



# HTM\*2700 Understanding Foods

## F19 0.50 credits

### General Course Information

**Instructor:** Alison Crerar, MA  
*Email* [acrerar@uoguelph.ca](mailto:acrerar@uoguelph.ca)  
*Office Hours* Macdonald Stewart Hall (MACS), Room 206  
 By appointment, please email me.

*Department/School* School of Hospitality, Food and Tourism Management

**Lab Co-ordinator:** **Mackenzie Michalczuk** (Masters of Applied Nutrition – in-progress)  
[mmichalc@uoguelph.ca](mailto:mmichalc@uoguelph.ca)

**Graduate Teaching Assistants** N/A

The course format consists of 2 - 90-minute lectures **and** one 2-hour lab each week as follows:

Lectures: Tuesday & Thursday, 4:00 pm - 5:20 pm

Labs:

SEC 0101	Wednesday	10:30 am - 12:20 pm	Macdonald Institute (MINS) 214
SEC 0102	Wednesday	1:30 pm - 3:20 pm	Macdonald Institute (MINS) 214
SEC 0103	Wednesday	3:30 pm - 5:20 pm	Macdonald Institute (MINS) 214
SEC 0104	Thursday	10:30 am - 12:20 pm	Macdonald Institute (MINS) 214

**Note:** Students MAY ONLY ATTEND the laboratory class to which they are assigned at all times throughout the semester. **If you will miss or have missed a lab** contact Professor, Alison Crerar, immediately.

Pre-requisites:

Co-requisites:

**Course Description**

Scientific principles and their application to food preparation and food consumption. An integrated lecture and laboratory approach is used to study the chemical and physical properties of foods.

## Course Learning Outcomes

Upon successfully completing this course, you will be able to:

### Knowledge and Understanding:

- 1) Describe and explain how the physical and chemical properties of foods affect their preparation and use in recipes by analyzing the products prepared in lab.
- 2) Describe and explain the chemical and physical changes that take place in foods under various preparation and cooking conditions (e.g. the effects of temperature, water, pH, enzymes).
- 3) Identify and describe various food preparation and processing methods through product preparation in the lab.
- 4) Identify which foods are most likely to become contaminated, describe how this occurs and explain which procedures should be used to prevent contamination.
- 5) Identify biological, chemical and physical food safety hazards and the 3 major types of foodborne illness.

### Discipline/Professional and Transferable Skills:

- 6) Develop problem solving skills by analysing new recipes and applying course theories related to the chemical and physical properties of foods.

In particular, **Applied Human Nutrition** students will develop an appreciation of the importance of appropriate food preparation methods in order to maintain the nutritional quality of foods. An understanding of the physical and chemical properties of foods will be important to AHN students planning to apply for a Dietetic Internship because they must take Restaurant Operations Management (HTM\*3090) in 3<sup>rd</sup> year.

An understanding of the physical and chemical properties of foods in food preparation will be important to **HTM:RAF** majors when they take Restaurant Operations Management (HTM\*3090) in their 3rd year.

## Indicative Content

The Monday and Wednesday lectures will be theoretical in nature, providing basic theory which will then be applied in the laboratory. The Friday lecture will integrate the theory with the practical applications observed in the lab. Students can expect to spend a **minimum of 6-8 hours per week on the course outside of the lectures and lab**. This time will be needed to prepare for the lab (reading the Laboratory Background Information), reviewing lecture material, doing the Lab Reports and studying for exams.

### Schedule of Classes

<b><u>DATE</u></b> <b><u>(Week Of)</u></b>	<b><u>LECTURE</u></b> <b><u>TOPICS</u></b>	<b><u>LABORATORY</u></b> <b><u>EXERCISE</u></b>	<b><u>BACKGROUND</u></b> <b><u>INFORMATION</u></b> <b><u>and QUIZ</u></b>
Thurs. Sept 5	Course orientation	—	—
September 10 - 12	Food borne illness and food safety HAACP system Dispersion systems and emulsions Osmosis and turgor pressure Types of salads and parts of salads	Introductory lab and Salads	—

