



UNIVERSITI TEKNOLOGI MARA

CDT172: CERAMIC RAW MATERIAL AND PROCESS

Course Name (English)	CERAMIC RAW MATERIAL AND PROCESS APPROVED
Course Code	CDT172
MQF Credit	2
Course Description	This course concentrates on ceramic theory and practical based on history, raw materials, fabrication processes, glazing techniques, firing and quality control. Academic visit enhance the student knowledge and experience of ceramic equipments and processes. Especially on clay base industry.
Transferable Skills	Students are able to gain knowledge and theory about raw materials and processes for ceramic.
Teaching Methodologies	Lectures, Lab Work, Field Trip, Discussion, Presentation
CLO	CLO1 Describe the basic knowledge about ceramic, history, functions, properties and raw materials. PLO1 (C2) CLO2 Comply the right procedures in ceramic fabrications process through project and presentation. PLO4 (A2) CLO3 Report the physical and chemical changes of ceramic material during drying and firing process. PLO5 (A2)
Pre-Requisite Courses	No course recommendations
Topics	
1. 1. Introduction of Ceramic 1.1) 1.1 History 1.2) 1.2 Types of Ceramic 1.3) 1.3 Ceramic product 1.4) 1.4 Ceramic Properties and classification 1.5) 1.5 Function	
2. 2. Ceramic ware 2.1) 2.1 Earthenware 2.2) 2.2 Stoneware 2.3) 2.3 Porcelain 2.4) 2.4 Bone China	
3. 3. Ceramic Fabrication/ Forming Methods 3.1) 3.1 Extrusion 3.2) 3.2 Jolleying 3.3) 3.3 Jiggering 3.4) 3.4 RAM Process	
4. 4. Raw Materials 4.1) 4.1 Types of raw materials 4.2) 4.2 Clay – The fundamental ingredients 4.3) 4.3 Geology of clay 4.4) 4.4 Primary and Secondary 4.5) 4.5 Plastic and non-plastic materials	
5. 5. Equipment for clay preparation 5.1) 5.1 Blunger machine 5.2) 5.2 Role Mill 5.3) 5.3 Filter Press 5.4) 5.4 Pug Mill	

6. 6. Slip Casting 6.1) 6.1 Type of slip 6.2) 6.2 Slip preparation
7. 7. Laboratory procedure 7.1) 7.1 Shrinkage 7.2) 7.2 Porosity 7.3) 7.3 Water absorption
8. 8. Drying procedure for clayware 8.1) 8.1 Steps of drying 8.2) 8.2 Drying mechanism
9. 9. Glazing 9.1) 9.1 Purpose 9.2) 9.2 Materials 9.3) 9.3 Glazing method
10. 10. Firing 10.1) 10.1 Type of firing 10.2) 10.2 Type of kiln
11. 11. Quality Control 11.1) 11.1 Meaning and 11.2) 11.2 Tools of Quality Control 11.3) 11.3 Faults and remedies

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Group Assignment	30%	CLO2
	Final Project	Final Report	20%	CLO3
	Presentation	Group Presentation	20%	CLO3
	Test	Test and Quiz	30%	CLO1

Reading List	This Course does not have any book resources
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Article/Paper List	This Course does not have any article/paper resources
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Other References	<ul style="list-style-type: none"> • Book Taylor Brian & Doody Kate. 2014, <i>Ceramics Glazes The Complete Handbook</i>, Thames and Hudson Publishing., London • Book Duncan Hooson, Anthony Quinn. 2012, <i>The Workshop Guide to Ceramics</i>, Quarto Publishing, United Kingdom • Book Frank and J. Hamer. 2015, <i>The Potter's Dictionary of Materials and Techniques</i> , A&C Black, London • Book Linda Bloomfield 2017, <i>Science for Potters</i>, Ammer Ceramic Society, United Kingdom • Book Louisa Taylor 2012, <i>Ceramics; Tools and Technique for the Contemporary Maker</i> , W&V Press
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