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Fall 2015

## CHEM 3610

John Wiley  
*University of New Orleans*

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CHEM3610  
**Materials Chemistry**  
Fall 2015

**Instructor:** Professor John B. Wiley  
CSB217, x3-6849, [jwiley@uno.edu](mailto:jwiley@uno.edu)  
Office hours: To be announced *or by appointment*

**Text:** *Solid State Chemistry, An Introduction* 4th Ed., L. E. Smart and E. A. Moore, Taylor and Francis, 2005, Boca Raton, FL. ISBN: 1439847908.

Also, if you want to look at the 3<sup>rd</sup> Ed before you purchase the 4<sup>th</sup> Ed.:

[http://uqu.edu.sa/files2/tiny\\_mce/plugins/filemanager/files/4300270/solid%20state%20chemistry.pdf](http://uqu.edu.sa/files2/tiny_mce/plugins/filemanager/files/4300270/solid%20state%20chemistry.pdf)

(Previous text: "*Materials Chemistry*" by Bradley D. Fahlman, Springer publishing, ISBN 978-1-4020-6119-6. This is a great book, just not the best one for this class.)

**Goal:** To acquaint you with those aspects of Materials Chemistry pertinent to a basic understanding of the preparation, characterization, properties, function, etc. of a variety of materials.

**Prerequisites:** CHEM1017, CHEM1018

**Topics to be covered:**

- Materials overview
- Preparation methods of polycrystalline materials, single crystals, thin films, polymers, etc.
- Structures of close packing of basic structure types
- Characterization of crystallography, microscopy, etc.
- Physical properties of magnetism, electronic properties, optical, simple band theory, etc.
- Other focused topics: nanomaterials, biomaterials, semiconductors, superconductors, polymers, etc.

We will have traditional lectures, some on-campus field trips, in-class demonstrations, and exams.

---- *Final Exam*---- (Scheduled: Thursday, Dec. 10, 2015, 10 am to 12 noon)

**Grade assignments:**

|   |                            |
|---|----------------------------|
| midterms (x 2) and final*                     | 300 pts (weighted equally) |
| quizzes, homework, demo design, home projects | 50 pts                     |
| paper   | 50 pts                     |

- \* The final will be comprehensive. For those who are borderline at the end of the semester, an extremely strong showing on the final exam will be taken into consideration when final letter grades are assigned.

**Grades.** If you fall within the ranges, you are guaranteed to at least get the following grades: 95-100% A, 89-94% B, 83-88% C, and 77-82% D. Likely the scale will be more generous.

**Attendance and Tardiness:** A student's attendance will be an important consideration at the end of the semester should the final grade be borderline. Students that are habitually tardy will be severely penalized; course totals will be reduced by at least 10% for such behavior.

**Other important policies (University and Department of Chemistry – *I did not write this section, but I do support it.*)**

Disabilities

Students who qualify for services will, whenever possible, receive the academic modifications for which they are legally entitled.

Academic Integrity

Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the UNO Judicial Code for further information, including the consequences for acts of academic dishonesty. The Code is available online at <http://www.studentaffairs.uno.edu/pdfs/StudentCode.pdf>.

**Plagiarism is a serious offense that can result in failure in a course and dismissal from the university.<sup>1</sup> Students must make special efforts to learn what constitutes plagiarism and how to properly utilize and cite the work of others.**

Plagiarize 1. To steal and use (the ideas or writings of another) as one's own. 2. To appropriate passages or ideas from (another) and use them as one's own . . . To take and use as one's own the writings or ideas of another. - definition from *The American Heritage Dictionary of the English Language*, W. Morris, Ed. American Heritage publishing Company, Inc. and Houghton Mifflin Company: New York, 1969.

Verbatim, or word for word copying, is the most obvious form of plagiarism. However, substantially copying the ideas or presentation of another, even when wording has been changed, can also constitute plagiarism.

**Free Tutoring for Many Courses is Available On-Campus from the UNO Learning Resources Center:** <http://lrc.uno.edu/>

**Free Chemistry Tutoring Available in the Chemistry Learning Center (CSB 101)**

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<sup>1</sup>International students who are dismissed from the university can lose their visa status, requiring them to return to their home country.

