# Mass Spectrometry KA7004/KA7003 2016

**2016-10-06**

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|---|---|---|---|---|---|---|
| **Course meetings, all compulsory for KA7004, * compulsory for KA7003** | | | | | | |
| **Mon** | **31/10** | 09.00-10.00 | * | Roll call, Introduction to the course | UN/AR/FM | B237 |
| | | 10.00-12.00 | * | MS instrumentation, analyzers | UN | B237 |
| **Tue** | **1/11** | 09.00-12.00 | | Lab safety and risk assessment of lab work<br>Choice of projects, project groups A-D | FM/AR | B237 |
| **Wed** | **2/11** | 09.00- 12.00 | * | Continuation MS instrumentation, analyzers | UN | B237 |
| **Thu** | **3/11** | | * | Homework, exam prep | | |
| **Fri** | **4/11** | 09.00-12.00 | | Exam lab safety | FM/AR | B237 |
| | | | | | | |
| **Mon** | **7/11** | 09.00-12.00 | * | Scan techniques and LC/MS: ESI, APCI, APPI | UN | B237 |
| **Tue** | **8/11** | | * | Home work (lab for Gr 1 and 2) | | |
| **Wed** | **9/11** | 09.00-12.00 | * | Continuation LC/MS techniques | UN | B237 |
| **Thu** | **10/11** | 09.00-12.00 | * | GC/MS EI, PICI, ECNI | UN | B237 |
| **Fri** | **11/11** | | * | Homework (lab for Gr 3 and 4) | | B237 |
| | | | | | | |
| **Mon** | **14/11** | 09.00-12.00 | * | Continuation of GC/MS techniques | UN | B237 |
| **Tue** | **15/11** | 09.00-12.00 | * | Quantitative MS | UN | B237 |
| **Wed** | **16/11** | 09.00-12.00 | | Literature seminars on chosen projects/discussions | FM/AR/UN | B237 |
| **Thu** | **17/11** | 09.00-12.00 | * | EI fragmentation and interpretation | UN | B237 |
| **Fri** | **18/11** | | * | Homework (lab for Gr 5 and 6) | | |
| | | | | | | |
| **Mon** | **21/11** | 09.00-12.00 | * | Interpretation exercises | UN | B237 |
| **Tue** | **22/11** | 09.00-12.00 | * | LC/MS and CID fragmentation | UN | B237 |
| **Wed** | **23/11** | | * | Homework | | |
| **Thu** | **24/11** | 09.00-12.00 | * | Peptide fragmentation | UN | B237 |
| **Fri** | **25/11** | 09.00-12.00 | * | MALDI | UN | B237 |
| | | | | | | |
| **Mon** | **28/11** | 09.00-12.00 | * | Interpretation exercises. | UN | B237 |
| **Tue** | **29/11** | | * | Homework | | B237 |
| **Wed** | **30/11** | 09.00-12.00 | | **Presentation of results from Labs 1-4/discussion** | AR/FM/UN | B237 |
| **Thu** | **1/12** | 09.00-12.00 | * | Interpretation exercises. | UN | B237 |
| **Fri** | **2/12** | 09.00-12.00 | * | Biomolecular MS | UN | B237 |
| | | | | | | |
| **Mon** | **5/12** | 09.00-12.00 | * | Interpretation exercises | UN | B237 |
| **Tue** | **6/12** | 09.00-12.00 | * | Less common techniques and state-of-the-art | UN | B237 |
| **Wed** | **7/12** | 09.00-12.00 | * | Interpretation and other MS exercises | UN | B237 |
| **Thu** | **8/12** | 09.00-17.00 | | Project work all day | | |
| **Fri** | **9/12** | 09.00-12.00 | | Exam experimental | AR/FM | B237 |
| | | | | | | |
| **Mon** | **12/12** | 09.00-17.00 | | Project work all day/Demos | | |
| **Tue** | **13/12** | 09.00-17.00 | | Project work all day/Demos | | |
| **Wed** | **14/12** | 09.00-17.00 | | Project work all day | | |
| **Thu** | **15/12** | | | Day off/exam prep | | |
| **Fri** | **16/12** | **09.00-14.00** | * | **Exam** | | B237 |
| **Christmas holidays** | | | | | | |
| **Mon** | **9/1** | 09.00-17.00 | | Project work/consultation report/report writing | | |
| **Tue** | **10/1** | 09.00-17.00 | | Project work/consultation report/report writing | | |
| **Wed** | **11/1** | 09.00-17.00 | | Project work/consultation report/report writing | | |
| **Thu** | **12/1** | | | Preparation for project presentations/deadline report | | |
| **Fri** | **13/1** | **09.00-14.00** | | **Project presentations** | UN/FM/AR | B237 |

