**Global Learning Initiatives Program Course Syllabus**

Please complete the following form in English. The information will be updated to the Global Learning Initiatives Program website for students’ reference. If you will be offering more than one course, please fill out one form per course offered. Examples in grey.

**Course Information**

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| --- | --- |
| Course Name\*provide the **English** course name of the course.  | Safety in the Chemical Lab |
| Lecturer(s)\*provide the lecturers’ **English** name. If there are more than one lecturer, please indicate all lecturers in the column. | Associate Professor. Hongyan FENG |
| Course Description\*briefly describe the contents covered in the courses. | Our approach is to teach safety in the chemical laboratory in small TOPICs by MOOC. Here are 36 topics of chemical safety, including videos, ppts, animation, etc. This freedom of learning process is practical and sends the message to students that safety is always important.Each lecture is 8 to 15 minutes and focuses on one topic. The topic is about working with flammable chemicals, a strong acid or an oxidizing agent safely, safe use of the lab emergencies or PPE well, dispose of wastes legally and appropriately and risk assessment for new experiments etc. |
| Course Objectives\*list out knowledge or skills students should acquire upon completion of course. | Safety in the chemical lab is very important,we need to work with flammable chemicals, a strong acid or an oxidizing agent safely. We need to know the lab emergencies or PPE well. We need to dispose of wastes legally and appropriately.We need to risk assessment for new experiments. This MOOC will help undergraduate chemistry students and other learners to work in lab well.After studying this course, you can master the common experimental safety knowledge in the chemical laboratory. |
| Suggested Proficiencies(if any)\*list preferred knowledge or skills students should have before taking the course. | This MOOC is primarily for undergraduate chemistry students,but  it is also  useful for other laboratory science students, scientists, technicians, and investigators.Master of Mandarin is a plus  |
| Reading List(if any)\*list out the textbooks, references, or other reading materials. |  |
| Grading Criteria\*how would the students be assessed during the course. | Discussion (30%): Students who get full marks need to participate in the discussion initiated by the teacher in the "Classroom Exchange Area". The total number of posts and replies is 20 or more. The MOOC platform defaults that only this part of the discussion can calculate the score. Each chapter of this course will specify a discussion topic, and students can choose to participate according to their interests.Quiz (20%): Each quiz includes 5 multiple-choice questions, each with 2 points for a total of 10 points. There is no time limit for each test, 3 attempts are allowed, and the effective score is the highest score. There are 10 chapter quizzes in this course.Assignment (10%): 1 unit assignment will be released this semester, including 1 subjective question, totaling 10 points. This question adopts the way of students' mutual evaluation of homework, and the minimum number of each student's mutual evaluation is 5. The system defaults that the unit work scores of students' mutual evaluations are taken as the median of their evaluated scores.Final exam (40%): Includes 25 multiple-choice questions and 25 true or false questions, each with 2 points, a total of 100 points; it needs to be completed within 60 minutes, and only one attempt is allowed.A total score of 60 points and above is qualified, 85 points and above are excellent, and corresponding certificates can be applied for. |

**Course Schedule**

Please complete the following table with the dates and expected course topics. If there are more than one lecturers instructing the course, please also indicate the lecturer for each class.

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| Class | Date (YYYY/MM/DD) | Course Topic | Lecturer |
| 1 | 2023/03/06 | 1. Introduction of Safety in Chemical Lab 1.1 Introduction of Safety in Chemical Lab1.2 Personal Protective Equipment1.3 The Student Safety Ethic and Bad Habits in Chemical Lab | Hongyan FENG |
| 2 | 2023/03/13 | 1. Identification and Classification for Hazardous Chemicals

2.1 Identification and Classification of Hazardous Chemicals 2.2 The Using of GHS and NFPA 704 in China  | Hongyan FENG |
| 3 | 2023/03/20 | 3. Hazards of Chemicals 3.1 Physical and Environmental Hazards of Chemicals3.2 Cause and Health Hazards of Chemicals3.3 Management and Use of Hazardous Chemicals | Hongyan FENG |
| 4 | 2023/03/27 | 1. Classification, Storage and Use of Chemicals (Part I)

4.1 Safe Storage of Chemicals: Location, Cabinets and Bottles4.2 Classification, Storage and Use of Organic Chemical Reagents (Part I)4.3 Classification, Storage and Use of Organic Chemical Reagents (Part II) | Hongyan FENG |
| 5 | 2023/04/03 | 5. Classification, Storage and Use of Chemicals (Part II) 5.1 Classification, Storage and Use of Inorganic Metallic Elementary substances5.2  Classification, Storage and Use of Inorganic Nonmetallic Elementary substances 5.3 Classification, Storage and Use of Inorganic Salt | Hongyan FENG |
| 6 | 2023/04/10 | 6. Classification, Storage and Use of Chemicals( (Part Ⅲ)6.1 Classification, Storage and Use of Inorganic Acids and Bases 6.2 Classification, Storage and Use of Inorganic Oxides6.3 Emergency and Disposal for Common Chemicals  | Hongyan FENG |
| 7 | 2023/04/17 | 7. Safety and Lab Rules for Organic Chemistry Laboratories 7.1 Reagents and Basic Lab Glassware 7.2 Basic Lab Techniques and Equipment  | Hongyan FENG |
| 8 | 2023/04/24 | 8. Safe use of Pressure Vessels 8.1  Principles for Gas Cylinders8.2 Hazards from Common Kinds of Gas Cylinders8.3 Safe use of Pressure Vessels  | Hongyan FENG |
| 9 | 2023/05/01 | 9. Hazards from Lab Water and electric 9.1 Electrical Shock Accidents and First Aid Measures 9.2 Electrical Accidents in the Lab and Preventive Measures  9.3 Hazards from Lab Water  | Hongyan FENG |
| 10 | 2023/05/08 | 10. Safety of Lab Instruments & Equipments 10.1 Safety and Classification for Common Instruments 10.2 Safety Management and Use of Large Lab Instruments & Equipment 10.3 Safety Precautions for Use of Large Instruments & Equipment | Hongyan FENG |
| 11 | 2023/05/15 | 1. Lab Hazardous Wastes (Part I)

11.1 Safety Management of Lab Hazardous Wastes 11.2 Disposal and Recycling of Organic Wastes  | Hongyan FENG |
| 12 | 2023/05/22 | 12. Lab Hazardous Wastes (Part II) 12.1 Disposal and Recycling of Liquid Inorganic Wastes 12.2 Disposal and Recycling of Solid Inorganic Wastes 12.3 “Going Green”: Wastes Disposal in the lab  | Hongyan FENG |
| 13 | 2023/05/29 | 1. Fire-fighting in Chemical Lab

13.1 Fire Safety in Chemical Lab13.2 Classification and Use of Fire Extinguishers13.3 Introduction of Fire-fighting Equipment and Fire Safety Symbols | Hongyan FENG |
| 14 | 2023/06/05 | Examination | Hongyan FENG |