

General Chemistry

Module Information

2022.01, Approved

Summary Information

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|---------------------|----------------------------------|
| Module Code | 3504YAUZOO |
| Formal Module Title | General Chemistry |
| Owning School | Pharmacy & Biomolecular Sciences |
| Career | Undergraduate |
| Credits | 20 |
| Academic level | FHEQ Level 3 |
| Grading Schema | 40 |

Teaching Responsibility

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| LJMU Schools involved in Delivery |
| LJMU Partner Taught |

Partner Teaching Institution

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| Institution Name |
| Yunnan Agricultural University |

Learning Methods

| Learning Method Type | Hours |
|----------------------|-------|
| Lecture | 40 |
| Practical | 48 |

Module Offering(s)

| Display Name | Location | Start Month | Duration Number Duration Unit |
|--------------|----------|-------------|-------------------------------|
| JAN-PAR | PAR | January | 12 Weeks |

Aims and Outcomes

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| Aims | The focus of this course is to enable students to systematically describe the basic principles, basic concepts and basic theories of quantitative analytical and organic chemistry, and on this basis to explain the methods and principles of determining the content of related components. Students will learn basic analytical methods, understand the development process, characteristics of quantitative analytical chemistry, and their connections with other disciplines. In addition, theoretical knowledge and practice will be closely linked to the skills and techniques for scientific experiments. Students will learn to identify the composition, structure, properties, synthesis, mutual transformation methods and related theoretical knowledge of organic compounds. Through the study of this course, students should master the basic knowledge and basic theory of organic chemistry, understand the latest achievements and development trends of the subject, and lay a solid foundation for studying follow-up professional courses, continuing education and engaging in related teaching, scientific research, and production in the future. Students will also master the basic operation skills of organic chemistry experiments. |
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After completing the module the student should be able to:

Learning Outcomes

| Code | Number | Description |
|------|--------|---|
| MLO1 | 1 | To enable students to describe the basic principles, basic concepts and basic theories of quantitative analytical chemistry. |
| MLO2 | 2 | Demonstrate the ability to safely carry out basic experimental techniques including glass instrument cleaning and drying, glass instrument installation and disassembly, heating and cooling, reflux, distillation, steam distillation, paper chromatography, recrystallization, Soxhlet extraction, drying of solid organic compounds, boiling point and measurement of melting point. |
| MLO3 | 3 | Summarise the physical and chemical properties of various organic compounds, write various types of organic chemical reaction equations correctly, comprehensively apply basic organic reactions to identify organic compounds, infer the structure of organic compounds, design reasonable organic synthesis routes and analysis, and solve complex Organic chemistry problems. |
| MLO4 | 4 | Recall the naming rules for organic compounds and the different representation methods of organic molecular structures, adopt the system of nomenclature to name various organic compounds, and be able to write the organic molecular structural formula correctly as required. |

Module Content

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| Outline Syllabus | Students will learn to identify and describe the main organic chemistry structures (including alkanes, alcohols, phenols ketones, carbohydrates and fats), and experimental practice will include; recrystallization of acetanilide, determination of melting point and boiling point, ordinary distillation, paper chromatography, synthesis of ethyl acetate, extraction of crude oil, steam distillation and extraction of caffeine from tea. Quantitative analysis will include error sources and classification, the importance of accuracy and precision, measures to improve measurement accuracy, overview of titration and acid-base titration analysis and absorptiometry. |
| Module Overview | |
| Additional Information | Students will learn to identify and describe major organic compounds and analytical methods using a combination of theory and experimental sessions. |

Assessments

| Assignment Category | Assessment Name | Weight | Exam/Test Length (hours) | Module Learning Outcome Mapping |
|---------------------|-----------------|--------|--------------------------|---------------------------------|
|---------------------|-----------------|--------|--------------------------|---------------------------------|

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|------|--------------|------|---|------------------------|
| Exam | Written exam | 16.2 | 2 | MLO1, MLO2, MLO3, MLO4 |
| Exam | Test | 20 | 0 | MLO1, MLO2, MLO3, MLO4 |
| Exam | Written exam | 16.2 | 2 | MLO1, MLO2, MLO3, MLO4 |
| Exam | Exam | 27.6 | 2 | MLO1, MLO2, MLO3, MLO4 |
| Exam | Test | 20 | 0 | MLO1, MLO2, MLO3, MLO4 |

Module Contacts

Module Leader

| Contact Name | Applies to all offerings | Offerings |
|-----------------|--------------------------|-----------|
| Rachael Symonds | Yes | N/A |

Partner Module Team

| Contact Name | Applies to all offerings | Offerings |
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