SCIENCE, MATH AND COMPUTER SCIENCE DEPARTMENT HANDBOOK

Directory

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Marywood Directories

Overview of the Science, Math and Computer Science Department

Mission Statement

The mission of the Science department is to produce open-minded persons with specific knowledge and technical skills that relate to the natural world, and to provide an in-depth understanding of scientific advances that currently affect society. Science and non-science students are provided scientific literacy and are encouraged to utilize their scientific education in a globally responsible manner.

The mission of the Department of Science, Mathematics, & Computer Science is to offer excellent instruction in the sciences, mathematics, and computer science by faculty for whom excellent teaching is a high priority, and who continually work to improve teaching and learning. We provide opportunities for students to participate in research projects with faculty and degree programs that result in graduates ready to pursue careers in their field, further graduate or professional studies, or enter the teaching profession. We also teach classes for general education students and nonmajors that offer the substance of science and mathematics in a manner which results in graduates who can understand and appreciate the linkage between science, mathematics, and the modern world. Majors and non-majors alike are provided scientific and quantitative literacy and are encouraged to utilize their education in a globally responsible manner.

University Catalog

College of Arts and Sciences Webpage

Undergraduate Degree Requirements

The link above for the Undergraduate Degree Requirements will provide you information about:

- Undergraduate Admission Information
- Undergraduate Basic Financial Information
- Undergraduate Academic Regulations

Graduate Degree Requirements

- Graduate Admissions Information
- Graduate Financial Assistance
- Graduate Degree Information
- Biotechnology MS Program Information

Biotechnology MS Degree Information
Graduate Academic Regulations

Campus Life

The link above for Campus Resources has more information about the following: Academic Computing, Book Store, Bus Service Chapel & Interfaith Reflection Room, Disability Services, Fellowships, Fricchione Day Care Center, Information Technology, Learning Commons, Office of Military & Veterans Services, Professional and Career Development, Psychological Services Center, Radio Station and TV Studio/Soundstage, Tutoring Center, Post Office, and Writing Center.

Academic Resource

Students are expected to be familiar with and comply with the policy statements in the University *Student Handbook, which* is updated annually and available on the University website. Students may also refer to this catalog and *departmental handbooks* (if applicable) for more specific policy and procedural statements.

Marywood University's catalog contains information current as of the date of the catalog about Marywood's calendar, admission policies, procedures and standards, degree requirements, fees, and regulations.

Marywood University reserves the right, in its sole judgment and discretion, to make and change rules and regulations; create, change and abolish programs; change the University's calendar, admissions policies, procedures and standards, degree requirements, fees, and academic schedule whenever necessary or desirable. Such changes include, but are not limited to, changes in course content and class schedules, canceling scheduled classes and other academic activities. In any case the University will strive to give such notice as is reasonably practicable under the circumstances.

Marywood University assumes no liability, and expressly negates any liability, for failure to provide or for delay in providing educational or related services or facilities, or for any other failure or delay in performance arising out of or due to causes beyond its reasonable control. Such causes may include, without limitation, power failure, fire, damage caused by the elements, acts of God, and acts of public authorities. Marywood University will exercise reasonable efforts, if appropriate, to provide comparable or substantially equivalent services, facilities, or performance. Its inability or failure to do so, however, shall not subject it to liability.

Undergraduate and Graduate Catalogs

Office of the University Registrar webpage

The link above for the Office of the University Registrar webpage will provide you information about:

Academic Calendar

Schedule of Classes
Student Forms
Transcripts

Prior Learning & Testing
Enrollment & Degree Verification
Academic & Classroom Scheduling
Compressed Schedule
Faculty Resources
Academic Regulations
FERPA
Veteran's Benefits
Contact Information for the Registrar's Office

Campus Resources

Office of Retention & Advising
Cashier's Office
Financial Aid Office
Office of Student Support Services
Career Services
Student Health Services

Registration For Classes

Please visit the Registrar's web page for specific dates to register. International students and students with disabilities may receive additional academic advising support. Students interested in these services should contact the appropriate office on campus for information. It is the student's responsibility to notify both the Academic Registrar and the Science Department Secretary of any change in name, address, phone number, or marital status. Prior to a student's first semester at Marywood, a faculty or professional staff advisor assists the student in the preparation of his/her first schedule**. Continuing students receive registration materials prior to each session and schedule an appointment with their academic advisors before registering online or at the Office of Academic Records.**
The links below will take you to registration information and forms you will need. *Included is a link to information about Student Planning a valuable new tool for planning a student's program of study and processing their registration.*

How to Use the Student Portal

Student Planning

Undergraduate Students

Use your MarywoodYOU portal to review your academic profile information prior to meeting with your academic advisor. A link for Program Evaluation is available in the Academic Profile section of your student portal. This gives you the ability to audit your progress toward degree completion. If you receive an error message in running the evaluation, report the problem in writing to Academic Records so that they can work with your academic department to determine the issue. In the interim, you should review your completed coursework under the transcript option in the Academic Profile. You should also check the Schedule of Classes online.

Make an appointment with your advisor two weeks prior to your registration date.
All advisors will have a sign-up sheet posted outside his/her office door for advisees to choose a day and time. Each student should print his/her name, email address and phone number on the sign-up sheet. Since it is necessary for the advisor to review the student's file before the appointment, no appointments will be taken without a 24-hour advance notice. If a student is unable to keep the appointment, he/she is asked to contact the advisor or the Science Department Administrative Assistant. It is the student's responsibility to meet with his/her advisor at least one time each semester. The Science Department will not assume any responsibility for students who do not show up for advisement.
Consult the Registrar's webpage to determine when registration begins via the MarywoodYou portal or at Academic Records, LAC 90.

All financial obligations must be met before you register. If you encounter a problem when attempting to register, please contact the Cashier's Office with questions pertaining to your financial status at (570) 348-6212. After your registration has been processed, you may print a copy of your schedule through your MarywoodYou student portal account.
Students whose major QPA is less than 2.33 after completing four major courses (16 credits) will not be permitted to register for upper level major courses until the minimum QPA of 2.33 is earned.

Ultimately, it is the student's responsibility to meet all requirements for his or her major program and general requirements for all students. Marywood University is committed to helping students become active in this decision -making process.

