



## UNIVERSITI TEKNOLOGI MARA

### CMT630: COLLOID AND SURFACE CHEMISTRY

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| <b>Course Name (English)</b>  | COLLOID AND SURFACE CHEMISTRY <b>APPROVED</b>   |
| <b>Course Code</b>  | CMT630  |
| <b>MQF Credit</b>   | 3   |
| <b>Course Description</b>   | This course will introduce students the basic principles of colloid and surface chemistry. Foundation of colloid surface chemistry will be explained and details. Essentially, colloids involving solid and liquid adsorption, stability, destabilization, surface tension and contact angle properties will be taught and assigned. Measurements of colloids properties and characterization method will also discussed. |
| <b>Transferable Skills</b>  | Scientific thinking<br>Critical thinking  |
| <b>Teaching Methodologies</b>   | Lectures, Blended Learning, Journal/Article Critique  |
| <b>CLO</b>  | CLO1 Upon completion, students will be able to comprehend the colloidal and surface chemistry system.<br>CLO2 Upon completion, students will be able to critically explain the colloidal physicochemical properties (colloidal particles interactions, stability, surface tension, contact angle and association), and analyze how these properties affect the colloidal system.  |
| <b>Pre-Requisite Courses</b>  | No course recommendations   |
| <b>Topics</b>   |   |
| <b>1. Colloidal System</b><br>1.1) Classification of colloidal system<br>1.2) Surface Chemistry of colloidal system<br>1.3) Properties of colloid particles<br>1.4) Preparation of lyophobic colloidal system |   |
| <b>2. Stability of Colloidal Dispersions</b><br>2.1) Colloidal particles surface interactions<br>2.2) Electrostatic stability<br>2.3) Steric stability  |   |
| <b>3. Instability of Colloidal Dispersion</b><br>3.1) Types of Instability of colloidal particles<br>3.2) Schultz Hardy Rule  |   |
| <b>4. Physicochemical of colloid and surface chemistry</b><br>4.1) Adsorption at Colloidal surface<br>4.2) Surface Tension of colloidal system<br>4.3) Contact angle of colloidal system                      |   |
| <b>5. Association Colloid</b><br>5.1) Surfactant systems<br>5.2) Micellisation  |   |

| <b>Assessment Breakdown</b> | <b>%</b> |
|-----------------------------|----------|
| Continuous Assessment       | 60.00%   |
| Final Assessment            | 40.00%   |

| <b>Details of Continuous Assessment</b> | <b>Assessment Type</b>   | <b>Assessment Description</b>   | <b>% of Total Mark</b> | <b>CLO</b> |
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|   | Journal/Article Critique | Students will be in a group, maximum, 3 students per group.           | 20%                    | CLO2       |
|   | Test                     | 2 tests. One at middle semester and the other will be end of semester | 40%                    | CLO1       |

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| <b>Reading List</b>       | This Course does not have any book resources          |
| <b>Article/Paper List</b> | This Course does not have any article/paper resources |
| <b>Other References</b>   | This Course does not have any other resources         |