September 17 - 19	Fruit - structure - effects of cooking Oxidative enzymatic browning Diffusion vs. Osmosis	Fruit	Fruit
September 24 -26	Vegetables - flavour types - effects of cooking Plant pigments	Vegetables	Vegetables
October 1 - 3	Causes of food spoilage Growth requirements of microorganisms Canning Freezing Jams, jellies and pickles	Preservation	Preservation
October 8 - 10	<b>Tuesday lecture – <u>PRESERVATION LAB REPORT DUE</u></b> (October 8 <sup>th</sup> ) - midterm review  <b>Thursday lecture</b> MIDTERM – in class (October 10 <sup>th</sup> )		
<b><i>MIDTERM 1 – Thursday – in class, October 10th, 4 - 5:20 pm</i></b>			
October 16 - 17	<b>Thanksgiving - Monday, October 14<sup>th</sup></b> <b>Study Break Day – Tuesday, October 15<sup>th</sup></b>  Starch - factors affecting sols and gels - white sauce vs. brown sauce - preventing lumps in starch mixtures  Protein - types and structure - denaturation and coagulation of proteins	Starch	Starch
October 22 - 24	Eggs - composition and structure - functional properties - factors affecting coagulation of egg proteins - factors affecting egg white foam quality	Eggs	Eggs
October 29 - 31	Milk - whey and casein proteins and causes of denaturation - whipping cream foam Cheese-making process Melting and blending properties of cheese	Milk & Cheese	Milk & Cheese
November 5 - 7	Meat - composition and muscle structure - beef wholesale and retail cuts - poultry and fish - dry heat cooking methods	Meat 1	Meat 1

November 12 – 14 ALL **lectures and labs as scheduled.**

Meat - methods to increase tenderness	Meat 2	Meat 2
- moist heat cooking methods		
- fresh and cured meat colour reactions		

**MIDTERM 2 - Tuesday, November 12<sup>th</sup>, 4 - 5:20 pm – IN CLASS**

November 19 - 21	Structure of cereal grains Gluten formation Leavening gases Mixing of muffins Flake formation in tea biscuits Browning reactions	Muffins & Tea Biscuits	Muffins & Tea Biscuits
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November 26 – 28	Cakes - function of ingredients - conventional vs. quick-mix methods - surface colour	Cakes <b>(Quiz, but no lab report)</b>	Cakes
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**NOTE:** Thursday lecture replaces Tuesday Study Day (October 15<sup>th</sup>)  
- Tuesday schedule in effect

**FINAL EXAM – Check Webadvisor for date and time, location to be determined by the Office of Registrarial Services**

## Course Assessment

			Associated Learning Outcomes	Date
<b>Assessment 1:</b>	20%	Midterm 1	1, 2, 3, 4, 5 and 6	October 12 <sup>th</sup>
<b>Assessment 2:</b>	20%	Midterm 2	1, 2, 3 and 6	November 16
<b>Assessment 3:</b>	20%	7 Lab Reports	1, 2 and 3	Throughout the semester
<b>Assessment 4:</b>	10%	10 Lab Quizzes	1 and 2	Weekly
<b>Assessment 5:</b>	30%	Final Exam	1, 2, 3 and 6	Dec. 4, 8:30am
<b>TOTAL</b>	<b>100%</b>			

## Course Resources

### Required Texts:

Crerar, A., Understanding Foods Course Package, University of Guelph, **Revised July 2019**. To be purchased from *The Bookstore* in MacNaughton building.

Crerar, A. Understanding Foods Laboratory Report Sheets, University of Guelph, **Fall 2019**. (available in courselink) = **FREE**

## Additional Costs:

**Chef's jacket:** \$22 [NOTE: Lab/ chemistry coats can be worn during the lab portion of the course as long as you don't have microbiology labs in the same semester.]

**Laboratory Fee:** \$25 This lab fee is required to cover the cost of food produced in the lab.

**Optional: Chef hat** \$8 (a hair net (free) will be provided in your first lab which you will keep and wear for the remainder of the semester)

Chef jacket and lab fee will be collected in the first week of classes payment is cash. Lab fees are not refundable.