Core Curriculum

Lab Assistantships

Qualified Science majors (QPA of at least 3.0 is required) are needed during the academic year to serve as laboratory assistants. Each laboratory assistant works in a specialized laboratory (Chemistry, Biology, Physics, Microbiology, etc.) under the direct supervision of the Science Laboratory Manager. Duties will include:

- Setup up and cleanup of teaching laboratories
- Processing of waste
- Inventory
- Assisting lab instructors
- Other duties as assigned by the Science Laboratory Manager

The position of laboratory assistant is a valuable experience, since it provides an opportunity to gain knowledge and skills beyond the classroom setting. Laboratory assistants are selected on the basis of merit by the Laboratory Manager and Department Chairperson. A major QPA of at least 3.0 is required to retain a lab assistant position.

How to Apply for a Lab Assistant Position

The Work Study Program supports many of the available lab assistant positions. Work Study must be applied for through the Marywood University Human Resources – Student Employment Web Page. Follow the Steps to Make it Happen. Human Resources (HR) contacts you with your eligibility status for a work study position. Once to hear from HR, please contact the Science Laboratory Manager to inquire about the interview process.

The Science Department may provide financing for a limited number of qualified students (major QPA of at least a 3.0 is required) who are **ineligible** for the Work Study Program. Interested students must apply through the Marywood University Human Resources – Student Employment Web Page. Follow the Steps to Make it Happen. Human Resources will contact you concerning your ineligibility for work study employment. Please contact the Science Laboratory Manager to inquire about the interview process for a non-work study position.

Internships

Students are strongly advised to participate in internships that are related to their major areas of study. BIOL 498/ENVS 498/CHEM498 Internship allows students to earn 3 credits for their work. Students are required to have a minimum major QPA and an overall QPA of 3.0. A science faculty member monitors the activity and assigns a grade.

Undergraduate Research

BIOL 454/ENVS 454/CHEM 454 Undergraduate Research is an elective open to science majors whose major QPA and overall QPA is at least 3.0. Adherence to the following guidelines is mandatory:

- ✔ The student must choose a research topic and a mentor who directs all aspects of the investigation by the end of junior year. In addition, the student must meet with the Science Department Chairperson to receive approval for the proposed project.
- ✔ The research project must be a library/laboratory-based investigation, which involves data collection.
- ✔ Students register for BIOL 454/ENVS 454/CHEM 454 Undergraduate Research for 2 credits in the semester in which the research will be completed.

At the conclusion of the research activity the student is required to submit a written report to his/her mentor for final evaluation, or provide a presentation to the Science department. The student may be asked to give a public

presentation of the research investigation. A copy of the research will be filed in the Science Department.

Procedure for Registering for Research Related Courses

1. View scheduled offerings and thus faculty members listed for the upcoming semester (e.g. BIOL 455, 454, 499)
2. From the Science dept. website examine the research activities and interests for those faculty listed (look up the faculty member you wish to work with.
3. Meet with that faculty member, to request participation in the upcoming semester
4. If approved by that professor, obtain an approval note from him/her
5. Bring note to dept. chair for final approval.
6. Bring notes to your advising session, so your advisor can sign off on the registered research course and your other courses.

Class and Laboratory Cancellation Policy

In the event an instructor is unable to conduct their class and/or laboratory, they must email the students, Department Chairperson, Laboratory Manager (if applicable), Dean's Secretary and Science Secretary. It is also the Laboratory Instructor's responsibility to make arrangements (if possible) to have another part-time or full-time Science Faculty member cover their laboratory session when they are not able.

e2campus Notification System

e2campus is a state-of-the-art notification system that sends notifications instantly and simultaneously to you. All users receive these notifications:

a. Weather cancellations and delays
b. Emergency conditions
c. Changes in parking conditions

You may choose to receive notifications on your

d. mobile phone (text messages)
e. e-mail address
f. Google, Yahoo, WindowsLive or AOL home page

Snow Days

In case of bad weather, students should call Marywood's Snow Information Line at (570) 961-4SNO. This phone line message will indicate the following:

i. if Marywood is operating according to its normal class schedule
ii. if classes are on a compressed schedule
iii. if classes are canceled
iv. or other important information about meetings, conferences, extra-curricular activities, etc.

Commuter students should use their own discretion about traveling when the University is operating on a regular schedule during bad weather. Students should check with course instructors about how their decisions will affect their academic performance.

GRADE REVIEW COMMITTEE

The **Grade Review Committee (GRC)** in the Science Department reviews the science majors' grades at the end of each academic semester. Letters are sent to students whose QPA is less than 2.33. **A student who has a QPA below 2.33 will be placed on academic probation for two semesters.** At the end of the probation period, he/she will be re-evaluated and a decision will be made about his/her status as a student in the Science Department. The GRC reserves the right to tell a student who does not achieve a 2.33 primary QPA after the probation period that it is no longer feasible for he/she to continue as a Science Major and that he/she should seek another major. The GRC will also evaluate Pre-PA majors in accordance with the 3.0 average QPA (major courses) that is needed for PA MS consideration. In addition, students who receive grades of (D, D+, C-, C, & C+) may be notified stating the recommendation of the committee. The Science Department strongly recommends that students retake any major courses in which a grade of "D" or "D+" has been issued. Once a grade of "D" or "D+" is received, it is difficult to raise the primary QPA unless the course is retaken. In some instances, the GRC will state that a student must retake a course or courses, especially students who do not achieve a 2.33 after completing four major courses (16 credits). In addition, congratulatory letters are sent to all currently enrolled students who have earned a primary QPA above 3.5. Approved by Faculty: Effective September 1, 1996 (Revised: January, 2002)

Please refer to the Marywood University Catalog for additional/detailed grading information.

Honors at Commencement

The degrees of Bachelor of Arts, Bachelor of Science, Bachelor of Music, Bachelor of Social Work, Bachelor of Science in Nursing, Bachelor of Fine Arts, Bachelor of Business Administration, Bachelor of Environmental Design in Architecture, and Bachelor of Architecture are awarded in three grades of honor:

- with distinction, cum laude 3.50 - 3.74 cumulative QPA
- with high distinction, magna cum laude 3.75 - 3.89 cumulative QPA
- with highest distinction, summa cum laude 3.90 - 4.00 cumulative QPA

These distinctions are awarded on the basis of the student's cumulative average in all subjects. For students attending Commencement in May, any and all honors are determined on grades from the preceding semester. Students entering with advanced standing from other colleges and universities are not eligible for these honors until they have completed at least 60 credits at Marywood University.

Special Awards at Graduation

Medal for Excellence in Biological Studies founded in memory of Sister Maria Laurence Maher, I.H.M. on behalf of her family members. The criteria for the award are:

- Primary major QPA of 3.33
- Overall Marywood QPA of 3.50
- Active membership in one or more department student clubs
- Participated in a student research project or internship
- Service to the department (lab assistant, work-study, tutor, club officer, etc.)

