

Date: 03/09/2021

To
The Principal,
Shri Mohatadevi Shikshan Sanstha,
Pragati Mahavidyalaya,
Sawkheda, Tq. Sillod,
Dist. Aurangabad

Subject: Proposal to Run a Certificate Course on "*Chemical Safety and Hazard Management*"
for Chemistry Department Students in the Academic Year 2021-22

Respected Sir,

I am writing to propose the introduction of a certificate course entitled "*Chemical Safety and Hazard Management*" for the students of the Chemistry Department in the academic year 2021-22. This course, spanning a total duration of 32 hours, is designed to enhance the knowledge and skills of our students in the crucial area of chemical safety and hazard management.

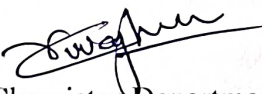
The importance of safety in chemical handling, storage, and disposal cannot be overstated, especially in a laboratory setting. This course will provide students with essential training on how to manage chemical hazards effectively, thereby equipping them with the competencies required to ensure a safe learning and working environment. The curriculum will cover a range of topics, including but not limited to, risk assessment, emergency response procedures, proper use of personal protective equipment (PPE), and regulatory compliance.

The implementation of this course will not only augment the students' academic learning but also significantly improve their practical skills, making them more competent and prepared for future careers in chemistry and related fields.

I kindly request your approval to run this certificate course and also seek permission to utilize the necessary resources and infrastructure of the college for this purpose.

Thank you for considering this proposal. I am available to provide any further information or clarification required.

Yours sincerely,


HOD, Chemistry Department
Pragati Mahavidyalaya,
Sawkheda, Tq. Sillod,
Dist. Aurangabad



Shri Mohatadevi Shikshan Sanstha, Aurangabad.

PRAGATI MAHAVIDYALAYA

Sawkheda, Tq. Sillod, Dist. Aurangabad.

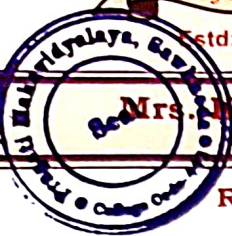
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College Code: 442 Exam. Center Code: 291

Website: www.pragatisawkheda.co.in

Email: pragatiiqac2016@gmail.com, pragatimahavidyalaya442@gmail.com

Contact: 9822021784, 8888611717



Mrs. Haveri Palkar
President

Mrs. Archana Mukhekar
Secretary

Dr. Varsha Phalke
Principal

Ref No.: PMS/2021-2022/04

Date: 06/09/2021

To
The Head of the Department,
Chemistry Department,
Pragati Mahavidyalaya,
Sawkheda, Tq. Sillod,
Dist. Aurangabad

Subject: Sanction to Run the Certificate Course on "*Chemical Safety and Hazard Management*"

Dear HOD,

With reference to your proposal dated [Date], requesting approval to conduct a certificate course entitled "*Chemical Safety and Hazard Management*" for the students of the Chemistry Department in the academic year 2021-22, I am pleased to inform you that your request has been approved.

The proposed course, spanning 32 hours, is an excellent initiative to enhance the practical knowledge and safety awareness of our students in handling chemicals and managing hazards in the laboratory environment. It aligns well with our goal of providing high-quality education and ensuring the safety and well-being of our students and staff.

You are hereby granted permission to run the aforementioned certificate course. Please ensure that all necessary arrangements, including the availability of qualified instructors, course materials, and adherence to safety protocols, are in place for the successful implementation of this program. Additionally, you are authorized to use the college's resources and infrastructure as required for conducting the course.

We look forward to the successful execution of this course and the positive impact it will have on our students' education and safety practices.

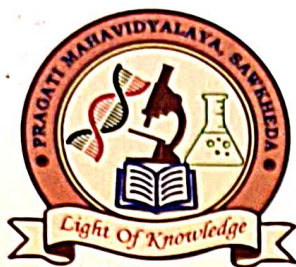
Thank you and best regards,

Varsha

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Mrs. Kaveri Palkar
President

Mrs. Archana Mukhekar
Secretary

Dr. Varsha Phalke
Principal

Ref No.: PMS/2021-2022/04

Date : 06 / 09 / 2021

Chemistry Department

NOTICE

Subject: Enrollment for Certificate Course on "*Chemical Safety and Hazard Management*"

All students of the Chemistry Department are hereby informed that the department is introducing a certificate course titled "*Chemical Safety and Hazard Management*" for the academic year 2021-22.

