

Chemistry Undergraduate Teaching Intern  
and  
Undergraduate Teaching Assistant  
Handbook

Indiana University, Bloomington



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## I. PROGRAM GUIDE AND PROCEDURES

### I.1 Introduction

A Chemistry Undergraduate Teaching Intern (UTIN) is an undergraduate student who assists faculty and graduate student Associate Instructors (AIs) in the teaching mission of the department. UTIN positions can be taken for credit, see section 1.4 of this handbook for details.

A Chemistry Undergraduate Teaching Assistant (UTA) is an undergraduate student who assists faculty and graduate student Associate Instructors (AIs), but this position differs from the UTIN in that this is a paid position. See section 1.6 of this handbook for further details.

Students interested in graduate or professional school, teaching, or management will be able to explore the attributes necessary in these careers, while learning essential transferable skills.

Other benefits include review of material commonly included in the GRE and MCAT examinations, opportunities for letters of recommendation, and additional work experience to enhance a resume or program applications.

Assignments will include assisting in the lecture, discussion, or laboratory.

### I.2 Eligibility

For the UTIN position students should have at least a junior class standing by the time the appointment begins, however exceptional sophomores or freshmen in their second semester may also be considered. A minimum overall GPA of 3.00 is required, and a minimum grade of A- in the course you have chosen is desirable.

For the UTA position students must have previously worked as a Chemistry UTIN.

### I.3a Application procedure – information for students

Apply to work as a UTIN using the following link:

<https://www.chem.indiana.edu/undergraduate/opportunities/associate-instructorship/>

The application opens for Fall 2024 positions on April 15<sup>th</sup> 2023, and all applications should be in by August 5<sup>th</sup> 2024. Late applications may be considered but a position is not guaranteed. Early applications are encouraged.

Please note that an application must be completed each time you wish to apply for a position.

For Fall 2024, **UTA** positions are by invitation only. Eligible students will be contacted by the Chemistry department. Please do not complete an online UTIN application for a UTA position.

### **I.3b Application procedure – information for instructors**

If you would like assistance in advertising positions available for your course, please contact Kayse Ehinger ([ehinger@iu.edu](mailto:ehinger@iu.edu)).

### **I.4 UTIN Enrollment details and requirements**

Chemistry UTINs will be enrolled in the parent course Chem-X371. One credit is offered for each course but duties will differ depending on the needs of the instructor – please refer to the individual course descriptions at the end of this document. As a general guide, 1 credit hour will require approximately 6 hours of duties. These are elective credits and cannot be used for the chemistry or biochemistry major requirements. A reduction in credit hours may be required to remain within the flat-rate credit hour fee for 12-18 credit hours. Submission of requests for a reduction are the responsibility of the student and should be directed to Kayse Ehinger via email at [ehinger@iu.edu](mailto:ehinger@iu.edu). Please note that a 0 credit hours request (auditing) will require specific paperwork and incur the auditing fee (\$25.00).

Important – If you require a certain number of credits to fulfil a scholarship or financial aid award you must consult with ‘Student Central’ ([studentcentral.indiana.edu](http://studentcentral.indiana.edu)) to determine whether the credits you have enrolled in for this course will count.

### **I.5a Choice of UTIN courses – information for students**

When completing the application form, you may choose up to two courses. If you choose more than one course, you should put them in order of preference on the application form. Please ensure that you choose courses that you are prepared to commit to as you may not be selected for your first-choice course – selection is also dependent on the needs of each instructor and whether your schedule matches with the needs of the course.

Late applications – you may apply after the deadline and should do so using the online application form. Please note that late applications may not be considered if the needs of the course have been fulfilled.

### **I.5b Choice of UTIN students – information for instructors**

To enable you to choose your UTINs you will be sent a link to the UTIN administrative web page (the ‘Admin Panel’) via email once we enter the ‘choice phase’ of the application procedure. In this notification you will also be informed of the dates between which you may choose students.

This phase will follow these steps;

1. The Admin Panel opens for student first choice courses. Instructors should aim to choose students within the open dates before the student list is made available to the next level course instructor(s).
2. The Admin Panel opens for student second choice courses. Instructors choose students as in step 1.
3. The Admin Panel remains open until late August for any late applications.