UN= Ulrika Nilsson, Course director, lecturer
AR= Ahmed Ramzy, Lab assistant
FM= Farshid Mashayekhy Rad, Lab assistant
RW= Roger Westerholm, Director of studies

# LAB SCHEDULE

**Lab groups 1-6, Project and demo groups A-D**

| | | | Lab 1 | Lab 2 | |
|---|---|---|---|---|---|
| | | | FM | AR | |
| **Mon** | **7/11** | 13:00-17:00 | 1 | 2 | |
| **Tue** | **8/11** | 09:00-13:00 | 1 | 2 | |
| **Wed** | **9/11** | 13:00-17:00 | 2 | 3 | |
| **Thu** | **10/11** | 13:00-17:00 | 2 | 3 | |
| **Fri** | **11/11** | 09:00-13:00 | 3 | 4 | |
| | | | | | |
| **Mon** | **14/11** | 13:00-17:00 | 3 | 4 | |
| **Tue** | **15/11** | 13:00-17:00 | 4 | 5 | |
| **Wed** | **16/11** | 13:00-17:00 | 4 | 5 | |
| **Thu** | **17/11** | 13:00-17:00 | 5 | 6 | |
| **Fri** | **18/11** | 09.00-13.00 | 5 | 6 | |
| | | | | | |
| **Mon** | **21/11** | 13:00-17:00 | 6 | 1 | |
| **Tue** | **22/11** | 13:00-17:00 | 6 | 1 | |
| **Wed** | **23/11** | 09.00-13.00 | Homework, no lab work | | |
| | | | **Lab 3** | **Lab 4** | **Projects A-D** |
| **Thu** | **24/11** | 13:00-17:00 | 1 | 6 | Risk assessments before starting up projects |
| **Fri** | **25/11** | 13:00-17:00 | 2 | 1 | |
| | | 13:00-17:00 | | | |
| **Mon** | **28/11** | 13:00-17:00 | 3 | 2 | |
| **Tue** | **29/11** | 09.00-13.00 | Homework, no lab work | | |
| **Wed** | **30/11** | 13:00-17:00 | 4 | 3 | |
| **Thu** | **1/12** | 13:00-17:00 | 5 | 4 | |
| **Fri** | **2/12** | 13:00-17:00 | 6 | 5 | |
| | | | | | |
| **Mon** | **5/12** | 13:00-17:00 | | | |
| **Tue** | **6/12** | 13:00-17:00 | | | |
| **Wed** | **7/12** | 13:00-17:00 | | | |
| **Thu** | **8/12** | 09.00-17.00 | | | |
| **Fri** | **9/12** | 13:00-17:00 | | | |
| | | | **Demo1** | | **Demo2** |
| **Mon** | **12/12** | 09.00-17.00 | A,B | | C,D |
| **Tue** | **13/12** | 09.00-17.00 | C,D | | A,B |
| **Wed** | **14/12** | 09.00-17.00 | | | |
| **Thu** | **15/12** | | Exam prep, no lab work | | |
| **Fri** | **16/12** | | Exam, no lab work | | |
| **Christmas holidays** | | | | | |
| **Mon** | **9/1** | 09.00-17.00 | | | |
| **Tue** | **10/1** | 09.00-17.00 | | | |
| **Wed** | **11/1** | | | | |
| **Thu** | **12/1** | | No lab work | | |
| **Fri** | **13/1** | | No lab work | | |

Lab 1: Scan techniques with LC/MS triple-quad, microLC
Lab 2: Scan techniques with GC/MS, identification and quantification
Lab 3: ESI/MS, peptides and proteins, sequencing, QToF
Lab 4: LC/ESI-MS, MSn, ion pair chromatography, LTQ ion trap

Demo 1: Portable MS (RW)
Demo 2: MALDI/MS and ion mobility MS, Orbitrap MS