

# Teaching Assistant Manual

Department of Chemical Engineering

Version 5.0 – Winter 2019



**UNIVERSITY OF WATERLOO**  
**FACULTY OF ENGINEERING**  
Department of Chemical Engineering

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## Introduction

Thank you for your interest in the teaching assistant program within the Department of Chemical Engineering (CHE).

Teaching Assistants (TAs) play an essential role in our students' learning process. TAs support course instructors by tutoring students, marking papers and proctoring during tests and exams. They support students by answering their questions, helping them solve problems and providing useful feedback about their work. TAs for laboratory courses supervise lab experiments. They guide students to perform experiments properly and safely within the allocated time. In addition to supporting student learning, TAs support the University by modelling ethical behavior, preserving academic integrity, protecting student privacy and maintaining a safe environment.

In return for their contributions through their TA position, graduate students earn money and gain experience teaching and communicating. This job experience provides a new perspective from which to consider teaching, learning and the discipline of chemical engineering.

Whether you are thinking about becoming a TA or looking for information to support you in your current role as a TA in the Department of Chemical Engineering, this manual is a good place to start. It provides some basic information for teaching assistants, including an overview of employment guidelines for graduate students and the application process. It also includes information for students who have been assigned a TA position, including training requirements, helpful tips to enhance your on-the-job performance, and resources for further information.

## Contact Information

If you have TA-related questions that this manual does not answer, please contact one of the departmental representatives below:

<b>Title</b>	<b>Name</b>	<b>Extension</b>	<b>Email</b>
TA Coordinator / MEng Graduate Studies Assistant	Colleen Mechler	30585	meng.chemicalengineering@uwaterloo.ca
Associate Chair of Graduate Studies	Nasser Mohieddin Abukhdeir	31306	nmabukhdeir@uwaterloo.ca

Table 1: CHE TA Contacts

## Teaching Assistantships

The Department of Chemical Engineering hires graduate students to act as teaching assistants for dozens of undergraduate lectures and laboratory courses each term. Graduate students must apply for and be selected to undertake such positions. Applicants must ensure that they are eligible and have the qualifications and time available to take on teaching assistant responsibilities.

## Graduate Student Employment

According to the Ontario Ministry of Education and Training, universities can employ full time graduate students for up to ten hours per week.

The University of Waterloo's guidelines for graduate student support specify that "through the university, full-time students can accept on average at most ten hours of paid employment per week, unless the employment is directly related to their degree programs. The ten-hour maximum applies to the total time required for Teaching Assistant and Research Assistant duties."

## Restrictions

Your participation in TA employment may be restricted by policies put in place by the Department of Chemical Engineering, the Faculty of Engineering, the University and/or any funding agencies, including those that have provided scholarships. For example, the NSERC Post-Graduate Scholarship places restrictions on the number of hours per year a recipient may spend fulfilling TA duties. It is your responsibility to be aware of any restrictions on your ability to engage in paid employment and proceed accordingly.

In our department, each graduate student receives a unique offer of admission with its own set of employment restrictions. Such offers typically include the following information:

*"Additional financial support of up to ~\$4,219 per term may be provided from time to time, in the form of teaching assistantship.*

*Teaching assistantships require an additional time commitment of up to ten hours of work per week. These cannot be offered in advance of your arrival at the University of Waterloo and are conditional upon successful completion of the Faculty of Engineering ExpectATIONS training course, which is offered twice per year (Normally in April and September).*

*Please note that although you may apply for teaching assistantships, this award is not guaranteed."*

Your Letter of Admission to Graduate Studies may include other information specific to your situation. Please refer to your letter of admission for more details.