### Tips for choosing students

- Once you access the Admin Panel via email link you will be able to view the names of all students who chose your class. You will also see whether students placed your course as their first or second choice, and which other course they have chosen if applicable. If you have a lot of applicants it may be helpful to consider which course the students would prefer.
- An update to the Admin Panel will allow you to view immediately whether students are available to attend lecture, discussion, or lab sections for your course.
- If students decide they would like to be a UTIN after the application deadline they should still complete an application form. Once they have done this, they will appear in your application list regardless of whether the choice phase has moved on to second choice courses. Use the link provided initially to re-access your applicant list and choose any late applicants you require.

### **I.6 UTA position details and requirements**

The Undergraduate Teaching Assistant (UTA) position is a paid position. As a UTA you will be expected to commit to 10-15 hours of work per week, and you will be paid at an hourly rate. All UTAs will have previous experience of working as a UTIN, and for Spring 2021 this position is by invite only.

Duties of a UTA will depend on the course in which you work and may involve a greater level of responsibility when compared to the duties of a UTIN; you may be asked to grade student work for example. It is important that you understand that any conflicts of interest must be declared at the beginning of the course to your instructor. See the Code of Ethics, section 1.9 for further details.

### **I.7 Participation requirements**

All UTINs and all UTAs will complete FERPA and Title IX training through the relevant Canvas site. In addition, UTIN students will be provided with online tasks in 'how learning works', pedagogy and professionalism.

In your assigned undergraduate course, we will follow Indiana University policy with regard to duties and responsibilities asked of UTINs and UTAs. Tasks may include (but are not limited to):

- Attend lecture and/or discussion to assist in active learning activities.
- Attend weekly AI/UTIN meeting with the course instructor.
- Assist undergraduates in laboratory report writing sessions.
- Complete pre-lecture reading/assignments.
- Attend laboratory to assist lead AI.

- Hold office hours in conjunction with the lead AI.

You must fulfill all requirements specific to your chosen undergraduate course and as directed by the lead instructor.

The hours you should expect to commit are outlined in the course description pages at the end of this document.

Duties of UTINs will not include:

- Grading, or accessing grades for any reason.
- Evening exam proctoring.

### **I.8 UTIN Performance evaluation**

All students take Chem-X371 on a pass/fail basis and will be informed of their progress throughout the semester via discussion with their course instructor (and/or AI) and bi-semester assessments. These assessments may be completed by the course instructor in conjunction with the graduate AI you are working with.

The standard evaluation form may be found on page 9 of this handbook and should be reviewed prior to the beginning of the semester. This may be updated, and you will be sent a copy.

All UTINs have the right to appeal evaluations that they feel do not accurately represent their performance. Queries should be initially directed towards the undergraduate course instructor, and then if deemed necessary, the coordinators of Chem-X371.

### **I.9 Code of ethics**

- You must adhere to policies described in FERPA and Title IX training at all times.
- UTAs/UTINS must never discriminate against students on any basis whatsoever. Examples include, but are not limited to: race, gender, religion, age, physical disability, nationality, political view, sexual orientation, campus affiliations, personal appearance or previous performance in the course. UTAs/UTINS must treat all students equally and fairly.
- UTAs/UTINS must never show favoritism to students on any basis whatsoever. Examples include, but are not limited to: race, gender, religion, age, physical disability, nationality, political view, sexual orientation, campus affiliations, personal appearance or previous performance in the course. UTAs/UTINS must treat all students equally and fairly.
- UTAs must disclose to their course instructor if they have a personal relationship with any student in their course. Your instructor will decide whether it is appropriate that you are involved in grading of this students' work.
- UTAs/UTINS must respect each student's individuality and innately different approaches to life and problem solving. There are many ways to solve a problem; you are encouraged to share what works for you, but don't try to force your style onto students.
- UTAs/UTINS must respect each student's sense of personal worth and refrain from statements or behaviors that belittle others. Never make negative or derogatory

comments about students, or the other course instructors either inside or outside the classroom.

- UTAs/UTINs must keep all information about their students and student performances confidential. Teachers have a moral and legal obligation to their students to keep this information confidential.
- Confidentiality does not extend to all circumstances and UTAs/UTINs are obligated to report certain disclosures made to them by undergraduate students. See the following link regarding some of your duties as a Responsible Employee, <https://policies.iu.edu/policies/ua-03-sexual-misconduct/index.html>. You must also immediately inform the appropriate person if an undergraduate student discloses to you details that cause you concern for their welfare. See the Canvas Chem-X371 page titled 'Reporting concerns about undergraduate students'. If a student lets you know of anything at all that gives you cause for concern for their safety or welfare, contact 911 for emergencies, otherwise immediately contact your course instructor.
- UTAs/UTINs must never provide early access to examination materials to any student for any reason. UTAs/UTINs must never provide assignment keys to students that course instructors have not expressly indicated students should have access to.