Sister M. Sylvia Morgan Medical for Pre Medical Studies founded by Elizabeth King Young Arvad, M.D. The criteria for the award are:

- Primary major (biology/biotechnology) QPA of 3.33
- Overall Marywood QPA of 3.50
- Active membership in Biology club
- Participated in a student research project or internship
- Service to the department (lab assistant, work-study, tutor, club officer, etc.)
- Preference will be given to any student who has been accepted to medical school

Philip E. Mulry Medal for Excellence in Chemistry founded by the Mulry family in memory of Philip E. Mulry, Sr. The criteria for the award are:

- Primary major QPA of 3.33; minor in chemistry
- Overall Marywood QPA of 3.50
- Active membership in one or more department student clubs
- Participated in a student research project or internship
- Service to the department (lab assistant, work-study, tutor, club officer, etc.)

Science Department Awards

Award for Excellence in Biotechnology

- ➢ Primary QPA of 3.33
- ➢ Overall Marywood QPA of 3.50
- ➢ Service to the department (lab assistant, work-study, tutor, club officer, etc.)

Award for Excellence in Environmental Science

- ➢ Primary QPA of 3.33
- ➢ Overall Marywood QPA of 3.50
- ➢ Service to the department (lab assistant, work-study, tutor, club officer, etc.)

Award for Excellence in Science Education

- ➢ Primary QPA of 3.33
- ➢ Overall Marywood QPA of 3.50
- ➢ Service to the department (lab assistant, work-study, tutor, club officer, etc.)

Sr. Anitra Award for Excellence in Human Anatomy & Physiology

- ➢ Combined QPA of 3.33 in Human Gross Anatomy & Human Physiology
- ➢ Overall Marywood QPA of 3.50
- ➢ Active membership in one or more department student clubs
- ➢ Service to the department (lag assistant, work-study, tutor, club officer, etc.)
- ➢ Participation in a student research project, internship, shadowing, or job with regards to application of anatomical or physiological principles.

Service Medals are given out to those students who have demonstrated outstanding service to the department and/or student department clubs.

NOTE: Regarding the awards and medals, criteria #2, #3, and #4 may be waived in senior year for students who are participating in internships or student teaching.

Health Professions Advisory Committee

Committee Members 2020-2021: Dr. Lisa Antoniacci (Chair), Dr. Michael Kiel, Dr. Deanne Garver, and Dr. Steven Reggie

Mission Statement: The mission of this committee is to provide Marywood University students with the proper advising, support, and curriculum to promote the successful transition into Health Professional Programs.

Policies/Procedures:

- Students applying to Health Professional Schools that are requesting a letter of recommendation will provide the committee with a Personal Statement, Declaration and Waiver Form, Interview Preference Sheet, and Student Information Form. These materials will be completed and sent to the committee chair by March 1st of their Junior year.
- Four letters of recommendation will be sent to the committee before April 1st of the student's junior year. Two letters should come from faculty in the science department and 1 letter from a faculty member outside of science. An additional letter of recommendation should come from a professional preceptor whom you shadowed. (If applying to DO school, must submit a letter from an osteopathic physician).

- Students enrolled in this process are required to obtain the committee's approval for the letters of recommendation written by faculty members in the science department. This will be identified on the Interview Preference Sheet. Only if the student decides to not participate in this process can they obtain letters from science faculty without committee approval.
- Students will interview with 2 members of the HPAC as part of the evaluation process. Students can select 2 committee members to conduct the interview and submit the committee packet. Students will request their preferences on the Interview Preference Sheet. The two members conducting the interview will generate the committee letter and submit the committee letter packet to the health professional schools requested by the student. Any HPAC member that is writing a letter of recommendation for a student cannot be part of the interview process or the formal submission of the committee packet.
  Interviews by the committee will take place after April 1st.
- The committee letter packet will contain the committee letter, the committee process, information about Marywood University, and the individual letters of evaluation submitted on behalf of the student.
- All items contained in the committee letter packet will only be forwarded to health professional schools.
- The committee letter packet will not be submitted until the committee receives all information from students including reference letters.

HPAC Advising:

- Two scheduled meetings will occur during the academic year, one meeting during the fall semester and one during the spring semester. Additional meetings may be added if needed. These meetings are for students majoring in Pre-Professional Studies (Biology) and interested in applying to Health Profession Schools. These meetings are open to freshmen through seniors, but will be mandatory starting in the sophomore year for those students that want a letter of recommendation from the committee.
- Faculty will provide Mock Interviews for students that have obtained an interview at Medical/Dental/Vet school.
- Faculty will help students in obtaining information for MCAT/DAT/GRE prep.
- Faculty will help the student identify shadowing/volunteering, extra-curricular and service activities.
- Faculty will provide information regarding other opportunities in the HealthCare Field/Science or options for reapplication if the student is not successful during their first application.
- Faculty will provide realistic expectations as to the students' acceptance into a Health Professional School; in addition faculty will provide contacts for counseling services during the stressful application process.

Curriculum:

- The committee will oversee the curriculum of the pre-professional major and will make changes according to changes in Professional school prerequisites, entrance exams, and acceptance criteria.
- Any changes made to the curriculum will need approval by the Undergraduate Curriculum Committee at Marywood University.

Policy on Letters of Recommendation

Letters of recommendation for students will be written only if the faculty member chooses to do so, and is under no obligation to do so. Ideally, the instructor will have taught the student for at least two semesters. That way the faculty member knows the student better and is better informed to write a representative letter. The science faculty prefers to write recommendations that are confidential between the faculty member and the person/ organization they are recommending the student to. If the recommendation is not confidential, the faculty member will list only basic facts, such as the name of the course taught and the grade that the student earned. The Letter of Recommendation Request Form should be used. Include a resume, including relevant work/academic experience as it relates to this program of studies or position.

DEGREE REQUIREMENTS

Major Programs (Curriculum Guides)

BS Pre-Physician Assistant Studies
BS Biology BS Biology (Pre-Chiropractic)
BS Biology (Pre-Professional) - (Pre-medical, Pre-dental and Pre-veterinary track available)
BS Pre-Chiropractic
BS Biology/Secondary Education
BS Biotechnology
BS Environmental Science
BS Medical Laboratory Science
MS Biotechnology
BS Mathematics
BS Computer Science
BS Information Security
BS Mathematics/Secondary Education
Teacher Certification in Biology and Mathematics

To be considered for retention, progression and graduation, students must maintain a minimum QPA of 2.33 in the major area of study. Pre-PA students need to be aware of the 3.0 major QPA average minimum required for consideration by the PA MS program.
A minimum of 2.0 QPA is required for all liberal arts courses.
Science Majors and students pursuing a science minor are required to take their science courses at Marywood

University.