## CHE TA Opportunities

Current job listings and the online application form are available on the Department of Chemical Engineering's Chemical Engineering Teaching Assistantship Program SharePoint site:

<https://chesp.uwaterloo.ca/sites/ta/SitePages/Home.aspx>

### Job Listings for the Upcoming Term

1. Navigate to <https://chesp.uwaterloo.ca/sites/ta/SitePages/Home.aspx>
2. Use your Nexus user name and password to access the site.
3. In the 'Graduate Students' section, select 'Teaching Assistantship Program.'
4. Under 'Available TA Positions,' select [CHE TA Application Form](#).
5. In the 'Preferences' section, view the courses listed in one of the drop-downs under the heading 'TA Course Task Level (Qty Needed) Instructor' list. The drop-down lists include the courses that require one or more TAs, as well as the number of hours per term required, the number of TAs needed and a brief description of the competency required for the position.

### Possible Opportunities for Future Terms

If you are interested to know what other courses may require TAs in the future, depending on course scheduling, you may view each term's standard course list from the Teaching Assistantship Program page:

1. Navigate to <https://chesp.uwaterloo.ca/sites/ta/SitePages/Home.aspx>
2. Use your Nexus user name and password to access the site.
3. In the 'Graduate Students' section, select 'Teaching Assistantship Program.'
4. Under 'Available TA Positions,' click on one of the academic terms to see a list of the courses that are typically offered that term and the requirements associated with them.

### Workload

The Department offers three levels of TA positions, based on the number of hours per week required.

The table below describes the workload associated with each level of time commitment:

Level	Average Required Time per Week	Average Required Time per 13-Week Term
A	10 hours	130 hours
B	7.5 hours	97.5 hours
C	5 hours	65 hours

Table 2: TA Levels and Time Commitments

## Competency

To perform your TA duties well, you must have general competence in the topic of the course you have been assigned and complete understanding of the material it covers.

If, after you secure a teaching assistant position, you realize that you have not mastered the course material, then you must learn it on your own time. In other words, the time it takes to learn the course content is not included in your TA work hours and no financial compensation is available for it.

TAs without the appropriate background and/or the ability to express themselves clearly in English could compromise the learning experience of their undergraduate students and, in the case of laboratories, expose students to hazardous situations. For these reasons, the department can cancel your TA contract if it is determined that you lack the necessary background to teach it or that your performance is unsatisfactory.

**Tip:** The University's Writing and Communications Centre provides resources to help you improve your language skills if necessary.

## Application Process

Interested graduate students must apply online to be considered for a TA position. To do so, follow these instructions:

1. Navigate to <https://chesp.uwaterloo.ca/sites/ta/SitePages/Home.aspx>.
2. Use your Nexus user name and password to access the site.
3. In the 'Graduate Students' section, select 'Teaching Assistantship Program.'
4. Under 'Application Process,' select CHE TA Application Form.
5. In the 'Preferences' section, the drop-downs under the heading 'TA Course Task Level (Qty Needed) Instructor' list the courses that require one or more TAs, as well as the number of hours per term required, the number of TAs needed and a brief description of the competency required for the position.  
Select, in your order of preference, one or more courses that you would like to TA.
6. For each of the three preferences, describe how your skill set makes you a good candidate to TA that course.
7. Click 'Submit'.

**Tip:** Before you apply for any TA position, read and understand the requirements to be sure that you can fulfil them.

## **Selection**

A TA Selection Committee, comprising the Graduate Review Committee, CHE laboratory instructors and a member of the Chemical Engineering Graduate Student Association (CEGSA), determines which applicants receive TA positions. During the selection process, the committee considers the task requirements, the instructor's preference and the following information about the applicant:

- Preferences
- Time in program
- Milestones achieved
- Background knowledge
- Skills and experience
- Progress towards degree requirements
- Experience with the TA program

The decision of the selection committee is final.

## **Compensation**

The Department funds TA positions with operating money provided by the University.

The University's Finance departments posts the compensation rates for teaching assistants each year.

Compensation requires the TA's satisfactory performance of the duties expected of his/her position.

## **Administration for Payroll**

Once you have been selected for a TA position, you must complete some administrative tasks to ensure that you will be paid for your work.

The TA Coordinator will send you a TA Confirmation Letter. Similar to an employment contract, it describes the TA position's level and compensation. You must sign and return it to the TA Coordinator.