Behavior unbecoming of a UTIN will result in appropriate disciplinary action. This disciplinary action may include, but is not limited to: immediate dismissal, receiving a failing grade for Chem-X371, and initiation of a formal complaint to the Dean of Students.

### **I.10 Teaching tips**

- Greet students in a courteous and friendly fashion, both inside and outside the classroom.
- Give sincere positive reinforcement whenever possible. Positive comments do more than anything else to spur students to higher levels of achievement.
- Help students develop their own solutions to problems or answers to questions, rather than simply showing them a solution. It will help them little to watch you do it; it will help them a lot if they do it themselves.
- Encourage students to talk to each other, working out problems together when they cannot solve them alone. When they can solve problems alone, encourage them to check their solutions with others.
- If you don't know the answer to a question, say so. For example, "I don't know, but let's find out." If you find the answer and help your students find the answer, you encourage scientific exploration and collaboration.
- Be prepared! Your students will not be impressed if you show up unprepared for your sessions.
- Plan ahead and show up for all obligations. If you have an unavoidable conflict, arrange in advance for another UTA/UTIN to substitute, such as swapping times. Be sure to let your course instructor know about any schedule changes.
- Remember that while your goal is to help students learn the course material, you are also teaching them how to study and how to learn. If they learn how to work independently in this course, they will be able to succeed in later courses.

- Lastly, discourage direct questions about what will be on the exam. Remind students that you are there to help them gain understanding of the concepts presented in the course, not to give them information about exams.

### **I.11 Working with your course instructor, Associate Instructors and fellow UTINs/UTAs.**

Working with your course instructor as a UTIN or UTA will be a different experience from being a student in that class. You have responsibilities that will impact other people and so should take careful note of the following points:

- Attend everything that you have agreed to.
- Always be on time.
- Aim to fulfill your duties to the highest standard.
- Understand that if you are negligent in your duties, another person will most likely have to find time to complete that task and student learning will be negatively impacted.
- If you cannot complete a task, or attend a class or meeting make sure you contact your course instructor immediately.
- Continued contact with the course instructor, head AI, and lead AI of your section/assignment will help to prevent miscommunication and misunderstanding.



## UTIN DUTY CONTRACT

Class code and title:

Course Instructor:

Your UTIN duties, as agreed with your course instructor are as follows:

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I understand that I must commit the agreed number of hours to these tasks each week, and that if I do not complete the tasks I have agreed to I may be dismissed from my UTIN duties, which will result in a grade of F for course Chem-X371.

**Signed:**

**UTIN**

\_\_\_\_\_

**Date**

\_\_\_\_\_

**Course Instructor**

\_\_\_\_\_

**Date**

\_\_\_\_\_

PERFORMANCE CRITERIA	NEEDS IMPROVEMENT	SATISFACTORY	EXCEPTIONAL
ATTENDANCE	> 2 days missed	1-2 days missed	0 days missed
WILLINGNESS TO WORK	just stands there and lets the AI do the work	will help if asked	assists students, peers, and superiors without being asked
ATTITUDE	"I don't care, I don't want to be here"	"I'm here, and I'll just do what I have to do"	"I'm glad to be here and I'll encourage student interaction"
MOTIVATION	doesn't care about teaching	shows motivation occasionally	displays motivation on a regular basis
WORK WITH INDIVIDUALS	hesitates to interact with students on an individual basis	will answer questions for individuals	provides guidance and recommends learning strategies on an individual basis
WORK WITH GROUPS	hesitates to interact with students in a group	will answer questions for individuals in a group	will direct and lead groups; involves all students in the group
PRESENTATION	presentation is not clear and organized	organized, but small problems (e.g., too fast, too slow, difficult to hear, etc.)	organized, clear, enthusiastic, paced well, no problems
PREPARATION	prepared on occasion	just covers the basics	always prepared and ready to go one step farther
FOLLOWS INSTRUCTIONS	has to be told repeatedly	redirected on occasion	needs no redirection
INITIATIVE	needs to be told to do everything	occasionally needs to be told to do something	a self-starter, looks for something to do
ENTHUSIASM	pessimistic & complaining	mild enthusiasm	very enthusiastic
RESPECT OF STUDENT	openly criticizes or speaks negatively of students	keeps comments and opinions to themselves	always respectful, and will even discuss strategies to work with all students
CONFIDENTIALITY	discusses confidential matters with peers	usually conscious of this privilege but has mistakenly provided confidential information	always conscious of and never abusive of this right
COMPLETES TASKS	doesn't complete tasks	completes required tasks, but may be late	completes all required tasks on time
TOTALS			