HEALTH PROFESSIONS PROGRAM

The track in health pre-professional studies at Marywood University is designed for the qualified and highly science-oriented students who plan to apply to schools of medicine, dentistry, optometry, podiatry and veterinary medicine.

Although most undergraduates who expect to attend health professions schools choose Biology or Biotechnology as their major, the program offers sufficient flexibility to prepare students for future studies in law, business administration, and to enter the allied health fields. The Association of American Medical Colleges recommends that pre-professional students have strong backgrounds in the natural sciences, (take courses in sociology & psychology) and develop oral and written communication skills. Honors courses, internships, independent study and student research are also strongly recommended. In addition, social science and humanities courses are also encouraged.

The student's choice of science electives is based on the requirements for the professional schools and on the lists of courses suggested or recommended by those schools in which the students are interested. It is recommended by the departments HPAC committee that students wanting to attend medical, dental, vet, optometry or podiatric schools take biochemistry as an elective in their junior year.

CORE EQUIVALENT COURSES

A STUDENT WILL BE GIVEN PRIORITY ADMISSION TO NYCC IF A MINIMUM QPA OF 3.25 IS MAINTAINED FOR THREE YEARS AT MARYWOOD UNIVERSITY. NYCC REQUIREMENTS: C OR BETTER IN PRE-REQUISITE SCIENCE CLASSES. AN OVERALL MINIMUM QPA OF 2.50 IS REQUIRED AT THE COMPLETION OF 90 CREDITS TO APPLY TO

NYCC. UPON ACCEPTANCE TO NYCC, A STUDENT MUST COMPLETE A LEAVE OF ABSENCE FORM FROM THE REGISTRAR'S OFFICE. A STUDENT WHO COMPLETES AT LEAST 22 CREDITS OF ELECTIVES IN THE FIRST TWO TRIMESTERS AT NYCC AND HAS MAINTAINED A QPA OG 2.5 WILL BE GRANTED A BS IN BIOLOGY FROM MARYWOOD UNIVERSITY. THE STUDENT MUST COMPLETE THE TRIMESTER AT NYCC IN ORDER TO GRADUATE IN MAY FROM MARYWOOD UNIVERSITY.

CULTURAL CONTEXT/LITERATURE/FINE ARTS -
(1) COMPLETE ENGL - 180 AND ONE 3-CREDIT UPPER-LEVEL ENGLISH
(2) FINE ARTS COURSE - SELECT COURSES FROM: FA-100, FA-101, FA-102, ART-113, ART-114, ART-117, ART-120, ART-218, ART-406, ART-433, ART-434, ART-436, ART-490A, ART-490B, COMM-449, MUSC-101, MUSC-219, MUSC-399A,
PSYC-341, PSYC-342, THEA-113, THEA-241.

FINE ARTS -
(1) COMPLETE ONE 3-CREDIT FINE ARTS COURSE.
(2) FINE ARTS COURSE - SELECT COURSES FROM: FA-100, FA-101, FA-102, ART-113, ART-114, ART-117, ART-120, ART-218, ART-406, ART-433, ART-434, ART-436, ART-490A, ART-490B, COMM-449, MUSC-101, MUSC-219, MUSC-399A,
PSYC-341, PSYC-342, THEA-113, THEA-241 FA TRAN.

SOCIAL STRUCTURE -
(1) COMPLETE ONE 3-CREDIT SOCIAL SCIENCE COURSE (CJ, ECON, GEOG, PH, PL, PS, PSYC) (DOES THIS INCLUDE PSYC 319?), SOC OR SSI (WHAT IS SSI). NOTE: PSYC 211 IS A PRE-REQUISITE TO ALL OTHER PSYCHOLOGY COURSES.

CULTURAL CONTEXT/FLANG -
(1) COMPLETE TWO FOREIGN LANGUAGE COURSES IN THE SAME LANGUAGE. FOR STUDENTS WHO HAVE TAKEN FOUR YEARS OF A HIGH SCHOOL LANGUAGE, THIS REQUIREMENT MAY BE MET BY TAKING ONE FOREIGN LANGUAGE
COURSE NUMBER ABOVE 212.

HISTORICAL CONTEXT -
(1) COMPLETE SIX CREDITS IN HISTORY. (I THINK THIS SHOULD ONLY BE 3 CREDITS AND NOT 6 CREDITS. SHOULDN'T IT ALSO SAY "STUDENTS CAN CHOOSE FROM GLOBAL REQUIREMENT COURSES LISTED BELOW?")

GLOBAL REQUIREMENT -
(1) COMPLETE ONE COURSE AND CHOOSE FROM: HIST-100, HIST-101, HIST-105, HIST-110, HIST-114, HIST-120, HIST-125, HIST-207, HIST-220, HIST-230, HIST-240, HIST-241, HIST-250, HIST-250B, HIST-254, HIST-301, HIST-320A, HIST-320J, HIST-399D, HIST-399F, HIST-399G, HIST-399I, HIST-400, HIST-420C, HIST-440, HIST-443, HIST-447, HIST-448, HIST-450, HIST-GLOBAL, HIST-454, HIST-455, BUS-315, BUS-370, SOC-218, SOC-301 (NO

LONGER IN CATALOG), SOC-305 (THE SOCIAL NETWORKS OF CRIME, HEALTH AND SOCIETY… IS THIS NUMBER CORRECT? SHOULD IT BE 350?) OR TAKE BOTH ND-223 AND ND-223L.

BIOL-151, CHEM-131 AND MATH-155 ARE REQUIRED FOR SCIENCE CORE, AND THEY WILL ALSO SATISFY THE PHYSICAL UNIVERSE PORTION OF THE LIBERAL ARTS CORE.

CORE EQUIVALENT COURSES

Science Department Laboratory Policies and Procedures

Applicability

The following is a Guide to Science Department Laboratory Policies and Procedures. This guide applies to all University faculty, staff, students and visitors who use Science department laboratories and equipment.

Responsibilities

- The Laboratory Manager, Chemical Hygiene Officer and Department Chairperson must approve any deviation from these guidelines.
- The enforcement of laboratory policies and procedures in the teaching labs is the responsibility of each individual **laboratory instructor.**
- Enforcement of laboratory policies and procedures in research labs is the responsibility of each **principal investigator**.
- Laboratory instructors and principal investigators are responsible to employ the RAMP safety principles (**Recognize** hazards, **Assess** risks from hazards, **Minimize** risks of the hazards and **Prepare** for emergencies) when reviewing existing lab experiments or designing new ones. Please familiarize yourself with these important safety concepts by watching this short RAMP video.

