**CURRICULUM (reading list) KJM3400 Analytical Chemistry - Separation methods Spring 2020**

**J.N. Miller; J.C. Miller and R.D. Miller, Statistics and Chemometrics for Analytical Chemistry, 7th ed. 2017 (or 6 ed. 2010 or 5th ed. 2005), Pearson Education Limited (51 pages)**

Ch. 3 Significance tests (23 p: 36 -66), not the following: 3.11, 3.12 and 3.14

Ch. 4-6 Shewhart charts for mean values (2 p: 79-81)

Ch. 4-7 Shewhart charts for ranges (3 p: 81-83)

Ch. 7 Experimental design and optimization, not the following: 7.9 – 7.12

**E. Lundanes, L. Reubsaet and T. Greibrokk, Chromatography – Basic Principles, Sample Preparations and Related Methods, 2014, Wiley VCH, approximately 157 pages,**

Ch. 1 General concepts (15 pages)

Ch. 2 Gas chromatography (30 pages)

Ch. 3 High performance liquid chromatography (56 pages)

Ch. 4 Thin layer chromatography (10 pages)

Ch. 5 Supercritical fluid chromatography (12 pages)

Ch. 6 Electrophoresis and potential-driven chromatography – except pp 135-147 (9 pages)

Ch. 8 Sample preparation – except pp 175-188 (14 pages)

Ch. 9 Quantitation (11 pages)

Total: About 200 pages (There are some overlap between the curriculum for KJM3400 and KJM2400)

**Laboratory assignments KJM3400, UiO, 2020**

**Slides from lectures**

**Lab-oppgaver:**

**Assignment 0.**

Lab techniques; making connecting tubings, leak search and gas flask handling etc.

**Assignment 1.**

Determination of fatty acids in edible oils by capillary gas chromatography

**Assignment 2.**

Identification of aliphates and aromatics in crude oil by capillary gas chromatography mass spectrometry

**Assignment 3.**

Determination of benzoic acid in berries or jam by reversed phase liquid chromatography

**Assignment 3.**

Determination of carnitine in artificial urine by HILIC liquid chromatography electrospray mass spectrometry