# Undergraduate Research III

**The University of Toledo**

**Department of Chemistry and Biochemistry**

**College of Natural Sciences and Mathematics**

**CHEM 4910-001, 091 (CRN: 42055, 42057)**

**Instructor**: Jon R. Kirchhoff

**Email**: jon.kirchhoff@utoledo.edu

**Office Hours**: M, W 9:30-11 am; T 2-3 pm

**Office Location**: BO 2024

**Instructor Phone**: (419) 530-1592

**Offered**: Fall 2021

**Course Website**: n/a

**Class Location**: BO/WO Laboratories **Class Day/Time**: schedule with research advisor

**Lab Location**: n/a

**Lab Day/Time**: schedule with research advisor

**Credit Hours**: 1-3

**SPECIAL UNIVERSITY COURSE EXPECTATIONS DURING COVID-19**

Maintaining a safe campus during the ongoing COVID-19 pandemic remains a top priority. UToledo continues to follow the guidance of the U.S. Centers for Disease Control and Prevention and Ohio Department of Health to keep our campus safe.
 **ATTENDANCE** The University of Toledo has a missed class policy. It is important that students and instructors discuss attendance requirements for the course. Before coming to campus each day, students should take their temperature and complete a self-assessment for symptoms of COVID-19, such as cough, chills, fatigue or shortness of breath. Anyone with a temperature at or above 100.0 degrees Fahrenheit or who is experiencing symptoms consistent with COVID-19 should not come to campus and should contact their primary care physician or the Main Campus Health Center at 419.530.3451 or Health Science Campus Student Health and Wellness Center at 419.383.5000. For more information on the symptoms of COVID-19, please go to <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html>

COVID-19 testing for sick students is available on both Main Campus and Health Science Campus. Call 419.383.4545 for an appointment. Absences due to COVID-19 quarantine or isolation requirements **are** considered excused absences. Students should notify their instructors and follow the protocols summarized in this document on [Navigating COVID-Related Course Concerns](https://www.utoledo.edu/offices/provost/docs/covid-19/COVID%20student%20flow%20chart.pdf).

In the event that you have tested positive for COVID-19 or have been diagnosed as a probable case, please review the [CDC guidance](https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fif-you-are-sick%2Findex.html&data=04%7C01%7CDenise.Bartell%40UToledo.Edu%7Cc3ecf55590d548a6006a08d95c3b8e19%7C1d6b1707baa94a3da8f8deabfb3d467b%7C0%7C0%7C637642233117266556%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=8jvRsGSu5bu%2BPHxfo75XszlKKqTfQig3w8ecZQR863w%3D&reserved=0) on self-isolation and symptom monitoring, and report the disclosure to the Division of Student Affairs by emailing StudentAffairs@utoledo.edu or by connecting with their on-call representative at 419.343.9946. Disclosure is voluntary and will only be shared on a need to know basis with staff such as in the Office of Student Advocacy and Support, The Office of Residence Life, and/or the Office of Accessibility and Disability Resources to coordinate supportive measures and meet contact tracing requirements.

**FACE COVERINGS**Face coverings are required while on campus, except while eating, alone in an enclosed space, or outdoors practicing social distancing. Students will not be permitted in class without a face covering. If you have a medical reason preventing you from wearing a face covering due to a health condition deemed high-risk by the CDC, submit an [online application](https://teton.accessiblelearning.com/Toledo/) to request an accommodation through the Office of Accessibility and Disability Resources. Students will need to provide documentation that verifies their health condition or disability and supports the need for accommodations. Students already affiliated with the Office of Accessibility and Disability Resources who would like to request additional accommodations due to the impact of COVID-19, should contact their accessibility specialist to discuss their specific needs. You may connect with the office by calling 419.530.4981 or sending an email to StudentDisability@utoledo.edu.

**VACCINATION**
Doctors and other health care professionals agree that the best way to protect ourselves and each other is to get vaccinated. Case data clearly show that vaccines remain highly effective at preventing serious illness from COVID, including the highly contagious delta variant. If you have not yet received your COVID vaccine, the University encourages you do so as soon as possible. No appointment is needed to get the shot at the UTMC Outpatient Pharmacy, University Health Clinic or Main Campus Pharmacy. Once you receive the COVID vaccination, please register on the COVID Vaccine Registry site at: <https://utvaccinereg.utoledo.edu/>.