With the receipt of your signed Confirmation Letter, the TA Coordinator will register you as a TA. Soon after, you will receive an email from Workday, the University's human resources software system, requesting that you complete the onboarding process. It requires you to submit the banking and personal information required to arrange the Department's payroll processes.

The University will deposit your payment into your bank account on the last Friday of every month you are employed. If there is a problem with your payment, contact your Manager of Graduate Studies.

**Tip:** If you need a social insurance number (SIN), see the instructions on the Student Success Office web page. Under 'Students' in the left column, click on 'Social Insurance Number.'

**Tip:** You can arrange to have your tuition paid directly from your monthly TA salary. Guidelines for arranging direct payment are available online the Finance (Student Financial Services) web page. Under 'Paying Your Fees,' select 'How to become "Fees Arranged" and what it means.' Under the heading 'There are two ways to become "Fees Arranged,"' select 'Promissory Note process (in the Finances section on Quest).'

## Effective Teaching

Before you begin your job as a teaching assistant, ensure that you understand your specific role and responsibilities and that you have completed all your training and conducted all of the activities you need to be prepared.

## Training/Resources

As a TA in the Faculty of Engineering, you must complete the following mandatory training before you begin your duties:

- **ExpectATIONS** – two-day workshop  
During the workshop, participants work in small, discipline-specific groups led by two mentors: one faculty member and one student with TA experience. These mentors help participants prepare for the TA role by sharing their own experiences and perspectives. The workshop also includes an online component. Through this combination of small-group and online activities, participants learn about the roles and responsibilities of TAs, practice giving lessons and marking student work, and examine the working relationships between TAs, professors and students.  
Visit Engineering's [Teaching assistants](#) web page for details about the workshop and when it is scheduled to be offered again.
- **UW Safety Office Training**
  - SO 1100 Supervisor's Safety Awareness
  - SO 1001 Employee Safety Orientation
  - SO 1081 Workplace Violence Awareness
  - SO 1002 WHMIS for Employees
  - SO 1010 Laboratory Safety
- **Chemical Engineering Safety Manual**

In addition, you are encouraged to take advantage of the many resources offered by the University's Centre for Teaching Excellence (CTE). University of Waterloo graduate students may attend individual workshops and enrol in certificate programs. CTE also provides the following resources specifically for graduate students and postdoctoral fellows:

- Workshops for International teaching assistants who are new to teaching in Canada
- A week-long [Teaching Development Seminar Series](#) for postdoctoral fellows
- [CTE's TA Manual](#), which contains resources, policies, strategies and suggestions for teaching assistants
- Consultations with graduate students and postdoctoral fellows preparing their teaching dossiers or statements of teaching philosophy for academic jobs

Learn more about the [CTE's programs](#).

## Preparation

To be successful in your TA position, prepare in advance so that you understand your responsibilities, assemble all the material and information you need well before the first day of classes or labs, and consider the workload and time requirements for the remainder of the term and how they relate to your personal schedule.

## Instructor Expectations

Before the term begins, meet with your TA supervisor, who is usually the course/lab instructor of the course you have been hired to support. When you discuss your duties and the instructor's expectations of you for the term, ensure that you cover the following topics:

- Preferred method of communication
- Specific expectations
- Course outline
- Course content and schedule
- Course reference materials (notes, textbooks, solution manual, etc.)
- Quiz/test/exam schedule
- Exam and group marking schedule
- Assignment schedule
- Assignment/quiz solutions and marking scheme
- Assignment receipt/return method
- Expected turnaround time
- Recording method for marks
- Division of work among multiple TAs, if applicable
- Office hours - location and time

## Course Material

Knowing as much as possible about your course/lab will increase your confidence and ability to support your students. Here are some tips on how to prepare for your TA duties.

Plan to attend the first class of the course, where you can introduce yourself to the students and learn how the course is taught. If you are teaching a lab, visit the laboratory where it will be conducted to ensure that you know where the equipment, chemicals and supplies are stored and what dangers, such as high voltage electricity and corrosive chemicals, might exist. Before the lab sessions begin, complete the lab experiments yourself and write a short report for your laboratory instructor to confirm that you understand the associated expectations.