Laboratory Safety Training

Mandatory Chemical Hygiene, Blood Borne Pathogen and Fire Safety training is conducted for all Science Faculty, Laboratory Instructional Assistants, Visiting Researchers,Graduate Assistants, Laboratory Assistants, and Research Assistants typically during the first week of the fall semester.

Science Department Laboratory Safety Training is required for all Science Faculty, Laboratory Instructional Assistants, Laboratory Assistants, Research Assistants, Visiting Researchers, and Graduate Assistants **prior** to working in the research or teaching laboratories. Laboratory safety training modules are assigned by job title. The Laboratory Manager and Department Chairperson assigns MU employees laboratory safety training in Safety Skills upon hire. An email containing login information will be emailed to the employee by Safety Skills. The Laboratory Manager monitors compliance of online lab safety training and reports non compliance to the Science Department Chairperson.

Principal Investigators must notify the Laboratory Manager with the name and email address of each research assistant prior to the start of each semester. Laboratory safety training in Safety Skills will be assigned to research assistants by the Laboratory Manager. An email containing login information will be emailed to the employee by Safety Skills. Username for Safety Skills is your MU email address and you will be directed by Safety Skills to create a password. Additional training may be required in consultation with the Principle Investigator if the appointment involves a research project. The Principal Investigator monitors compliance of online lab safety training for their own research assistants.

Additional online training may be required for research assistants and graduate assistants by the Office of Research and Community Collaboration. Specialized training of Laboratory Assistants, Graduate Assistants and Research Assistants is also conducted on a case-by-case basis by the Laboratory Manager or Principle Investigator.

No lab access will be granted until required lab safety training is complete. Work in the laboratories cannot begin until lab safety training is completed.

Laboratory Access

No lab access will be granted until required lab safety training is complete. Laboratory access is granted on a semester by semester basis to authorized personnel (i.e. faculty, staff, lab assistants, graduate assistants, research assistants) at the discretion of the Lab Manager and Department Chair. Authorized personnel may report to the Madonna Hall ID Center at the beginning of each semester to have their MU identification card programmed for laboratory access.

Access may be limited to certain laboratories and/or certain hours. Weekend and holiday access for faculty, research assistants and laboratory assistants to the Center for Natural and Health Science (CNHS) is granted on a semester-by-semester basis as determined by the Laboratory Manager and the Department Chairperson.

Laboratory Doors

Laboratory doors are fire rated, and must be kept closed at all times. Propping of laboratory doors is strictly prohibited. Lab instructors may prop lab doors at the beginning of class. Once class begins, the lab doors should be closed. Instructors should make accommodations for students that may need to leave the lab and return. Research lab doors should remain closed at all times. **Propping of Research laboratory doors is strictly prohibited.**

Personal Protective Equipment (PPE)

All MU personnel and students must wear the proper PPE in the labs. Required PPE includes appropriate clothing, lab coat, indirect vent splash goggles (if required) and gloves. Should a student come unprepared to the lab (without proper clothing or the required PPE), he/she will be asked to leave and change and/or retrieve their PPE. All laboratory personnel and students must remove all PPE before leaving the lab. **Gloves must be removed before leaving the lab** even if you are exiting and entering another lab. **Wearing PPE is not permitted in hallways and restrooms.**

Laboratory Clothing

Clothing worn in the laboratory should not be loose fitting, and should cover and protect as much skin as possible. The clothes should be made of materials that are resistant to chemicals, such as cotton or other natural fibers. Jeans and long-sleeved t-shirts are great examples of appropriate laboratory attire. Shorts and skirts where skin is exposed are prohibited. Long or loose hair must be tied back. Remove jewelry (including necklaces, rings, bracelets and watches) to prevent chemicals from seeping underneath them. Shoes must have closed toes and soles of a good gripping material. Clogs, perforated shoes, sandals, flip–flops and cloth shoes do not provide protection against spilled chemicals and are not to be worn in the lab. Those individuals who arrive for the lab inappropriately dressed will be asked to leave and return when they are appropriately dressed.

Laboratory Coats

Lab coats are required when working in the laboratory. They should have snap closures and the sleeves (no cuffs) should be rolled down. All students enrolled in science laboratory courses are required to purchase a lab coat from Marywood University Gear Shop. Short lab coats or other lab coats that have not been approved are strictly prohibited with **no exceptions**. The MU Science Department provides lab coats for employees, research assistants, and lab assistant use only. These lab coats are not to be loaned to students who have forgotten their lab coat. Failure to bring a lab coat constitutes unpreparedness. The student will not be allowed to participate in the lab without their lab coat. Vinyl aprons are required for pouring/mixing strong acids or bases and must be worn over the lab coat. Vinyl aprons are provided and located in the chemistry labs (CNHS 300 and 305). Disposable lab coats are provided for BIOl 235L, BIOL 114L, and BIOL 332L/532L in CNHS 106.

Eye Protection

All persons in the lab area (where chemicals are used) must wear approved eye protection. Wearing of contact lenses in a laboratory is normally forbidden. If the use of contact lenses is required, indirect vent splash proof goggles must be worn at all times. Students enrolled in CHEM 121L, CHEM 131L, CHEM 132L, CHEM 221L, CHEM 222L, CHEM 398L, BIOL 421L/521L courses are required to purchase a pair of indirect vent splash proof goggles fromMarywood University Gear Shop. **No substitutions are allowed**. Students will not be allowed to participate in the lab without their goggles. Safety glasses are not permitted in Chemistry labs. Appropriate eye protection is provided for all other labs. Remove eye protection when you leave the lab. This reduces the chance of spreading contaminants to other areas. The MU Science Department provides eye protection for employee use.

Emergency Clothing

Emergency clothing located in the chemistry lab (CNHS 305) is for emergency use only and should only be given to students who have had to disrobe and shower due to a chemical spill. It shall not be used for those who are inappropriately dressed for the lab. Those individuals who arrive for the lab inappropriately dressed will be asked to leave and return when they are appropriately dressed.

Food and Beverages

Do not bring any food or beverages into the **laboratory wing** or chemical prep areas. Eating and drinking is forbidden in all laboratories.

Laboratory Behavior

There should be no horseplay in the laboratories including sitting on lab benches. Perform no unauthorized experiments. Store personal items (backpacks/coats) in their proper location (as indicated by the lab instructor, principle investigator or your supervisor).