### Important Dates\*

|   |                  |
|---|------------------|
| Last day to adjust schedule w/out fee.....                              | 08/18/2015       |
| Semester Classes Begin .....  | 08/19/2015       |
| Last day to adjust schedule w/fee,<br>or withdraw with 100% refund..... | 08/25/2015       |
| Last day to apply for December commencement .....                       | 09/25/2015       |
| Final day to drop a course or resign.....                               | 10/14/2015       |
| Mid-semester examinations .....   | 10/05-10/09/2015 |
| Final examinations.....   | 12/07-12/11/2015 |
| Commencement .....  | 12/18/2015       |

\*Note: check Registrar's website for Saturday and A/B sessions, and for items not listed here: <http://www.registrar.uno.edu>

### Fall Semester Holidays

|                          |                  |
|--------------------------|------------------|
| Labor Day .....          | 09/07/2015       |
| Mid-semester break ..... | 10/15-10/16/2015 |
| Thanksgiving .....       | 11/26-11/27/2015 |

### Withdrawal Policy – Undergraduate only

Students are responsible for initiating action to resign from the University (withdraw from all courses) or from a course on or before dates indicated in the current Important dates calendar. Students who fail to resign by the published final date for such action will be retained on the class rolls even though they may be absent for the remainder of the semester and be graded as if they were in attendance. Failure to attend classes does not constitute a resignation. Check the dates on the Registrar's website, <http://www.registrar.uno.edu>. Please consult The Bulletin for charges associated with dropping and adding courses.

### Incomplete Policy – Undergraduate only

The grade of I means *incomplete* and is given for work of passing quality but which, because of circumstances beyond the student's control, is not complete. The issuance of the grade of I is at the discretion of the faculty member teaching the course. For all graduate and undergraduate students, a grade of I becomes a grade of F if it is not converted before the deadline for adding courses for credit (as printed in the Important Dates Calendar) of the next regular semester including summer semester.

### Repeat Policy

When a student is permitted to repeat a course for credit, the last grade earned shall be the one which determines course acceptability for degree credit. A student who has earned a C or better in a course may not repeat that course unless, (1) the catalog description indicates that the course may be repeated for credit, or (2) the student's Dean gives prior approval for documented extenuating circumstances.

### Graduate Policies

Graduate policies often vary from undergraduate policies. To view the applicable policies for graduate students, see the Graduate Student Handbook: <http://www.uno.edu/grad/documents/GraduateStudentHandbook2014.pdf>

### Academic Dishonesty Policy

<http://www.uno.edu/student-affairs-enrollment-management/documents/academic-dishonesty-policy-rev2014.pdf>

### Safety Awareness Facts and Education

Title IX makes it clear that violence and harassment based on sex and gender is a Civil Rights offense subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories such as race, national origin, etc. If you or someone you know has been harassed or assaulted, you can find the appropriate resources here: <http://www.uno.edu/student-affairs-enrollment-management/>

### UNO Counseling Services and UNO Cares

UNO offers care and support for students in any type of distress. Counseling Services assist students in addressing mental health concerns through assessment, short-term counseling, and career testing and counseling. Find out more at <http://www.uno.edu/counseling-services/>. First-year students often have unique concerns, and UNO Cares is designed to address those students succeed. Contact UNO Cares through <http://www.uno.edu/fye/uno-cares.aspx>.

### Emergency Procedures

Sign up for emergency notifications via text and/or email at E2Campus Notification: <http://www.uno.edu/ehso/emergency-communications/index.aspx>. All emergency and safety procedures are explained at the Emergency Health and Safety Office: <http://www.uno.edu/ehso/>.

### Diversity at UNO

As the most diverse public university in the state, UNO maintains a Diversity Affairs division to support the university's efforts towards creating an environment of healthy respect, tolerance, and appreciation for the people from all walks of life, and the expression of intellectual point of view and personal lifestyle. The Office of Diversity Affairs promotes these values through a wide range of programming and activities. <http://diversity.uno.edu/index.cfm>

### Learning and Support Services

Help is within reach in the form of learning support services, including tutoring in writing and math and other supplemental instruction. Visit the Learning Resource Center in LA 334, or learn more at <http://www.uno.edu/lrc/>.

### Affirmative Action and Equal Opportunity

UNO is an equal opportunity employer. The Human Resource Management department has more information on UNO's compliance with federal and state regulations regarding EEOC in its Policies and Resources website: <http://www.uno.edu/human-resource-management/policies.aspx>