Before you conduct a tutorial, familiarize yourself with the material on which the students are working. Solve the tutorial questions ahead of time so you know the answers and how they can be found. Have all the course material close at hand while you are teaching – you never know when it will help you answer a student's question.

**Tip:** If your early review of the course material reveals any problems, discuss them with the instructor before your session with your students.

## **Absences from Work**

Sometimes, important obligations conflict with the responsibilities of a TA position. To be absent from your TA duties, you must get permission from the Associate Chair of Graduate Studies and your course instructor *at the beginning of the term*.

For some TA positions, your absence will be permitted for only relevant conferences or research meetings – when you need to present a seminar or poster, for example – and for only the time required to attend. In other words, you cannot add extra time to the trip to travel or visit family.

Furthermore, permission will be granted only if you can arrange for someone capable of performing the TA duties to take your place. Someone who has TA'd your course before is one option.

**Note:** Lab TAs cannot be excused from TA duties. Lack of consistency in the lab poses a safety concern for students.

**Tip:** Do not plan to take any vacation time during your TAship.

If a serious illness or injury or an emergency leaves you unable to fulfill any part of your TA assignment, notify your TA supervisor immediately. Have your family physician or a University of Waterloo Health Services representative complete a University of Waterloo Verification of Illness form and provide a copy to the Manager of Graduate Studies and your TA supervisor.

## **Performance**

Successful TAs share some common traits and approach their jobs in similar ways. Your behavior and the way you handle the administrative and communication aspects of your job can influence the quality of your work.

### **Behaviour**

In a tutorial, your behaviour and mannerism affect the students' response to your efforts. Be approachable, enthusiastic and honest. Circulate around the room and try to engage students by asking if they are making progress. Encourage the students to ask clear and specific questions. When you answer a student's question, try to involve everyone – not just the person who asked the question.

You should be able to answer all routine questions about the course material. If a student asks a difficult question, consider it carefully before you answer. If you cannot provide an answer, explain that you will find the answer and let them know more later.

### **Assignments**

Assignments provide a major source of feedback for instructors and students. They help instructors know how well their students are learning the course material, so they can make changes to their teaching content and/or delivery if necessary. They help students recognize their own progress (or lack thereof), so they can adapt their study habits if necessary.

Unless the instructor has specifically allowed it, do not distribute or allow students to have copies of solutions to the assignments.

You will tell your students where and when to submit their assignments. If you mistakenly receive an assignment for another course, write the date on it, sign it and bring it to the Department's Undergraduate Advisor.

If a student has a problem submitting work on time, discuss this with the instructor and get his/her approval for any arrangements you want to make with the student.

## **Marks**

At the discretion of the course instructor, you may be asked to mark assignments, part of the midterm or a final examination for the course. If your job requires you to create the marking scheme, skim the papers to help determine if your proposed scheme is reasonable. Ask the instructor whether you should assign marks for presentation.

While your marking style will depend on the instructor's preferences, consider the following common guidelines:

- Examine a student's solution carefully
- Clearly mark where the student went wrong and, if necessary, write a short explanation
- If the student's work implies confusion, a short comment like 'Get help from professor' or 'See solutions,' may be helpful
- Point out the key error in an incorrect solution and refer students to the solutions if necessary
- Avoid ambiguous or cryptic comments or symbols
- Avoid arrogant or sarcastic comments
- Mark consistently – Marking one question at a time on all papers can help with consistency

You may not always see the exact solution that you expect. Unique – and correct – solutions are possible. When you understand the material well, correct solutions that fall outside the marking scheme should be easily identifiable. Be on the lookout for unexpected correct solutions.

Students depend upon useful and informative marking comments to help them identify and solve problems with their work. Without enough commentary, they cannot know what they did wrong or how to improve their approach.

## **Questions**

Students will come to you for help with problems and assignments. Frequently asked questions include

- How do I do this question?
- What's wrong with my solution?

Your first response should be "Show me your current work on the question."