Personal Hygiene

Wash hands frequently, especially when you change gloves and are ready to leave the work area. Do not apply cosmetics in the work area including lip balm. Confine long hair. Remove gloves and lab coat before leaving the lab.

Medical Conditions

Please notify your Laboratory Instructor/Principle Investigator or supervisor immediately if you have any health related condition that would benefit their knowledge, should a safety incident occur. Some examples are diabetes, pregnancy, color blindness, allergies, chemotherapy, immunosuppressive drug therapy, hypoglycemia or any other medical condition that requires special measures in the lab.

Leaving the Work Area

Do not allow any electrical device to run unattended. Turn off all electricity, hoods, gases, water and vacuum. Lock the work area. Notify the Instructor/Principle Investigator or Laboratory Manager when you are leaving.

Working Alone

Working in the laboratory alone is strongly discouraged unless there is permission from the laboratory manager and/or department chair.

Please view this video Working Alone in the Lab

Cell Phone Use

Cell phone use is prohibited without the permission of the laboratory instructor. Cell phones may not be used as calculators during the laboratory.

Safety Equipment

Note location and operation of safety showers, eye wash stations, first aid kits, chemical spill kits, fire extinguishers, emergency clothing, spill pillows/socks and goggle cabinets in each of the work areas. Items must not block safety equipment (ex. podium, lab cart).

Chemical and biological hoods are important pieces of safety equipment in the laboratories. Instructors/Principal Investigators must familiarize students with their proper operation.

Laboratory Equipment

All issues with laboratory equipment (including computers/printers) and laboratory maintenance should be brought to the

immediate attention of the Laboratory Manager. If the Laboratory Manager is not available the Department Chair must immediately be contacted. All Physical Plant Work requests and IT Help Desk tickets regarding laboratory issues must be submitted by the Laboratory Manager. The Lab Manager is responsible to monitor all tickets and work orders.

Science Department Equipment Loan Form

A Science Department Equipment Loan Form must be filled out prior to any equipment being loaned to a department or individual. The form (linked here) must be downloaded into a PDF form to fill it out.

Laboratory Instructor Information

Supplies and Equipment

The ordering of laboratory equipment and supplies must be done through the Laboratory Manager. When planning for your fall, summer, and spring lab sections or research laboratories keep the following in mind:

- Outlines, syllabi and material needs/waste lists per session are due to the Laboratory Manager no later than 6 weeks prior to the start of the semester.
- Please email your syllabi to the Science Department Administrative Assistant prior to the start of the semester.
- The Laboratory Manager will order all supplies associated with teaching labs. This includes materials on needs lists and general glassware and consumables.
- If an instructor needs something above what is provided in the teaching lab, Purchase requisition forms may be obtained online. Purchase Order Requisition . The Standard Operating Procedure for Purchase Orders for Laboratory and Research Supplies must be followed. Material need lists for the semester must be broken down per lab session and must include volumes or number of items needed per student, student group, per section and per week. **Chemical names should not be abbreviated**.
    - Anticipated chemical waste products with volumes must be listed. This will ensure adequate planning for waste collection, storage and disposal. Questions concerning waste should be directed to the Lab Manager or the Chemical Hygiene Officer.
    - Special Standard Operating Procedures (SOPs) and additional Personal Protective Equipment (PPE) required for an experiment must be noted.
- All science laboratory safety concerns and questions should immediately be brought to the attention of the Laboratory Manager.
- The Lab Manager is the direct supervisor of all lab assistants. All questions and issues involving lab assistants should be brought directly to the Lab Manager.
- Laboratory access is granted at the discretion of the Laboratory Manager and Department Chairperson. Please contact the Laboratory Manager to request lab access.
- All Physical Plant Work requests and IT Help Desk tickets regarding laboratory issues must be submitted by the Laboratory Manager. All issues with laboratory equipment (including computers/printers) and laboratory maintenance should be brought to the immediate attention of the Laboratory Manager. If the Laboratory Manager is not available the Department Chair must immediately be contacted.

Purchase Orders for Research Supplies

In order to streamline Science Department purchase order procedures, a Standard Operating Procedure (SOP) for Purchase Orders for Laboratory and Research Supplies is essential. This procedure is designed to guarantee all chemicals and supplies are received through a central location. This will ensure Safety Data Sheets (SDS) are obtained prior to ordering, chemicals and supplies are logged into the inventory and materials are properly handled and stored. This procedure must be followed by all principal investigators and student researchers who need to order research laboratory supplies.

Safety Rules Agreement

It is the **Laboratory Instructor's** responsibility to review the safety rules agreement with laboratory students. Review of safety rules agreement includes:

- Have the students read it

- Review it with them to ensure sure they understand it
- Require students to sign the agreement (agreement is located in the Administrativetask of Brightspace) with the understanding that their signature means they agree to follow it

Laboratory instructors are responsible to reinforce this agreement with the following:

- Create a section in the laboratory syllabus that explains personal protective equipment (PPE)
- review the required PPE in pre-laboratory discussions for each experiment
- perform a thorough review of the health and safety aspects of each experiment

Laboratory instructors are also responsible to:

- include safety in the laboratory as part of their final lab grade (a certain percentage or a certain point value for each lab experiment)
- include safety questions on each laboratory quiz/practical given during the semester
- require a safety section/part within their laboratory report

Instructors must include consequences of breaking the safety agreement in the laboratory syllabus:

- First offense would be a verbal warning
- Second offense would be a written warning
- Third offense would be grounds to ask the student to leave the laboratory for that day and a meeting with the Department Chairperson

Undergraduate Laboratory Assistant Responsibilities

The undergraduate laboratory assistants **perform the following duties** as part of their job description:

1. Prepare solutions and gather laboratory equipment for each weekly experiment
2. May assist the course instructor in overseeing and helping with laboratory setup, if requested
3. Take responsibility for cleanup and proper storage of laboratory solutions and equipment
4. Work under the supervision of the Laboratory Manager

Subsequently, undergraduate laboratory assistants **are not responsible for**:

1. Grading of laboratory reports, quizzes and/or exams
2. Proctoring of laboratory sessions
3. Teaching on behalf of the laboratory course instructor

An undergraduate laboratory assistant may be requested to be present for a laboratory session, but is not guaranteed. At least one undergraduate laboratory assistant will be present in the laboratory **wing** each evening during scheduled laboratory sessions to assist with laboratory needs and for safety purposes. Individual assistants for each evening lab session are not guaranteed.

Laboratory Dissection Policy

Students enrolled in BIOL 122L and BIOL 151L are required to purchase a dissection kit. Dissection kits may be purchased from the MU University Gear Shop. Students will not be allowed to participate in dissection labs without their dissection kit. Students who are opposed to dissection activity must discuss alternative dissection options with the laboratory instructor and the department Chair.

