

Enquiry for Course Details

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| CHEM3141 Environmental chemistry (6 credits) | | Academic Year | 2021 | | | | | | | | | | |
| Offering Department | Chemistry | Quota | 50 | | | | | | | | | | |
| Course Co-ordinator | Dr Y X Li, Chemistry < yxpli@hku.hk > | | | | | | | | | | | | |
| Teachers Involved | (Dr Y X Li, Chemistry) | | | | | | | | | | | | |
| Course Objectives | This course introduces students to Environmental Chemistry and enables them to understand the chemical principles involved in various environmental phenomena and processes. | | | | | | | | | | | | |
| Course Contents & Topics | Atmosphere chemistry: atmospheric composition and behavior, ozone, air pollution, carbon cycle and climate change Water Chemistry: water resources and cycle, ocean, chemical quality of natural water, water pollution, water purification and desalination Pollutants: persistent organic pollutants, pesticides, toxic heavy metals, toxicology Waste treatment: domestic and hazardous waste treatment (landfill, incineration) Energy: energy resources, fossil fuels, solar energy, nuclear energy | | | | | | | | | | | | |
| Course Learning Outcomes | On successful completion of this course, students should be able to: <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">CLO 1</td> <td>demonstrate knowledge on chemical principles of the various environmental phenomena and processes</td> </tr> <tr> <td>CLO 2</td> <td>describe the practical processes of chemistry in atmosphere, water purification, waste treatment, and energy production</td> </tr> <tr> <td>CLO 3</td> <td>critically discuss local and global environmental issues based on scientific principles and data</td> </tr> <tr> <td>CLO 4</td> <td>apply knowledge to analyze chemical processes involved in various environmental problems</td> </tr> </table> | | | CLO 1 | demonstrate knowledge on chemical principles of the various environmental phenomena and processes | CLO 2 | describe the practical processes of chemistry in atmosphere, water purification, waste treatment, and energy production | CLO 3 | critically discuss local and global environmental issues based on scientific principles and data | CLO 4 | apply knowledge to analyze chemical processes involved in various environmental problems | | |
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| CLO 4 | apply knowledge to analyze chemical processes involved in various environmental problems | | | | | | | | | | | | |
| Pre-requisites (and Co-requisites and Impermissible combinations) | Pass in CHEM2041 or CHEM2341 or CHEM2441 or CHEM2442 or CHEM2541 | | | | | | | | | | | | |
| Course Status with Related Major/Minor /Professional Core | 2021 Major in Environmental Science (Disciplinary Elective) 2021 Minor in Chemistry (Disciplinary Elective) 2021 Minor in Environmental Science (Disciplinary Elective) 2020 Major in Environmental Science (Disciplinary Elective) 2020 Minor in Chemistry (Disciplinary Elective) 2020 Minor in Environmental Science (Disciplinary Elective) 2019 Major in Environmental Science (Disciplinary Elective) 2019 Minor in Chemistry (Disciplinary Elective) 2019 Minor in Environmental Science (Disciplinary Elective) 2018 Major in Environmental Science (Disciplinary Elective) 2018 Minor in Chemistry (Disciplinary Elective) 2018 Minor in Environmental Science (Disciplinary Elective) 2017 Major in Environmental Science (Disciplinary Elective) 2017 Minor in Chemistry (Disciplinary Elective) 2017 Minor in Environmental Science (Disciplinary Elective) | | | | | | | | | | | | |
| Course to PLO Mapping | 2021 Major in Environmental Science < PLO 1,2,3,4 > 2020 Major in Environmental Science < PLO 1,2,3,4 > 2019 Major in Environmental Science < PLO 1,2,3,4 > 2018 Major in Environmental Science < PLO 1,2,3,4 > 2017 Major in Environmental Science < PLO 1,2,3,4 > | | | | | | | | | | | | |
| Offer in 2021 - 2022 | Y 2nd sem | Examination | May | | | | | | | | | | |
| Offer in 2022 - 2023 | Y | | | | | | | | | | | | |
| Course Grade | A+ to F | | | | | | | | | | | | |
