

GC-MS WORKSHOP PROGRAMME
JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY
DEPARTMENT OF CHEMISTRY
23rd - 27th August, 2010

DAY 1: MONDAY 23rd August, 2010

OPENING CEREMONY:		
Venue: Chair:		
Master of ceremony:		
TIME	EVENT	PRESENTERS
8.30 - 9.00	(a) Arrival & Registration of Participants	
9.00 - 9.45	(b) Remarks:- University staff	
	-	
	-	
	-	
	-	
9.45 - 10.15	Official Opening & Opening remarks: -	
10.15 - 10.45	<i>Tea Break</i>	
TRAINING SESSION 1		
Venue:		
10.45 – 1.00	Installation of GC-MS including introduction to the instrument and software	A Gachanja
1.00-2.00	Lunch	
TRAINING SESSION 2		
Venue:		
2.00-3.00	GC Instrumentation:	A Gachanja
	(a) Gas chromatography-basic theory	A Gachanja
	(b) Columns and separation considerations	A Gachanja
	(c) Injection systems	A Gachanja
3.00-3.30	Tea break	
3.30-4.30	Mass Spectrometer instrumentation: Including setting up and tuning the instrument	M Schäfer
	(a)Basic Theory	M Schäfer
	(b) Ionization	M Schäfer
	(c) Mass spectrometer types	M Schäfer
4.30-5.00	Open Discussion and close of day 1	
5.15-7.15	COCKTAIL Venue: KUCC Sponsored by: PACN	

DAY 2: TUESDAY 24th August, 2010

TRAINING SESSION 3		
Venue: IEET ENV LAB		
	Practical Session 1:	
9.00-10.30	Basic Maintenance for GC-MS	A Gachanja
10.30-11.00	<i>Tea break</i>	
11.00-1.00	Basic Maintenance for GC-MS (Cont'd) including changing columns, liners and source components	A Gachanja
1.00-2.00	Lunch	
TRAINING SESSION 4		
Venue:		
2.00-3.30	Basic Spectral interpretation:	M Schäfer
	(a) Introduction	M Schäfer
	(b) Isotope abundances – how can these be useful?	M Schäfer
	(c) Spectral appearance including some examples	M Schäfer
3.30-3.45	<i>Tea Break</i>	
3.45	Elemental formulas including	M Schäfer
	(a) isotopic abundances,	M Schäfer
	(b) use of abundances for determining carbon and oxygen, rings plus double bonds equivalents	M Schäfer
5.30	Open Discussion and close for the day	

DAY 3: WEDNESDAY 25TH August, 2010

TRAINING SESSION 5		
Venue:		
	Practical Session 2:	
9.00-10.30	Exercises to determine simple structures	M Schäfer
10.30-11.00	<i>Tea break</i>	
11.00-1.00	Exercises to determine simple structures (Cont'd)	M Schäfer
1.00-2.00	Lunch	
TRAINING SESSION 6		
Venue:		
2.00-3.30	More advanced methods in spectral interpretation including	M Schäfer
	(a) Nitrogen rule	M Schäfer
	(b) Molecular ion	M Schäfer
	(c) Molecular weight determination	M Schäfer
3.30-4.00	<i>Tea break</i>	
4.00-5.30	Single bond cleavage	M Schäfer
	Multiple bond cleavage	M Schäfer
	Rearrangements, specifically McLafferty	M Schäfer
5.30	End of session	

DAY 4: THURSDAY 26TH August 2010

TRAINING SESSION 7		
Venue: GC-MS LAB		
8.30 - 10.00	Practical session 3	
	Spectral Interpretation exercises using yesterdays rules	M Schäfer
10.00 - 10.30	<i>Tea break</i>	
10.30 - 1.00	Spectral interpretation continued	M Schäfer
1.00 - 2.00	<i>Lunch break</i>	
2.00 - 3.30	Quantitative exercises including the use of internal standards	A Gachanja
3.30 - 4.00	<i>Tea break</i>	
4.00 - 5.00	Quantitative exercises including the use of internal standards (Cont'd)	A Gachanja

DAY 5: FRIDAY 27TH August 2010

TRAINING SESSION 8		
Venue: IEET ENV LAB		
8.30 - 10.00	Sample pre-treatment including	A Gachanja
	- solid phase extraction	A Gachanja
	- liquid/liquid extraction	A Gachanja
	Identification of unknowns in an analgesic drug sample	A Gachanja
	Designing experiments to quantify some compounds in the above matrix	A Gachanja
10.00 - 10.30	<i>Tea Break</i>	
10.30 - 11.30	Open Discussion	
11.30 - 1.00	Way forward	
1.00 - 2.30	<i>Lunch Break</i>	
2.30 - 3.30	Closing Ceremony	