students will be asked to work independently or in small groups to complete problems introduced in class. Some of the problems will be marked toward the student's ***bonus participation mark***. The answers will be collected through LEARN Quizzes tool during the live session time. Remember, attempting the problems before watching the instructor solutions will help you to develop your independent ability to solve problem. Correct answer will be graded with 1 point while incorrect will be graded as 0. The instructor and the TAs will be available during the live session time to answer questions. Common misconceptions and difficulties stemming from the course content and assignments will be address during the Q&A session. Please note that the live-session is being recorded at all times (Please see below privacy information for students in remote teaching and learning: students notice of recording). **Live sessions time is scheduled to Wednesday & Friday: 11:30 am – 1:00 pm.** Live sessions are cancelled on Wednesday, Feb 17th (Reading Week), Friday, Feb 19th (Reading Week) and Friday, Apr 2nd (Good Friday).

ONLINE ASSIGNMENTS

Assignments are designed to reinforce content covered during the synchronous lectures. These multi-choice assignments will be administered with the start of a new unit and can be accessed through LEARN quizzes tool. In addition, the students must submit the FULL SOLUTION on LEARN Dropbox. No late assignments will be accepted! Each assignment will be open for completion until the scheduled due date for approximately two (or one)-week-period, depending on the unit length. The assignments are evenly weighted from the total assignment mark. You can view your assignment grades on the gradebook in LEARN. After the due date, the students will have access to the solution of the assignments.
Assignments due are at 11:59 PM on Tuesdays: (1) *Jan. 26;* **(2)** *Feb. 9;* **(3)** *Mar. 2;* **(4)** *Mar. 9;* **(5)** *Mar. 30* **(6)** *Apr. 13.*

ONLINE TESTS

There will be three multiple-choice-question tests that will be administered using the LEARN quizzes tool. In addition, the students must submit the FULL SOLUTION on LEARN Dropbox. The tests will be available at 12:00 am EST on the scheduled date and closed at 11:59 pm EST. Tests are designed to be completed in one hour. To accommodate all students (including students registered with AccessAbility), students will have **two hours** to submit their responses from the time the test is opened. In general questions on the tests will not be answered during test time, however, there is exemption for technical questions. If you find a test question unclear, email your assumptions and a screenshot of the unclear test question to the instructor and the TAs within an hour of completing the test. The tests are evenly weighted to form the total tests mark. Students can view their tests marks on the gradebook in LEARN. No make-up tests for missed ones will be conducted. The mark of the missed test with an acceptable reason will be shifted toward the other tests. Practice

problems will be posted at the beginning of each unit. The solutions for the practice problems will be posted the following Monday to ensure the students attempt the problems independently. During tests you may consult your textbook, handwritten course notes, and materials posted in the course LEARN site. You may use any type of calculator. Use of any other resource is **prohibited**. You may not communicate directly or indirectly with any person except the course instructor.

Tests: (1) *Tuesday, Feb. 23, 2021;* **(2)** *Tuesday, Mar. 23, 2021;* **(3)** TBD*; during finals*

TENTATIVE LECTURE SCHEDULE AND MANDATORY READINGS

FROM MATERIALS SCIENCE AND ENGINEERING - AN INTRODUCTION, 7TH EDITION, WILLIAM D. CALLISTER JR, WILEY

Weeks	Topics	Mandatory Reading
Jan. 11 – Jan. 26 (4 Lectures)	**UNIT 1: INTRODUCTION & ATOMIC STRUCTURE AND BONDING**	Chapter 1 &2
Jan. 27 – Feb. 9 (4 Lectures)	**UNIT 2: CRYSTALLINE STRUCTURE – PERFECTION**	Chapter 3
Feb. 10 – Feb. 24 (3 Lectures) (Feb. 13 – Feb. 21; Reading Week)	**UNIT 3: CRYSTAL DEFECTS AND NON-CRYSTALLINE STRUCTURE – IMPERFECTION**	Chapter 4
Feb. 26 – Mar. 9 (3 Lectures)	**UNIT 4: DIFFUSION**	Chapter 5
Mar. 10 – Mar. 23 (4 Lectures)	**UNIT 5: BAND THEORY AND ELECTRICAL PROPERTIES**	Chapter 18
Mar. 24 – Apr. 31 (3 Lectures)	**UNIT 6: MAGNETIC PROPERTIES**	Chapter 20
Apr. 2 – Apr. 14 (3 Lectures) (No class on Apr 2: Good Friday)	**UNIT 7: OPTICAL PROPERTIES**	Chapter 21

EXPECTATIONS OF ACADEMIC INTEGRITY

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. More information available at: http://www.uwaterloo.ca/academicintegrity/.

Discipline: Academic offences will not be tolerated. Every student is expected to know what constitutes academic integrity to avoid committing an academic offence and to take responsibility for his/her actions. For information on categories of offences and types of penalties, students should refer to Policy 71, Student Discipline (https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-71. For typical penalties, please refer to the Guidelines for the Assessment of Penalties

(http://www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines).

Grievance: A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70, Student Petitions and Grievances, Section 4 (https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-70). When in doubt, please be certain to contact the department's administrative assistant who will provide further assistance.

Appeals: A decision made or penalty imposed under Policy 70: Student Petitions and Grievances (other than a petition) or Policy 71: Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to Policy 72: Student Appeals (https://uwaterloo.ca/secretariat-general-counsel/policies-procedures-guidelines/policy-72).

INTELLECTUAL PROPERTY

Students should be aware that this course contains the intellectual property of their instructor, TA, and/or the University of Waterloo. Intellectual property includes items such as:

- Lecture content, spoken and written (and any audio/video recording thereof);
- Lecture handouts, presentations, and other materials prepared for the course (e.g., PowerPoint slides);
- Questions or solution sets from various types of assessments (e.g., assignments, quizzes, tests, final exams); and
- Work protected by copyright (e.g., any work authored by the instructor or TA or used by the instructor or TA with permission of the copyright owner).

Course materials and the intellectual property contained therein, are used to enhance a student's educational experience. However, sharing this intellectual property without the intellectual property owner's permission is a violation of intellectual property rights. For this reason, it is necessary to ask the instructor, TA and/or the University of Waterloo for permission before uploading and sharing the intellectual property of others online (e.g., to an online repository).

Permission from an instructor, TA or the University is also necessary before sharing the intellectual property of others from completed courses with students taking the same/similar courses in subsequent terms/years. In many cases, instructors might be happy to allow distribution of certain materials. However, doing so without expressed permission is considered a violation of intellectual property rights.