)*; Ch 19: 439-440, 442-444 Ch 28 Ch 27: p. 667-668 Lecture notes	Chemo- and regioselectivity: selective reactions, protective groups. Oxidations and reductions. Elementar retrosynthetic analysis.
KW4/S4	Ch 23 (24)*; Ch 19: 439-440, 442-444 Ch 28 Ch 27: p. 667-668 Lecture notes	Chemo- and regioselectivity: selective reactions, protective groups. Oxidations and reductions. Elementar retrosynthetic analysis.
KW5/S5	Ch 23 (24)*; Ch 19: 439-440, 442-444 Ch 28 Ch 27: p. 667-668 Lecture notes	Chemo- and regioselectivity: selective reactions, protective groups. Oxidations and reductions. Elementar retrosynthetic analysis.
KW6/S6	Ch 23 (24)*; Ch 19: 439-440, 442-444 Ch 28 Ch 27: p. 667-668 Lecture notes	Chemo- and regioselectivity: selective reactions, protective groups. Oxidations and reductions. Elementar retrosynthetic analysis.
KW7/S7	Ch 23 (24)*; Ch 19: 439-440, 442-444 Ch 28 Ch 27: p. 667-668 Lecture notes	Chemo- and regioselectivity: selective reactions, protective groups. Oxidations and reductions. Elementar retrosynthetic analysis.

KW8	E1	Chemo- and regioselectivity
KW9/S8	Ch 23 (24)*; Ch 19: 439-440, 442-444 Ch 28 Ch 22: p. 667-668 Lecture notes	Chemo- and regioselectivity: selective reactions, protective groups. Oxidations and reductions. Elementar retrosynthetic analysis.
KW10/S9	Ch 23 Lecture notes	Peptide synthesis, Fries rearrangement, Kolbe-Schmitt.
KW11/S10	Ch 20 Lecture notes	Formation and reactions enols and enolates.
KW12	E1 (contd) E2	Formation and reactions of enols and enolates.
KW13/S11	Ch 20 Lecture notes	Formation and reactions enols and enolates.
KW14/S12	Ch 20 Lecture notes	Formation and reactions enols and enolates.
KW15/S13	Ch 25 Lecture notes	Alkylation of enolates.
KW16/S14	Ch 25	Alkylation of enolates.
KW17/S15	Ch 25 Lecture notes	Alkylation of enolates.
KW18/S16	Ch 25 Lecture notes Ch 27 Lecture notes	Alkylation of enolates. Reactions of enolates with aldehydes and ketones.
KW19	E2 contd E3	Formation and reactions of enols and enolates.
KW20/S17	Ch 26 Lecture notes	Reactions of enolates with aldehydes and ketones.

KW21	E3 contd E4	Alkylation of enolates
KW22/S18	Ch 26 Lecture notes	Reactions of enolates with aldehydes and ketones.
KW23/S19	Ch 26 Lecture notes	Reactions of enolates with aldehydes and ketones.
KW24/S20	Ch 26 Ch 28 Lecture notes	Reactions of enolates with aldehydes and ketones. Acylation at carbon.
KW25/S21	Ch 28 Lecture notes	Acylation at carbon.
KW26	E3 (contd) E4	Reactions of enolates with aldehydes and ketones.
KW27/S22	Ch 28 Lecture notes.	Acylation at carbon.
KW28	E4 (contd) E5	Acylation at carbon.
KW29/S23	Ch 26 p 605-612 Lecture notes	Conjugate addition of enolates.
KW30/S24	Ch 26 p 605-612 Lecture notes	Conjugate addition of enolates. The Robinson annelation.
KWMetOrg	Lecture notes	Transition metal catalyzed cross-coupling reactions. Metal ions as protective groups.
KW31/S25	Ch 39 Lecture notes	Deciphering reaction mechanisms.

KW32/S26	L26 Ch 39, Lecture notes	Deciphering reaction mechanisms
KW33	E5 (contd) E6	Conjugate addition of enolates. Deciphering reaction mechanisms.
KW34/S27	Ch 39 Lecture notes	Deciphering reaction mechanisms.
KW35	E6 (contd)	Deciphering reaction mechanisms.
KW36/S28	Ch 39 Lecture notes	Deciphering reaction mechanisms
KW37/S29	L29 Ch 39 Lecture notes Ch 27 p 677- 693 Lecture notes	Deciphering reaction mechanisms Diastereoselectivity: Controlling the geometry of double bonds.
KW38/S30	Ch 27 p 677- 693 Lecture notes	Diastereoselectivity: Controlling the geometry of double bonds. Curtin-Hammett kinetics.
KW39/S31	Ch 27 p 677-693	Diastereoselectivity: Controlling the geometry of double bonds.
KW40	E7-8	Deciphering reaction mechanisms.
KW41/S32	Ch 33 Lecture notes	Diastereoselectivity: Carbonyl reactions.
KW42	E7-8 (contd) E9	Deciphering reaction mechanisms Controlling the geometry of double bonds.
KW43/S33	Ch 39, 37 Lecture notes	Radicals.
KW44/S34	Ch 37 Lecture notes	Radicals.
KW45/S35	Ch 38 p.1053-1071 Lecture notes	Carbenes.
KW46/S36	Ch 36 Ch 38 p 1020-1022 Lecture notes	Rearrangements.

KW47	E9 (contd) E10	Controlling the geometry of double bonds. Diastereoselective addition to carbonyls. Radicals. Carbenes.
KW48/S37	Ch 36 Ch 38 p 1020-1022 Lecture notes	Rearrangements.
KW49	E10 (contd)	Diastereoselective addition to carbonyls. Radicals. Carbenes.
KW50/S38	Ch 27	Organosulfur chemistry, organosilicon and organo- phosphorous chemistry.
KW51/S39	Ch 34 Lecture notes	Pericyclic reactions.
KW52/S40	Ch 35 Lecture notes	Pericyclic reactions.
KW53	E10 (contd)	Diastereoselective addition to carbonyls. Radicals. Carbenes.
KW54	E11	Rearrangements. Organosulfur-, organosilicon- and organophosphorous chemistry.
KW55	E11 (contd) E12	Rearrangements. Organosulfur-, organosilicon- and organophosphorous chemistry. Pericyclic reactions.
KW56	E12 (contd)	Pericyclic reactions.
KW57		Reserve.

*note: Chapter 24: The examples of regioselective reaction have either been treated in KEB01 or will be treated elsewhere in KEMM01. The concept is however active knowledge.

S = self-study

A group room is booked for each session.

Purpose: To learn the contents of the course.

Means: Use the *lecture notes* (available at the home-page) and the *textbook* to learn the contents of that session. *Advice:* arrange yourself in study groups in the group room and discuss the material and help each other. The lecturer will in general be available during the last part of the self-study session to give a short summary and to answer questions during the second-half of each self. A *revision question* covering the previous self-study session will be presented in the beginning of each study session and you are supposed to use some of the self-study session to solve that question. Your answers will be discussed with the lecturer during the second half of each self-study session.

E = Exercise

Purpose: To train your ability to independently solve problems related to the contents of the course.

Means: The exercises are to be prepared in advance at home. The solutions will be presented in such a way that a student will be asked to present his/her solution at the black board and the teacher and the other students will assist and comment and also give alternative solutions.