| Grade Descriptors | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;">A</td> <td>- Demonstrate thorough grasp of the subject. - Demonstrate integration of the full range of appropriate theories, principles, and evidence. - Show evidence of strong analytical abilities, logical and independent thinking, and ability to apply knowledge to a wide range of complex, familiar and unfamiliar situations. - Demonstrate highly effective organization and presentation skills.</td> </tr> <tr> <td>B</td> <td>- Demonstrate substantial grasp of the subject. - Demonstrate general integration of theories, principles, and evidence. - Show evidence of analytical abilities and logical thinking, some evidence of independent thinking, and ability to apply knowledge to familiar and some unfamiliar situations. - Demonstrate effective organization and presentation skills.</td> </tr> <tr> <td>C</td> <td>- Demonstrate general but incomplete grasp of the subject. - Demonstrate some partial integration of theories, principles, and evidence. - Show evidence of some analytical abilities and logical thinking, little evidence of independent thinking, and ability to apply knowledge to most familiar situations. - Demonstrate moderately effective organization and presentation skills.</td> </tr> <tr> <td>D</td> <td>- Demonstrate partial but limited grasp, with retention of some relevant information, of the subject. - Demonstrate limited integration of theories, principles, and evidence. - Show evidence of limited analytical abilities, little or no evidence of independent thinking, and limited ability to apply knowledge to solve problems. - Demonstrate limited or barely effective organization and presentation skills.</td> </tr> <tr> <td>Fail</td> <td>- Demonstrate little or no grasp of the knowledge and understanding of the subject. - Demonstrate little or inapt integration of theories, principles, and evidence. - Show little or no evidence of analytical abilities, logical and independent thinking, and very little or no ability to apply knowledge to solve problems. - Demonstrate incoherent organization and poor presentation skills.</td> </tr> </table> | | | A | - Demonstrate thorough grasp of the subject. - Demonstrate integration of the full range of appropriate theories, principles, and evidence. - Show evidence of strong analytical abilities, logical and independent thinking, and ability to apply knowledge to a wide range of complex, familiar and unfamiliar situations. - Demonstrate highly effective organization and presentation skills. | B | - Demonstrate substantial grasp of the subject. - Demonstrate general integration of theories, principles, and evidence. - Show evidence of analytical abilities and logical thinking, some evidence of independent thinking, and ability to apply knowledge to familiar and some unfamiliar situations. - Demonstrate effective organization and presentation skills. | C | - Demonstrate general but incomplete grasp of the subject. - Demonstrate some partial integration of theories, principles, and evidence. - Show evidence of some analytical abilities and logical thinking, little evidence of independent thinking, and ability to apply knowledge to most familiar situations. - Demonstrate moderately effective organization and presentation skills. | D | - Demonstrate partial but limited grasp, with retention of some relevant information, of the subject. - Demonstrate limited integration of theories, principles, and evidence. - Show evidence of limited analytical abilities, little or no evidence of independent thinking, and limited ability to apply knowledge to solve problems. - Demonstrate limited or barely effective organization and presentation skills. | Fail | - Demonstrate little or no grasp of the knowledge and understanding of the subject. - Demonstrate little or inapt integration of theories, principles, and evidence. - Show little or no evidence of analytical abilities, logical and independent thinking, and very little or no ability to apply knowledge to solve problems. - Demonstrate incoherent organization and poor presentation skills. |
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| Course Type | Lecture-based course | | | | | | | | | | | | |

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| Course Teaching & Learning Activities | Activities | | Details | No. of Hours |
| | Lectures | | | 36 |
| | Tutorials | | | 12 |
| | Reading / Self study | | | 100 |
| Assessment Methods and Weighting | Methods | Details | Weighting in final course grade (%) | Assessment Methods to CLO Mapping |
| | Assignments | (poster presentation) | 50 | CLO 1,2,3,4 |
| | Examination | | 50 | CLO 1,2,3,4 |
| Required/recommended reading and online materials | C. Baird and M. Cann: Environmental Chemistry, Freeman, latest edition. S.E. Manahan: Environmental Chemistry, Lewis Publishers, latest edition. | | | |
| Course Website | NIL | | | |
| Additional Course Information | NIL | | | |