## Course Policies

### Grading Policies

**NOTE: Students must obtain an overall cumulative pass in the three examinations in order to pass the course (i.e. Midterm 1 + Midterm 2 + Final Exam = 35/70 or higher). If a student does NOT cumulatively pass the three exams then their final grade in the course will be calculated as the marks earned on the 3 exams expressed as a percentage.**

## Laboratory Reports (20% of final grade):

- Students can download the Lab Report Sheets from the HTM\*2700 CourseLink website
- Students are responsible for handing-in their lab reports, to their lab instructor at the beginning of the lab, the week that the report is due (e.g. Salads and Fruit Lab Report is to be handed-in at the beginning of the Vegetable Lab). A total of 7 lab reports will be submitted.
- Lab Reports can be answered in the spaces provided (blue or black ink) or they can be done on the computer.
- **Lab reports done on the computer must:**
  - include the questions and marking scheme with the answers
  - use minimum font size of 12 point
  - be stapled in the top left corner. Covers are not necessary.
- **Late Reports** - Students who find themselves unable to hand-in a lab report on time due to medical, psychological or compassionate circumstances beyond their control should discuss their situation with Professor Alison and make arrangements regarding a new due date. Lab Reports handed-in late for other reasons will be penalized 10% per day and will only be accepted until the Friday of the week they are due.
- **Individual assignments** –Please note: **lab reports are individual assignments and must be completed independently.** No two reports should look like they came from the same computer file, with a word or two changed to keep them from being identical. IF you write independently, and put your report into your own words you don't have to worry about it looking like someone else's. DO NOT share your lab reports with anyone else in the class. **Plagiarizing another student's answers constitutes academic misconduct.** Plagiarism includes the act of copying or paraphrasing significant portions of someone else's material and representing it as one's own. Suspected cases of plagiarism will be reported to the Associate Dean - Academic of the College.
- **Referencing:** You must reference where you obtained your information from for each of your lab report answers. All answers can be found in your lecture notes and in the coursepack. The guidelines for referencing are as follows: (Salad Lecture: *Date*) or (Coursepack: pg. 19)

- **Lab Report Due Dates (lab reports are due at the beginning of your lab)**

For specific weeks / dates please refer to Courselink

## **Laboratory Quizzes (10% of final grade):**

- Lab quizzes are to be done on-line through the HTM\*2700 CourseLink website: <https://courselink.uoguelph.ca/shared/login/login.html> .
- Information that will be tested on the quizzes is found in the “*Background Information*” sections of the Course Package and any associated readings for that lab (e.g. Fruit quiz will be on “*Fruit Background Information*” and readings).
- Each quiz will consist of 10 questions and you will have 15 minutes to complete the quiz. Each quiz can only be taken once.
- **Quizzes close Friday @ 11:59pm** Once your quiz is completed you will be given your mark.
- The answers to the questions which you got wrong will be available Monday at the beginning of the following week, after all students in the class have taken the quiz. Do NOT contact the Professor before Monday to find out the answers.
- There are a total of 10 quizzes. The **first quiz** is the Fruit Quiz during the **week of September 17**
- **Failure to write a quiz by Friday will result in a grade of zero (0).**
- **Missed Quizzes** - If you miss taking your quiz and have a legitimate medical, psychological or compassionate reason contact the course Instructor, Alison Crerar ([acrerar@uoguelph.ca](mailto:acrerar@uoguelph.ca)) **immediately**. If you do not contact her by the Monday (3 days after due date for quiz) a grade of zero ('0') will be assigned to the missed lab quiz.
- **Lab Attendance and Quiz Marks** - **In order to your count quiz marks towards your final grade in the course, you must attend a minimum of 9 of the 11 labs during the semester.** If you fail to attend at least 9 labs then you will forfeit this 10% component of the course. If you must miss a lab due to illness etc. contact Professor Alison Crerar and your TA, **before lab** or **immediately** afterwards. Failure to contact Alison or your TA about missing your lab will be recorded as an absence (a ‘strike’ for missed lab; 3 ‘strikes’ and you’re ‘out’).