## CONTACTS

**Ms. K. Ehinger**

[ehinger@iu.edu](mailto:ehinger@iu.edu)

**Chemistry C021**

**Prof. K Arnold**

[ksa2@indiana.edu](mailto:ksa2@indiana.edu)

**Chemistry A310**

**Prof. D Snaddon**

[dsnaddon@indiana.edu](mailto:dsnaddon@indiana.edu)

**Chemistry A610**

## **C101: ELEMENTARY CHEMISTRY I**

### **Offered Fall and Spring Semesters**

#### **Course Description**

C101 covers essential principles of chemistry: atomic and molecular structure, bonding, properties and reactions of elements and compounds, stoichiometry, solutions, redox, and acids and bases. This course is the first semester of a 2-semester general, organic, biochemistry (GOB) sequence.

#### **Course Instructor(s)**

D. Snaddon [dsnaddon@indiana.edu](mailto:dsnaddon@indiana.edu)

**Responsibilities of the UTIN** – 6 hours commitment required per week for 1 credit hour, to include the following points:

- Ideally, C101 UTINs will attend every lecture (MWF 1:25-2:15) to solidify their own knowledge and help participate in small group discussion with students, answer questions and disseminate written materials.
- UTINs will be assigned one or two weekly discussion sections based on openings in their schedule. In discussion, UTINs work in coordination with the graduate student AI and one other UTIN to guide and facilitate the active participation of students.
- Communicate effectively with the instructor and graduate AI to ensure that you are teaching information accurately. If you have questions, then please ask.
- Study course materials so you are able to answer questions correctly.
- Complete all assignments required for Chem-X371 as listed on Canvas.

#### **Evaluation of Performance**

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the graduate AIs.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.

## **C103: INTRODUCTION TO CHEMICAL PRINCIPLES**

### **Offered Fall, Spring and Summer Semesters**

#### **Course Description**

C103 covers essential principles of chemistry. It is a rigorous, calculation-based preparatory course that requires significant effort and time commitment from its students. This course is intended for students who plan to move on to C117, which is required for chemistry majors as well as for majors in biology, neuroscience and other sciences. Many students plan to eventually move on to medical school.

#### **Course Instructor**

K. Arnold [ksa2@indiana.edu](mailto:ksa2@indiana.edu)

**Responsibilities of the UTIN** - 5-6 hours commitment required per week for 1 credit hour, to include the following points:

- Attend 1 discussion section (meets 2x per week). UTINs will help participate in small group discussion with students, answer questions and share their own experiences on successfully completing C103 (or other higher chemistry courses).
- Help facilitate a study session with course professor or AI on a weekly or biweekly basis.
- You will meet with a mentor AI on a regular basis to discuss issues and receive guidance.
- Communicate effectively with the instructor, graduate AI, and peers to ensure that you are teaching information accurately. If you have questions, then please ask.
- Study course materials so you are able to answer questions correctly. You are encouraged to review online lectures.
- Complete all assignments required for Chem-X371 as listed on Canvas.

#### **Evaluation of Performance**

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the graduate AIs and/or course instructor.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.

## **C116: PROBLEM SOLVING IN GENERAL CHEMISTRY**

### **Offered Fall and Spring Semesters**

#### **Course Description**

C116: Problem Solving in General Chemistry is a supplemental instruction course that provides students with an additional discussion each week over C117 course material. C116 is designed and offered for individuals who may struggle in C117 and is taken concurrently with C117. Students in this course will have more hands-on problem solving experiences focused on course content, plus develop better study and learning skills.