**SPECIAL NOTES**It is important to note, that based on the unpredictability of the COVID-19 virus, things can change at any time. So please be patient and understanding as we move through the semester. Please refer to [https://www.utoledo.edu/coronavirus/](https://nam04.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.utoledo.edu%2Fcoronavirus%2F&data=04%7C01%7CDenise.Bartell%40UToledo.Edu%7C08c78d1d6bd948bf874608d95e6a05de%7C1d6b1707baa94a3da8f8deabfb3d467b%7C0%7C0%7C637644631713174655%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C1000&sdata=wbjCdV9R%2Fs6FK3F%2BmnBPUqBeqn7JOM1v3b7lr7tKo7E%3D&reserved=0) on a regular basis for updates to current requirements or mandates. I also ask that you keep me informed of concerns you may have about class, completing course work/assignments timely and/or health concerns related to COVID.

**COURSE SPECIFIC INFORMATION**

**CATALOG/COURSE DESCRIPTION**

Thesis level research under the guidance of a faculty member. May be repeated. A minimum of three hours and an acceptable thesis required for credit toward the B.S. major. A maximum accumulated credit of 10 hours in CHEM 2910, 3910 and 4910 may be applied toward a degree. A written report is required. May be taken only as P/NC.

**COURSE OVERVIEW**

Students will conduct research in an area of chemistry in the laboratory of a faculty advisor from the Department of Chemistry and Biochemistry. Students should view the department web page and identify

faculty whose research interests match their interest. They should then contact the faculty member(s) and make an appointment to discuss research opportunities in their lab. Once a faculty advisor is selected, the student and faculty advisor will formalize a schedule and specific learning outcomes for the

assigned project. Typically, 3 hours of research time in the laboratory per credit hour is required per week.

## **STUDENT LEARNING OUTCOMES**

## Students will learn specific laboratory techniques, the operation of scientific instrumentation, and the chemistry knowledge specific to the assigned project, including safe laboratory practices and chemical safety. For detailed general safety information, see <https://www.utoledo.edu/depts/safety/>. It is especially important that each student communicate with their selected advisor regarding all specific lab safety protocols and guidelines for the research laboratories in which they will perform their research.

**TEACHING STRATEGIES**

## Students will conduct hands on research in a laboratory setting under the direction of a faculty member and graduate students.

Students will communicate directly with their research advisor on research specific questions. The course coordinator is available for all general questions.

**PREREQUISITES AND COREQUISITES**

Prerequisite: GPA (overall and in chemistry courses) above 2.5 and permission of department Corequisite: CHEM 3740 or 4570

**TEXTS AND ANCILLARY MATERIALS**

No formal textbook is required. Approved chemical safety goggles meeting the American National Standard Z87.1-1968 are required. Research Group Leaders will provide information specific to the research project.

**TECHNOLOGY REQUIREMENTS**

Computer access to the internet will be necessary for literature research, data analysis and report writing.

**ACADEMIC POLICIES**

All students at the University of Toledo are expected to read, understand, and follow the academic policies that govern their attendance at the University. These policies include, but are not limited to, academic dishonesty, academic forgiveness, adding and dropping a course, grades and grading, and the missed class policy. Please use the following URL to read a comprehensive list of academic policies that pertain to you in this class and throughout your academic journey. If you have any questions after reading through the policies, please let me know.

[**Undergraduate Policies**](http://www.utoledo.edu/policies/academic/undergraduate/)**:** <http://www.utoledo.edu/policies/academic/undergraduate/>

**COURSE EXPECTATIONS**

In consultation with their faculty advisor, it is expected that students create a regular schedule for continuous research activity throughout the semester to ensure timely completion of their project goals. Regular communication with the research supervisor is essential to maintain progress.

**Academic Honesty:** Ethical practices for conducting research will be strictly enforced.

**OVERVIEW OF COURSE GRADE ASSIGNMENT**

The faculty research advisor will provide the department’s coordinator of undergraduate research (course coordinator listed on front) a recommendation for a grade in the class. The class is graded as Pass or No Credit. A grade of Pass indicates the student has met the expectations for regular or Honors research as set forth by the faculty member.

**Midterm Grading**

Midterm grades are assigned to assist students in determining their academic standing.

Midterm grades will be based on a recommendation of your faculty advisor attesting to the progress on your project at that point of the semester. The mid-term grade will allow you to gauge where you currently stand in the class, but is not a reflection of your final grade. Midterm grades will be entered between October 4 and October 24, 2021.

**Drop, Withdrawal, and Incomplete Grades:** Course drop and withdrawal procedures have been set by the University faculty. Pay attention to the add/drop dates as they pass very quickly during the semester. Dates can be found at <https://www.utoledo.edu/offices/registrar/registration_dates_fall.html>

**The last day to withdraw from a course is Friday November 5, 2021.** Please note that course registration changes might change your financial aid.