This 32-hour course aims to provide in-depth knowledge and practical skills in managing chemical hazards and ensuring safety in the laboratory environment. The course will cover important topics such as risk assessment, emergency response procedures, proper use of personal protective equipment (PPE), and regulatory compliance.

Interested students are requested to register for the course by filling out the enrollment form available at the department office. Please ensure you submit the completed form before the registration deadline.

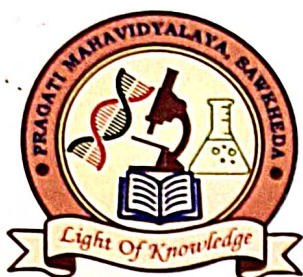
This is a valuable opportunity to enhance your knowledge and skills in chemical safety, which will be beneficial for your future academic and professional endeavors.

We look forward to your enthusiastic participation.

Thank you.

Head of the Department, Chemistry
Pragati Mahavidyalaya, Sawkheda

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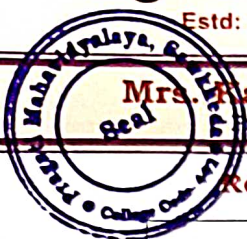
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Mrs. Paveri Palkar
President

Mrs. Archana Mukhekar
Secretary

Dr. Varsha Phalke
Principal

Ref No.: PMS/20 - -20 - /

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Syllabus for Certificate Course on *Chemical Safety and Hazard Management*

Course Duration: 32 Hours

Course Objective: To provide students with comprehensive knowledge and practical skills in chemical safety and hazard management, ensuring safe laboratory practices and compliance with safety regulations.

Module 1: Introduction to Chemical Safety (4 Hours)

- Overview of Chemical Safety
- Importance of Safety in the Laboratory
- Common Laboratory Hazards
- Safety Culture and Responsibility

Module 2: Understanding Chemical Hazards (6 Hours)

- Types of Chemical Hazards: Physical, Health, and Environmental Hazards
- Hazard Communication Standards
- Reading and Understanding Safety Data Sheets (SDS)
- Labeling of Chemicals and Hazard Symbols

Module 3: Risk Assessment and Management (6 Hours)

- Identifying Potential Hazards in Laboratory Settings
- Conducting Risk Assessments
- Control Measures for Risk Reduction
- Developing Safety Protocols and Standard Operating Procedures (SOPs)

Module 4: Personal Protective Equipment (PPE) and Laboratory Safety Equipment (4 Hours)

- Types of PPE: Gloves, Goggles, Lab Coats, Respirators, etc.
- Selection and Proper Use of PPE
- Maintenance and Storage of PPE
- Overview of Laboratory Safety Equipment: Fume Hoods, Fire Extinguishers, Safety Showers, and Eye Wash Stations

Module 5: Safe Handling, Storage, and Disposal of Chemicals (4 Hours)

- Guidelines for Safe Handling of Chemicals
- Storage Requirements for Different Types of Chemicals
- Waste Segregation and Disposal Methods
- Environmental Considerations and Compliance with Regulations

Module 6: Emergency Preparedness and Response (4 Hours)

- Types of Emergencies: Chemical Spills, Fires, Explosions, and Medical Emergencies
- Emergency Response Planning and Evacuation Procedures

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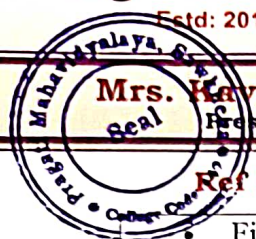
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Fstd: 2016



Mrs. Haveri Palkar

President

Mrs. Archana Mukhekar

Secretary

Dr. Varsha Phalke

Principal

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- First Aid Measures for Chemical Exposure
- Conducting Emergency Drills and Incident Reporting

Module 7: Regulatory Framework and Compliance (4 Hours)

- Overview of National and International Safety Regulations
- Regulatory Bodies and Their Role (OSHA, EPA, etc.)
- Compliance with Laboratory Safety Standards
- Documentation and Record-Keeping for Safety Compliance

Module 8: Case Studies and Practical Sessions (4 Hours)

- Analysis of Real-Life Chemical Safety Incidents
- Group Discussions on Best Practices and Lessons Learned
- Hands-On Training: Using Safety Equipment and Conducting Safety Audits
- Practical Exercises: Risk Assessment and Emergency Response Simulations

Assessment and Certification (Included in Module 8)

- **Assessment:** Written Test and Practical Evaluation
- **Certification:** Issued upon Successful Completion of the Course

Recommended Reading and Resources:

- *Prudent Practices in the Laboratory: Handling and Management of Chemical Hazards*
- Safety Data Sheets (SDS) for Common Laboratory Chemicals
- OSHA Laboratory Safety Guidance
- Relevant Scientific Journals and Articles on Chemical Safety

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30 Marks Multiple-Choice Questionnaire (MCQ) for the Certificate Course on *Chemical Safety and Hazard Management*

Instructions:

- Answer all questions.
- Each question carries 1 mark.
- Choose the most appropriate answer.