Anatomy and Physiology Model Policy

Models that are used for classroom demonstration purposes outside of CNHS Lab # 109 or Lab #117 must be signed out by the faculty member. Immediately following the demonstration period, models must be returned (signed-in) to CNHS Lab # 109 or #117. No models should be left in classrooms unattended, since replacements are expensive. A cart is available in CNHS # 110 to transport models to and from the laboratory. The Anatomy Model Sign-Out/In Form must be used. It is linked here and is also located in the shared Google Drive Laboratory Folder (Equipment Loan Files).

Laboratory Inventory

Vertere is an inventory management system used by Marywood University (MU) Science Department. It is used to track containers of chemicals and equipment by owner and location. All MU Science department full time faculty, laboratory/graduate assistants and select research assistants should use this inventory system. Access to the system is granted on a case by case basis by the Laboratory Manager and Science Department Chairperson. Users may better manage their stock of materials by knowing where chemicals and equipment are located down to the shelf in a laboratory cabinet.
Barcode labels are attached to each inventoried container and by looking up the barcode, information about that container such as the owner, location, inventory date and container history may be viewed. **No chemical, supply or equipment contained in the laboratories should be moved or deleted without the Laboratory Manager's permission. If the chemical, supply or equipment is from a research lab the Principal Investigator must be asked and the Lab Manager must be notified before anything may be moved. The Lab Manager will move the chemical, supply or equipment in the inventory system and then physically move it to a new location.**
For more information, please consult the Science Department Chemical Inventory Vertere Standard Operating Procedure.

EMERGENCY ACTION

Report the nature of the emergency to the appropriate medical or fire facility. Note location of emergency phone numbers which are on each laboratory phone. THE CLOSEST PHONE IS USUALLY IN THE LAB NEAR THE INSTRUCTOR'S DESK. Give the location of the emergency. For the record, we are located in the laboratory wing of the Center for Natural and Health Sciences (CNHS).

EMERGENCY 911 PHONE ACCESS

If, when dialing 911, you experience a delay, stay on the phone.
IF INDIVIDUALS ARE INJURED, REPORT NATURE OF INJURY AND WHETHER THERE IS A CHEMICAL OR ELECTRICAL FIRE. DIRECT EMERGENCY RESPONSE TO APPROPRIATE LOCATION AS BEST AS POSSIBLE.
Notify others about the emergency. This would normally mean reporting to the Laboratory Manager, Department Chairperson, Secretarial Area and/or Campus Safety. If necessary, have someone go outside to direct the emergency response team.

Fire Drills and Evacuation

Note location of closest fire alarm and extinguisher in each work area. Note location of emergency phone numbers which are on each laboratory phone and locate all emergency exits.

Incident/Accident Reports

An incident report should be filed with each laboratory accident or near miss. A report detailing the event must be filled out by the Supervisor, Laboratory Instructor or Principle Investigator as soon as possible.

Employee Incident/Accident Reports

If a MU employee is involved in an incident/accident an Incident/Accident Investigation Report must be filed with Human Resources within 24 hours.

Student Incident/Accident Reports

If a MU student (who does not work for MU) is involved in an incident/accident in a Science laboratory, a Science Department Laboratory Incident/Accident Report must be filed with the Laboratory Manager. This is the responsibility of the laboratory instructor or principal investigator to make sure it is completed. Copies of the MU Science Department Incident Report is linked here and must be downloaded into PDF form to fill out.

General Precautions

Introduction

The first and most important rule is: DO NOT USE OR HANDLE A CHEMICAL, BIOHAZARDOUS MATERIAL, OR EQUIPMENT UNLESS YOU ARE FAMILIAR WITH ITS PROPERTIES. Read the label or manual. If necessary, seek out additional information from the Safety Data Sheet (SDS), Standard Operating Procedure or Equipment Manual.

The SDSs are linked in the Science Department Vertere Inventory Management System by using the ChemWatch SDS Management System link for the chemical in question. If you do not have access to the Vertere Inventory Management System, you can find SDSs by logging into the ChemWatch SDS Management System from any Marywood University IP address (PC or wireless) and searching for the chemical in question.

Follow all safety instructions carefully. Be sure to follow the Instructor/Principal Investigator's advice and seek out additional information as necessary. If you are unsure of a procedure or Instructor/Principal Investigator's directions. DO NOT GUESS. Ask questions.

General Housekeeping

- Laboratory doors are fire rated, so they must be kept closed at all times. Propping of laboratory doors is prohibited. Lab instructors may prop lab doors at the beginning of class. Once class begins, the lab doors should be closed. Instructors should make accommodations for students that may need to leave the lab and return. Research lab doors should remain closed at all times. Propping of Research laboratory doors is prohibited.
- Keep all work areas clean and uncluttered. Keep cabinets and doors closed, as much as possible.
- Never store materials, especially chemicals, on the floor.
- Keep aisles clear of wastebaskets and carts as much as possible.
- Clean glassware promptly at the sink or dishwasher. Use hot water and detergent for cleanup. Consult the instructor for more difficult stains.
- Wear gloves where appropriate.
- Laboratory storage of large amounts of chemicals should be avoided as much as possible.
- Return large containers of chemicals to their proper storage area as soon as possible. Use the safety secondary carriers for the large jugs.
- Use carts to transfer chemicals between the various work areas. Be sure all containers are secured on the carts.
- If chemicals are moved between the floors of the facility, they should be secured on the carts and transported on the elevator. **Do not carry chemicals on stairwells.**

Chemical and Biological Substance Handling

All chemicals are potentially harmful. Avoid contact with any chemical. It is especially important to keep chemicals and biohazards away from your face and clothing. Substances are absorbed into the body through the skin or through inhalation or ingestion.
Remember that chemicals can be transferred to the eyes from your hands. To avoid contamination of other areas, all laboratory personnel and students must remove all PPE before leaving the lab. Wearing PPE is not permitted in hallways and restrooms. The following general precautions are recommended:

- Know the properties of the chemical.
- Keep hands and face clean. Wash hands in the laboratory before and after each lab session.
- Never taste/ingest a chemical.
- Do not use a chemical from an unlabeled or doubtful container.
- Respiratory hazards should be dispensed in the fume hood.