**Course Instructor(s):** to be assigned.

**Responsibilities of the UTIN** – 6 hours commitment required per week for 1 credit hour, to include the following points:

- C116 UTINs will help participate in small group discussion with students, answer questions and share their own experiences on successfully completing C117.
- UTINs will be assigned one weekly discussion section based on openings in their schedule. In discussion, UTINs will guide and facilitate the active participation of students.
- UTINs may be asked to make short videos showing worked problems from worksheets or practice exams.
- UTIN have the option to provide two office hours each week.
- Attend weekly C116 Teaching Teams meetings and complete short teaching-related assignments.
- Communicate effectively with the instructor, graduate AI, and peers to ensure that you are teaching information accurately. If you have questions, then please ask!
- Study course materials so you are able to answer questions correctly. You are encouraged to attend C117 online lectures to help refresh any C117 content as needed.
- Complete all assignments required for Chem-X371 as listed on Canvas.

#### **Evaluation of Performance**

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the course instructor.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.

## **C117: PRINCIPLES OF CHEMISTRY AND BIOCHEMISTRY I**

### **Offered Fall, Spring and Summer Semesters**

#### **Course Description**

The course will cover foundational principles of chemistry and biochemistry. The course topics are designed to teach chemistry starting with a microscopic picture and building toward a macroscopic picture of chemistry. Topics include energy, thermochemistry, atomic structure and properties, quantum theory, molecular structure, chemical bonding, thermodynamics, equilibrium, kinetics, and a basic introduction to organic chemistry. All topics are taught with the goal of practicing and developing approaches for problem solving.

#### **Course Instructor(s)**

J. Robinson (jrobins@indiana.edu) and M. Porter (mmulcron@indiana.edu)

**Responsibilities of the UTIN** – 6 hours commitment required per week for 1 credit hour, to include the following points:

- Ideally, C117 UTINs will attend and engage with every lecture to solidify their own knowledge and help answer questions, facilitate participation in small groups, and disseminate written materials.
- UTINs will be assigned one weekly discussion section based on availability. In discussion, UTINs will work in coordination with the graduate student AI to guide and facilitate the active participation of students in problem solving or guided learning activities.
- UTINs will have the option to hold review sessions during the week/weekend before each exam.
- Attend weekly AI meeting. Communicate effectively with the instructor, graduate AI, and peers to ensure that you are teaching information effectively and accurately. If you have questions, then please ask!
- Review C117 homework and complete discussion assignments in advance of discussion each week. Study course materials so you are able to answer questions correctly.
- Complete all assignments required for Chem-X371 as listed on Canvas.

#### **Evaluation of Performance**

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the graduate AIs.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.

## **C127: PRINCIPLES OF CHEMISTRY AND BIOCHEMISTRY I, Lab** **Offered Fall, Spring and Summer Semesters**

### **Course Description**

C127 is a 2-credit lab course that align with the topics in C117. Chemical bonding (atomic structure, molecular structure, molecular orbital theory, and non-covalent interactions), macroscopic properties (energy, kinetics, equilibrium, and thermodynamics). Hands-on laboratory techniques in chemistry necessary for success in later chemistry laboratory courses, especially organic chemistry.

### **Course Instructor(s)**

A. Wood, [allambri@iu.edu](mailto:allambri@iu.edu)

**Responsibilities of the UTIN** – 6 hours commitment required per week for 1 credit hour, to include the following points:

- UTINs will attend C127 lab lecture and facilitate small group active learning.
- UTINs will be assigned a lab section where they will work with the graduate student AI to help answer student questions and assist in the lab.
- Attend weekly AI meeting.
- Communicate effectively with the instructor, graduate AI, and peers to ensure that you are teaching information accurately. If you have questions, then please ask!
- Review lecture material and read the textbook in advance.
- Study course materials so you are able to answer questions correctly.
- Complete all assignments required for Chem-X371 as listed on Canvas.

### **Evaluation of Performance**

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the course instructor.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.



## C341: ORGANIC CHEMISTRY I (Lecture) Offered Fall, Spring and Summer Semesters

### Course Description

Organic chemistry is the study of the structure and reactivity of carbon-containing compounds. Throughout the semester, we will discuss the physical properties and chemical transformations of organic compounds. Of primary emphasis will be the development of a systematic rationale for these properties and transformations. Specific goals include:

- Develop a mastery-level understanding of the structure, bonding, nomenclature, properties, preparations, and reactivity of alkanes, alkyl halides, alkenes, alkynes, alcohols, ethers, and epoxides.
- Apply understanding of structure and reactivity to write mechanisms and predict regiochemically- and stereochemically-correct products for reactions involving the functional groups listed above.
- Recognize the fundamental types of reactions: acid-base, substitution, elimination, addition, radical and oxidation/reduction and apply these to the synthesis of simple organic molecules.
- Retain knowledge to move forward and be successful in future organic and biochemistry coursework.