1. What is the primary purpose of Safety Data Sheets (SDS)?

- a) To provide marketing information about chemicals
- b) To describe the properties and hazards of chemicals
- c) To list the prices of chemicals
- d) To provide recipes for chemical mixtures

2. Which of the following is considered a physical hazard in a laboratory?

- a) Toxicity
- b) Flammability
- c) Carcinogenicity
- d) Reproductive toxicity

3. What does PPE stand for?

- a) Personal Protective Equipment
- b) Professional Protection Equipment
- c) Personal Practice Equipment
- d) Professional Personal Equipment

4. Which regulatory body is responsible for setting standards for workplace safety in the United States?

- a) EPA
- b) FDA
- c) OSHA
- d) NIH

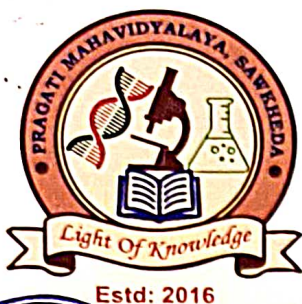
5. What is the correct procedure for handling a chemical spill?

- a) Ignore the spill and continue working
- b) Use water to dilute and clean up the spill
- c) Evacuate the area and report the spill to the appropriate personnel
- d) Cover the spill with paper towels and leave it

6. What type of hazard does the term "corrosive" refer to?

- a) Physical hazard
- b) Health hazard
- c) Environmental hazard
- d) Fire hazard


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7. Which piece of PPE is essential when working with chemicals that can cause eye irritation?

- a) Lab coat
- b) Gloves
- c) Safety goggles
- d) Respirator

8. How should chemicals be stored to minimize hazards?

- a) In open containers on lab benches
- b) In a well-ventilated area away from heat sources
- c) Mixed together to save space
- d) In any available storage space without regard to compatibility

9. What is the main goal of a risk assessment in a laboratory?

- a) To find out the cost of chemicals
- b) To identify potential hazards and implement control measures
- c) To assess the performance of laboratory equipment
- d) To calculate the time required for experiments

10. In case of a chemical fire, which type of extinguisher is most appropriate?

- a) Water extinguisher
- b) Foam extinguisher
- c) Carbon dioxide (CO₂) extinguisher
- d) Wet chemical extinguisher

11. What should be done if a chemical comes into contact with skin?

- a) Wash the area with plenty of water
- b) Rub the area with a cloth
- c) Apply oil to the affected area
- d) Ignore it if there is no pain

12. Which hazard label color indicates a high level of reactivity?

- a) Blue
- b) Red
- c) Yellow
- d) White

13. What is the purpose of an emergency eye wash station in a laboratory?

- a) To clean laboratory equipment
- b) To rinse off chemical splashes from the eyes
- c) To wash hands before eating
- d) To clean up spills

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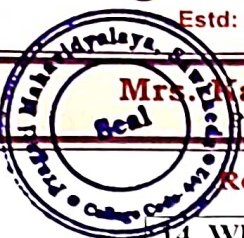
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14. What does the acronym "OSHA" stand for?

- a) Office of Safety and Health Administration
- b) Occupational Safety and Health Administration
- c) Organization for Safety and Health Assistance
- d) Office of Safety and Hazard Assessment

15. What is the recommended way to dispose of chemical waste?

- a) Pour it down the sink
- b) Throw it in regular trash
- c) Follow the specific disposal guidelines provided for the chemical
- d) Mix it with other wastes and dispose of it

16. What is the primary focus of a chemical hazard communication program?

- a) Marketing strategies
- b) Emergency contact information
- c) Providing information on chemical hazards and safety measures
- d) Financial budgeting for chemical purchases

17. When should laboratory safety drills be conducted?

- a) Only when there is a real emergency
- b) Regularly, as part of safety training
- c) Once a year during inspection
- d) Only when new equipment is installed

18. Which of the following is NOT a common safety equipment found in a laboratory?

- a) Fume hood
- b) Safety shower
- c) Fire extinguisher
- d) Personal fan

19. What is the proper action if you are unsure how to handle a particular chemical?

- a) Guess and proceed with caution
- b) Consult the Safety Data Sheet (SDS) for guidance
- c) Avoid using the chemical
- d) Ask a colleague to handle it for you

20. What type of chemical hazard does "carcinogenic" refer to?

- a) Physical hazard
- b) Health hazard
- c) Environmental hazard
- d) Fire hazard

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21. Which of the following is a key element of an emergency response plan?

