

Enquiry for Course Details

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| CHEM4147 Supramolecular chemistry (6 credits) | | Academic Year | 2020 |
| Offering Department | Chemistry | Quota | 40 |
| Course Co-ordinator | Dr H Y Au-Yeung, Chemistry < hoyuay@hku.hk > | | |
| Teachers Involved | (Dr H Y Au-Yeung, Chemistry) (Dr K Okuro, Chemistry) (Dr Y F Wang, Chemistry) | | |
| Course Objectives | Supramolecular chemistry concerns the chemistry beyond that of molecules. This course aims at introducing students to concepts and techniques in supramolecular chemistry, demonstrating how molecular assembly and supramolecular structures leads to functions and properties, and their relevance to material and biological science. | | |
| Course Contents & Topics | Basic concepts in molecular recognition and self-assembly; non-covalent interactions and common supramolecular building blocks; methods in supramolecular chemistry. Selected topics in modern supramolecular chemistry, such as macrocycles and cages, molecular capsule and container molecules, synthetic receptors, interlocked structures, supramolecular polymers and supramolecular chemistry of biomolecules and biomaterials, will also be discussed. | | |
| Course Learning Outcomes | On successful completion of this course, students should be able to: | | |
| | CLO 1 | Understand important principles and concepts in supramolecular chemistry | |
| | CLO 2 | Demonstrate knowledge and understanding in the nature of non-covalent interactions and to apply these concepts in the design and explanation of the structures, properties and functions of different supramolecular systems | |
| | CLO 3 | Interpret and analyse physical characterization data of supramolecular systems and extract relevant chemical information to explain the properties of the supramolecular systems | |
| Pre-requisites (and Co-requisites and Impermissible combinations) | Pass in CHEM3341 and CHEM3441 | | |
| Course Status with Related Major/Minor /Professional Core | 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) 2017 Major in Chemistry (Disciplinary Elective) 2017 Major in Chemistry (Intensive) (Disciplinary Elective) 2017 Minor in Chemistry (Disciplinary Elective) 2016 Major in Chemistry (Disciplinary Elective) 2016 Major in Chemistry (Intensive) (Disciplinary Elective) 2016 Minor in Chemistry (Disciplinary Elective) | | |
| Course to PLO Mapping | 2020 Major in Chemistry < PLO 1,2,3,5 > 2020 Major in Chemistry (Intensive) < PLO 1,2,3,5 > 2019 Major in Chemistry < PLO 1,2,3,5 > 2019 Major in Chemistry (Intensive) < PLO 1,2,3,5 > 2018 Major in Chemistry < PLO 1,2,3,5 > 2018 Major in Chemistry (Intensive) < PLO 1,2,3,5 > 2017 Major in Chemistry < PLO 1,2,3,5 > 2017 Major in Chemistry (Intensive) < PLO 1,2,3,5 > 2016 Major in Chemistry < PLO 1,2,3,5 > 2016 Major in Chemistry (Intensive) < PLO 1,2,3,5 > | | |
| Offer in 2020 - 2021 | Y | 2nd sem | Examination May |
| Offer in 2021 - 2022 | Y | | |
| Course Grade | A+ to F | | |