- Carefully read labels before picking up the container.
- Hold the bottle with the label side toward your palm.
- If a stopper or lid is stuck, use extreme caution in opening.
- Do not use more material than directed.
- Always use fume hoods for pouring chemicals.
- Always pour and transfer slowly. Do not dump chemicals.
- Always pour concentrated solutions into water slowly with stirring.
- Make sure containers are adequately supported.
- Never look into the opening of a vessel containing a chemical.
- Never use mouth suction to pipet.
- Never add a chemical to a hot solvent unless specified.
- Use impact-resistant containers to carry chemicals.
- Do not use equipment without instruction and/or permission.
- Never leave heat sources unattended.
- Keep alcohols, acetone and other flammables away from flames.
- Disposable gloves must be worn when working with blood or body fluids.
- Upon entering the laboratory, please keep all book bags off lab benches. Place neatly away in designated area.
- Before leaving the lab, clean the bench top with the provided cleaning reagents.
- Never remove any chemicals, equipment, media, bacterial cultures, or supplies from the lab. Doing so is absolutely prohibited.
- Do not place contaminated instruments, such as inoculating loops, needles, and pipettes, on bench tops. Loops and needles should be sterilized by incineration, and pipettes should be disposed of in designated receptacles.
- On completion of the laboratory session, place all cultures and materials in the disposal area as designated by the instructor.
- Carry cultures in a test-tube rack when moving around the laboratory. Likewise, keep cultures in a test-tube rack on the bench tops when not in use. This serves a dual purpose: to prevent accidents and to avoid contamination of yourself and the environment.
- When working in a biohazard laboratory goggles should be worn if an aerosol might be formed or splattering of these fluids is likely to occur.

Laboratory Spills

Chemical Hazards

Pay attention to the Supervisor, Laboratory Instructor or Principle Investigator's directions regarding the safe handling and disposal of chemicals and biohazards. ***IT IS THE STUDENTS' RESPONSIBILITY TO SEEK ADVICE AND GUIDANCE WHENEVER THEY ARE IN DOUBT ABOUT SAFETY PROCEDURES OR POTENTIAL HAZARDS IN THEIR LABORATORY WORK.***

NOTIFY SUPERVISOR, LABORATORY INSTRUCTOR OR PRINCIPLE INVESTIGATOR AND FOLLOW GUIDELINES

1. Be prepared
    - Know the properties of the chemicals and biohazards which are present in your work area. At a minimum you should know flammability, volatility, corrosivity and toxicity properties of chemicals. Information on chemicals and biohazards should be obtained from your Supervisor, Laboratory Instructor or Principle Investigator. Detailed chemical information may be found on individual Safety Data Sheets (SDSs). Be aware of the biohazard level of your laboratory.
2. Protect yourself from injury
    - Never expose yourself to a spill situation unless you have the proper protective equipment. At a minimum this means indirect vent splash goggles, gloves and lab coat.
3. Alert
    - Alert others in the area.
    - Keep others away from the spill.
4. Isolate the spill from related hazards

    - If a volatile, flammable material is spilled, turn off all flames and spark-producing equipment such as motors or stirrers. KEEP FUME HOODS ON.
5. Contain the spill
    - Liquid chemical spills of DILUTE AQUEOUS SOLUTIONS may be cleaned up with dampened paper towels and rinsed with water. The appropriate ABSORBENT MATERIAL should be used to contain Concentrated ACID SPILLS and concentrated BASE (ALKALINE) SPILLS. These absorbents are located in the spill control boxes in CNHS 97, CNHS 107 and CNHS 305.
    - Clay absorbents or vermiculite should be used for ORGANIC materials. Circle the chemical spill with the material and use caution, since mixing absorbents and certain organics may cause a SLIP HAZARD.
    - Any spilled body fluid must be cleaned with a 1:10 bleach solution or equivalent solution as designated by your Supervisor, Laboratory or Principle Investigator.
6. Clean up/dispose the absorbed material
    - A dustpan or brush should be used to place an absorbed chemical spill in a plastic bag (label bag with chemical hazards). These materials are located in the spill control boxes. Place labelled plastic hazardous chemical waste bag in CNHS 302 Satellite Accumulation Area Hood.
    - Paper towels contaminated with body fluids should be placed in a red biohazard bag and placed in the -20 degree Celsius freezer in CNHS 95.
7. Clean yourself up
    - Make sure you wash all parts of your body which may have been exposed to the chemicals.
8. Learn from the experience
    - How could you have prevented the spill in the first place?
9. Fill out an Incident Report
    - If a MU employee is involved in an incident/accident an Incident/Accident Investigation Report must be filed with Human Resources within 24 hours.
    - If a MU student (who does not work for MU) is involved in an incident/accident a Science Department Laboratory Incident/Accident Report must be filed with the Laboratory Manager. It is linked here and must be downloaded into PDF form to fill out.

Chemicals on the Skin

Immediately flush the area with cold running water for at least fifteen minutes. Wash gently with soap and water, removing jewelry immediately as necessary.
Notify Supervisor, Laboratory Instructor or Principle Investigator. Get prompt medical attention and explain exactly what happened.
For chemicals contaminating a large area of the body or clothing, use the safety shower immediately. Remove contaminated clothing immediately. Be careful not to spread the chemical to additional areas of skin, especially into the eyes. **KEEP SAFETY GOGGLES ON UNLESS EYES ARE AFFECTED**. Immediately, flood the entire area with water for at least fifteen minutes. Get prompt medical attention.

Responsibility for Training

Handling and disposal instructions should be given to all students by the Laboratory Instructor or Principle Investigator responsible for the laboratory where chemicals and bio-hazard materials are used.

Hazardous Waste Management

MU Science Department follows policies and procedures outlined in the Hazardous Waste Management Plan. Chemical wastes from experiments will be collected as directed in the experimental procedure and outlined by the instructor. Containers should be clearly labeled as to contents with the chemical name(s), and concentration if possible. Place containers in CNHS 302 Satellite Accumulation Area Hood before the next scheduled laboratory.

Management of chemical waste is the responsibility of the Chemical Safety Officer (currently Dr. Deanne Garver).

Wastes are segregated as to type and transferred to the appropriate storage container. Wastes are stored for a chemical lab pack in the Chemical Waste Accumulation Area (flammable cabinets in CNHS 309). An EPA-approved waste-hauler is contracted for proper labeling, transport, and disposal. Records regarding disposal are on file in the Physical Plant Office.

Biological wastes are handled according to the Science Department Biological Waste Disposal Standard Operating Procedure.

Special Science Department Standard Operating Procedures

Some special Standard Operating Procedures (SOPs) may be found in the Marywood University Chemical Hygiene Plan. Additional SOPs are:

Effective use of Autoclaves
Microbiological Media Preparation
Biological Waste Disposal
Compressed Gas Handling Policy
Cryogenic Substances