To reveal if the student understands the problem, ask them to explain the question and describe their reasoning. It can be tricky to answer questions without giving away too much information. Giving useful and enlightening hints takes practice.

## **Office Hours**

You may be asked to hold office hours during which undergraduate students can stop by to ask questions and seek help with their assignments.

To minimize time conflicts for students, try to schedule your office hours to start during one class period and end during the next class period. Post your office hours and TA contact information on [Waterloo LEARN](#).

## **Harassment and Discrimination**

In your role as TA, you are in a very visible and accessible position. Some students feel more comfortable talking with a TA than other members of the University community, and you may be called upon to talk about more than just academic work.

If you become aware of or are approached about any situation involving harassment or discrimination, you have serious responsibilities as a TA. When an initial complaint is handled well, with sensitivity and understanding, the potential for a successful resolution increases dramatically.

When problems related to harassment and discrimination arise, you may be the first person, in an official capacity, called upon to respond. As a TA and employee, you are required under University Policy 33 - Ethical Behavior, Policy 42 – Prevention and Response to Sexual Violence, and provincial human rights legislation to respond in a timely and sensitive manner.

You are not required to take formal action on the complaint. But it is important to listen to the complaint, notify your immediate supervisor as soon as possible, and get help to determine how to proceed.

The Conflict Management and Human Rights Office (CMAHRO) has prepared Guidelines for Teaching Assistants to assist in the rare, but difficult, cases when a TA is presented with an initial human rights complaint. Since these issues can be complex and serious, these guidelines focus on that initial meeting where you may be asked to respond to the student bringing a concern.

After the initial encounter with the student, you must consult with your course professor or department chair. You may also access other resources on campus, including CMAHRO, Counseling Services, Health Services and Campus Police.

**Tip:** For more information about the University's Workplace Harassment Program, see the Safety Office's Workplace Harassment Program brochure.

## **Unsatisfactory Performance**

The department may, at its discretion, permanently exclude poorly performing TAs from future TA assignments.

If you have a problem carrying out your job, you should first talk to your course instructor or your TA supervisor. It is also a good idea to discuss any problem you have with your own academic supervisor and the Associate Chair of Graduate Studies.

If your on-the-job performance is unsatisfactory, either your course instructor or TA supervisor will provide you with written notice. If, after that notice, your performance continues to be unacceptable, your course instructor or TA supervisor will provide written notice to your Associate Chair of Graduate Studies.

Your performance will be evaluated by either the course instructor or your TA supervisor at the end of each term. If you apply for TA positions in the future, this evaluation will be considered during the selection process.

## Appendix A: Information, Privacy and Copyright Issues

- You must comply with Policy 46 – Information Management
- Never leave material that contributes to a student's grade in a public place
- Record comments/grades on pages that are hidden from the view of other students
- Return exams/assignments only to the student who wrote them, unless that student has provided written permission to give them to another person
- When returning assignments to the instructor, include a comment sheet that describes what material is giving students the most trouble and what things they understand well
- Explain to your students the reasoning for the marking scheme
- Do not let students talk you into changing marks without a reason
- Inform the course instructor if you suspect a student of cheating

## Appendix B: Proctoring Tests and Examinations

Be aware of the regulations associated with assignments, tests and final exams.

Here are some highlights for you to consider:

- Midterm tests may be held during class time or during the evening
- Final exams are always written during an official examination period
- For exams and tests outside of normal class time, arrive 20-30 minutes before the exam begins in order to distribute exam material – have everything prepared so that the exam begins on time and latecomers can be handled with minimal disruption
- If there is a mistake or typo in the exam questions, announce this at the beginning of the exam period and write the change(s) on the black/white board
- Before the exam begins, make clear and repeated announcements about what type of support materials are permitted.
- Explain any necessary examination procedures like, for example, no one may leave the exam room during the last fifteen minutes
- Once students have settled down, take a head count so you know the number of examinees present
- Students should sign an attendance list and, to discourage cheating, display their WatCard while doing so
- Check students' desks to ensure that they have only authorized materials and remove un-authorized materials.
- Place all unauthorized materials at the front or side of the room, out of reach and beyond the sightline of the students being tested
- If the exam is held in a classroom, regulations require that students be seated with at least one empty chair in between them
- Re-arrange students before and during the exam to prevent students from looking at another paper or calculator
- If a student asks to leave the room for a short period (i.e. washroom break), make sure all others are present before allowing him/her to leave, accompanied by another TA
- Only one student should leave the room at a time
- Be vigilant during the exam – walk around the room frequently and, when you take a break, avoid sitting in the same seat every time
- Announce when the exam time allotment is halfway complete and when there are 10 minutes left in the exam period
- No student may leave the exam in the final 10 minutes
- Extend the exam period only on the professor's instruction
- Collect exams punctually
- Remind the students not to discuss the exam until all papers have been collected
- As papers are submitted, check each one to ensure that it has been marked with a student's name and identification number
- Before you allow students to leave the room, count the exam booklets to confirm that each one has been returned

## Appendix C: Cheating and the Academic Discipline Policy

Cheating on assignments, tests or exams is a serious offence. Cheating includes using unauthorized aids or communicating in any way with others during an examination. Penalties for cheating range from a grade penalty to suspension or expulsion from the University.

If you suspect cheating during a test or exam, inform the course instructor as soon as possible. Also, write a note about the incident immediately and keep any evidence.

For more information, see the open access version of the [Graduate Academic Integrity Module](#). The module is a degree requirement for all graduate students.

### Assignments

Watch assignments for indications of copying, cheating and plagiarism.

Tip-offs to plagiarism on assignments and labs include:

- Entire sections with better language than others – in such cases, paste the section into Google, where a search may identify the source
- Lack of proper citation or referencing
- Errors that are the same as another student's errors, including
  - Wrong answers
  - Wrong value, unit or inverted unit conversion
  - Incorrect spelling or grammar
  - Incorrect format on a plot or figure

If you think that a student may have copied an assignment, mark the assignment and bring it to the instructor before returning it to the student or recording a mark. Draw attention to the area that you think may have been copied.

**Tip:** Students who use the same incorrect methodology may have the same wrong answer, without cheating.

### Study Groups

Students are encouraged to form study groups, but they must be vigilant to do the work independently.

You may recommend these study group guidelines to students:

- Outline the problem on your own
- Try the problem on your own
- Complete and verify solutions with others
- Explain completed problems to each other

Members of a study group will have similar approaches to a problem, but they should not all have the same answer.

Students may work together in a study group to complete and share answers regarding additional problems before mid-terms and exams, but these problems should not be part of the exam.

**Note:** Ask your students to identify their study group members on their assignment.

## Appendix D: Academic Integrity

Academic integrity is a cornerstone of research, teaching and learning. You are expected to demonstrate academic integrity in your work and encourage it in your students. Because teaching assistants are sometimes involved in student grievances, discipline and appeals, it is wise to familiarize yourself with the relevant resources, policies and processes.

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. The Office of Academic Integrity is a promotional and educational unit that communicates the importance of academic integrity at the University. Learn more on the University's [Academic Integrity web page](#).

### Grievances

Students who believe that a decision affecting some aspect of their university life has been unfair or unreasonable may have grounds for initiating a grievance.

[Policy 70, Student Petitions and Grievances](#), Section 4, provides more information about grievances and the processes involved with filing a petition.

### Discipline

Students are expected to know what constitutes academic integrity to avoid committing an academic offence and to take responsibility for their actions. Students who are unsure whether an action constitutes an offence or who need help to learn how to avoid offences (e.g., plagiarism, cheating) or about rules for group work/collaboration should seek guidance from their course instructor, academic advisor or undergraduate Associate Dean.

For information on categories of offences and types of penalties, students should refer to [Policy 71, Student Discipline](#).

### Appeals

Decisions made or penalties imposed under Policies 70 and 71 may be appealed. Students who believe they have grounds for an appeal should refer to [Policy 72 - Student Appeals](#).