### Course Instructors

L. Brown [brownlcb@iu.edu](mailto:brownlcb@iu.edu) and M. Oakley [oakley@indiana.edu](mailto:oakley@indiana.edu)

**Responsibilities of the UTIN** – 6 hours commitment required per week for 1 credit hour, to include the following points:

- C341 UTINs should plan to **attend every lecture** to solidify their own knowledge, answer questions, and help participate in small group discussion with student. If a UTIN cannot attend either lecture section in person, then they may catch up by watching lecture videos. (3 hours/week)
- UTINs will be assigned **one-two weekly discussion sections** based on openings in their schedule. In discussion, UTINs will guide and facilitate the active participation of students. (1-2 hours/week)
- UTINs have the option to lead a study session (office hours) each week.
- Communicate with the instructor and complete occasional short teaching-related assignments.
- Communicate effectively with the instructor, graduate AI, and peers to ensure that you are teaching information accurately. If you have questions, then please ask!
- Study course materials so you can answer questions correctly.
- Complete all assignments required for Chem-X371 as listed on Canvas.

### Evaluation of Performance

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the graduate AIs.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.

## J341: ORGANIC CHEMISTRY I (Lecture) Offered Fall and Spring Semesters

### Course Description

Organic chemistry is the study of the structure and reactivity of carbon-containing compounds. Throughout the semester, we will discuss the physical properties and chemical transformations of organic compounds. Of primary emphasis will be the development of a systematic rationale for these properties and transformations. Specific goals include:

- Develop a mastery-level understanding of the structure, bonding, nomenclature, properties, preparations, and reactivity of alkanes, alkyl halides, alkenes, alkynes, alcohols, ethers, and epoxides.
- Apply understanding of structure and reactivity to write mechanisms and predict regiochemically- and stereochemically-correct products for reactions involving the functional groups listed above.
- Recognize the fundamental types of reactions: acid-base, substitution, elimination, addition, radical and oxidation/reduction and apply these to the synthesis of simple organic molecules.
- Retain knowledge to move forward and be successful in future organic and biochemistry coursework.

### Course Instructors

B. Burlingham [bburling@indiana.edu](mailto:bburling@indiana.edu)

**Responsibilities of the UTIN** – 6 hours commitment required per week for 1 credit hour, to include the following points:

- C341 UTINs should plan to **attend every lecture** to solidify their own knowledge, answer questions, and help participate in small group discussion with student. If a UTIN cannot attend either lecture section in person, then they may catch up by watching lecture videos. (3 hours/week)
- UTINs will be assigned **one-two weekly discussion sections** based on openings in their schedule. In discussion, UTINs will guide and facilitate the active participation of students. (1-2 hours/week)
- UTINs have the option to lead a study session (office hours) each week.
- Communicate with the instructor and complete occasional short teaching-related assignments.
- Communicate effectively with the instructor, graduate AI, and peers to ensure that you are teaching information accurately. If you have questions, then please ask!
- Study course materials so you can answer questions correctly.
- Complete all assignments required for Chem-X371 as listed on Canvas.

### Evaluation of Performance

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the graduate AIs.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.

## **C240: PREPARATION FOR ORGANIC CHEMISTRY**

### **Offered Fall and Spring Semesters**

#### **Course Description**

C240 is designed for science majors at Indiana University as a supplemental program to enhance problem solving techniques in organic chemistry, preconceptions of difficulty and effort in university science courses, and better ready yourself for the science degrees you will be pursuing later in the curriculum. These extra course meetings and resources will be taken concurrently with C341: Organic Chemistry I to help students be successful.

#### **Course Instructor(s)**

TBD

**Responsibilities of the UTIN** – 6 hours commitment required per week for 1 credit hour, to include the following points:

- C240 UTINs will help participate in small group discussion with students, answer questions and share their own experiences on successfully completing C341.
- UTINs will be assigned one weekly discussion section based on openings in their schedule. In discussion, UTINs will guide and facilitate the active participation of students. (in person, meets two times per week).
- UTINs may be asked to make short videos showing worked problems from worksheets or practice exams.
- UTIN have the option to lead a study sessions (office hours) each week. (online via zoom)
- Attend weekly AI meeting and complete short teaching-related assignments.
- Communicate effectively with the instructor, graduate AI, and peers to ensure that you are teaching information accurately. If you have questions, then please ask!
- Study course materials so you are able to answer questions correctly. You are encouraged to attend C341 online lectures to help refresh any C341 content as needed.
- Complete all assignments required for Chem-X371 as listed on Canvas.