## **Midterm 1 (20% of final grade):**

- Midterm 1 will test any material covered up to the end of PRESERVATION

## **Midterm 2 (20% of final grade):**

- The second midterm will test all material covered on STARCH, EGGS, MILK and CHEESE

## **Final Examination:**

- The final exam will be cumulative and therefore include all material studied in the course. However, the exam will emphasize information covered after Midterm 2 (Meats, Muffins & Tea Biscuits and Cakes).

## **NOTES:**

- Both midterms and the final exam will be a combination of multiple-choice and short answer questions.
- Any student not writing a midterm or the final exam at the scheduled time will receive a grade of zero unless they have valid documentation to verify a medical, psychological or compassionate reason for missing the midterm.
- Students are responsible for ensuring that they do not have a time conflict with final exams in other courses. The Final Exam Schedule is available through WebAdvisor for Students. In the event of a conflict the student must drop one of the courses.
- ***Religious Holidays*** - Should you need to miss a lab or examination for religious reasons, please advise Professor Crerar at least 2 weeks in advance so that arrangements can be made.

## **Course Policy regarding use of electronic devices and recording of lectures**

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be

reproduced, or transmitted to others, without the express written consent of the instructor.

## University Policies

### Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor in writing, with your name, id#, and e-mail contact. See the academic calendar for information on regulations and procedures for

Academic Consideration: <http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml>

### Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08...>

### Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible.

**Drop date:** The last date to drop one-semester courses, without academic penalty, is **last day of semester classes**. For regulations and procedures for Dropping Courses, see the Academic Calendar:

<http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08>

## Additional Course Information

### School of Hospitality, Food and Tourism Management Food Laboratory Policy

This policy:

- 1) sets professional standards for our students when involved in food preparation activities,
- 2) insures consistent food laboratory procedures for all foods courses taught within the School of Hospitality and Tourism Management and
- 3) insures the School is teaching to the highest standard of food safety.
- 4) complies with the recommendations in the Canadian Restaurant and Foodservices Association (CRFA) "Food Safety Code of Practice" and with local health regulations.

The following mandatory procedures apply to:

- a) students enrolled in **Understanding Foods (HTM\*2700)**, Cultural Aspects of Food (HTM\*2740), Restaurant Operations Management (HTM\*3090) and Advanced Restaurant Operations (HTM\*4110) courses in the School of Hospitality and Tourism Management and
- b) student sponsored activities which use HTM food laboratory facilities.

### Food Production Uniform

- A chef jacket OR white lab coat - clean, pressed and buttoned
- Chef cap OR hair net - covering all hair
- Beard net where deemed necessary by the course instructor
- Full-length pants (shorts, skirts and torn jeans are not allowed)
- Closed toe, leather or non-absorbent material shoes with non-skid soles (sandals, clogs, canvas sneakers and open-toed or heeled shoes are **not** allowed),
- **No jewelry of any type** - this includes all facial jewelry (earrings, nose rings, lip rings, eyebrow rings etc.), necklaces, watches and bracelets of any kind, except Medic Alert bracelets.
- Short to moderate length **unpolished** fingernails and no false fingernails.

**Note:** If you appear without the proper uniform you may rent a lab coat for \$3.00 (per time) or purchase a hair net for \$1.00.

### **Lab Safety and Supervision of Students in Food Production Laboratories**

Safety in the laboratory is a priority at all times. In order to ensure safety of all participants, the safety procedures provided by the instructor must be followed. It is the responsibility of each student to attend any safety orientation that is provided. Students who explicitly refuse to follow lab safety policy will be required to leave the lab and the School's Director will be informed of the incident.

Students in food production laboratories must be supervised by an instructor, lab technician or graduate teaching assistant at all times. There is a real concern about the safety and well-being of students left in a lab unsupervised. The School is directly responsible for these students and their activities as they relate to the courses.

Students' access to food storage areas (refrigerators, freezers or dry storage) outside of class time, without supervision is prohibited, i.e. keys may not be given to students to work on weekends or in the evening.

All applicable health, food safety and liquor regulations will be adhered to while in the HTM food laboratory facilities.