If you decide you are not going to attend this class (or any other class you have registered for), you must formally withdraw (drop) from the course. You can do this by logging on to the myUTportal, clicking on the “Student” tab, and then under “MyToolkit” clickon Register/Drop/Withdraw.

A course grade of incomplete is given only to those who have completed all but a small percentage of course requirements for an unexpected and acceptable reason.

**UNIVERSITY POLICIES**

Students can find a summary of university policies listed by audience on the [University Policy webpage](http://www.utoledo.edu/policies/audience.html/#students) (<http://www.utoledo.edu/policies/audience.html/#students>) and (<https://www.utoledo.edu/title-ix/policies.html>).

**Institutional Classroom Attendance Policy:** Please be aware that the university has implemented an attendance policy, which requires faculty to verify student participation in every class a student is registered at the start of each new semester/course. For this course, if you have not attended/participated in class (completed any course activities or assignments) within the first 14 days, I am required by federal law to report you as not attended. Unfortunately, not attending/participating in class impacts your eligibility to receive financial aid, so it is VERY important that you attend class and complete course work in these first two weeks. Please contact me as soon as possible to discuss options and/or possible accommodations if you have any difficulty completing assignments within the first two weeks.

**Policy Statement on Non‐Discrimination.** The University is an equal opportunity educational institution. Please read the relevant policies related to non-discrimination.

* Nondiscrimination 3364-50-02
* Nondiscrimination on the basis of disability - Americans with Disability Act (ADA) 3354-50-03

**Policies for Student Safety.** Your safety and well-being as a University of Toledo student is important to the faculty, staff, and administration. Please review the following policies:

* Student Code of Conduct 3364-30-04
* The University of Toledo's Title IX (Sexual Misconduct) Policy - 3364-50-01
* Consensual romantic and/or sexual relationships - Policy 3364-25-65

**Academic Accommodations.** The University of Toledo embraces the inclusion of students with disabilities. We are committed to ensuring equal opportunity and seamless access for full participation in all courses. For students who have an accommodations memo from Student Disability Services, I invite you to correspond with me as soon as possible so that we can communicate confidentially about implementing accommodations in this course. For students who have not established affiliation with Student Disability Services and are experiencing disability access barriers or are interested in a referral to healthcare resources for a potential disability or would like information regarding eligibility for academic accommodations, please contact the [Student Disability Services Office](http://www.utoledo.edu/offices/student-disability-services/index.html)

(http://www.utoledo.edu/offices/student-disability-services/) by phone: 419.530.4981 or email at StudentDisability@utoledo.edu.

## **ACADEMIC AND SUPPORT SERVICES**

## Please follow this link to view a comprehensive list of [Student Academic and Support Services](http://www.utoledo.edu/studentaffairs/departments.html) (http://www.utoledo.edu/studentaffairs/departments.html) available to you as a student.

The university provides a variety of academic and support services on campus to help you succeed and reach your fullest potential. Whether you need to ask a question, get help with an assignment, seek advice from a counselor, find a job or join a club, UToledo is there for you! Examples of some of the resources for academic support or service are:

Tutoring: <http://www.utoledo.edu/success/lec/>

Library: <http://www.utoledo.edu/library/>

Success Coaching: <https://www.utoledo.edu/successcoach/>

Student Affairs: <http://www.utoledo.edu/studentaffairs/>

Career Services: <http://www.utoledo.edu/success/career/>

**SAFETY AND HEALTH SERVICES FOR UTOLEDO STUDENTS**

Please use the following link to view a comprehensive list Campus Health and Safety Services available to you as a student. <https://www.utoledo.edu/offices/provost/utc/docs/CampusHealthSafetyContacts.pdf>. One example is the food pantry.

**Food Pantry:** <http://www.utoledo.edu/studentaffairs/food-pantry/>

**INCLUSIVE CLASSROOM STATEMENT**

In this class, we will work together to develop a learning community that is inclusive and respectful. Our diversity may be reflected by differences in race, culture, age, religion, sexual orientation, gender identity/expression, socioeconomic background, and a myriad of other social identities and life experiences. We will encourage and appreciate expressions of different ideas, opinions, and beliefs so that conversations and interactions that could potentially be divisive turn, instead, into opportunities for intellectual and personal development.

**COURSE SCHEDULE**

To be determined in consultation with the faculty research advisor.