



## UNIVERSITI TEKNOLOGI MARA

### CDT272: GLAZE AND FIRING PRACTICE

<b>Course Name (English)</b>	GLAZE AND FIRING PRACTICE <b>APPROVED</b>
<b>Course Code</b>	CDT272
<b>MQF Credit</b>	3
<b>Course Description</b>	This course is concentrates on glaze and firing theory and practice based on history, functions, glaze materials, glaze preparation, kiln construction, kiln components and firing process. The study of the simple chemistry of materials and the impact of heat opens up possibilities of manipulation and control leading ultimately to the design of glazes for specific needs. This course unveils the secrets of what happens during the transformational process of firing.
<b>Transferable Skills</b>	Glaze materials handling Glazing applications Raku and firing process
<b>Teaching Methodologies</b>	Lectures, Studio, Demonstrations, Discussion, Presentation
<b>CLO</b>	CLO1 Describe basic knowledge in glaze practice, glaze preparation and application. CLO2 Demonstrate the effect and defect of the glaze product through practical test and report. CLO3 Demonstrate about kiln, history, functions, type of kiln and also practice the firing process and procedures through final assignment.
<b>Pre-Requisite Courses</b>	No course recommendations
<b>Topics</b>	
<b>1. 1. Introduction of Glaze</b> 1.1) 1.1 History 1.2) 1.2 Groups or types of glaze 1.3) 1.3 Function	
<b>2. 2. Glaze Materials</b> 2.1) 2.1 Alkali group 2.2) 2.2 Acid group 2.3) 2.3 Neutral group 2.4) 2.4 Glaze Color 2.5) 2.4.1 Stains 2.6) 2.4.2 Oxides 2.7) 2.4.3 Engobes	
<b>3. 3. Glaze Preparation</b> 3.1) 3.1 Formula and recipes 3.2) 3.2 Weighing 3.3) 3.3 Mixing 3.4) 3.4 Testing	
<b>4. 4. Methods of glaze application</b> 4.1) 4.1 Pouring 4.2) 4.2 Dipping 4.3) 4.3 Brushing 4.4) 4.4 Spraying	
<b>5. 5. Glaze Firing</b> 5.1) 5.1 Loading 5.2) 5.2 Setting in Kiln 5.3) 5.3 Firing Temperature 5.4) 5.4 Profile of Firing	

<b>6. 6. Glaze Effect and Defect</b> 6.1) Types of defects
<b>7. 7. Introduction of kiln</b> 7.1) 7.1 History of kiln 7.2) 7.1.1 Early Kilns 7.3) 7.1.2 Kiln in the Orient 7.4) 7.1.3 European and Modern Kilns 7.5) 7.2 Types of kiln 7.6) 7.3 Planning in built kiln
<b>8. 8. Kiln Construction</b> 8.1) 8.1 Refractory Materials 8.2) 8.2 Design 8.3) 8.3 Kiln Components
<b>9. 9. Firing process/ techniques</b> 9.1) 9.1 Loading and Unloading the kiln 9.2) 9.1.1 Boxing Technique 9.3) 9.1.2 Satter 9.4) 9.1.3 Sagger and Sagger Ring 9.5) 9.1.4 Rack and Pin 9.6) 9.2 Heat Flow 9.7) 9.3 Biscuit Firing and glaze firing 9.8) 9.3.1 Temperature and time 9.9) 9.3.2 Profile of Firing 9.10) 9.3.3 Cooling Down 9.11) 9.4 Oxidation and reduction firing 9.12) 9.4.1 Atmosphere 9.13) 9.4.2 Temperature 9.14) 9.5 Kiln Furniture and tools
<b>10. 10. Heat and fuel</b> 10.1) 10.1 Liquid 10.2) 10.2 Gases 10.3) 10.3 Wood
<b>11. 11. Temperature measurements</b> 11.1) 11.1 Pyrometric Cones 11.2) 11.2 Thermocouple 11.3) 11.3 Optical Pyrometric 11.4) 11.4 Buller Ring
<b>12. 12. Alternative Firing Technique</b> 12.1) 12.1 Raku Kiln 12.2) 12.2 Pit Firing 12.3) 12.3 Wood Firing
<b>13. 13. Troubleshooting and Safety Precautions</b> 13.1) N/A

Assessment Breakdown	%
Continuous Assessment	100.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Glaze and properties	20%	CLO1
	Assignment	Glaze Preparation Process and test pieces	20%	CLO2
	Assignment	glaze project	20%	CLO1
	Assignment	Firing Processes	20%	CLO3
	Assignment	Firing Project and Practice	20%	CLO3

Reading List	<b>Reference Book Resources</b> <ul style="list-style-type: none"> <li>• Frank and H. Janet. 2004, <i>The Potter's Dictionary of Materials and Techniques</i>, Fifth Edition Ed., A&amp;C Black. London</li> <li>• Susan Peterson and Jan Peterson 2012, <i>The Craft and Art of Clay: A Complete Potter's Handbook</i>, 5th Edition Ed., Laurence King Publishing Ltd. London</li> <li>• Ray Hemachandra 2011, <i>500 Raku: Bold Explorations of a Dynamic Ceramics Technique</i>, Lark Crafts New York</li> <li>• Taylor Brian &amp; Doody Kate. 2014, <i>Ceramics Glazes The Complete Handbook</i>, Thames and Hudson Publishing London</li> <li>• Duncan Hooson &amp; Anthony Quinn., <i>The Workshop Guide to Ceramics</i>, Quarto Publishing United Kingdom</li> <li>• Louisa Taylor 2012, <i>Ceramics; Tools and Technique for the Contemporary Maker</i>, W&amp;V Press</li> </ul>
Article/Paper List	This Course does not have any article/paper resources
Other References	This Course does not have any other resources