

PROPOSAL ON RATE OF CHARGES FOR USING EQUIPMENT IN CENTRALIZE LAB

**A. Rate of Charges for using equipment in Lab 243 – Liquid Chromatography (LC) laboratory
(Reference Lecturer: Dr. Cheng Lai Hoong)**

	Equipment	Laboratory Classes	Final Year Project (School of Industrial Technology)	Post-Graduate Project/ Research (School of Industrial Technology)	Research Project (Non- School of Industrial Tech.)	Consultation and Testing
1.	HPSEC/GPC system	Free Of Charge	F.O.C (Student must prepare their own standards, consumables, column and chemicals) RM20/day (Lab will prepare the standards, consumables, column and chemicals)	RM10/component (Student must prepare their own standards, consumables, column and chemicals) RM40/component (Lab will prepare the standards, consumables, column and chemicals) RM70/day (Lab will prepare the standards, consumables, column and chemicals) + RM300/use for GPC standard	RM50/component (They must prepare their own standards, consumables, column and chemicals) RM80/component (Lab will prepare the standards, consumables, column and chemicals) RM100/sample (Lab will prepare the standards, consumables, column and chemicals) + RM300/use for GPC standard	RM200/sample
2.	HPLC system with RI detector	Free Of Charge	F.O.C (Student must prepare their own standards, consumables, column and chemicals)	RM20/day (Student must prepare their own standards, consumables, column and chemicals)	RM50/component (They must prepare their own standards, consumables, column and	RM200/component

			RM20/day (Lab will prepare the standards, consumables, column and chemicals)	RM40/day (Lab will prepare the standards, consumables, column and chemicals)	chemicals) RM80/component (Lab will prepare the standards, consumables, column and chemicals)	
3.	HPLC system with UV-detector	Free Of Charge	F.O.C (Student must prepare their own standards, consumables, column and chemicals) RM20/day (Lab will prepare the standards, consumables, column and chemicals)	RM20/day (Student must prepare their own standards, consumables, column and chemicals) RM40/day (Lab will prepare the standards, consumables, column and chemicals)	RM50/component (They must prepare their own standards, consumables, column and chemicals) RM80/component (Lab will prepare the standards, consumables, column and chemicals)	RM200/component
4.	HPLC system with Diode-Array detector	Free Of Charge	F.O.C (Student must prepare their own standards, consumables, column and chemicals) RM20/day (Lab will prepare the standards, consumables, column and chemicals)	RM20/day (Student must prepare their own standards, consumables, column and chemicals) RM40/day (Lab will prepare the standards, consumables, column and chemicals)	RM50/component (They must prepare their own standards, consumables, column and chemicals) RM80/component (Lab will prepare the standards, consumables, column and chemicals)	RM200/component

5.	HPLC system with Photodiode Array detector	Free Of Charge	<p>F.O.C (Student must prepare their own standards, consumables, column and chemicals)</p> <p>RM20/day (Lab will prepare the standards, consumables, column and chemicals)</p>	<p>RM20/day (Student must prepare their own standards, consumables, column and chemicals)</p> <p>RM40/day (Lab will prepare the standards, consumables, column and chemicals)</p>	<p>RM50/component (They must prepare their own standards, consumables, column and chemicals)</p> <p>RM80/component (Lab will prepare the standards, consumables, column and chemicals)</p>	RM200/component
6	HPLC system with Fluorescent detector	Free Of Charge	<p>F.O.C (Student must prepare their own standards, consumables, column and chemicals)</p> <p>RM20/day (Lab will prepare the standards, consumables, column and chemicals)</p>	<p>RM20/day (Student must prepare their own standards, consumables, column and chemicals)</p> <p>RM40/day (Lab will prepare the standards, consumables, column and chemicals)</p>	<p>RM50/component (They must prepare their own standards, consumables, column and chemicals)</p> <p>RM100/component (Lab will prepare the standards, consumables, column and chemicals)</p>	RM200/component

**B. Rate of Charges for using equipment in Lab 333
(Reference Lecturer: Dr. Tay Guan Seng)**

	Equipment	Laboratory Classes	Final Year Project (School of Industrial Technology)	Post-Graduate Project/ Research (School of Industrial Technology)	Research Project (Non-School of Industrial Tech.)	Consultation and Testing
1.	DSC	Free Of Charge	RM 10/day (Sample pan is not provided)	RM 20/day (Sample pan is not provided)	(i) 20°C/min: RM50/sample (ii) 10°C/min: RM100/sample (iii) 5°C/min: RM200/sample (Sample pan is not provided)	(i) 20°C/min: RM100/sample (ii) 10°C/min: RM200/sample (iii) 5°C/min: RM400/sample
2.	TGA	Free Of Charge	RM 10/day	RM 20/day	(i) 20°C/min: RM50/sample (ii) 10°C/min: RM100/sample (iii) 5°C/min: RM200/sample	(i) 20°C/min: RM100/sample (ii) 10°C/min: RM200/sample (iii) 5°C/min: RM400/sample
3.	DMA <i>Liquid Nitrogen Price: RM275.00 / tank (50L)</i>	Free Of Charge	RM 30/day <i>Liquid nitrogen provided by laboratory.</i>	RM 30/day <i>Liquid nitrogen needs to be purchased by user</i>	(i) 5°C/min: RM325/sample (ii) 3°C/min: RM375/sample (iii) 1°C/min: RM475/sample <i>Liquid nitrogen provided by laboratory.</i>	(i) 5°C/min: RM375/sample (ii) 3°C/min: RM475/sample (iii) 1°C/min: RM675/sample <i>Liquid nitrogen provided by laboratory.</i>
4.	TGA-DSC*	Free Of Charge	RM 10/day (Sample pan is not provided)	RM 20/day (Sample pan is not provided)	(i) 20°C/min: RM50/sample (ii) 10°C/min: RM100/sample (iii) 5°C/min: RM200/sample	(i) 20°C/min: RM100/sample (ii) 10°C/min: RM200/sample (iii) 5°C/min: RM400/sample