| Grade Descriptors | <table border="1"> <tr> <td data-bbox="617 155 706 275">A</td> <td data-bbox="706 155 1448 275">Demonstrate thorough knowledge and understanding of essential facts, concepts and principles in supramolecular chemistry, especially those relating to non-covalent interactions, molecular recognition and self-assembly. Show strong ability to apply and integrate knowledge in supramolecular chemistry in explaining the formation and properties of, and in designing different supramolecular systems. Show strong ability to analyse and interpret experimental data to draw appropriate conclusions relating to the advanced principles and properties of supramolecular systems.</td> </tr> <tr> <td data-bbox="617 275 706 401">B</td> <td data-bbox="706 275 1448 401">Demonstrate substantial knowledge and understanding of essential facts, concepts and principles in supramolecular chemistry, especially those relating to non-covalent interactions, molecular recognition and self-assembly. 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| Course Type | Lecture-based course | | | | | | | | | | | | | | | | | | | | |
| Course Teaching & Learning Activities | <table border="1"> <thead> <tr> <th data-bbox="617 888 966 919">Activities</th> <th data-bbox="966 888 1263 919">Details</th> <th data-bbox="1263 888 1448 919">No. of Hours</th> </tr> </thead> <tbody> <tr> <td data-bbox="617 919 966 951">Lectures</td> <td data-bbox="966 919 1263 951"></td> <td data-bbox="1263 919 1448 951">36</td> </tr> <tr> <td data-bbox="617 951 966 993">Tutorials</td> <td data-bbox="966 951 1263 993"></td> <td data-bbox="1263 951 1448 993">12</td> </tr> <tr> <td data-bbox="617 993 966 1024">Reading / Self study</td> <td data-bbox="966 993 1263 1024"></td> <td data-bbox="1263 993 1448 1024">100</td> </tr> </tbody> </table> | Activities | Details | No. of Hours | Lectures | | 36 | Tutorials | | 12 | Reading / Self study | | 100 | | | | | | | | |
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| Assessment Methods and Weighting | <table border="1"> <thead> <tr> <th data-bbox="617 1045 743 1077">Methods</th> <th data-bbox="743 1045 1047 1077">Details</th> <th data-bbox="1047 1045 1226 1098">Weighting in final course grade (%)</th> <th data-bbox="1226 1045 1448 1098">Assessment Methods to CLO Mapping</th> </tr> </thead> <tbody> <tr> <td data-bbox="617 1098 743 1140">Assignments</td> <td data-bbox="743 1098 1047 1140"></td> <td data-bbox="1047 1098 1226 1140">15</td> <td data-bbox="1226 1098 1448 1140">CLO 1,2,3</td> </tr> <tr> <td data-bbox="617 1140 743 1182">Examination</td> <td data-bbox="743 1140 1047 1182"></td> <td data-bbox="1047 1140 1226 1182">55</td> <td data-bbox="1226 1140 1448 1182">CLO 1,2,3</td> </tr> <tr> <td data-bbox="617 1182 743 1224">Presentation</td> <td data-bbox="743 1182 1047 1224"></td> <td data-bbox="1047 1182 1226 1224">15</td> <td data-bbox="1226 1182 1448 1224">CLO 1,2,3</td> </tr> <tr> <td data-bbox="617 1224 743 1255">Test</td> <td data-bbox="743 1224 1047 1255"></td> <td data-bbox="1047 1224 1226 1255">15</td> <td data-bbox="1226 1224 1448 1255">CLO 1,2,3</td> </tr> </tbody> </table> | Methods | Details | Weighting in final course grade (%) | Assessment Methods to CLO Mapping | Assignments | | 15 | CLO 1,2,3 | Examination | | 55 | CLO 1,2,3 | Presentation | | 15 | CLO 1,2,3 | Test | | 15 | CLO 1,2,3 |
| Methods | Details | Weighting in final course grade (%) | Assessment Methods to CLO Mapping | | | | | | | | | | | | | | | | | | |
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| Test | | 15 | CLO 1,2,3 | | | | | | | | | | | | | | | | | | |
| Required/recommended reading and online materials | <p>Supramolecular Chemistry by Jonathan W. Steed and Jerry L. Atwood, John Wiley & Sons, Ltd., 2nd Edition, 2009</p> <p>Modern Physical Organic Chemistry by Eric V. Anslyn and Dennis A. Dougherty, University Science Books, 2006</p> <p>References to specialist texts and other published materials will be made throughout the course.</p> | | | | | | | | | | | | | | | | | | | | |
| Course Website | | | | | | | | | | | | | | | | | | | | | |
| Additional Course Information | | | | | | | | | | | | | | | | | | | | | |

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