

Enquiry for Course Details

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| CHEM4143 Interfacial science and technology (6 credits) | | Academic Year | 2022 |
| Offering Department | Chemistry | Quota | 50 |
| Course Co-ordinator | Prof G K Y Chan, Chemistry < hrsccy@hku.hk > | | |
| Teachers Involved | (Prof G K Y Chan, Chemistry) (Visiting Professor, Chemistry) | | |
| Course Objectives | To understand the science and technology of interfacial phenomena and processes often appeared in high value added products and modern technologies. | | |
| Course Contents & Topics | Physics and Chemistry of Interfaces: coatings and surfactants, colloids and interfaces, wetting, microemulsion, thin films, nanomaterials, porous materials. | | |
| Course Learning Outcomes | On successful completion of this course, students should be able to: | | |
| | CLO 1 | understand interfacial phenomena and their origin from molecular details | |
| | CLO 2 | solve problems in interfacial science and technology by applying knowledge of general chemistry, thermodynamics, and kinetics | |
| | CLO 3 | be familiarized with technologies that require application of interfacial science, including nanomaterials, nanotechnology, detergency, composite polymers, and porosimetry | |
| Pre-requisites (and Co-requisites and Impermissible combinations) | Pass in CHEM3143 or CHEM3541 or CHEM3542 | | |
| Course Status with Related Major/Minor /Professional Core | 2022 Major in Chemistry (Disciplinary Elective) 2022 Major in Chemistry (Intensive) (Disciplinary Elective) 2022 Minor in Chemistry (Disciplinary Elective) 2021 Major in Chemistry (Disciplinary Elective) 2021 Major in Chemistry (Intensive) (Disciplinary Elective) 2021 Minor in Chemistry (Disciplinary Elective) 2020 Major in Chemistry (Disciplinary Elective) 2020 Major in Chemistry (Intensive) (Disciplinary Elective) 2020 Minor in Chemistry (Disciplinary Elective) 2019 Major in Chemistry (Disciplinary Elective) 2019 Major in Chemistry (Intensive) (Disciplinary Elective) 2019 Minor in Chemistry (Disciplinary Elective) 2018 Major in Chemistry (Disciplinary Elective) 2018 Major in Chemistry (Intensive) (Disciplinary Elective) 2018 Minor in Chemistry (Disciplinary Elective) | | |
| Course to PLO Mapping | 2022 Major in Chemistry < PLO 1,2,3,5,6 > 2022 Major in Chemistry (Intensive) < PLO 1,2,3,5,6 > 2021 Major in Chemistry < PLO 1,2,3,5,6 > 2021 Major in Chemistry (Intensive) < PLO 1,2,3,5,6 > 2020 Major in Chemistry < PLO 1,2,3,5,6 > 2020 Major in Chemistry (Intensive) < PLO 1,2,3,5,6 > 2019 Major in Chemistry < PLO 1,2,3,5,6 > 2019 Major in Chemistry (Intensive) < PLO 1,2,3,5,6 > 2018 Major in Chemistry < PLO 1,2,3,5,6 > 2018 Major in Chemistry (Intensive) < PLO 1,2,3,5,6 > | | |
| Offer in 2022 - 2023 | Y | 1st sem | Examination Dec |
| Offer in 2023 - 2024 | N | | |
| Course Grade | A+ to F | | |
| Grade Descriptors | A | Demonstrate thorough knowledge of interfacial science and technology, and mastery of skills required for attaining all of the course learning outcomes. Show strong analytical and critical abilities and logical thinking, with evidence of original thought, and ability to apply knowledge to solve problems in a wide range of complex, familiar and unfamiliar situations. Critical use of data and sourcing of references. Apply highly effective organizational and presentational skills. | |
| | B | Demonstrate substantial knowledge of interfacial science and technology and command of skills required for attaining at least most of the course learning outcomes. Show evidence of analytical and critical abilities and logical thinking, and ability to apply knowledge to solve problems in familiar and some unfamiliar situations. Correct use of data and sourcing of references. Apply effective organizational and presentational skills. | |
| | C | Demonstrate general but incomplete knowledge of interfacial science and technology and command of skills required for attaining most of the course learning outcomes. Show evidence of some analytical and critical abilities and logical thinking, and ability to apply knowledge solve problems to most familiar situations. Mostly correct but some erroneous use of data and references. Apply moderately effective organizational and presentational skills. | |
| | D | Demonstrate partial but limited knowledge of interfacial science and technology and command of skills required for attaining some of the course learning outcomes. Show evidence of some coherent and logical thinking, but with limited analytical and critical abilities. Show limited ability to apply knowledge to solve problems. Limited ability to use data and source references. Apply limited or barely effective organizational and presentational skills. | |
| | Fail | Demonstrate little or no evidence of knowledge of interfacial science and technology, and command of skills required for attaining the course learning outcomes. Lack of analytical and critical abilities, logical and coherent thinking. Show very little or no ability to apply knowledge to solve problems. Misuse of data and references. Organization and presentational skills are minimally effective or ineffective. | |
| Course Type | Lecture-based course | | |

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| Course Teaching & Learning Activities | Activities | | Details | No. of Hours |
| | Lectures | | | 36 |
| | Tutorials | | or discussion | 12 |
| | Reading / Self study | | | 100 |
| Assessment Methods and Weighting | Methods | Details | Weighting in final course grade (%) | Assessment Methods to CLO Mapping |
| | Assignments | | 25 | CLO 1,2,3 |
| | Examination | | 50 | CLO 1,2,3 |
| | Test | | 25 | CLO 1,2,3 |
| Required/recommended reading and online materials | Barnes and Gentle: Interfacial Science | | | |
| Course Website | NIL | | | |
| Additional Course Information | This course is offered every other year. | | | |