					(Sample pan is not provided)	
5.	FTIR	Free Of Charge	(i) RM 10/day (KBR is not provided) (ii) RM 10 /sample (KBR is provided)	(i) RM 10/day (KBR is not provided) (ii) RM 10 /sample (KBR is provided)	(i) RM 100/day (KBR is not provided) (ii) RM 20 /sample (KBR is provided)	(i) RM 100 /sample (KBR is provided)

* will be review after considering the consumerable

**C. Rate of Charges for using equipment in Lab 047
(Reference Lecturer: Professor Dr. Abdul Khalil B. Shawkataly)**

	Equipment	Laboratory Classes	Final Year Project (School of Industrial Technology)	Post-Graduate Project/ Research (School of Industrial Technology)	Research Project (Non- School of Industrial Tech.)	Consultation and Testing
1.	Scanning Electron Microscope (SEM)	Free (must be in school schedule time table)	RM 75*	RM 75*	RM 100*	RM 150*
2.	SEM-EDX	Free (must be in school schedule time table)	RM 150**	RM 150**	RM 150**	RM 300**

* Including: 3 images per sample and 30min of time for microscope usage, with carbon or gold sputtering.

** Including: (i) Imaging and analysis of maximum of 3 spots area or areas on the same sample.
(ii) A maximum of 3 printed copies of the analytical result.
(iii) 30 min of time for microscope usage.

**D. Rate of Charges for using equipment in Elemental Analysis Laboratory – LAB 225
(Reference Lecturer: Dr Yusri B. Yusup)**

	Equipment	Laboratory Classes	Final Year Project (School of Industrial Technology)	Post-Graduate Project/ Research (School of Industrial Technology)	Research Project (Non- School of Industrial Tech.)	Consultation and Testing
1.	AAS (FLAME-Student Prepare Their Own Sample)	Free	RM20 per day	RM20 per day	RM20 per 10 sample per element	RM50 per 10 sample per element
2.	AAS (Graphite-Student Prepare Their Own Sample)	Free	RM70 per day	RM70 per day	RM70 per 10 sample per element	RM100 per 10 sample per element
3.	Photovoltaic	-	-	-	-	-
4.	Microwave Digest (Student Prepares Own Sample)	Free	RM15 per run	RM15 per run	RM30 per run	RM60 per run
5	ICP-OES (Student Prepare Their Own Sample) (Argon Gas Price – RM 238.00)	Free	RM60 per day <i>-Argon gas provided by laboratory</i>	RM30 per day <i>-Argon gas needs to be purchased by user.</i>	RM60 per sample/element <i>-Argon gas needs to be purchased by user.</i> RM298/sample/element <i>- Argon gas provided by laboratory</i>	*RM100 per sample/element <i>- Argon gas needs to be purchased by user.</i> *RM338/sample/element <i>- Argon gas provided by laboratory</i>

*Except for gold/platinum (RM200/sample/element) and mercury/selenium (RM150/sample/element)

E. Rate of Charges for using GC and GCMS
(Reference Lecturer: Assoc. Prof. Dr Fazilah Bt. Arifin)

	Equipment	Laboratory Classes	Final Year Project (School of Industrial Technology)	Post-Graduate Project/ Research (School of Industrial Technology)	Research Project (Non- School of Industrial Tech.)	Consultation and Testing
1.	GC	Free	Free	Free	RM60 per sample	RM200 per sample
2.	GCMS	Free	*RM50 per sample	*RM50 per sample	**RM150 per sample	**RM350 per sample

*Consumerable, standard & chemical solution are not provided. Common column is provided by the lab. Students will integrate the result themselves

** Consultancy; Customer only give the sample. Integration is only for the first 5 peaks.

F. Rate of Charges for using equipment in Microbiology Laboratory

(Reference Lecturer: Pn. Wan Nadiah Bt. Wan Abdullah (Teaching); Dr Norli Bt. Ismail (Research)).

(i) All equipments for the purpose of teaching (Course listed in the schedule) is *Free of Charge: Teaching Lab (Lab 206)*.

No.	Equipment	Total	Location	Cost		Charge			
				Price	S&M	Practical			
1	Image Analyzer	1			1500	Free			
2	Normal Microscope	25			1000	Free			
3	Incubator	4			2000	Free			
4	Orbital Shaker	2			2000	Free			
5	Colony Counter	17			1000	Free			
6	Autoclave	2			2000	Free			

(ii) Research Lab (Lab 119)

No.	Equipment	Total	Location	Price	S&M	Final Year Project (School of Industrial Technology)	Post-Graduate Project/ Research (School of Industrial Technology)	Research Project (Non-School of Industrial Tech.)	Consultation and Testing
1	Image Analyzer	2			1500	free	free	RM 50/hour	-
2	Atomic Force Microscope (AFM)	1			20,000	RM10/sample	RM50/sample	RM100/sample	RM150/sample
3	Fluorescent Microscope	1			3000	free	free	-	-
4	Normal Microscope	5			1000	free	free	-	--
5	Laminar Flow Hood	3			3000	free	free	-	-
6	Incubator	10			2000	free	free	-	-
7	Orbital Shaker	5			2000	free	free	-	-
8	Autoclave	6			2000	free	free	-	-
9	Colony Counter	2			1000	free	free	-	-

S&M: Service & Maintenance **per unit** equipment (not including spare part)