#### **Evaluation of Performance**

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the graduate AIs.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.

**C342: ORGANIC CHEMISTRY II (Lecture)**  
**Offered Fall, Spring and Summer Semesters**

**Course Description**

Second semester Organic lecture focusing on syntheses and reactions of polyfunctional compounds, natural and industrial products.

**Course Instructor**

A. Wood, [allambri@iu.edu](mailto:allambri@iu.edu)

**Responsibilities of the UTIN** – 6 hours commitment required per week for 1 credit hour, to include the following points:

- Ideally, C342 UTINs will attend every lecture to solidify their own knowledge, answer questions, and help participate in small group discussion with students.
- UTINs will be assigned one weekly discussion section based on openings in their schedule. In discussion, UTINs work in coordination with the graduate student AI to guide and facilitate the active participation of students.
- UTINs have the option to provide one-two office hours each week.
- UTINs will rotate providing review sessions during the week/weekend prior to each exam
- UTINs may be asked to make short videos showing worked problems from worksheets or practice exams
- Communicate with your instructor weekly and complete short teaching-related assignments.
- Communicate effectively with the instructor, graduate AI, and peers to ensure that you are teaching information accurately. If you have questions, then please ask!
- Study course materials so you are able to answer questions correctly.
- Complete all assignments required for Chem-X371 as listed on Canvas.

**Evaluation of Performance**

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the graduate AIs.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.

## **C343: ORGANIC CHEMISTRY LABORATORY** **Offered Fall, Spring, and Summer Semesters**

### **Course Description**

C343 covers the basics of the organic chemistry techniques and the introduction to spectroscopy and structure elucidation using data obtained from IR,  $^{13}\text{C}$  and  $^1\text{H}$  NMR, IR, UV-Vis, etc. Students apply their knowledge from C341 and/or C342 to understand mechanisms, reactions and observations of experiments done in the laboratory.

### **Course Instructor(s)**

S. Mata (samata@iu.edu)

**Responsibilities of the UTIN-** 6 hours commitment required per week for 1 credit hour to include the following points:

- Ideally, C343 UTINs will attend and engage in every lecture to solidify their own knowledge and help answer questions or disseminate written materials.
- UTINs will be required to attend one lab session at their most convenient time but the same each week and the limitation of only one UTIN per lab session. During this lab session, students will help other students during the set up of the reaction, ask questions to help students understand the reason behind their reaction set up and the theory behind the experiment.
- UTINs are required to hold 1 office hour per week either in person or online and will have the option to hold review sessions during the week/weekend before each exam.
- Attend weekly UTIN/AI meeting or communicate effectively with the instructor, graduate AI, and peers to ensure that you are teaching information effectively and accurately. If you have questions, then please ask!
- Review homework and keep up with the theory covered in class to best assist students.
- Complete all assignments required for Chem-X371 as listed on Canvas.

### **Evaluation of Performance**

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the course instructor in conjunction with the graduate student performing the duties of AI for the course.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.

## **R340: SURVEY OF ORGANIC CHEMISTRY**

### **Offered Fall Semester**

#### **Course Description**

R340 covers the foundation of structure, bonding, nomenclature, properties, and reactivity of the functional groups (alkanes, alkenes alkynes, alcohols, ethers, ketones, aldehydes, thiol, carboxylic acids, and amines) and their biological applications. The course focuses on fundamentals of reactivity (from acid-base reactions, substitution, elimination, addition, and oxidation/reduction) to understand the main metabolic reactions. R340 explores the reactivity of the previously mentioned functional groups and explains it by drawing electron pushing mechanisms.