- a) Chemical purchase records
- b) Response procedures for different types of emergencies
- c) Personal contact details of all employees
- d) Experimental procedures and results

22. What does the term "flammable" mean in relation to chemicals?

- a) Chemicals that can dissolve in water
- b) Chemicals that can catch fire easily
- c) Chemicals that are safe to store
- d) Chemicals that are corrosive to metal

23. When should you use a fume hood?

- a) When handling chemicals that emit toxic fumes
- b) When preparing meals in the laboratory
- c) When working with non-chemical materials
- d) When storing chemicals in a cabinet

24. What should be included in a laboratory safety audit?

- a) Laboratory equipment inventory
- b) Review of safety protocols and equipment functionality
- c) List of all chemical suppliers
- d) Student attendance records

25. Which of the following actions is NOT recommended for safe laboratory practices?

- a) Wearing appropriate PPE
- b) Keeping chemicals in their original containers
- c) Eating and drinking in the laboratory
- d) Properly labeling chemical containers

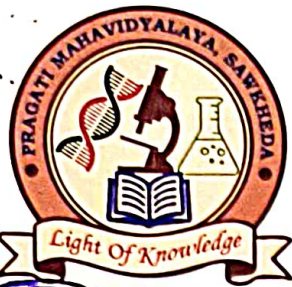
26. What is the purpose of a lab coat in a laboratory?

- a) To keep clothes clean from chemical splashes
- b) To look professional
- c) To provide warmth
- d) To indicate authority

27. How should you handle broken glass in the laboratory?

- a) Pick it up with bare hands
- b) Sweep it up with a broom
- c) Use a dustpan and dispose of it in a designated glass disposal container
- d) Leave it for someone else to clean up

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28. What does the term "toxic" refer to in chemical safety?

- a) Chemicals that are dangerous when inhaled, ingested, or absorbed
- b) Chemicals that can cause fire
- c) Chemicals that are safe to use
- d) Chemicals that are highly reactive

29. Which type of extinguisher should be used for a flammable liquid fire?

- a) Water extinguisher
- b) CO2 extinguisher
- c) Foam extinguisher
- d) Dry chemical extinguisher

30. What is the key feature of a chemical hazard label?

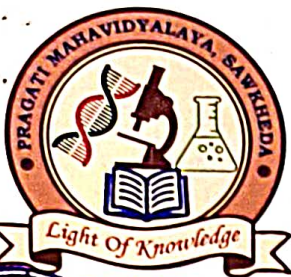
- a) Decorative design
- b) Chemical name and hazard information
- c) Expiration date
- d) Manufacturer's contact information

Answer Key

1. b) To describe the properties and hazards of chemicals
2. b) Flammability
3. a) Personal Protective Equipment
4. c) OSHA
5. c) Evacuate the area and report the spill to the appropriate personnel
6. b) Health hazard
7. c) Safety goggles
8. b) In a well-ventilated area away from heat sources
9. b) To identify potential hazards and implement control measures
10. c) Carbon dioxide (CO2) extinguisher
11. a) Wash the area with plenty of water
12. c) Yellow
13. b) To rinse off chemical splashes from the eyes
14. b) Occupational Safety and Health Administration
15. c) Follow the specific disposal guidelines provided for the chemical
16. c) Providing information on chemical hazards and safety measures
17. b) Regularly, as part of safety training
18. d) Personal fan
19. b) Consult the Safety Data Sheet (SDS) for guidance
20. b) Health hazard

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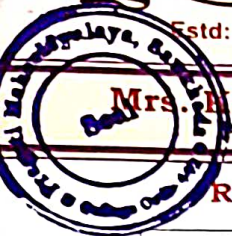
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21. b) Response procedures for different types of emergencies
22. b) Chemicals that can catch fire easily
23. a) When handling chemicals that emit toxic fumes
24. b) Review of safety protocols and equipment functionality
25. c) Eating and drinking in the laboratory
26. a) To keep clothes clean from chemical splashes
27. c) Use a dustpan and dispose of it in a designated glass disposal container
28. a) Chemicals that are dangerous when inhaled, ingested, or absorbed
29. d) Dry chemical extinguisher
30. b) Chemical name and hazard information

Varsha

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