



UNIVERSITI TEKNOLOGI MARA

CMT610: CORROSION AND MATERIAL LABORATORY

Course Name (English)	CORROSION AND MATERIAL LABORATORY APPROVED
Course Code	CMT610
MQF Credit	1
Course Description	This course is aimed to provide the fundamental practical skills on corrosion and material science. It supplements the theoretical knowledge and enhances understanding the corrosion phenomena and materials performance. This course is prepared for student to capable in conducting, analysing, material characterization and interpreting the corrosion phenomena and preparation of material . Students will acquire the learn how to carry out experiments safely and carefully in the laboratory, as well to obtain data accurately and to manipulate the data correctly. It complements the theoretical knowledge and enhances more holistic understanding towards the corrosion, material science and technology.
Transferable Skills	Analytical and critical skill on material, electrochemistry and corrosion behaviors
Teaching Methodologies	Lab Work, Case Study, Presentation
CLO	CLO1 Able to communicate the result of the experiment in oral CLO2 Able to analyse the results of the experiment in written
Pre-Requisite Courses	No course recommendations
Topics	
1. PART A : ELECTROCHEMISTRY & CORROSION	
1.1) N/A	
2. Laboratory Familiarization: Safety at workplace and Guide for preparing report	
2.1) N/A	
3. Experiment 1: Galvanic Cell	
3.1) N/A	
4. Experiment 2: Electrolytic Cell – Electrolysis of Aqueous Solutions	
4.1) N/A	
5. Presentation and discussions on Lab 1 and 2	
5.1) N/A	
6. Experiment 3: Determination of Avogadro's Number using Electrogravimetry	
6.1) N/A	
7. Experiment 4: Conductance of Aqueous Ions	
7.1) N/A	
8. Presentation and discussions on Lab 3 and 4	
8.1) N/A	
9. Experiment 5: Anodes and Cathodes in Corrosion Reactions	
9.1) N/A	
10. Experiment 6: Corrosion of Steel - Weight Loss Analysis	
10.1) N/A	
11. Experiment 7: Corrosion of Irons	
11.1) N/A	
12. Presentation and discussions on Lab 5 and 6&7	
12.1) N/A	

13. PART B : MATERIAL LABORATORY 13.1) N/A
14. Experiment 1 : Bulk polymerization of polymethyl methacrylate 14.1) N/A
15. Experiment 2 : Preparation and characterization of nylon 6, 6 15.1) N/A
16. Presentation and discussions on Part B: Exp. 1 and 2 16.1) N/A
17. Experiment 3 : Preparation and characterization of synthetic rubber (Thiokol) 17.1) N/A
18. Experiment 4 : Preparation and characterization of polymethyl methacrylate and natural rubber blends via solvent casting method 18.1) N/A
19. Presentation and discussions on Part B: Exp. 3 and 4 19.1) N/A
20. Experiment 5: Tensile properties of carbon black, silica and calcium carbonate filled natural rubber compounds 20.1) N/A
21. Revision/Replacement 21.1) N/A

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Presentation	Student has to present their experiment.	40%	CLO1
	Written Report	Student has to submit a compilation of Lab report	60%	CLO2

Reading List	This Course does not have any book resources
Article/Paper List	This Course does not have any article/paper resources
Other References	<ul style="list-style-type: none"> • Lab Manual Mohammad Noor 2019, <i>CORROSION AND MATERIAL LABORATORY</i>, UiTM, UiTM