#### **Course Instructor(s)**

S. Mata (samata@iu.edu)

**Responsibilities of the UTIN-** 6 hours commitment required per week for 1 credit hour or 3 hours for 0.5 credit hour to include the following points:

- Ideally, R340 UTINs will attend and engage in every lecture to solidify their own knowledge and help answer questions or disseminate written materials.
- UTINs will be required to attend one or two weekly discussions (according to the registrar). In discussion, UTINs will work in coordination with the graduate student AI to guide and facilitate the active participation of students in problem solving and report back any teaching problems.
- Rarely, UTINs together with UTAs run discussion if needed.
- UTINs are required to hold 1 office hour per week either in person or online and will have the option to hold review sessions during the week/weekend before each exam.
- Attend weekly UTIN/AI meeting or Communicate effectively with the instructor, graduate AI, and peers to ensure that you are teaching information effectively and accurately. If you have questions, then please ask!
- Review homework and complete discussion assignments in advance of discussion each week. Study course materials so you can answer questions correctly.
- Complete all assignments required for Chem-X371 as listed on Canvas.

#### **Evaluation of Performance**

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the course instructor in conjunction with the graduate student performing the duties of AI for the course.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.

## **C383: HUMAN BIOCHEMISTRY**

### **Offered Fall and Spring Semesters**

#### **Course Description**

C383 is a one-semester course focused on the structure and function of molecules found inside cells. Students in the course develop a framework to begin to understand how these molecules interact with each other to sustain life. Major topics include enzyme mechanisms, regulation, and metabolism.

#### **Course Instructor(s)**

J. Hollenbeck (jjhollen@iu.edu)

**Responsibilities of the UTIN** – 6-hour commitment required per week for 1 credit hour, to include the following:

- Ideally, C383 UTINs will attend lecture to solidify their own knowledge, help answer questions, facilitate small group discussions with students, and disseminate written materials.
- UTINs will be assigned to weekly discussion sections based on their availability. In discussion, UTINs will collaborate with the graduate student AI and/or UTA to facilitate active learning and encourage student participation.
- UTINs will have the option to host review sessions before each of the midterm exams. These review sessions can be held in-person or on Zoom.
- UTINs are expected to study the course materials and review discussion worksheets in advance of weekly staff meetings.
- UTINs are expected to communicate effectively with the instructor and the graduate student AI/UTA.
- All UTINs must complete the assignments required for CHEM-X371 as listed on Canvas.

#### **Evaluation of Performance**

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the graduate student AIs or UTAs.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.

## **N331: INTERMEDIATE INORGANIC CHEMISTRY**

### **Offered Fall and Spring Semesters**

#### **Course Description**

An integrated lecture-laboratory course covering structure and bonding of inorganic compounds, including transition metal coordination compounds, organometallic compounds and bioinorganic complexes. Further topics will include nuclear chemistry and reaction mechanisms.

#### **Course Instructor(s)**

M. Porter (mmulcron@indiana.edu)

**Responsibilities of the UTIN** – 6 hours commitment required per week for 1 credit hour, to include the following points:

- Depending on schedules, some UTINs will provide office hours prior to each examination and proctor the practice exam sessions.
- Attend an AI meeting each week and complete short teaching-related assignments throughout the semester.
- Study course materials so you are able to answer questions correctly.
- Work in coordination with the graduate student AI and/or instructor to guide and facilitate the active participation of student and their group in the designated active learning activities for each discussion/flipped classroom. UTINs should report poor participation or irresponsible activity to their AI when such behavior is observed. UTINs should lead by example.
- Complete all assignments required for Chem-X371 as listed on Canvas.
- UTINs in this course should plan to put in around 6-8 hours per week.

#### **Discussion UTINs**

In addition to the points above, discussion UTINs are expected to:

- Assist a graduate student AI in one discussion section which will be assigned based on openings in your schedule.
- Complete the discussion activities prior to the AI meeting each week and be prepared to discuss with the group.

#### **Flipped Classroom UTINs**

In addition to the points above, flipped classroom UTINs are expected to:

- Attend N331 class sessions each week during the three flipped classroom topics: Molecular Orbital Theory, Crystal and Ligand Field Theory, and Organometallics.
- Complete the flipped classroom activities prior to the AI meeting two weeks before the flipped classroom begins and be prepared to discuss with the group.

#### **Evaluation of Performance**

Performance evaluation is an important part of the instructional process. Evaluation of the UTIN performance typically will be conducted twice a semester. This evaluation will be conducted by the graduate AIs.

The criteria used to evaluate UTIN performance are outlined in the UTIN Evaluation Form, found in this handbook. The evaluation for the UTIN will provide feedback regarding performance and emphasize areas where improvement may be needed.